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STRATEGY OF FARM DEVELOPMENT ON THE BASIS OF MARKETING

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The theoretical and methodological bases of forming strategies for the development of farms on the basis of marketing are highlighted. An assessment of the implemented strategies for the development of farms and their investment orientation in conditions of instability is carried out. The peculiarities of managing the marketing activities of farms during the war and post-war reconstruction are determined. The directions of strategic development of farms in order to ensure their sustainable development are substantiated.

The use of the results in research and practice makes it possible to objectively assess the state and prospects of farm development during the war and post-war reconstruction.

It is intended for farmers, government officials, scientists, teachers of agricultural education institutions, postgraduates, and students.

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INTRODUCTION

Farming activities contribute to fuller employment of farmers, generating additional income, social and other effects, and to the formation of the state's food security. For farmers, it is important that their income and other effects are not only constant over time, but also grow steadily, which requires each farm to achieve a certain rhythm in the formation of technological processes, costs and income, which ensures the sustainability of reproduction processes.

The most important features of farm development are not only the constant reproduction of resources and economic relations, but also the maintenance of strong market positions, which can only be achieved through the maximum use of internal and external opportunities over a long period of time. The most significant of these measures are those of a strategic nature. Therefore, each farm needs to formulate an effective investment-oriented strategy for its development. However, most farms do not have such strategies, which often leads them to financial instability and bankruptcy, especially in times of war. Implementation of scientifically sound sustainable development strategies is the key to successful farming operations over time.

The resilience of farms to the stresses of war was negatively affected by postponed institutional reforms and the long-standing problem of insufficient investment. In particular, agroholding of agriculture, structural inter- and intra-industry imbalances, dominance of raw materials in exports, large tonnage of crop exports, monopolization of input markets and logistics infrastructure, one-sided dependence of exports on sea transportation, and others. The role of family farms and small businesses, as well as alternative activities in the context of rural development, was underestimated.

Ukraine's economy has been developing in an unstable environment for a long time, characterized by alternating periods of decline and intensification of investment processes in agriculture, including farms. In such an unstable environment, capital investment in the rehabilitation of farms is a crucial factor

in the growth of not only their commodity output and profits, but also the country's gross domestic product.

The United Nations has declared 2019-2028 as the Decade of Family Farming and developed a Global Action Plan for the development of such farms. According to the Food and Agriculture Organization of the United Nations (FAO), more than 83% of gross livestock production and more than 51% of crop production in the world are produced by farms.

Thus, there is an urgent need for further development of farms as a socio-economic phenomenon. Sustainable development of agricultural production and environmental protection in the long term can only be ensured by properly meeting the needs and expectations of farmers and other stakeholders, provided that an appropriate balance of organizational, economic, and social factors of farms is maintained.

Therefore, the basis for the development of farms and its basic principles should be the implementation of state policy aimed at introducing the provision that the basis of the agrarian economy and rural development should be the farm system.

The proposed monograph also substantiates the organizational and economic foundations of farmers' development based on the transformation of individual peasant farms into family farms.

SECTION I
MANAGEMENT OF MARKETING ACTIVITIES OF ENTERPRISES IN UKRAINE

At the current stage of development of the Ukrainian economy, the role of managing the marketing activities of enterprises is growing. An integral element of effective business activity is the understanding and use of the marketing concept in enterprise management. The qualitative component of marketing in management is enormous, as it determines the highly profitable rhythmic activity of business entities.

As the practice of Ukrainian enterprises shows, although the introduction of marketing is becoming more widespread, all forms of marketing management are not yet fully used. This would create prerequisites for ensuring the competitiveness of enterprises, adaptation to constant changes in the external environment and market conditions, and stability of business conditions.

The process of managing material and human resources, ensuring their integration and most efficient use to achieve the set goals, is known as management. Based on the above, marketing management or marketing management in an enterprise is the process of analyzing, developing and implementing means that are designed to establish, strengthen and maintain profitable exchanges with customers to achieve the enterprise's goal of making a profit, increasing sales, increasing market share, etc.

Marketing management is the process of planning and implementing pricing, promotion and development of ideas, products and services aimed at making an exchange that satisfies both individuals and the firm. It also aims to solve the problems of the firm's influence on the level and structure of demand in a certain period of time, to determine the optimal ratio of supply and demand so that the firm achieves its goal [7]. In essence, marketing management is the management of supply and demand and is carried out when one of the parties to

a potential exchange develops and uses the means to achieve the desired action (response) of the other parties.

Marketing management is considered by most scholars and practitioners from the point of view of marketing functions within the marketing department of an enterprise, but not from the point of view of its management within the whole enterprise, i.e., today little attention is paid to the formation of an integrated marketing management system as a process that covers all areas of the enterprise. The issues of marketing management have been studied by both foreign anddomestic scholars: G. Armstrong, P. Drucker, F. Kotler, K. L. Keller, R. Branson, A. V. Voichak, L. V. Balabanova, M. M. Belovodskaya, M. I. Belyavtsev, V. N. Vorobyova, R. H. Ivanova, S. S. Garkavenko, V. G. Gerasymchuk, N. M. Komarova, V. P. Onishchenko, A. V. Romanova, and others.

The modern vision of the problems of marketing development in the domestic scientific literature is revealed by M. I. Andrushko, T. G. Dudar, M. M. Yermoshenko, Y. B. Ivanov, S. I. Kosenkov, V. V. Lipchuk, A. O. Starostina, G. V. Cherevko, and others. Problematic issues of the functioning of enterprises are reflected in the scientific works of such Ukrainian scientists as P. S. Berezivskyi, O. M. Borodina, M. V. Bochkov, V. G. Galanets, P. M. Garasym, M. I. Dolishnyi, E. S. Karnaukhova, and others.

The use of marketing in domestic enterprises is hampered by a number of problems that comprise several main groups, as shown in Fig. 1.

However, the issues of directions for the development of marketing management in the sector of economy, taking into account the changes that have occurred in the process of its globalization, remain insufficiently studied.

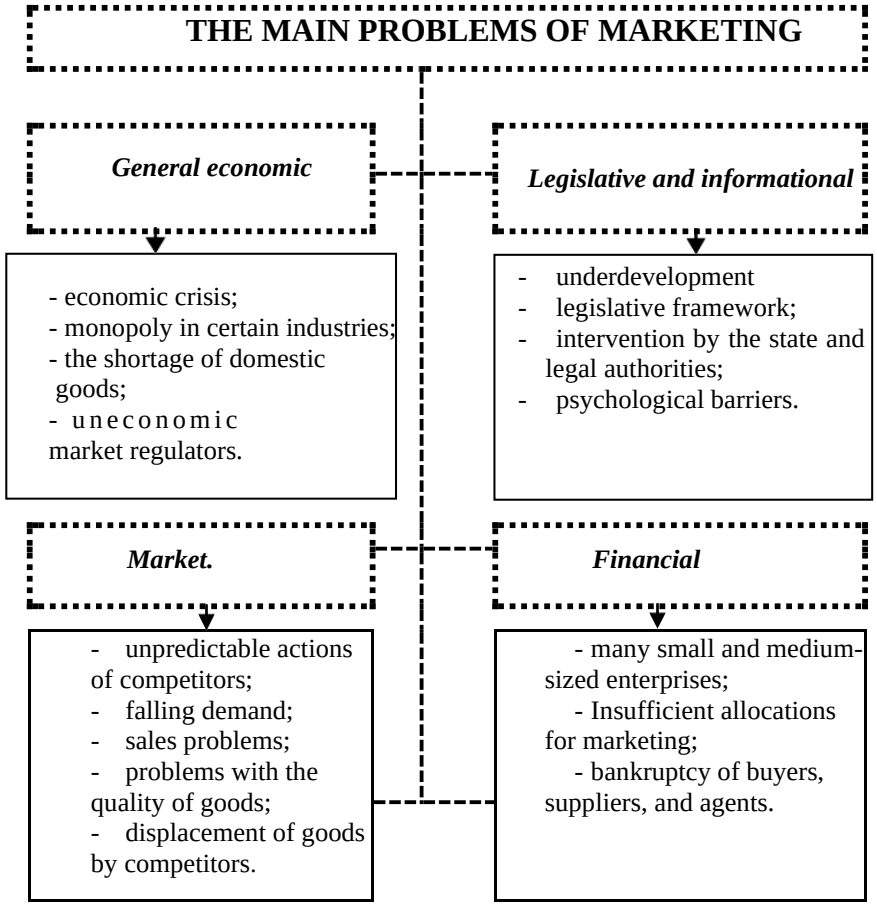

Fig. 1. **Typical problems of marketing application in Ukrainian enterprises**

Source: [2].

However, the issues of directions for the development of marketing management in the sector of economy, taking into account the changes that have occurred in the process of its globalization, remain insufficiently studied. After the collapse of the administrative-planning system, social and production conditions have radically changed, the goals of production have radically changed (from fulfilling directive plans to maximizing profits), the forms of ownership have changed (from unitary state ownership to its various forms), enterprises have gained full independence in decision-making, new forms of goods (capital, labor, natural resources, means of production) have emerged, and a free market has been organized. At the same time, market factors of the economy have given rise to a number of problems in the country related to the instability of the external environment, changes in market conditions, fierce

competition, unwillingness of management to change management technology, lack of highly qualified specialists in managing the marketing activities of enterprises, etc.

Philip Kotler, the famous "father" of marketing, considers it a system of various activities of an enterprise that are interrelated and include planning, pricing, selling, delivering goods and providing services that are needed by existing or potential customers; as well as a type of human activity aimed at satisfying needs through exchange [5].

The word "marketing" originated in the United States of America, and it meant "market getting". Later, the combination of these two words resulted in the term "marketing". Today, the essence and content of the concept of marketing are interpreted differently and there are more than 2000 definitions of this term. According to the scientists of the British Institute of Management, marketing is one of the types of management activities that promotes the expansion of production and trade and increases employment by identifying consumer demand and developing research to meet this demand; it links production capabilities with the ability to sell goods and services, justifies the nature, direction and scale of all work necessary to make a profit as a result of selling the maximum amount of products to the end user [7].

In its most general definition, marketing is a management concept that ensures the market orientation of a company's production and sales activities; as well as a management system that provides for coordinated and directed activities to study sales markets, adapt production to their needs, actively influence market processes and consumers in order to increase sales and generate high profits.

These descriptions of the concept of marketing are united by a key word - consumer needs, so the ability to meet their needs in the best possible way is the secret of success for any company in a competitive market. The application of marketing as a business philosophy that reorients all the activities of the company to meet customer demand is possible only when marketing becomes

the philosophy of all employees, when each of them is focused on the consumer. Marketing is relevant to any sphere of human activity.

The purpose of marketing is, on the one hand, to create conditions for adapting production to social demand and market needs; to develop a system of organizational and technical measures for market research, intensify sales, and increase the competitiveness of goods in order to maximize profits; and, on the other hand, to influence the sales area: supply, demand, prices, sales conditions, and distribution channels by using the means, techniques, and the entire marketing system. Marketing involves the widest and most complete use of market conditions and all factors of commercial success in order to achieve the main goal of making a profit.

Specific features of marketing in Ukraine:

1. Low level of solvency and awareness of domestic consumers.
2. Low level of domestic production competition, which makes it unnecessary to use the concept of marketing.
3. Strong pressure from distribution structures, leading to unjustified price increases.
4. The formation of a layer of professional marketers is in its infancy.
5. The mentality of the domestic consumer creates distrust of advertising campaigns, sales promotion, etc.
6. Unregulated legal framework for consumer protection, advertising, unfair competition, registration of patents and inventions, registration and protection of rights to trademarks.

In the literature, the term "marketing management" is often used as a simplification of the term "marketing management". In fact, these two terms mean the same thing and have the same meaning. In our opinion, it is more correct to use the term "marketing management" because it more accurately reflects the essence of this process. However, both types of wording are common, and when it is written "marketing management" means "management of marketing activities".

"Marketing management" and "marketing service management" are different concepts. As you know, the marketing service of an enterprise is a special unit that operates on the basis of marketing principles and methods in order to comprehensively study the market, ensure sustainable sales of goods, market orientation of production and design and development work. And the management of the marketing service is a clearly defined program developed on the basis of decisions made and strategic directions of development. Therefore, marketing management (management of marketing activities) in an enterprise is a wide range of strategic and tactical measures aimed at the effective implementation of the enterprise's market activities and achievement of its main goal - satisfaction of the needs of consumers of goods and services and obtaining the greatest profit on this basis.

In today's business environment, marketing management is becoming increasingly important. It gives managers a number of advantages:

- stimulate their ongoing forward thinking;
- leads to better coordination of the firm's efforts;
- leads to the establishment of performance indicators for further control;
- makes the company clearly define its tasks;
- makes the firm more prepared for rapid changes;
- more clearly demonstrates the interconnectedness of the responsibilities of all officials.

But in every region, there are a large number of businesses that do not have marketing specialists. An entrepreneur is his own director, marketer, accountant, etc., he simply cannot have so many specialists, so he will use the services of special consultants. Factors that strongly influence the management of marketing activities are the age composition of employees, their level of education, material and moral incentives, which affects their attitude to work. Each of the local groups has specific needs that should be taken into account in the practice of developing marketing plans [1].

An enterprise that introduces marketing management into its operations ensures that it will benefit from it:

- the target orientation of the company's market activities, which is related to meeting the needs of society and individuals;
- the effectiveness of marketing activities, which is manifested in the organization of the technological process from product design to consumption;
- Market analysis, i.e., its potential, capacity, market conditions, demand, consumer behavior, firm capabilities, competition, etc;
- motivation: creating appropriate material and moral incentives for employees to ensure that they fulfill their duties;
- control and analysis of marketing activities.

Identifying, on the basis of various analyses, the types of products that can provide the organization with the highest level of profit and focusing on planning and selling these types of products is the most important task of the company's marketing activities.

Having analyzed the concepts of marketing activity management given in the literature, we propose the following improved and developed definition of it, which is considered from the point of view of its purpose, essence and systematic nature.

Management of marketing activities in Ukrainian enterprises is a system of various types of activities, which is a wide range of strategic and tactical measures interrelated and aimed at the effective implementation of the enterprise's market activities and achievement of its main goal

- satisfaction of the needs of consumers of goods and services and obtaining the highest profit on this basis. This concept, in our opinion, takes into account the complexity of the marketing management process, its purpose and essence, it emphasizes the systematic nature of this process, because marketing management should be carried out systematically and comprehensively.

Marketing management can be carried out from the standpoint of five approaches: improvement of production, goods; intensification of commercial efforts; marketing; and social and ethical marketing.

Thus, we can formulate the basic principles of marketing management in an enterprise: orientation and influence on the consumer, adaptability and flexibility, focus on the future, complexity, systematicity, freedom of the consumer and the producer, limitation of potential damage, satisfaction of basic needs, economic efficiency, innovation, training, information and consumer protection (Fig. 2).

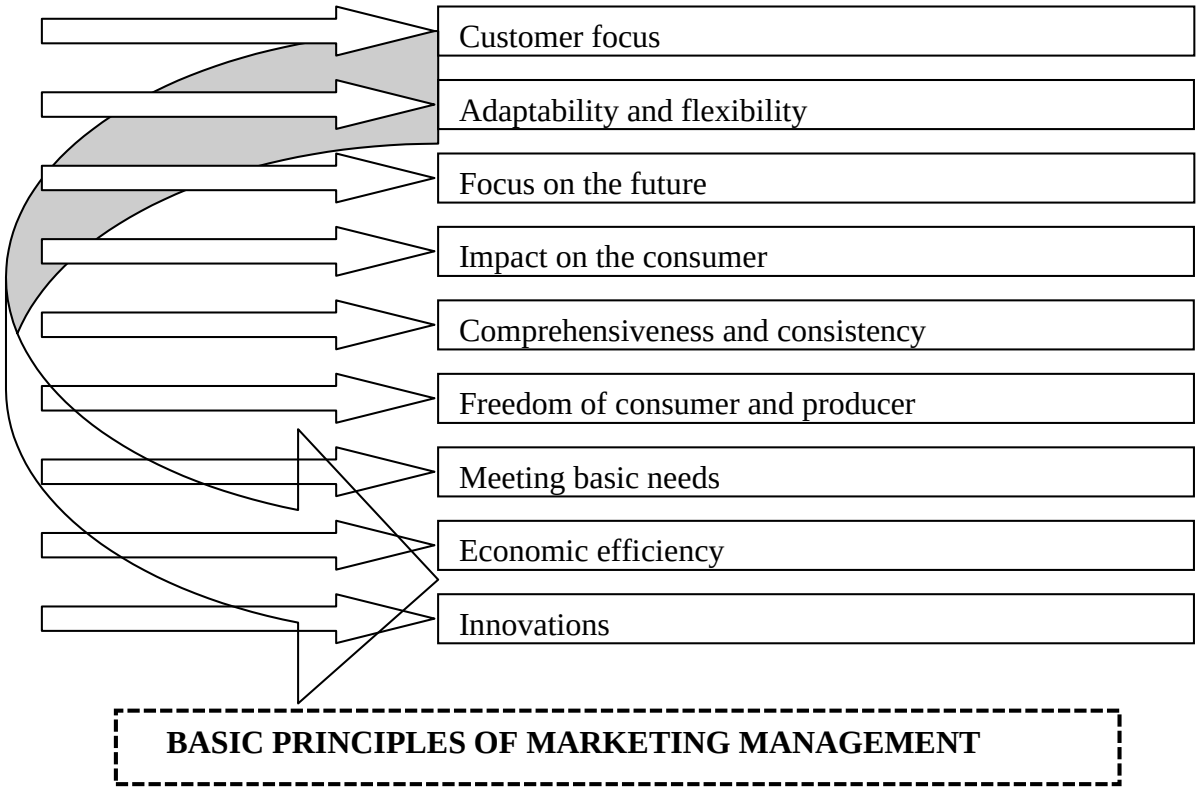

Fig. 2. Basic principles of marketing management in an enterprise

Source: [6].

The concept of production improvement asserts that consumers will favor goods that are widely distributed and affordable, and as a result, the company should focus its efforts on improving production and increasing the efficiency of the distribution system. This concept can be applied in two situations: when

demand for a product exceeds supply and when the cost of the product is very high and needs to be reduced by increasing productivity.

The main idea behind the concept of product improvement is the statement that consumers will favor the highest quality products with the best performance and features, so a company should focus its efforts on continuous product improvement.

The negative aspect of this concept is that consumers are not really satisfying the need for a particular product, but rather their own needs.

These principles determine the specific areas of activity of enterprises carried out within the framework of marketing, the content and direction of its main functions, which are characterized by the evolutionary development of enterprises. In the modern specialized scientific literature there is no generally accepted classification of functions that are part of the marketing complex. Ultimately, the content of marketing functions is determined by the scale of production and sales, competition conditions, product range, peculiarities of consumption and demand for the enterprise's products, etc.

The general functions of marketing management in an enterprise are analysis, planning, organization of execution, and control. Specific functions are: development of goals and objectives of the enterprise, basic strategic principles of its activity; development of the enterprise strategy, identification of markets; product planning; preparation of procurement plans for material and technical resources; formation of a production plan; planning and implementation of a complex of marketing communications; formation of distribution channels; formation and implementation of pricing policy; planning of financial support; recruitment of employees; formation of a structure for managing marketing activities; formation and realization of

Functional support of marketing activities, i.e. creation of a marketing service, functioning of a marketing information system, determination of strategy and marketing planning, marketing control, begins with market research (including consumer behavior, competitor analysis, marketing

opportunities of the enterprise, market segmentation and product positioning). Then, the company's marketing complex is developed, i.e., the product, pricing, sales methods and channels, and methods of promoting the product on the market.

Schematically, the model of marketing activities can be represented as shown in Fig. 3.

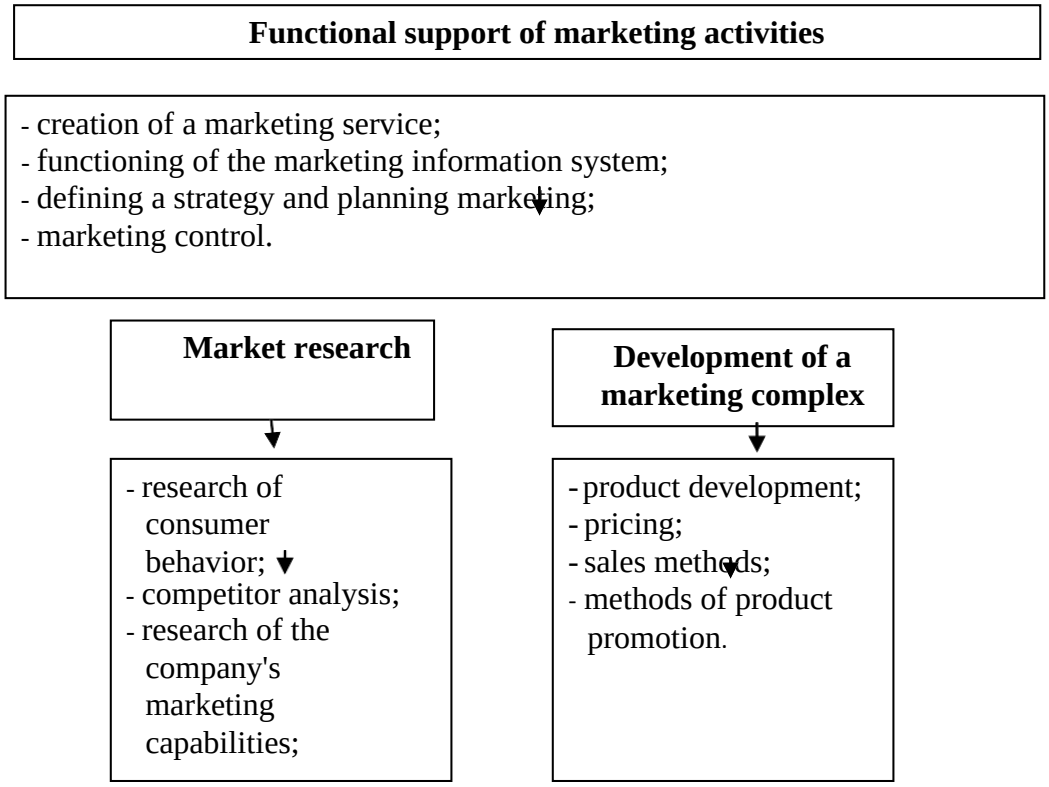

Fig. 3. **Model of marketing activities**

Source: [1]

The following methods of marketing research and actions are distinguished in the system of managing the marketing activities of an enterprise:

- study of the external environment;
- studying existing and
- planning future products;
- planning the movement and sales of goods;
- Ensuring the formation of sales and stimulating supply;
- ensuring the company's pricing policy;

- ensuring the required level of safety of use of goods, environmental protection, and requirements for consumer properties of goods [3].

A company's marketing activities always begin with a comprehensive market research, as it is focused on meeting the needs of consumers. This research studies consumer behavior, their tastes and preferences, needs, consumer preferences, motives that motivate them to buy goods, and this allows the company to best meet their needs.

Market research also involves studying and forecasting demand for goods, analyzing prices and competitors' products, determining market capacity and the company's share in it. Such analysis helps to assess market opportunities and identify an attractive area of marketing activity where the company can gain competitive advantages.

At the same time, the company is searching for its potential customers whose needs it seeks to satisfy. In doing so, a very important marketing technique is used - market segmentation, i.e., the division of consumers into groups based on differences in their needs, characteristics and behavior. If a company has chosen the right market segment for further cooperation, i t means that it has found its "niche" in the market.

Next, it is necessary to position the product on the market, i.e., to clearly define how the product of the enterprise will differ from the products of competitors, thanks to which its characteristics can gain competitive advantages in the minds of potential consumers. Having made a decision on the product positioning, the company can start developing a marketing mix. This is one of the fundamental categories of modern marketing, the most important elements of which are the marketing mix - the so-called "4Ps": product, price, place, distribution or delivery, and promotion.

These four elements together create a marketing mix that is developed for a specific market situation. The ability to properly "mix" marketing elements to solve a practical problem is the basis of marketing. The elements of marketing are:

1. Product (quality, assortment, service). Each product has properties that are of interest to the consumer, such as design, durability, reliability, functions, capabilities, i.e. it has a certain quality (the entire set of product properties that help the consumer to judge its benefits). The assortment, its breadth (the number of product names) and depth (the number of types of products per product name), is often a tool that facilitates the sale of goods on the market.

2. Price (discounts, markups, payment terms). Price setting is considered one of the most difficult tasks of the marketing complex. It should be attractive to a potential buyer and at the same time profitable for the retailer, ensuring the latter's profit.

3. Delivery of products to consumers - includes the choice of the optimal scheme for delivering products from the manufacturer to the consumer (direct, through wholesale trade, agents), its physical implementation (transportation, storage, cargo handling), as well as after-sales (service) customer service. Today, it is not even the one who wins new customers who wins the market, but the one who manages to retain the old ones, so service comes to the fore in the competition. Among the elements of customer service are instruction and recommendations before and after purchase, delivery and installation of goods, staff training, handling customer complaints, provision of documentation, provision of component parts, high-quality telephone communication and prompt response, maintenance (repair and prevention), and warranty.

4. Market promotion involves effective contacts with buyers and is carried out in the following forms: creating a positive image of the company and its products; advertising, exhibitions, fairs, discounts, loan of goods, trade on credit; personal sales, etc.

The possibilities of the firm are inexhaustible here - from advertising through the media (television, radio, newspapers) to effective actions of the public relations service [4, p. 15-18].

Traditionally, over the past few years, experts have made their forecasts for 2017 based on the assumptions of a stable political and economic situation, as well as the existing legal framework regulating advertising (Table 1).

Table 1

The size of the advertising media market in Ukraine

Media market	Results of 2019, million UAH	Results of 2020, million UAH	Percentage change in 2020 to 2015 p.	Forecast, 2021, million UAH	Percentage change in 2021 by 2020, forecast
TV advertising, of all	4 164	5 676	36	7 414	31
Direct advertising	3 733	4 965	33	6 454	30
Sponsorship	431	711	65	960	35
Press, total	1 320	1 130	n/a	1 320	17
National	n/a	670	n/a	805	20
Regional	n/a	180	n/a	207	15
Specialized on	n/a	280	n/a	308	10
Radio advertising, of all	304	400	31	480	20
National radio	217	290	34	348	20
Regional radio	31	39	26	47	20
Sponsorship	56	71	27	85	20
Out-of-Home Media, total	953	1 240	30	1 595	29
Shielded external advertising	821	1 081	32	1 405	30
Transportation advertising	64	77	20	92	20
Indoor advertising (including indoor video)	68	82	20	98	20
Advertising in movie theaters	24	35	46	53	15
Internet. advertising	2 355	3 140	33	4 010	28
Together media market	9 120	11 621	27	14 872	28

Source: [8].

Experts of the All-Ukrainian Advertising Coalition summarized the results of 2016 and made a forecast of market development for 2017. The

volume of the advertising and communication market is defined as the volume of media (direct) advertising, and, in addition, the volumes of marketing services, direct marketing and PR markets are taken into account, but not summarized with media.

The structural subdivisions of the advertising and communication market are as close as possible to the existing international classification and European standards. The volume of the advertising market does not include political advertising and VAT.

Effective development of marketing is facilitated by the constant emergence of new ideas and trends in this area. Although countries with developed market economies have accumulated a wealth of experience in the practice of using marketing in the activities of enterprises, it should be borne in mind that it is one of the most dynamic sectors of economic activity. Trends in the development of the modern market are of particular importance for the evolution of marketing, and this is the growing importance of such areas:

- quality, price and customer satisfaction;
- building relationships with consumers and retaining them;
- management of business processes and integration of management functions;
- global thinking and local market planning;
- strategic alliances and networks;
- of high-tech industries;
- service marketing;
- direct and online marketing;
- ethical marketing behavior.

To successfully master marketing, you need to meet the conditions:

- Organizing training for managers and specialists in the basic techniques and tools; training of relevant personnel;
- building the human resource potential of marketing professionals;
- building the necessary organizational structure (special marketing

services);

- creation of scientific and material support for marketing research;
- high level of marketing elements implementation;
- incentive mechanism for reorientation to marketing.

The use of marketing largely depends on the form of ownership and the specifics of the management organization of a particular enterprise. Private, leased, and joint-stock organizations are more responsive to market requirements and have greater opportunities for independent decision-making on interrelated elements of the marketing mix: nomenclature, output, price, distribution channels, sales promotion, etc., which is organically necessary for the development and implementation of marketing policy.

In our country, the use of marketing as a holistic concept of market management is not very common at present. The use of groups of interrelated methods and means of marketing activities, as well as individual elements of the marketing complex, is widely used.

Organizations that manufacture products or provide services intended for the mass consumer operate in competitive markets dominated by consumers and where there are conditions for making independent coordinated decisions on all elements of the marketing mix.

Management that fails to keep up with dynamic changes within the enterprise and in the external environment leads to the "death of ideas" and makes the enterprise unable to adapt and develop further, while marketing activities are an integral part of the enterprise's functioning, often determining other areas of the organization's activities.

As a result of the study, it can be concluded that in the practice of domestic enterprises there are a number of shortcomings that reduce the effectiveness of marketing activities. These include: chaotic use of individual marketing elements, reduction of marketing functions to sales promotion only, short-term orientation, lack of flexibility and ignorance of their own customers.

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SECTION II
PECULIARITIES OF FARM MARKETING MANAGEMENT

By the process of managing the marketing activities of a farm, we mean: all processes related to the promotion of new ideas for products for exchange on favorable terms for the firm and individuals; pricing policy; influence on the relationship between supply and demand to achieve the goals set by the farm. In other words, it is the achievement of desired results through the development and application of tools that help manage supply and demand. After all, the environment in which a farm operates is similar to any other entity in the agricultural sector

of the Ukrainian economy is extremely dynamic and changeable. Therefore, it requires a quick response to objectively manage its activities, which is due to such reasons as coherence, coordination, subordination, accountability and organization.

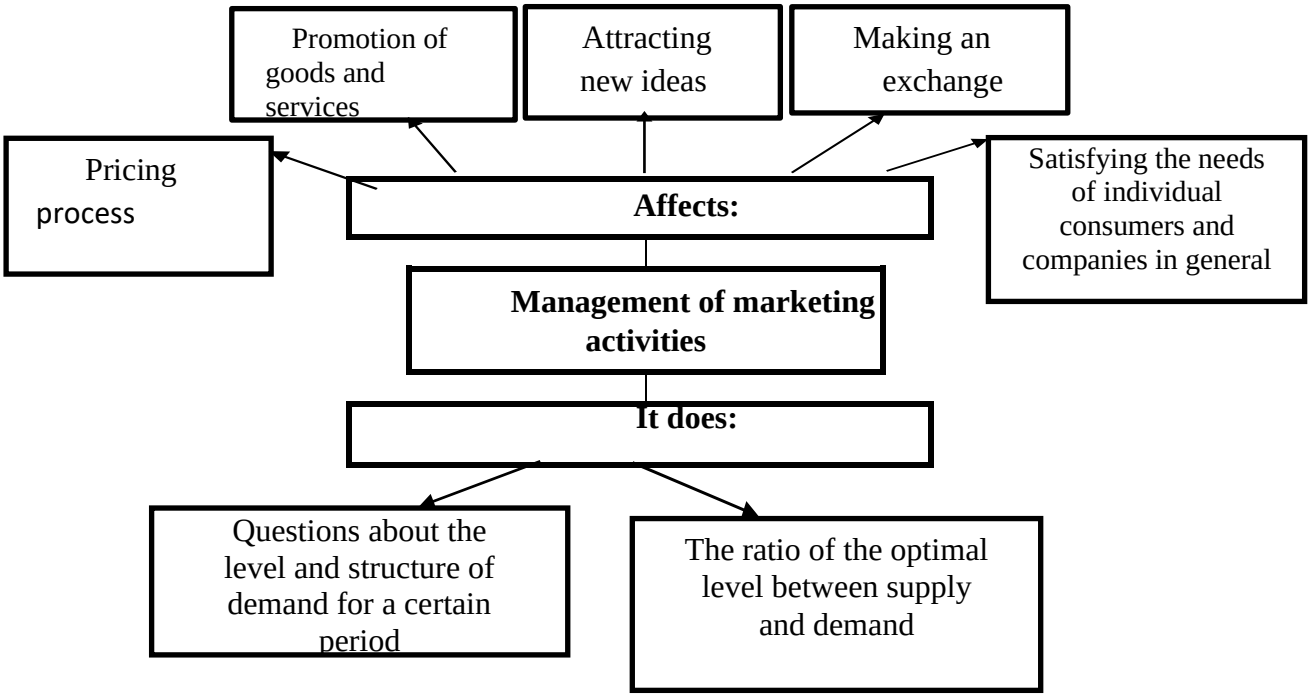

Figure 1. **Scheme of management of marketing activities of farms**

Source: developed by the author on the basis of [4, p. 26].

There are five main functions of marketing management. They include: 1) planning; 2) organization; 3) coordination and regulation;

4) incentives; 5) accounting, analysis and control. The listed functions are listed in the order of their occurrence directly during the activity [1, p. 13].

Today, doing business in a particular sector of the economy requires careful organization and planning of the farm's activities. In today's world, this is a certain axiom or key to the success of a future business. This axiom means that a business owner must know what marketing is, its features, and how to apply them to his or her business. Before starting a business, its future manager must carefully consider – how, when and for what purpose to create it. Marketing activities are subject to planning. Thus, planning is a basic management function. In particular, in the agricultural sector of the economy, it allows to prevent numerous mistakes in the process of activity and to maximize the use of all available opportunities of the farm. This is confirmed by researcher P. Drucker: "Planning does not determine what we will do tomorrow. It tells us how we should act today to better cope with the uncertainty of the future, how we can better prepare to solve emerging problems" [3].

Marketing planning is usually divided into: strategic (long- and medium-term) and tactical (short-term). Management or top managers are engaged in strategic planning, while executives or middle managers are involved in tactical planning. In terms of time, strategic planning is considered to be planning for more than a year, and tactical planning is considered to be planning for up to a year. For correct and effective planning, the following principles should be followed: to define clear goals of activity; to orient production to the interests of the consumer; to collect and master as much detailed information as possible; to have clearly formed plans; to constantly look for ways to improve and develop business [8, p. 203-205].

The next stage of management – ισ τηε organization of marketing activities of the farm. After determining the action plan and outlining the boundaries of economic activity, it is necessary to move on to the realization of

the manager's goals. In this regard, it is necessary to skillfully organize the implementation of the planned steps.

When the farm's activities are planned and organized, there is a need to coordinate and regulate them. This function is very important, as situations arise in the course of farm operations that need to be monitored and coordinated. The reasons for interfering with the pre-planned plans of the farm vary from changing consumer tastes and preferences to unfavorable weather conditions that significantly change the results of the expected harvest.

After this function, activation and stimulation come into play, which means revitalizing business processes to stimulate sales of products and increase profits for owners.

Last but not least are accounting, control and analysis. Accounting and control are necessary in order to have information about the current situation. As a result, an analysis is performed, on the basis of which the farmer solves certain management issues to improve the efficiency of his farm. However, there are still many specific functions of marketing management: formulation of goals and objectives of the farm; product planning and identification of markets for its sale; staffing; collection and processing of marketing information; introduction of pricing policy and a set of marketing communications; formation of distribution channels and preparation of plans for future purchases of material and technical resources.

So, having decided on the scientific approach to the general marketing functions, let us analyze their specific connections with the marketing management functions (Table 1).

Table 1

The relationship between marketing functions and marketing management functions for farms

Marketing functions	Marketing management functions	Consequences of the introduction of farmers' marketing farms
Analytical	Collecting and analyzing information on consumer tastes and preferences; micro and macro environment of the farm; competitors; markets Organization of demand forecasting and sales	Production of products based on information obtained from market research Active policy in the marketing environment (micro and macro) Meeting demand and growing sales
Planning and production	Developing a product policy Planning of material and technical supply and the use of modern equipment, technologies	Implementation of the farm's marketing commodity policy Realization of logistics, attracting new equipment and technologies
Sales and distribution	Formation of a sales and distribution policy and distribution of goods Selection of distribution channels Realization of transportation, warehousing and storage	Ensuring an active sales policy and the use of sales channels that are profitable for the farm Rational and efficient support of logistics operations
Promotion	Development of communication policy Implementation of of sales promotion tools Tangible and intangible Incentivizing incentives for sales staff	Implementation of marketing communication policy Implementing the most effective ways to communicate about manufactured products Motivation of employees
Pricing	Developing a pricing policy Choosing a strategy and pricing methods Solutions for finding management models	Implementation of a marketing pricing policy Definition of the method pricing strategy Choosing a marketing model for farm management

Source: compiled by the author on the basis of [5, p. 23; 8 , p. 5-19].

Thus, the basic marketing function - analytical - is related to the marketing management function, such as collecting and analyzing information, organizing demand forecasting and sales. That is, there is a close relationship between the marketing function and the marketing management function. Therefore, it is necessary to ensure the production of farm products based on the

results of market research. This helps to meet consumer demand and increase sales, which is especially important in the context of increasing consumer demands for the quality of products and competitive pressure in the market.

The situation is similar with the following functions. Thus, the planning and production function is interconnected with the development of commodity policy and planning of material and technical supply. The implementation of the above-mentioned marketing function by farms involves the implementation of a marketing commodity policy. It is the organization and implementation of this policy that determines the main conditions of farming. Particular attention is paid to the planning and production of quality products, which is the key to the success of the marketing function.

The other function, sales and distribution, also involves close connection with the marketing management function - formulating a sales and distribution policy, selecting distribution channels, implementing transportation, warehousing and storage. The farm's performance depends on an active sales policy and the use of distribution channels that are profitable for farmers. Careful planning of logistics operations related to the delivery of farm products to consumers will minimize the cost of this.

Although promotion as a marketing function is important, it also involves close connection with the marketing management function, which includes the development of communication policy, implementation of sales promotion tools, and material and non-material incentives for sales employees. In the process of marketing management, special attention should be paid to the marketing communication policy. A large number of ways to inform about your own products and the ability to persuade people to buy them depends on the motivation of employees involved in this multifaceted process.

Marketing also performs the function of pricing, which is combined with the development of pricing policy, the choice of pricing strategy and methods, i.e. the function of marketing management. The amount of profit of afarm depends on the implementation of a reasonable marketing pricing policy, which

will help determine the profitability of the farm and its products. The priority of the pricing function is to set a fair price at the most favorable level for the farmer and the consumer.

In our case, it is necessary to manage the marketing activities of the farm in order to realize the goals and objectives of its operation. The use of marketing tools, on the one hand, will help consumers learn about the farm's products, and on the other hand, – ωιλλ βε able to identify and study their tastes and preferences to meet their needs. The use of marketing provides a two-way communication between the farm and the consumer.

Thus, the object of marketing management is the farm, the subject of – farm's position in the market (Fig. 2).

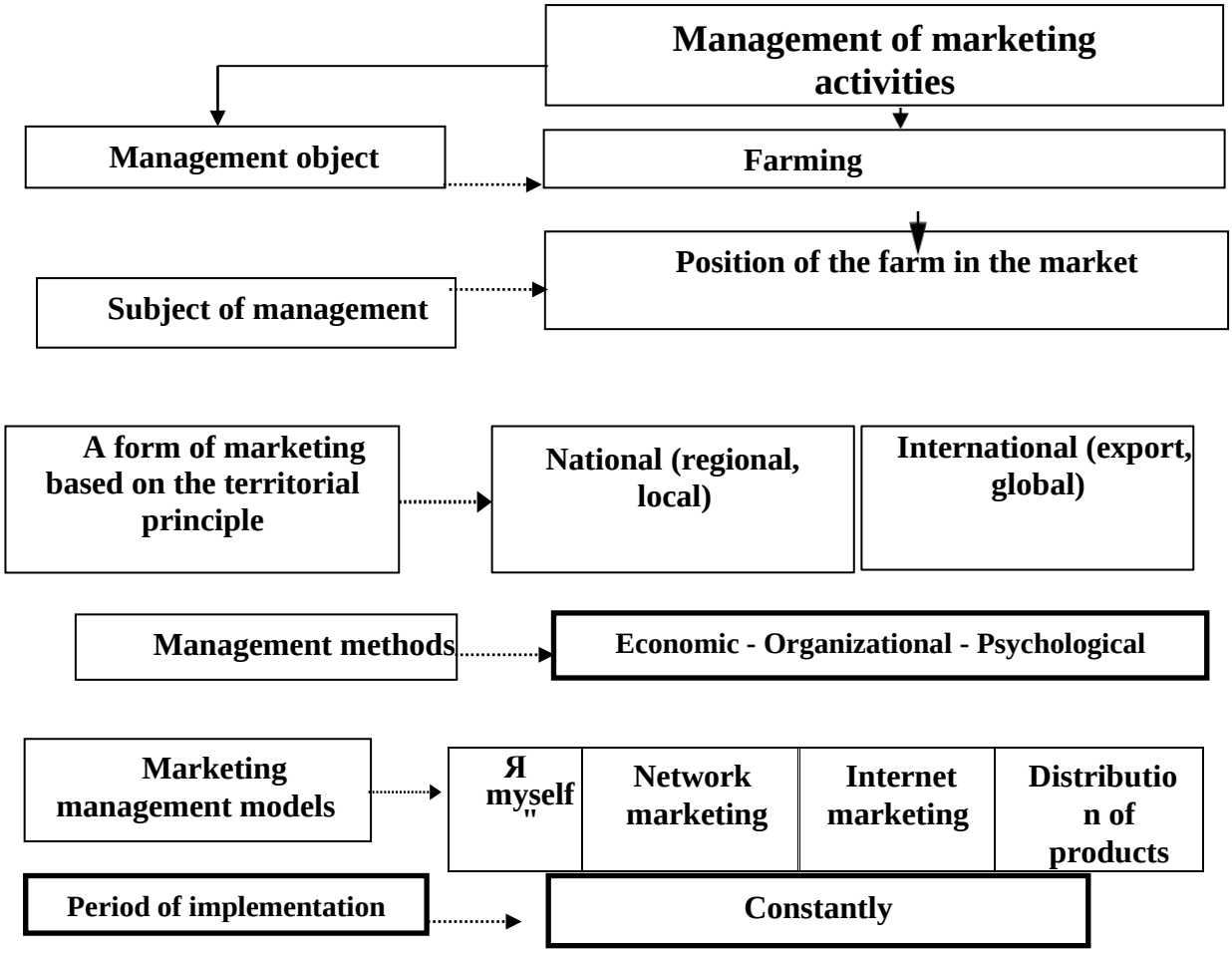

Fig. 2 The complex nature of managing the marketing activities of a farm

The methods of managing the marketing activities of a farm are understood as economic (planning, research, sales, pricing), organizational

(orders, recommendations), and psychological (persuasion). "I do it myself" marketing models are mostly used by small farms through personal sales by the farmer. Network marketing involves the creation of a network, usually based on a local business association or chamber of commerce in the region. Internet marketing is available to all farms, as it is a convenient way to communicate information about the range of farm products to a large number of people. Supplying products to customers means sending samples of manufactured products to actual and potential consumers.

Farm marketing management is not a one-time action to increase sales or attract new customers, but a continuous process. This activity should be carried out only on a permanent basis, then the use of marketing by the farm will be effective.

The right marketing management model for farms will mean increased production, the ability to sell farm products in their own outlets, favorable conditions for farmers to organize into cooperatives and engage in various forms of direct marketing.

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SECTION III
ORGANIZATIONAL AND INSTITUTIONAL FRAMEWORK FOR THE DEVELOPMENT OF FARMING IN UKRAINE

The family form of management in the agricultural sector of Ukraine has certain traditions. The institutional status of farm business entities is based on family ties formed in the family of a peasant. Family farms existed in the pre-Soviet era and during the socialist era, although their functions were limited to the status of household farms[1, p. 87] .

For a significant part of the period of Ukrainian independence, the state paid insufficient attention to the development of family farming in the agricultural sector. Only in the last five years have certain changes taken place - family farms have been formally recognized in legislation. This is a significant step in completing the transformation of the economic system and creating favorable institutional conditions for the realization of property rights and entrepreneurial initiative in rural areas. Domestic society and the government community have nevertheless come to the conscious conclusion that family farmers are responsible for preserving the potential of the territories where production and economic processes take place, i.e. they are moderators of sustainable development practices.

We associate the inception of the modern practice of family farming in agriculture of t h e national economy with the formation of an individual sector of land use, in which the primacy belongs to households and private peasant farms. The state is trying to solve a number of fundamental problems in this area by promoting the development of family farming. However, the weakness of state support and the lack of financial resources in the context of the Russian military actions will deepen the gap between Ukrainian producers and European competitors.

In December 2017, the United Nations announced the Decade of Family Farming for 2019-2028 to promote the implementation of the 2030 Agenda for

Sustainable Development. As part of the implementation of the family farming priorities for the decade, a global action plan was announced to mobilize national and global resources to address the urgent problems of farmers.

Provided that Ukraine actively implements the UN Global Plan of Action for the Development of Family Farming, which provides for effective measures at all levels in seven areas:

- development of a favorable political environment;
- Supporting young people and ensuring the sustainability of family farms from generation to generation;
- promoting gender equality in family farms;
- Increasing the resilience of family farms to external levers;
- strengthening family farms to ensure the resilience of food systems to climate change;
- support for the diversity of family farms to introduce social innovations that will contribute to the preservation of the environment and biodiversity.

Until recently, there were still a number of institutional restrictions on the mass development of family farms in Ukraine, but they can be considered formally removed with the adoption of the targeted legislative framework. The approval of the family farming institution largely eliminates uncertainties regarding the market status of family farms. Currently, the Ukrainian government, taking into account the enormous social significance of family farming, provides institutional conditions and incentives for the development of this type of farms by adopting legislative acts and programs.

The farming system in Ukraine is undergoing transformation and institutionalization. Family farming has been institutionalized relatively recently, with the adoption of relevant regulations and a development concept. The Law of Ukraine "On Farming" is considered to be a pioneer, with its provisions laying down the institutional and legal framework for farming, including the status of farms, principles of establishment, economic relations,

etc. The following institutional and legal measures are important for the implementation of institutional and legal support of family farms (Table 1).

Table 1: **Institutional and legal measures to support the development of family farming in Ukraine**

Institutional and legal measure	Regulatory aspects
Concept for the Development of Farms and Agricultural Cooperation for 2018-2020 *(Approved by the Cabinet of Ministers of Ukraine on 13.09.2017, No. 664-r)*	Identification of the main directions of family farming development and approval of the conceptual vision of the institutionalization strategy
The Law of Ukraine "On Amendments to the Law of Ukraine "On Farming" to Stimulate the Establishment and Operation of Family Farms"	Regulation of legal transactions for the establishment, acquisition of status and determination of the principles of operation, taxation of family farms, etc.
Standard form of the agreement (declaration) on the establishment of a family farm *(approved by the Ministry of Agrarian Policy and Food of Ukraine)*	Define and regulate relations between members of a family farm, the procedure for its establishment and operation

Source: compiled on the basis of the analysis of regulatory acts.

These measures set out the framework conditions and practical possibility for the establishment of family farms. With the adoption of the relevant legal regulations and the implementation of the relevant legal transactions, the family farm now acquires the organizational and institutional status necessary to enter the organized market system.

This status allows them to legally apply for participation in state support programs, lending, investment, infrastructure, and many other projects, including legal sales of their products, etc. This is only a small part of the institutional capacities that are moderated by the normalization of the official status of a family farm and provide the basis for increasing its competitiveness.

The current institutional and legal framework in the country generally allows solving the problem of de-shadowing the entities of agricultural producers, whose activities can be qualified, in particular, by the "family farm of 2-20 hectares" model. Formally, the status of a "family farm" business entity is defined by the Law of Ukraine "On Amendments to the Law of Ukraine "On Farming" in 2016. According to the provisions of this Law, it is possible to

transform small farms into family farms, but those that meet the size of the "2-20 hectare family farm" model.

It is legally regulated that a family farm may be established as a legal entity or as an individual entrepreneur (IE). The constituent document for the establishment of a family farm and its legalization as a business entity is the form of an agreement (declaration) (standard form approved by the Order of the Ministry of Agrarian Policy of Ukraine No. 177 dated 05.04.2019 and registered with the Ministry of Justice of Ukraine on 25.04.2019 under No. 438/33409). The Declaration regulates the establishment and operation of a family farm without obtaining the status of a legal entity and is intended for one member - a sole proprietor.

The Law of Ukraine "On Amendments to the Tax Code of Ukraine and Certain Laws of Ukraine on Stimulating the Establishment and Operation of Family Farms" also provides tax incentives for this category of agricultural entities [2] .

In addition, there are foreign projects in Ukraine that support and promote family farming. This contributes to a certain development of this phenomenon, as investment support from these projects is used to implement initiatives for the direct creation of family farms. A number of other projects are also being implemented, but the most institutionally significant are in the dairy cattle sector, as they have a real practical impact on the dynamics of family farming.

Family farms form social capital consolidated at the level of the family as the owner of the assets and income generated by the farm. According to Ukrainian legislation, family farms include entities with the status of a legal entity and/or an individual, which are identified by the criterion of land area in the range of 2 to 20 hectares, as set out in the Law of Ukraine "On Amendments to the Tax Code of Ukraine and Certain Laws of Ukraine on Stimulating the Establishment and Operation of Family Farms".

The introduction of family farming in Ukraine means the continuation of institutional reform in the organization of rural management and rural

development. The institutional norms that formalize the status of a family farmer are being modernized, enabling him to participate in market transactions, apply for state support, loans, etc. That is, he becomes a legal and equal participant in market exchange, etc.

The institutional structuring of farming entities in the agricultural sector of Ukraine is regulated by the legislation on organizational and legal forms of management and a special law. In particular, these are structures of the following types: classical farms (institutionally established since the 1990s); farms– enterprises (institutionally established in the 1990s, in particular during the reform of collective agricultural enterprises); family farms (institutionally established in 2016).

It is also necessary to talk about the institutional model of farming - the institutional characteristic of the composition of farms by organizational and legal status (farm, enterprise, family farm). In addition, it is necessary to highlight the *economic characteristic of* structuring - the size of the farm (micro, small, medium and large enterprises). Micro and small farms include family farms; small and medium-sized farms include farms based on the legislation of the 1990s; medium and large farms include farms-agricultural enterprises. All of this constitutes a methodological characterization of the organizational and economic model of family farming in Ukraine, which defines national peculiarities, problems and development priorities.

Family farms are, in terms of organization and size, entities that represent a set of small forms of management, and in terms of importance, they serve as the basis for sustainable rural development. Primarily, this role is to provide employment, guarantee food security, and enable farmers to participate in the implementation of promising rural development projects, etc. However, the Ukrainian model of family farming is still institutionally vague in a practical sense, although its organizational and economic characteristics are formally enshrined in legislation. The latter is a significant institutional message, a

practical step in the development of family farms, which should be attributed to the effective components of agricultural policy.

There are different categories of entities on the market that can be classified as family-type farms, such as rural households or households of the population. This category also includes private peasant farms (individuals who have been granted ownership or lease of land plots for private peasant farming), which also operate in accordance with the Law of Ukraine "On Private Peasant Farming". It should be noted that, according to estimates of the prospects for transformation and future trends in the development of family farming, private peasant farms should be recognized as potential and candidates for transformation into family farms.

Practice has proven that farmers have significant advantages in motivation to work, and their farms are extremely mobile in responding to market changes. However, the institutional dynamics of farm creation, and in particular the transition of landowners with more than 2 hectares to this segment, has been restrained for a long period of transformation.

A family farm is thus a special market unit that is institutionally defined by the specifics of family farming, as well as by the principles of development of agriculture as an industry and of the countryside as a living environment. This is the basis for the characteristics of the limiting and (or) stimulating factors of the functioning of a family farm as an economic agent represented in the market.

Family farms are now being established, in particular, with the support of non-governmental organizations that provide advisory services on a grant basis at the expense of foreign countries. Examples of specific family farms established in this way can be found in Lviv and Dnipropetrovs'k regions. The respective programs provide for a comprehensive approach to the implementation of family farming development programs in rural areas, but are still local in nature. At the same time, the general trend in the sectoral structure of small (family) farmers' production is dominated by crop production.

Some of the land is used by so-called "gray" farmers who do not register their agricultural products anywhere and sell them unofficially. At the same time, the productivity of the land and the involvement of material resources in illegal or semi-legal ways ensure a certain level of profitability.

According to practical observations, most of them are ready to work only under conditions of spontaneous management. The main problem here is motivation - many work to survive, similar to traditional, well-established private households, while cultivating additional land on the basis of an informal contract. The area of land ("gray" lease - property of relatives and close friends) of each of them is much larger than that of a "legal" farmer who falls under the qualification criteria of the "2-20 hectares" model, as well as that of a farmer who received land to establish a farm in the 1990s. Empirical estimates have shown that, for example, the area of land used by a "gray" farmer in Vinnytsia Oblast can be 25-50 hectares, depending on the number of land shares in the family, availability of machinery, age, circle of friends, etc. There are laws of exchange of resources, labor, and goods produced here, and this scheme is becoming more and more popular. However, its durability depends not only on the institutional state policy, but also on the willingness of the peasants to engage in it.

Assessing the motivational part of the development of family farming, it can be concluded that this category of farmers does not consider such activities to be something different from non-core employment. In their opinion, it can be considered a hobby production that should neither be taxed nor comply with generally accepted standards. For them, the priority is the existence of the so-called artisanal, subsistence farming. In most cases, if they have a high-paying job, they can give up farming without any hesitation. Such farmers mostly consider farming to be a forced activity, and many of them would prefer to have a high-paying job (in employment) and a high pension.

At the same time, we are convinced that the family farm is gradually turning into a conservative model of management and the establishment of the national

tradition is focused on establishing it as a semi-legal form of agricultural business. Semi-legal farming is becoming more and more entrenched, with peasants withdrawing their land shares from lease from large enterprises by entire families and cooperating with others to cultivate it on their own**.** Sometimes this type of farmer does not own any equipment or machinery, so he hires other people to perform technical and technological operations. This system of management is partially outside the relevant legal framework in terms of the subjective status of an entrepreneur. However, due to the distrust of peasants in state and market institutions, it remains a widespread practice.

The family farming system in Ukraine has developed somewhat, but it follows the national specifics of multivariance. In particular, family farms, if we take into account the belonging of different entities to this category according to qualification criteria, are represented by farms, private peasant farms, as well as other economic agents of the agricultural production system of the category "small formations". This is, in particular, the author's assessment of the situation with the development of family farming and the formation of the existing structure of the subject composition of farms. According to the State Statistics Service of Ukraine, more than 4 million rural households are engaged in agricultural production in the country. These farms annually account for more than 40% of gross agricultural output.

The statistical identification of family farms in the formal aggregate is not yet carried out on the basis of functional characteristics and land resource potential. This approach can be used to assess the subject population of family farms in accordance with the institutional status defined by the Law of Ukraine of March 31, 2016, No. 1067 "On Amendments to the Law of Ukraine "On Farming".

The farming system is undergoing further transformation, with active capital accumulation and market selection of farms. In fact, natural selection is taking place. Some farms (family farms) operate as long as informal activities in the "gray" zone of the market are available. Some owners have other jobs (teachers,

local government officials, etc.), and farming is a situational activity for them, i.e., in a simplified interpretation, an additional income.

The "gray" market has completely different laws of interaction, which are detrimental to such farms, they lose a lot of income, and cannot apply for state support, because there is no documentary evidence of their existence, origin of products, etc. Otherwise, they will not be able to compete if they are formalized.

Family farmers of the "gray" type are hybrid farms that institutionally balance between the status of a private peasant farm and a family farm. The main problem lies in the fact that their owners are mostly unmotivated to acquire this or that status - to formally integrate into the organized market. The main reason for this is the lack of trust in state and market institutions in their current quality.

Institutional features and specifics of "gray" farming are as follows: land lease - on mutual trust (relatives, friends), without any documentary fixation, which, accordingly, affects the amount of rent; ubiquity of hidden schemes for the supply of resources, performance of work and sale of products, non-transparent pricing; exclusively crop production activities for the cultivation of traditional crops; cooperation in the performance of work (without the creation of a cooperative or simple partnership); lack of desire to formalize - they do not trust the state and are used to working

Some farmers want to run their own business, but without formalizing their status. For the prospective development of family farming and its successful institutionalization into the national agroeconomic system, it is important that the business environment is transparent and institutions are adapted - only then will entities that potentially fall under the legally regulated category of "family farm" be interested in formalizing their status (registration as an individual or legal entity). This is the main institutional problem, since a significant number of farms operate in the "gray" zone of the market. They consider this status to be the most successful in terms of profitability, business prospects, and, most importantly, the preservation of assets from any encroachment.

Small farms, which are still in their infancy in Ukraine, should be prioritized. Emphasis on farming development is seen as a relevant way to sustainably reconcile economic, social, and environmental interests and to ensure green growth factors. The basis for this conclusion is the exceptional position of the small farmer, his predominantly caring attitude to the environment. In his activities, profit is not always in the first place, because he wants to preserve the farm for his descendants. Such a development factor is inherent in the nature of the farm, which is rightly considered to be an area of sustainable management.

It should be noted that the entry of family farms into innovative sectors of economy that are most accessible for maximizing development will allow this category of agri-food market players to optimize transaction costs, as well as to use the most promising value-added distribution chains and choose respectable (prestigious) market niches.

A favorable institutional environment will provide the conditions for family farms to operate, lead to the gradual legalization of small agricultural businesses, and ensure successful partnerships with local authorities.

The family farm as an economic institutional structure is now essential for the development of small agricultural entities (households, private farms, and "gray" farmers), their entry into the organized market, and strengthening their economic sustainability and competitiveness. Private farms and farmers need institutional assistance to join the organized market, to come out of the "shadows" so that the redistribution of value added occurs not only in the semi-legal sector, but also so that local communities and villagers benefit from it, social infrastructure improves, environmental requirements are met, etc.

The formation and mass development of family farming is an important milestone in further organizational and economic structural transformations, the establishment of an institutional model in which all agricultural entities will be in the competitive field of the organized market. In accordance with the institutional status and size of family farms, it is necessary to develop

innovative sectors and promising niches where their activities will consolidate the most concentrated competitive advantages.

It is necessary to promote the development of family farming:

- to revise the criteria for the size of family farms, taking into account their specialization, especially with regard to livestock, labor-intensive crop production, for which it is necessary to introduce a criterion for identifying the size of a family farm by the value of sold or produced products, changing the formation of their size from 2 to 50 hectares and more;
- create a register of family farms based on their specialization and types of activities;
- The state should prioritize support for small farms; it is important to provide infrastructure for the development of family farmers, including through the creation of cooperatives.

By moderating and satisfying private property interests, family farms have been, are and will be the most progressive in motivating quality work, social activities, and most importantly, will a priori contribute to the achievement of sustainable development goals in cooperation with the state, community, and business structures. Taking care of their farm, families are interested in improving their living conditions, production, and everyday life. Thus, family farming has prospects as a form of employment, as well as a set of structures that lead the process of preserving the national identity of the Ukrainian village.

Farms as entrepreneurial entities operate according to the classical institutional model of entrepreneurship, namely: they organize activities using their own financial and resource potential; attracting borrowed funds and becoming debtors; and conducting activities at their own risk in order to make a profit. Projecting entrepreneurial activity on the conditions of martial law as a special time, we note that it is built mainly as a social mission - self-sufficiency of oneself, family and local communities with food [3] .

This type of farms plays a special role in the development of entrepreneurial activity in rural areas, in particular by contributing to the formation of social

capital. Such farms form specific, effective capacities expressed in the characteristics of the institutional potential of the farm. It should be noted that the institutional potential of farming is a set of institutional capabilities of an economic structure acquired within the organizational and legal form, in accordance with the fundamental principles of building economic, social and political participation of an enterprise in the implementation of practices to achieve certain goals (sustainable development in particular).

Currently, in Ukraine, farms play a crucial role in the implementation of the principles of food security, achieving the criteria for sustainable development, as noted by the practice and conceptual visions of researchers [4; 5; 6], and their exceptional ability to ensure the socio-economic mission at the level of territorial communities is manifested. After all, in wartime, farms, especially small ones, proved to be the most institutionally, organizationally, and economically mobile - this concerns the ability to: restore business; act effectively in the face of extreme risks; guarantee community food security; and ensure the principles of sustainable development of territories. Accordingly, the effective features of family farms in crisis conditions are institutional and organizational, economic mobility, adaptability, and social orientation of activities based on the principles of sustainable development.

These features and capacities are attributed to the characteristics of the institutional potential of farms in the development of entrepreneurial activity in rural areas.

In the current situation of Ukrainian farmers in the context of Russia's war against Ukraine, there are many cases of loss of business, facilities, etc. Examples of resumption of activities of farms affected by the war are indicative, as their production systems and potential were destroyed or significantly damaged. However, the practice confirms the mobility of these farms and their ability to recover quickly.

It is important to note that family farms are gaining momentum as a relatively socially and economically efficient form of employment organization

[4; 5; 6; 7]. A properly formalized farm business initiative (farm registration) provides employment and income for the family, as well as a certain level of food security for the community. Thus, it is necessary to talk about the need for effective interaction between farmers and local authorities, which should ensure synergy in the mutual achievement of goals. As an example of such interaction, we can highlight the activities of Vinnytsia, Ivano-Frankivsk, and Lviv city territorial communities, which have adopted programs to support the agricultural sector and really care about the effective development of farming.

Family farms are one of the most capable institutional sectors, given their status, organizational, and economic capabilities to meet the necessary conditions for the green course and sustainable development in general. Despite the conditions that have also developed in Ukraine due to Russia's military aggression, family farming has become even more relevant than before the war.

We also note the unconditional participation of small farms in promoting: food security guarantees at the level of local communities; mobility and rapid accumulation of resources for recovery; solving a significant number of socio-economic problems of rural areas at the local level; development of local niche small-scale processing for the production of quality food products; formation of non-agricultural cooperative structures for the organization of production and consumption of renewable energy sources; development of craft business

In wartime conditions, taking into account the priorities of the post-war restoration of the agricultural sector, rural areas, and the economy as a whole, farms as rural entrepreneurship entities play a crucial social role - they provide employment, food security, and material well-being. It should be noted that active support and expansion of mechanisms for institutionalizing family farming, changing the nature of social capital in rural areas, social and institutional support for local family business initiatives are key factors for bringing Ukraine's accession to the European Union closer and implementing, in particular, the measures envisaged by the EU Candidacy Agreement.

Despite the war, the principles of sustainable development for Ukraine cannot be rejected, as only the conditions for achieving them have changed and additional force majeure risks have emerged. Farming has significant institutional potential to ensure sustainable development of rural areas. That is why, in the future, with changes in the institutional environment, the rural economy and rural areas will rely more heavily on small farmers, especially in ensuring local food security. Farms should form the institutional framework for the development of Ukrainian rural areas, which will become the basis for ensuring the food, energy and even military security of the Ukrainian nation.

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SECTION IV
FARM DEVELOPMENT STRATEGY

A science-based strategy for a farm is an important condition for its successful development. This is especially important in an environment of instability that necessitates strengthening measures to overcome difficulties or even catastrophic impacts on their operations, as well as creating prospects for sustainable development.

The need to formulate development strategies is amplified in times of war, when farms are increasingly affected by circumstances. Given that some territories have been or remain temporarily occupied by the aggressor country or are in the area of hostilities, unpredictable changes in the logistics chains of supply of inventory and sales of finished products are taking place. This forces farms to change their specialization and production technologies in a short time. Therefore, each farm needs to formulate an effective development strategy in the face of instability. However, most farms do not have such strategies, which often leads them to financial instability and bankruptcy. Implementation of scientifically sound strategies during the war is the key to their survival and functioning.

Research on theoretical and practical aspects of the strategic development of farms is carried out thanks to the works of many scientists, among whom it is advisable to note K.I. Levchuk [1], who in the historical aspect studied the development of farms in Ukraine for the period from the 90s of the 20th century to the present. The author found out that despite the existing legislation in support of the farmers' movement, the limited possibilities of state financial support and credit support most strongly constrained the process of material and technical re-equipment of farms, as a result of which many of them remain small-scale with low production intensity or even ceased to operate.

The organizational and economic mechanism of management of family business enterprises was studied by Yu. Solonenko [2]. In his research, he

substantiated the theoretical and methodological foundations and scientific and practical recommendations for the formation of an organizational and economic mechanism for managing family business enterprises, identified global and domestic trends in the development of family farms, monitored the state of development of family business enterprises in the agricultural sector of Ukraine and diagnosed the sustainability of family business enterprises in the region.

Considerable attention was also paid to the functioning of farms in modern conditions by L.A. Belyaev [3], V. Ilchuk, T. Spomer [4], O. Shubravska [5] and O.A. Horobchenko [6], who studied the trends and prospects for the development of farms.

The basics of small agrarian entrepreneurship and the effectiveness of its activities in modern conditions were studied by D.V. Nemish and M.M. Humeniuk [7, 8, 9]. The authors identified groups of indicators that should be used in assessing the economic, technological, social and environmental efficiency of small agricultural entrepreneurship. Other researchers, such as O.G. Vitryak and V.A. Tkachuk, also assessed the efficiency of small farms in rural areas [10].

M.G. Rosnovsky and O.A. Chumachenko studied the training of farm workers in Ukraine [11].

Aspects of optimization of the structure of sown areas of farms were investigated by A.I. Bilonog [12] and M.O. Levina-Kostiuk [13], who studied the improvement of production activities of farms using economic and mathematical methods.

Practical recommendations for organizing production on a family dairy farm were studied by M. Malik, O. Kozak, O. Shpykuliak, and M. Kozak within the framework of the Family Dairy Farms project. They provide explanations of technical and technological solutions for buildings, animal feeding, fodder production, herd management, milk quality assurance, reproduction, and genetics on the farm [14].

Since investments are the most important factor in Ukraine's economic and social development, it is especially important to ensure the sustainability and growth of investment processes in farms during times of instability, when the normal course of economic and other processes of their livelihoods is disrupted. In the face of instability, farmers' investments allow not only to restore but also to increase their production, contribute to the food security of the state, improve the efficiency of the entire economy and significantly increase the gross domestic product.

Given the multidimensional nature of the investment problem in farms, scientific research and practice of managing their investments should pay special attention to solving problems related to maintaining the achieved level of investment activity. This will be facilitated by measures to overcome the investment decline, intensify investment activity of agricultural producers of all forms of management through their own and attracted sources of financing, smoothing, and implementation of investment-friendly agricultural policy.

Given the importance of investment issues, foreign scholars are actively studying them. For example, Marie Vander Donckta, Philip Chanb, Andrea Silvestrinic have studied the aggregate flows of capital investment and capital in agriculture, forestry and fisheries for 189 countries in 1995-2017, the long-term dynamics of the relationship between investment and value added in agriculture, and summarized global and regional trends in gross fixed capital formation in agriculture. Nusrat Akber, Kirtti Ranjan Paltasingh, Ashok K. Mishra [15], investigated how public policy encourages private investment in Indian agriculture. U. Farooq, J. Ahmed, and S. Khan [16] paid considerable attention to the impact of macroeconomic factors on investment and proposals for their improvement. Alison Eskesen, Rashi Agrawal and Noopur Desai (2014) - studied the support for investment in small and medium-sized agribusiness and ways to address it [17].

Various aspects of the current state and prospects of investing in agricultural development in an unstable environment are discussed in the works of the following researchers at :

Nicolas Büttner, Michael Grimm, Sidiki Soubeiga have studied the impact of political instability and social conflicts on economic performance and investment in Burkina Faso. They concluded that instability, especially caused by armed conflicts, leads to a decrease in investment and efficiency [18].

Adwoa Yeboah Gyapong (2020) used the example of Ghana to study the impact of large-scale investment on employment and the effects of investment in land grabbing and land concentration on employment. The negative effects of large-scale agriculture on employment were identified. The author concluded that it is necessary to improve the distribution of benefits from land investment [19].

Xiaoyan Qian studied the farmer's investment in the establishment of a service cooperative, which is made with the aim of better providing the necessary resources. The author considers a multi-period model for substantiating investment decisions, in which the farmer first studies the feasibility of joining the cooperative, and then decides on the task of making additional investment contributions to the cooperative based on profitability criteria [20].

Zheng Liu, Lingling Lang, Bin Hu, Lihua Shi, Bangtong Huang, Yuanjun Zhao studied investment decisions that lead to carbon emissions and other negative environmental impacts in agriculture that produce instability. The authors developed a game model to compare optimal decisions and profits in order to help producers choose the best options for emission reduction investments, as well as decentralized and centralized decision-making. The conclusion was made that there is a need for investment and cooperation between agricultural producers and market intermediaries in the production and sale of products, increasing profits, and protecting the environment [21].

Vu Ha Thu, Daisaku Goto (2020) studied the relationship between land tenure security and agricultural investment in Vietnam. The authors provided evidence that as the duration of agricultural land use increases, farmers' investments increase, primarily in irrigation, soil conservation, water conservation, and organic fertilization, which curbs instability [22].

Ukrainian scientists, in particular, Y.O. Lupenko, O.V. Zakharchuk [23], N.P. Reznik, A.M. Slobodianyk, V.O. Kotlyarov [24, 25] and M.I. Kisil [26, 27], studied the problem of investment in development in general in agriculture, including farmers. Aspects of investment support for rural development were studied by V. Ilchuk, T. Spomer [28], regional investment - by N.I. Mezentseva, I.M. Moroz [29]. The investment methodology was also studied by O. Zakharchuk, M. Kisil, V. Nechytailo [30].

While studying the directions of state regulation of investment activity in agriculture, Y.M. Dziurakh and O.O. Druhov identified its main direction - the formation of an integrated system of its mechanisms and instruments [31]. The essence and goals of state support for small and medium-sized enterprises in the agricultural sector were studied by V. Rusaniuk [32].

The legal regulation of economic activity of farms and the principles of their state support was studied by Y.A. Koverko [33].

R.S. Chornyi, N.P. Chorna and I.I. Berdey pay considerable attention to the problems of investment in conditions of instability. Exploring ways to intensify investment activity in the context of economic and political instability of Ukraine, they proposed a set of measures to overcome the crisis, attract investment, promote the development of the national investment market and its integration into the world space [34].

I. Kramarenko identified the causes of Ukraine's economic instability and substantiated ways out of it. In his opinion, a scientifically sound investment policy, a favorable investment climate and the attraction of foreign investors are necessary for the national economy to overcome the crisis and further stable development [35].

The state and prospects of investment activity in Ukraine in the context of economic instability were studied by N. Tanasiienko and V. Rud. They identified factors that positively affect the investment climate and promote investment activity [36].

Studying the efficiency of land use, N. Hvozdey found that the main condition for the growth of agricultural production in conditions of instability is to improve the situation with lending to farmers. At the same time, it is important that all sources of financing ensure investments in the expanded reproduction of capital [37].

Y. Kolupaiev, S. Zalyubovska, and I. Melnychuk studied the problem of attracting investment in an unstable environment and substantiated the need for financial investment in the national economy and measures to improve the investment climate. It was found that to revitalize investment and innovation activities and improve social conditions on this basis, comprehensive and consistent reforms are needed, the goal being to release entrepreneurial initiative, create a competitive environment and stimulate investment [38].

The studies of investment problems in an unstable environment conducted by foreign and Ukrainian authors were mainly concerned with the entire economy. There were also some studies on agriculture. For example, V. Lavruk and L. Budnyak studied the tasks of investment support for the development and competitiveness of agricultural production. The authors proposed to consider the efficiency of investments as the main criterion for the competitiveness of products, systematized indicators of investment efficiency, identified priority areas of investment, and substantiated proposals for intensifying the processes of reproduction and modernization of the material and technical base of agriculture [39].

The investment problems of farms in the context of instability, which have been significantly exacerbated by the war, have not been thoroughly studied. First of all, this concerns the mechanisms for overcoming the investment downturn and crisis, investment support for sustainable development

of farms, as well as strengthening the positive impact of agricultural investment on food security, increasing export potential and the development of the entire economy

The most important problem of any farm in an unstable environment is the problem of its survival and ensuring continuous and sustainable development. An effective solution to this problem is based on the principles of creating and realizing competitive advantages that can be achieved on the basis of a scientifically sound and effective farm development strategy.

The concept of "strategy" is etymologically derived from the Greek word *strategia* (*stratus* - army and *ago* - leading), which was used to describe the most important part of military art [40]. If we turn to the economic sphere of activity, strategy is usually understood as long-term plans of the company's management aimed at strengthening its position, satisfying customers and achieving long-term goals.

The economic encyclopedia defines the term "enterprise strategy" as a generalized model of actions aimed at achieving a goal through the distribution, coordination and efficient use of resources; a system of rules and methods for implementing the strategic concept of enterprise development.

I. Ansoff defines strategy as a set of rules for decision-making that guide an organization in its activities. There are four different groups of rules: rules that can be used in assessing the results of the farmer's activities, which form his relations with the external environment; rules that establish relations and procedures within the farm; rules by which the farmer carries out his daily activities.

According to T. A. Primak, a strategy is a general comprehensive program of actions that defines the priority problems for the enterprise, its mission, main goals and allocation of resources to achieve them. A farmer's strategy should include goals and ways to achieve them [41].

According to Z.E. Shershneva, strategy is a general set of programs, by implementing which the company expects to significantly improve its position in the markets [42].

Some authors believe that the strategy is a detailed comprehensive plan to ensure the implementation of the organization's mission and achievement of its goals. The main approach involves a set of measures, the consistent and parallel implementation of which allows achieving the goals in the absence of changes in the external and internal environment [43].

Nowadays, economic strategy is most often interpreted as a system of long-term goals of an enterprise and the actions necessary to achieve these goals. However, there are definitions in which economic strategy is the long-term most important attitudes, plans, and intentions for the implementation of the production process.

The concept of "investment strategy" in the modern economic literature is interpreted as the formation of a system of long-term goals of investment activity and the choice of the most effective ways to achieve them.

According to V.L. Konashchuk and V.Y. Kovaleva, the investment strategy is the formation of a system of long-term objectives of the investment activity of the farm and the choice of the most effective ways to achieve it [44].

According to Blank I.O., an investment strategy is a system of long-term goals of the farm's investment activity, which are determined by the general objectives of its development and investment ideology, as well as the choice of the most effective ways to achieve them [45].

In our opinion, the investment strategy is one of the most important strategies in the overall set of farm strategies. The efficient use of investment resources increases the efficiency of the farm, which contributes to the competitiveness of the farmer and ensures an increase in the value of his capital. Each farm develops an investment strategy based on its own investment needs and taking into account the return on investment in terms of profit and social

impact. Effective implementation of the strategy is associated with the selection of investment objects and optimization of risk and return indicators.

As a rule, the development of farm strategies needs to start from scratch. This occurs when the market situation changes dramatically, for example, competitive products appear on the market compared to those produced by the farmer; potential limitation as a result of the loss of part of the property; expansion of opportunities with the emergence of additional sources of financing [45].

Thus, for the development of national farms, the results of scientific research focused specifically on their problems were of the most practical importance. Thus, Y.O. Lupenko, M.Y. Malik, O.G. Shpykuliak, V.A. Mamchur and R.Y. Korinets developed a draft concept for the development of family farms until 2030. The researchers have scientifically substantiated the conceptual foundations of organizational and economic support for the development of family farms and institutional assistance in enhancing their role in shaping the foundations of sustainable rural management [46].

M.I. Kisil and M.M. Kropyvko substantiated theoretical and methodological approaches to the formation of a strategy for managing the efficiency of farm investments. The scientists summarized the theoretical provisions and methodological approaches to the formation of a strategy for managing the efficiency of farm investments, which arise from the peculiarities of this form of management [47].

M. V. Horikhovsky assessed the state of strategic management of the competitiveness of farms, as well as forecasted the indicators of their development. He carried out a theoretical generalization and proposed a new solution to the current scientific and applied problem of strategic management of the competitiveness of farms [48].

According to the results of the study, it was found that in the pyramid of strategic life needs, family-type farms first develop a security strategy for the survival of the farm (Fig. 1.1).

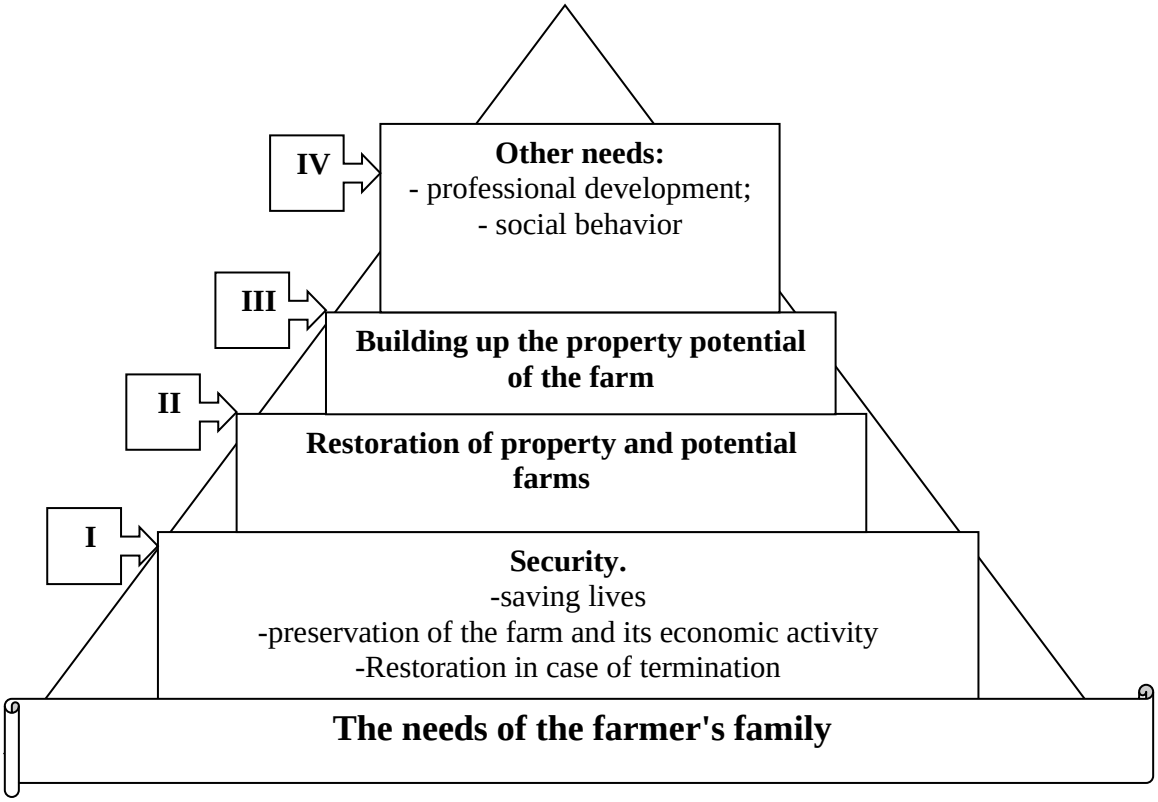

Fig. 1. **The pyramid of life needs of a farmer's family, which determine the main strategic priorities of a farm in conditions of instability**

Source: developed on the basis of Abraham Maslow's theory of need motivation

In most farms, the goal of their functioning in the war is to preserve the farm and its economic activity.

Once the conditions for safe operation are achieved, the interest is in ensuring the restoration of the potential of the farm and its economic activity. When the potential of the farm is restored, the task of increasing it is solved.

The farm development strategy should be designed in such a way that all participants are interested in its implementation, so their interests should be taken into account as much as possible when formulating the strategy (Fig. 2).

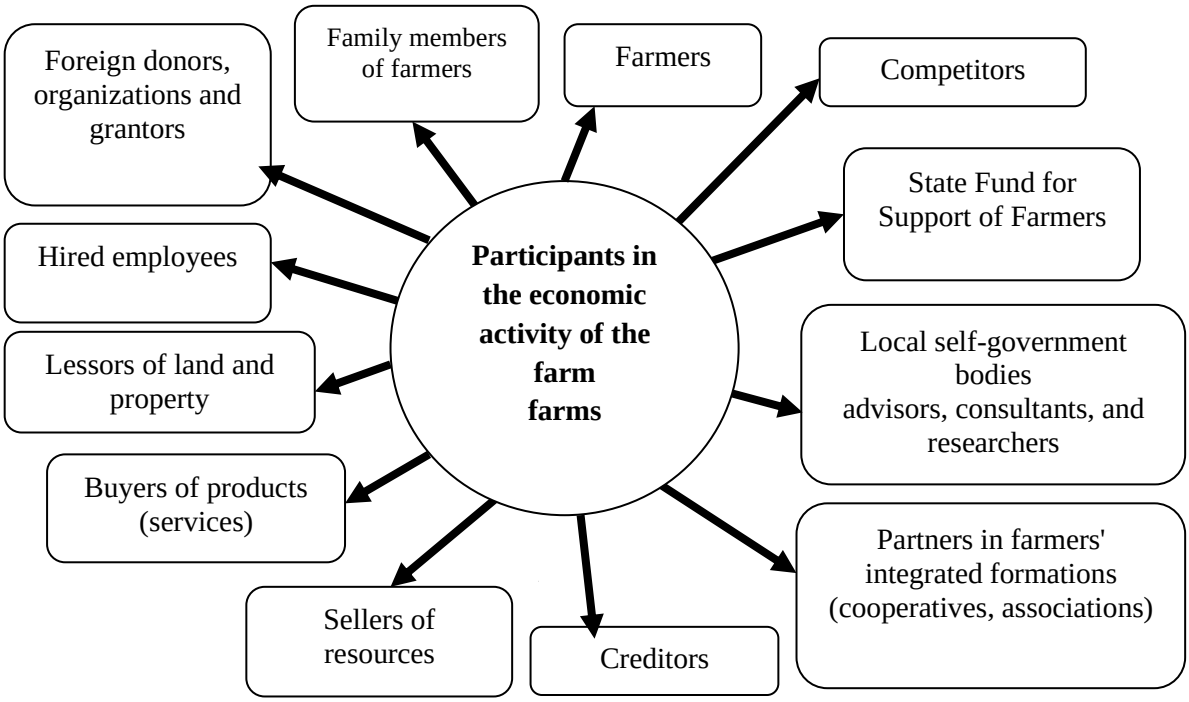

Figure 2. **Participants of economic activity of farms**

Source: [2], [14], [25], [32], [33].

Later on, the farm has to solve the problems of training both its own family members and other farm workers. The highest-level need is the farmer's social behavior, which includes the improvement of the area where the farm is located, support for kindergartens and schools, construction of paved roads, gas supply, waste disposal, water supply, etc.

Strategic management of a farm is a kind of process of developing and making management decisions, which includes the following stages:

- defining the mission;
- formulation of goals;
- analysis of internal capabilities (advantages, product range, production potential, marketing, cost);
- Identification of the company's strengths and weaknesses,
- formation of competitive advantages of the enterprise);
- analysis of the external environment (market demand, supply, prices and competitors);
- analysis of alternatives and selection of a development strategy [49].

The practice of farms in Ukraine shows that a successful strategy cannot be copied and there is no single strategy for all farms. Therefore, effective management necessarily requires farmers to think strategically and to be able to develop and implement a strategy.

The main components of the strategic choice of a farm are as follows: its mission; general strategic goals of the farm's development; functional strategies: operational, investment, financial, innovation, resource, technical and technological, and others. The mission of a farm is its main, general goal, which determines the reason for its existence. It details the status and provides direction and guidance for setting goals and strategies at different organizational levels.

The strategic vision of the farm based on the mission should: define the boundaries of the farm's market position (the farm's market niche); determine the strategic intentions of the farm to change the boundaries of the existing market niche in the future; provide an opportunity to formulate the general goals of the farm and the main goals of the farm for the future.

Since, in the context of instability, some farms cease to operate, it is advisable to study the possibilities of occupying their market niches and, consequently, to formulate accelerated development strategies. A schematic approach to building farm strategies is shown in Fig. 1.3.

A well-founded, well-formulated mission statement is of real value to a farm's operations because it shapes the farmer's views on the farm's long-term plans; reduces the risk of short-sighted management and uninformed decision-making; and makes it easier to prepare the farm for the future.

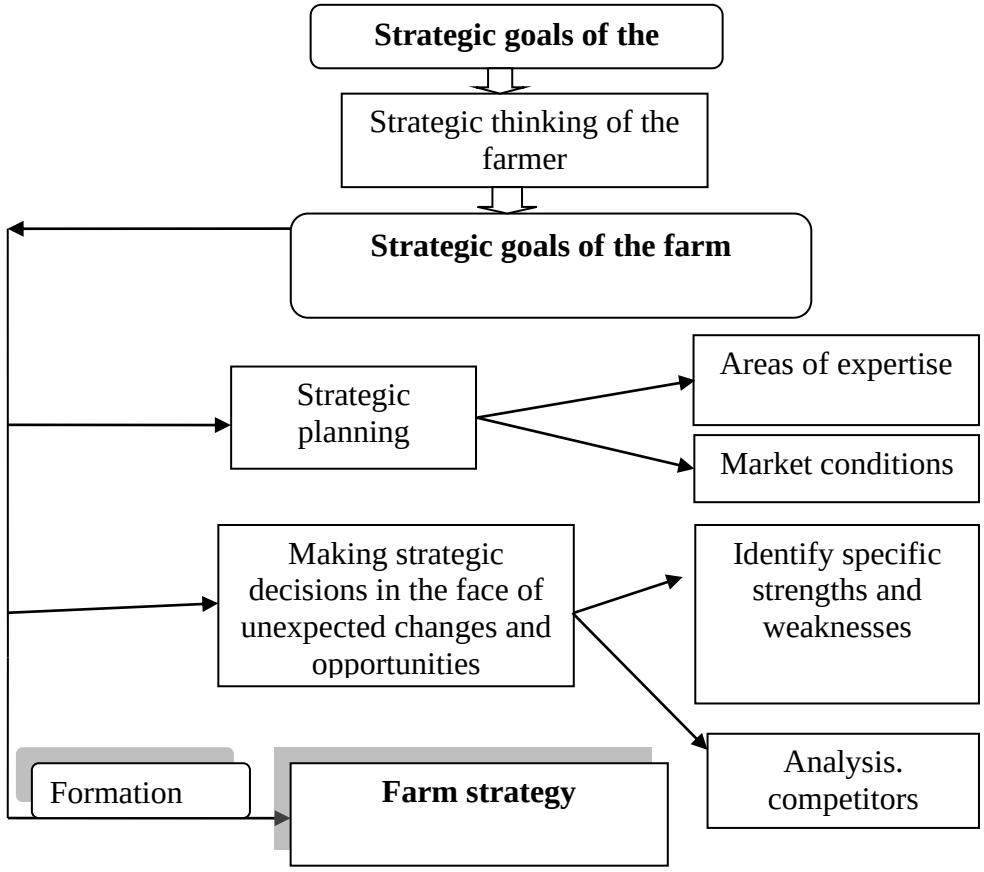

Fig. 3. **Schematic approach to building investment-oriented strategies for farms.**

Source: developed based on [49], [50], [51], [52].

A detailed mission of the farm should include the following components (Fig. 4).

The farm's mission is realized through the achievement of the main goals, which include the preservation, expansion and rational use of the main factors of production (capital, labor, land) through scientifically sound labor organization, innovation technologies, which are part of its strategy. That is, the goals are the desired end results that the farmer seeks to achieve.

V.A. Vasylenko and T.I. Tkachenko identify financial goals that reproduce the current needs of the farm to ensure its normal operation and efficient return, i.e. they determine the overall conditions for the survival of the farm [49].

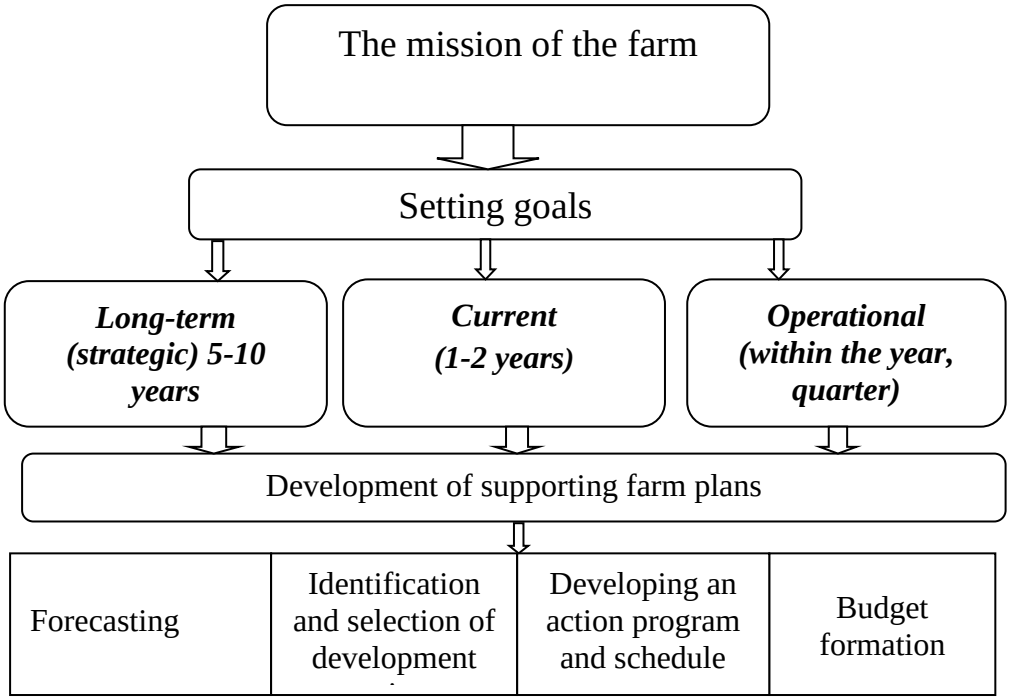

Figure 4. The **mission of the farm and its connection with its goals**
Source: Authors' elaboration.

Strategic goals - relate to a greater extent to the direction of strengthening the position of the farm in the selected activities, maintaining and improving its long-term specific market position. Such goals are usually set for longer periods than financial goals, focused on achieving an effect in subsequent periods [50].

Farmers in particular have a strong influence on the choice of development strategy. This choice largely depends on the size of the farm.

For family and medium-sized farms, it is advisable to develop one general strategy that covers all aspects of their development strategies, and for large farms, several in particular:

1. The overall strategy of the farm, which provides for the development of all areas of its activities and ways to achieve the farm's mission.

2. A business strategy that defines measures to gain and maintain the competitive advantages of the farm, combine and coordinate the strategic actions of all its functional subsystems, solve problems related to disruption of

the farm's activities, ensure the ability and capacity to respond to changes in the external environment, etc.

3. Functional strategies that ensure competitiveness and achievement of goals: operational, investment, financial, innovation, resource, technical and technological, anti-crisis, etc. These strategies are aimed at supporting the business strategy, achieving both local and general goals of the farm.

The operational one reflects the growth strategy of the farm and its individual units.

The investment strategy of a farm characterizes the system of long-term goals of investment activity and the choice of the most effective ways to achieve them.

A well-developed investment component of the overall strategy ensures the fulfillment of the strategic objectives of the operational strategy for the development of the farm, and this development requires the use of new ideas and factors. Therefore, the investment strategy of a farm's development should focus on maximizing the use of innovations.

The investment component of the overall strategy cannot be developed without taking into account financial flows. Some scholars propose to develop a financial strategy, which is one of the most important types of functional strategies of an enterprise, providing all the main directions of development of its financial activities and financial relations by formulating long-term financial goals, choosing the most effective ways to achieve them, adequately adjusting the directions of formation and use of financial resources in the face of changing environmental conditions The financial section of the general strategy for the development of a farm is a master plan of action for securing financial resources. It is used when farmers need to know how much financial resources they need for investment and current expenses and where they can get them.

Depending on the goals of the farm, the financial component of the strategy can be of the following types:

- The strategy of financial support for the economic growth of the company is aimed at expanding the reproduction of production and capital, ensuring high rates of operating activities;

- a strategy to ensure sustainable growth, which involves balancing the parameters of limited growth in operating activities and the required level of financial security of the enterprise through the efficient allocation and use of financial resources;

- anti-crisis financial strategy, which involves achieving financial stabilization in the process of overcoming the crisis, reducing production and sales volumes through the formation of the achieved level of financial security of the enterprise.

Implementation of the financial component of the farm's strategy involves the use of financial management tools such as financial analysis, budgeting, financial control, use of financial services market instruments, etc.

The next most important component of the overall farm development strategy is innovation. In the world economic literature, innovation is mainly interpreted as the transformation of potential scientific and technological progress into real progress, which is embodied in new products and technologies. In the broadest sense, an agro-innovation is an innovation implemented in the agricultural sector. Scholars offer different approaches to defining this concept. For example, O.V. Kot [50] understands agro-innovation as systematic implementation of research results in the agricultural sector, which provide positive qualitative and quantitative changes in the characteristics of the relationship between the bio- and technosphere and improve the environment. O.V. Popova [51] believes that agro-innovation is directly or indirectly related to a person, his or her capital, processes, machines, equipment, tools, etc., environmental components (animal, plant), the existence of which is impossible without human participation in the natural environment or is possible with the loss of basic functional characteristics.

The involvement of a farm in innovative development necessitates the development and implementation of a strategy that would form the basis for a consistent, systematic and controlled process of innovation implementation and reflect the strategic objectives of the farm.

The formation and selection of strategic directions of innovation activity is based on the results of a comprehensive assessment of both the environment in which the farm operates and the identification of its innovative capabilities, which are characterized by the state and level of use of its innovative potential. At the same time, the innovative capabilities of farms differ significantly depending on their specific characteristics and strategic orientation.

Considering innovations as a means of ensuring the strategic advantages of a farm, it is important to note that strategic innovation development cannot be described as a one-sided change, but rather as a set of measures that cause various transformational processes in the farm. This process is complex and dynamic, which is carried out under the influence of a combination of external and internal factors.

For farms, one of the most important strategies is the marketing strategy, its main purpose is to reconcile the marketing goals of the farm with the capabilities and requirements of consumers, to use the weaknesses of competitors and their competitive advantages [52].

In the process of forming a marketing strategy for a farm, one can distinguish between input and output elements.

Input elements are those factors whose analysis precedes the development of a marketing strategy. So, we are talking about the factors of the marketing environment and the goals of the firm.

The initial elements are strategic decisions on the marketing mix, i.e. a set of marketing components that includes four components: product, price, sales, and promotion.

The marketing strategy includes specific strategies for target markets, the marketing mix to be used, and marketing costs. The strategies developed for

each market segment should consider new products and existing products, prices, product promotion, bringing products to consumers, and indicate how the strategy responds to market threats and opportunities.

Possible deviations, which consist in the difference between the actual result and the one planned at the time of strategic decision-making, are characterized by the risk category

According to R.O. Kolibaba, risk is the possibility of losing part of the assets, shortfall or non-receipt of profit as a result of the impact of unfavorable factors in the course of business activities.

At the same time, G. Kleiner defines risk as "the danger of unforeseen and undesirable consequences of the subject's actions". Considering the risk, O. I. Yastremsky notes that it arises when there is uncertainty, lack of comprehensive information about the conditions of decision-making"/

The main types of risks that farms may face can be divided into the following:

1) the risk of damage to the farm by wind, storm, flood, drought [54];

2) the risk of reducing resources and their productivity - soil erosion, soil salinity, weeds, loss of water quality, employee health and well-being, etc;

3) production risk due to improper processes, lack of well-trained employees, lack of investment, unfavorable weather conditions, mechanical breakdowns of equipment, etc;

4) Strategic risks associated with insufficient planning for the future of the economy, as well as changes in government policy, productive forces and enforcement proceedings, etc.

5) social risks arising from the loss of markets for products, poor reputation or failure to be socially responsible, from unsatisfactory relationships with partners, the ability to expand the farm due to imperfect relationships with suppliers and buyers, markets due to lack of food safety, environmental or ecosystem damage;

6) risks of business relations due to legal risks, interruption of the supply chain, resources, attraction of investments in farming, interruption of the sales chain;

7) market risks, currency fluctuations, changes in the market value of financial instruments, etc.

Today, the most significant risks for farmers, in addition to weather conditions, are price risks. Fluctuations in agricultural prices cause farmers' incomes to be unstable. In order to hedge against such situations, to calculate which crops will be profitable to plant and which will not, to plan the profitability of the farm for the year ahead and to know that it will not be unprofitable, there are certain tools for managing price risk in agriculture. We are talking about futures, options, and swap futures.

Farm risk management includes the development and implementation of sound recommendations and measures aimed at reducing the initial level of risk to a satisfactory final level [8]. A component of such a comprehensive farm recovery plan is the implementation of an anti-crisis strategy, the implementation of which remains an alternative component of this plan [8].

The farm's way out of the crisis requires the development of an anti-crisis management strategy, which cannot be implemented without a transition to a new system of anti-crisis management, which allows accelerating stabilization processes [8]. The anti-crisis strategy is used mainly by large farms.

The importance of an anti-crisis strategy for farms is determined by many factors. First of all, it allows to identify and develop market advantages that are key in competition and establishing proper relationships with competitors [9]. A crisis management strategy will be effective if its type is appropriate to a particular situation and other conditions.

A farmer who wants his farm to succeed and stay on the market for a long time has to focus on development and growth. His activity is a certain purposeful process carried out on the basis of pre-formed ideas and plans that are embodied in the farm development strategy.

Achieving a level of sustainable development by farms is an important national task, the solution of which will increase production, replenish markets with food and thus make a significant contribution to solving the national food problem. The effective functioning and development of farms is strongly influenced by internal and external factors of their development (Fig. 5).

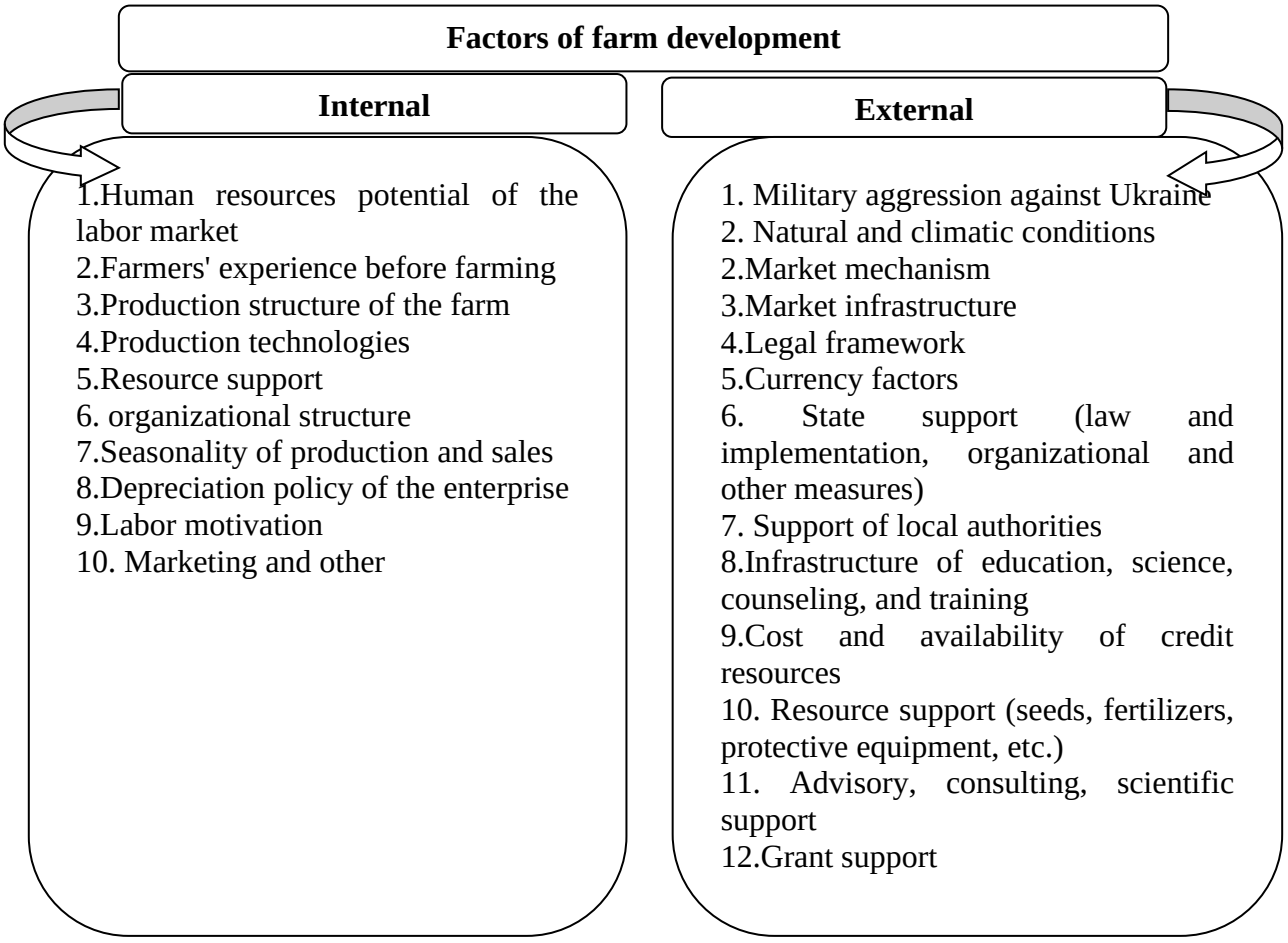

Figure 5**. Factors of farm development**

Source: compiled from [7], [8], [10], [13], [14].

Assessment of the current conditions for the development of farms allows us to identify those that hinder this development or make it possible to accelerate it in case of an increase in their aggregate or individual impact.

Since the conditions of economic activity of farms are constantly changing along with the external environment, they should be studied constantly and at each stage the relevant conclusions and proposals should be substantiated.

The combined effect of internal and external factors shown in Fig. 5 determined the trends in the development of farms. Thus, at the beginning of the formation of the farming system, the state had a significant organizational and other influence, thanks to which farms were created, and later in the process of development, quantitative indicators gave way to qualitative ones.

There are various approaches to the classification of farms in the scientific literature. The most detailed classification is that of M.M. Babych [53].

Given the variety of farm strategies, the study of the problem of sustainable development requires a scientifically based classification that would include the features of sustainability, innovation, type of reproduction and joint development. In connection with the above, the above-mentioned classification of M.M. Babych was supplemented in the course of the research by additional five classification features: by measures for survival and overcoming instability; by place in the innovation process; sustainability, type of reproduction, by membership in a farmers' association and removal of intermediate aggregated features from them - division into organizational and economic, socio-economic and organizational and legal aspects.

According to the types of measures to survive and overcome instability, farms are divided into those aimed at preserving the farm, the safety of the farmer and his family, and those that must be restored in the event of a business interruption.

Farms are divided by area of specialization:

1) crop farms specializing in growing grain, sunflower, and sugar beet. In the structure of commodity production of such farms, more than 50% are accounted for by two or three main types of crop production;

2) crop-livestock farms: grain and dairy, grain and pig farms. Such farms make rational use of by-products and are engaged mainly in two industries, which account for more than 60% of marketable products;

3) farms with a narrow specialization that produce certain types of livestock products, such as poultry or pig farming on purchased feed, production of

vegetables or non-traditional products (beekeeping, fish farming, floriculture, etc.);

4) diversified farms.

Farms should be divided by ownership into:

- provided with property, equipment, tractors, cars, combines, warehouses, workshops, etc;
- land plots - owned land, permanent use and leased land;
- labor contribution - characterizes the farmer's activity: his organizational, physical, communication and other abilities).

According to the type of cooperation, farms are divided into those that are part of a cooperative or operate independently.

A farmer can use hired labor in his business activities (engage non-relatives) or work exclusively on the basis of his own labor and the labor of his family members.

According to the level of marketability, farms should be divided into low-, medium-, and high-marketable farms.

High-margin farms are advantageous because they can attract experienced workers, have greater maneuverability of equity capital, rationalization of resource capital use, intensification and diversification of production, preferential loans and subsidies, attraction of private investment, efficient use of resource capital, combination of production with processing and sales, etc. In medium-sized farms, all of the above advantages of high value farms are not fully realized. In small-scale farms, all of the above advantages are also incomplete or absent.

It is also advisable to divide farms by the form of ownership of the means of production (owned and leased); the principle of establishment of the farm (by one citizen or several).

According to the main models of creation, farms are divided into those created on the basis of individual peasant farms as a result of reforming

collective agricultural enterprises; by leaving collective agricultural enterprises with property and land shares, on the basis of purchased property or land plots.

Under conditions of instability, the price of products decreases, so the farmer should formulate a survival strategy.

Farms should formulate development strategies based on the level of sustainability they have achieved. In this regard, it is proposed to divide farms into six groups according to the level of sustainability: pronouncedly sustainable, medium level of sustainability, conditionally sustainable, with a predominance of unsustainability, pronouncedly unsustainable and unsustainable with signs of bankruptcy.

The most important features for these groups of farms are as follows: for pronouncedly sustainable ones - expanded reproduction of production and sales of products, resources, capital and economic relations and ensuring competitiveness of products, active operating, investment and other activities, as well as achieving cost recovery over a long period of time; for an average level of sustainability - moderate or incomplete provision of all the benefits; for conditionally sustainable ones - no losses, but profits are insignificant and do not change significantly in dynamics; with a predominance of Each of these groups should also be divided into two subgroups based on the presence or absence of social and environmental effects.

According to the place in the innovation process, farms should be divided into farms in the push period, as noted above, the first stage of the push was carried out at the stage of farm establishment; then farms that are at the peak of the rise of innovation processes (using new technologies, involving better quality resources in production), the decline of innovation processes, and the bottom (farms do not use the latest technologies).

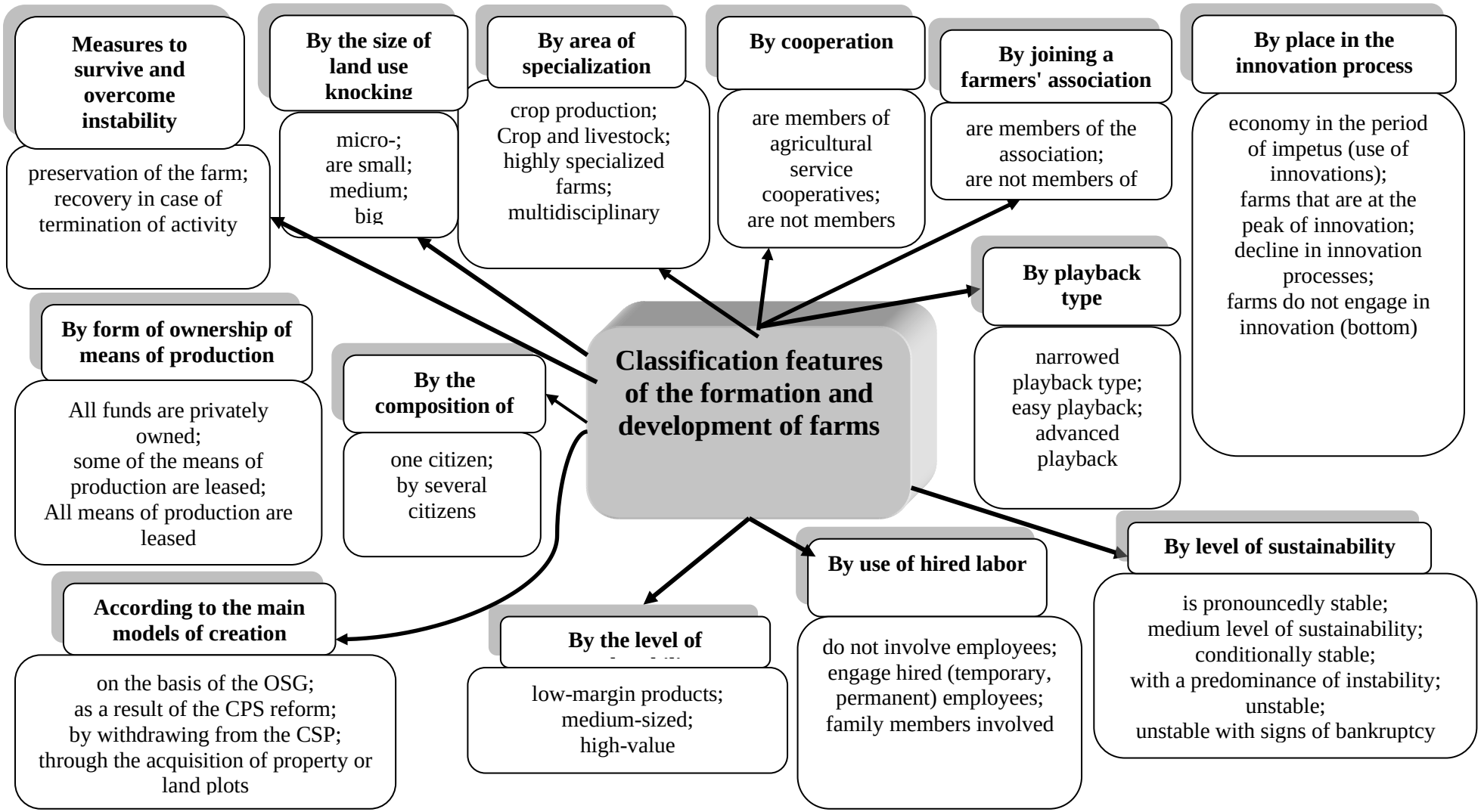

Figure 6. **Classification features of the formation and development of farms**

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Given that the terms "sustainability" and "stability" characterize the constancy and immutability of a phenomenon, a special concept of "sustainable development of a farm" is proposed. Its essence should be considered on the basis of the category of sustainability, which over a long period of time allows for the cyclical and undulating nature of its development, which, despite natural fluctuations, can acquire signs of sustainability in reproductive processes, and at certain stages, stability (Fig. 7).

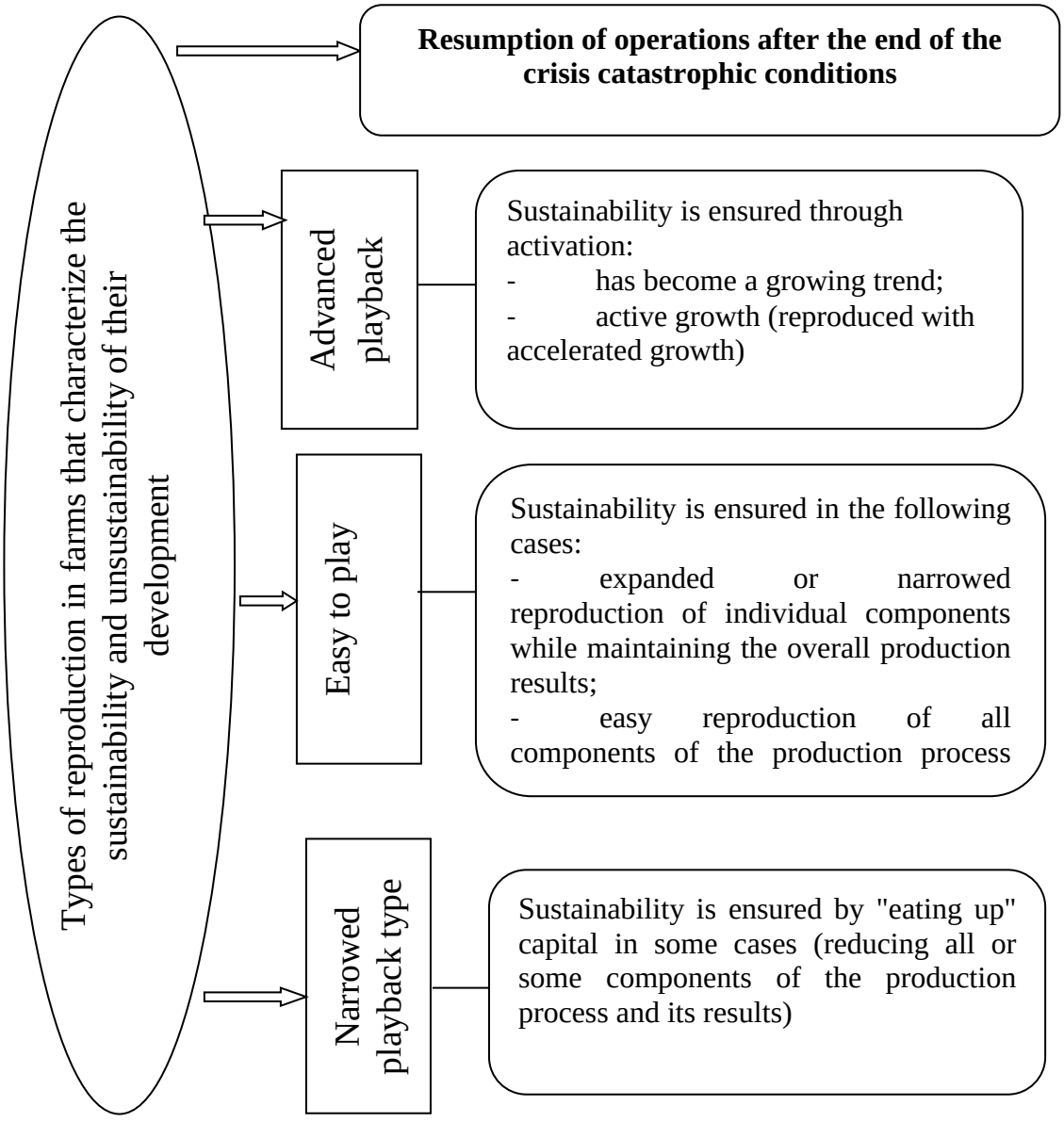

Figure 7. **Types of reproduction in farms that can ensure the competitiveness of their products**

Source: Authors' elaboration.

The development of economic processes in agriculture is particularly cyclical and wave-like.

According to the explanatory dictionary, the term "unstable" is interpreted as characterized by instability and variability.

The main signs of instability are: a changing situation in the economy that does not allow predicting trends and values of supply, demand, and price levels, the absence of a certain trend due to the lack of real offers to buy or sell manufactured products, and the inability to establish a real price level.

A farmer cannot eliminate the factors of instability. His main task is to survive and adapt to unfavorable conditions.

Given the undulations of agriculture, it cannot ensure constantly high rates of expanded reproduction, and it periodically needs a boost for development. For Ukrainian farms, such an impetus was first given at the stage of their mass creation, and then at the stage of forming a system of state support.

Today, when the potential of this system is partially utilized, the pace of development is slowing down, some farms are liquidating and switching to simple and narrowed types of reproduction of production, relations and capital.

An important feature of the economic content of farm sustainability is the type of reproduction of production and marketing of products, resources, capital, and economic relations. The sustainability of farms is characterized to the greatest extent by the processes of reproduction, and depending on the type of reproduction in the farm, it is necessary to determine the sustainable or, conversely, unsustainable state of its development.

In scientific research and practice, it is advisable to use the definition of "sustainable development of farms" proposed by the research results as a wave-like process in which there is a simple and expanded reproduction of the production of their commodity products, resources, capital and economic relations, which in the long term ensures the competitiveness of products, active operating, investment and other activities, as well as conditions for efficiency.

Russia's large-scale aggression against Ukraine has led to instability in farming operations. As a result of the hostilities in Ukraine, the largest losses of farms were incurred as a result of the destruction or damage to land, crop losses, and delays in the shipment of agricultural products due to the complication of logistics communications. The contamination of agricultural land by mines and ammunition poses a deadly threat to farmers and damages their property.

Manifestations of instability in farm investment have distinct regional characteristics, with the activity of their investment processes differing significantly by region. Due to the war in the occupied, de-occupied and other affected territories of Ukraine, investment activity in farms has completely or partially ceased. Therefore, solving the problem of restoring the resource potential of farms is a complex and necessary task for the preservation of Ukrainian agriculture, which will be facilitated by the formation of properly formed investment strategies for the development of farms and the resumption of activities after the end of the crisis.

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SECTION V
METHODOLOGICAL APPROACHES TO ASSESSING THE STATE OF DEVELOPMENT OF FARMS IN CONDITIONS OF INSTABILITY

Ukraine's economy has been developing in an unstable environment for a long time, characterized by alternating periods of decline and intensification of investment processes in agriculture. Particularly unfavorable conditions for investment have arisen in connection with the military aggression of the Russian Federation, which negatively affects investment activity in all sectors of the economy. In the context of instability in the country, it is particularly important to prevent an investment decline in agriculture.

Running a farm on the basis of sustainable development will not only increase the competitiveness of its products, but also significantly improve its financial and economic condition, as well as to some extent solve the food problem of the country's population [10]. In turn, the task of managing sustainability is also reduced to finding effective methods for assessing, analyzing and forecasting the performance of farms.

Effective farm management involves the use of methods and procedures for forecasting, strategic planning, management accounting, financial diagnostics, risk management and internal control, which together are focused on optimizing the farmer's financial and business decisions and increasing the efficiency of farm operations.

Today, among the concepts developing within the framework of strategic management, is widely used *Business Performance Management* (*BPM*), which is a management approach aimed at improving the efficiency of company management and implementing its strategy , and is a combination:

- company management processes;
- methodology for assessing the company's performance;
- technological solutions and systems that support processes.

BPM allows enterprises to define strategic goals, manage the process of achieving them, and then evaluate the effectiveness of their activities in accordance with the degree of such achievement.

The most comprehensive approach may be the approach that considers a balanced scorecard in three aspects: performance evaluation system, strategic management system, and information .

The Balanced Scorecard is a strategic management system. According to the developers, the primary goal of the system was to balance historical financial data with factors of future value for the firm. However, over time, it became clear that it is an effective tool for aligning short-term actions with the company's strategy, i.e., it solves the problems of strategic management of the reproduction process, long-term management of finance, cost and risks. The management's vision is formulated into clear, understandable, measurable indicators that direct the actions of employees to achieve the goal. The balanced scorecard links strategic and operational planning, budgeting; selection and funding of only those initiatives that lead to the achievement of the strategic goal, which saves resources and directs them to the right areas.

The experts of Horvath Partners Consulting Company offer some basic principles for formulating strategic goals:

-No more than 4-5 goals should be set for each prospect;

-Objectives should be formulated verbally and clearly;

-It is necessary to concentrate on those goals that are of strategic priority for the company;

-Use not general, but rather specific goal statements.

The UN Commission has proposed a system of more than 60 indicators that reflect the economic, environmental and social spheres to indicate sustainability at the national level. The main indicators of economic sustainability are: foreign trade balance; level and share of investments in GDP per capita; energy intensity and energy needs and their ratio by economic

sectors, their products and per capita; consumption of renewable resources and the share of recycled materials. Environmental sustainability is assessed by the level of emissions of harmful substances; the level of plowed areas; the use of agrochemicals; the share of areas under perennial plantations, renewability of water resources, etc. Social sustainability is characterized by: the composition and ratio of the population by income; employment and unemployment rates; the share of the population living in cities; the ratio of average wages of women and men; the structure of nutrition, etc.

The peculiarity of farms is their high dependence on natural, climatic and biological factors, and therefore it would be more reliable to compare the actual values of the factors with their normative values. However, the creation of a regulatory framework is a complex and lengthy process, so the average statistical values of the indicators of farms in the district for certain years were used as a basis for comparison.

In order to assess, control and forecast the sustainability of farms, an integrated approach can be taken to analyze the current state and dynamics of farm sustainability indicators, which are simultaneously factors that have a direct impact on the level of the generalized indicator.

To get acquainted with the results of the work of farms, an approach can be used that involves a direct comparison of the indicators of these formations. An analysis using such indicators as animal productivity, crop yields, production per 100 hectares of agricultural land, etc. would show how efficiently the farm operates. This technique would help small units to solve the problem in cases where, for various reasons, it is impossible to use a sufficient number of indicators.

Farms have their own peculiarities of income and expense flows and economic interests of their owners. In this regard, it is necessary to objectively assess the economic efficiency of farms based on the interests of farm owners,

the objectives of the analysis and using the most appropriate methods and indicators for this form of business activity.

Economic efficiency is a general economic category for any type of business activity. It is determined by comparing the economic result (business benefits) with the costs of achieving this result. This criterion fully applies to farms, which operate to maximize their economic results and minimize the costs associated with their production. Therefore, we should distinguish between the concepts of "effect" and "efficiency". The effect is the total amount of benefits from the business, and efficiency is the quotient of dividing the effect by the costs incurred to obtain this effect.

The cost-effectiveness criterion can be represented by the following formula:

$$K_e = \frac{E \rightarrow \max}{B \rightarrow \min} \qquad (1.1)$$

where Ke is the criterion of economic efficiency; E is the economic result (benefit or effect) to be maximized; C is the cost of achieving the economic result to be minimized.

The overall economic result (effect) of farm activities can be determined by one or more indicators. For farms, an important indicator of the result (effect) is the total income received during the year.

In farms, their owners are the main or even the only performers of work, but they do not receive a salary. Therefore, M.I. Kisil believes that the indicator of net farm income (E_3), includes possible wages, for example, of the farmer or his family members, as well as savings in payroll costs. In this case:

$$E_3 = P + 3', \qquad (1.2)$$

where P is the amount of profit;

3' is the conditional salary of the farmer and his family members with conditional accruals to it [83].

However, in assessing the efficiency of farming, the most important thing is the income that remains with farmers for use after deducting relevant taxes, fees, discounts, etc., i.e., the profit after tax (net profit). This indicator of effect characterizes the value that farms actually receive and can use for production needs or withdraw from the business.

It is advisable to determine the economic efficiency of a farm by one or more indicators that most fully take into account the peculiarities of the formation of income and expenses of business entities and meet the requirements of the efficiency criterion. The choice of a particular indicator depends on the goals and objectives of the economic analysis and the interests of the parties.

When justifying decisions on the feasibility of investing in any type of business in rural areas, taking into account other possible (alternative) investment options, the rate of return ($R_п$) is used, which is determined by the ratio of the amount of annual profit (P) to the cost of capital advanced to obtain it. In agriculture, capital includes non-current assets, including land owned by the enterprise (Na) and current assets (Oa) [8], i.e:

$$H_п = 100\% \qquad (1.3)$$

The financial condition of a farm is the degree to which it is provided with the necessary financial resources, their rational allocation for efficient economic activity and timely cash payments for its obligations.

The main characteristics of the financial condition of a farm should be considered: financial stability, solvency, liquidity, profitability and profitability, business activity in the commodity and financial markets, and property status.

The calculation of the growth of farm effect indicators is intended to characterize the investment of a farm in terms of changes in the means of production, its fixed and working capital, the rate of their reproduction, social benefits for the farmer, his family and employees, and the income of these

farms. The sum of the farmer's and farm employees' salaries, accruals on these salaries and social contributions, depreciation, and net profit constitute the farm effect indicator.

One of the types of information collection is monographic research, which is the simplest and less labor-intensive, and can provide answers to questions of an individual farm with specific production conditions. However, when conducting this type of research, it is quite possible that some subjective factors may affect the performance of farms. Therefore, when conducting the analysis, it is necessary to determine the number of objects to be analyzed, i.e. its scale. General trends and patterns will be better traced on massive material. For example, the performance of new crop or livestock specialization units in one natural and economic zone is compared with the performance of the same farms in another. The performance of farms in the same zone in terms of land and labor resources over the study period is compared with similar enterprises with different sizes of land plots. The main requirement applied to the compared objects is their comparability. The main criteria that characterize the comparability of farms are as follows: specialization, size of the enterprise's land, and availability of labor resources.

There are many forecasting methods for predicting the economic performance of industries, including agriculture. Forecasting methods are a set of techniques and estimates that allow, based on the analysis of past (retrospective) internal and external relations inherent in an object, as well as their changes, to make a judgment about a certain probability of the future development of the object. Currently, the number of known methods and techniques used for forecasting exceeds 150, and they can be divided into quantitative and qualitative.

Extrapolation method. Based on statistical data, patterns of change and, accordingly, trends in data are determined. After that, forecasted values are calculated beyond the existing empirical time or dynamic series based on the

hypothesis that the main factors and trends of the past period will continue for the forecast period. The extrapolation method can be applied when a sufficiently accurate relationship in the time series is established and the area to be extrapolated is determined.

The method of normative forecasting. Normative (target) forecasting should be understood as the search for the optimal way (among many possible) to achieve a certain ultimate goal in the future, as provided for by the task (standards).

This method is used when the development goals of the forecasting object are outlined and it is necessary to determine a set of time-distributed and interrelated elements (measures, problems, tasks, resources, etc.) that ensure the achievement of these goals in the most efficient way. In other words, for a certain period of time in the future, a fixed value of the forecasted indicator is set - a standard.

In terms of performance indicators, sustainable development of a farm in the strategic perspective should be considered as such that it ensures a level of net income per unit of expenditure that exceeds the corresponding indicator for the aggregate of agricultural enterprises, and thus achieves product competitiveness. The level of sustainability is additionally characterized by indicators of land productivity, labor productivity, capital productivity, production costs, etc., as well as positive changes in the values of these indicators in the dynamics. According to the division of farms by sustainability level proposed in the course of the research, the main development indicators should be assessed according to their compliance with the following scales from one to six:

1) performance indicators according to their place in the scale - highest, medium, low, insignificant loss, medium loss (not exceeding the amount of depreciation) and high loss;

2) the average annual capital growth rate, respectively, according to the place in the scale - high (>10.0%), medium (4.0-9.0%), low (1.0-3.0), minor reduction (from -1.0 to -2.0%), medium reduction (from -3.0 to -7.0%) and significant reduction of capital (> -8.0%);

3) change in the values of output indicators in the strategic period as a percentage of the previous period by place in the scale - significant growth rate (>6.0%), average growth rate (2.0-0.0%), slight decline (up to -2.0%), average decline (from -3.0 to -5.0%) and significant decline (over -6.0%).

The methodological approaches to assessing the effectiveness of agricultural development have been deepened by adapting them to the conditions of farms.

Statistical data on small enterprises reflect trends in changes and the level of economic performance of farms. Therefore, the calculations of the effect and efficiency of Ukrainian farms are based on the data of small enterprises.

The methodology for substantiating the prospective volumes of investment needs and their effectiveness was developed by scientists of the Institute of Agrarian Economics M.I. Kisil and M.M. Kropyvko. According to the authors, for most investment purposes of farms, it is necessary to determine the minimum cultivation/harvesting area that provides the lower/limit level of return on investment.

This method allows you to assess the quality of the developed farm plan in terms of achieving break-even production and ensuring the necessary margin of financial stability. Such calculations should be made by determining the break-even point.

The break-even point is determined by comparing costs with sales revenues. It can be calculated using the formula, which in a simplified version looks like this:

$$Q_{\min} = \frac{C}{П - З},$$

Where: Q_{min} - the minimum cultivation (harvesting) area at which it is advisable to purchase a machine;

C is the annual fixed cost of maintaining the machine;

P is the annual fee for the provision of cultivation services by an agricultural service organization;

C is the annual variable cost of maintaining the machine.

According to the authors of the methodology, the formula does not cover all the specifics of the economic relations that arise between farmers and service organizations in the process of providing agricultural services, renting, hiring and leasing of machinery. Therefore, for practical use, it needs to be detailed. In this regard, when determining the break-even point (payback) of machinery, the following items should be included in the fixed costs of the i-th machine: depreciation charges; loan fees if the machine is taken on credit; annual insurance premiums if the machine is insured; and storage and maintenance costs.

In addition, these costs are increased by the planned percentage of profitability that should ensure the use of the machine if it is fully utilized annually.

Variable costs include the cost of purchasing fuels and lubricants per unit of work volume, based on variable fuel consumption rates, production rates, and the complex price of 1 liter of fuel.

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SECTION VI
THE STATE OF DEVELOPMENT OF NATIONAL FARMS

Farms as a form of economic activity emerged and formed in the process of agrarian reform after the adoption of the Law of Ukraine "On Peasant (Farm) Economy", enacted by the Resolution of the Verkhovna Rada of Ukraine No. 2010-XII of December 20, 1991 (VVR, 1992, No. 14, p. 187). This Law defines the economic, social and legal framework for the establishment and operation of peasant (farm) enterprises in Ukraine. Its provisions guarantee the right of Ukrainian citizens to voluntarily establish such farms, their independent management, equality with other forms of management in the agro-industrial complex, and equality of employment of those working in peasant (farm) farms with those employed in other sectors of the national economy. The law was aimed at creating conditions for the development of peasant (farm) enterprises, production of marketable products, ensuring the rational use and preservation of the land transferred and provided to them, and ensuring their social and legal protection.

Later, the Law "On Peasant (Farm) Economy" was repealed by the Law of Ukraine "On Farming" No. 973-IV of June 19, 2003 (VVR, 2003, No. 45, p. 363), which defines the legal, economic and social principles of the establishment and operation of farms as a progressive form of entrepreneurial activity of citizens in the field of agriculture of Ukraine. The preamble of the new version of the said law (current document 973-IX - as of 20.10.2021) states that it is aimed at creating conditions for the implementation of citizens' initiatives for the production of marketable agricultural products, their processing and sale in domestic and foreign markets, as well as ensuring the rational use and protection of farmland, legal and social protection of farmers in Ukraine.

The activity of Ukrainian farms is conditioned by the transformation of economic relations in agriculture, took place in stages and was characterized by the

following features: the first stage (1992-1995) - mass creation of farms, allocation of land for permanent use, introduction of budget support mechanisms and formation of strategies for their development; the second stage (1996-2000) - establishment of the farm system, although the number of farms does not grow, they actively accumulate capital, development strategies, reorientation

In 2022, the next fifth stage began, unfortunately triggered by the war, whose economic consequences caused significant damage to farmers' production and income.

The State Statistics Service provides information on 28544 active farms as of November 1, 2022, of which 22652 farms are run by men and 5892 farms are run by women. However, according to Ivan Tomych, president of the Association of Farmers and Private Landowners of Ukraine, only 12,000 farms are actually operating today.

Key factors that led to the suspension and reduction of farms include temporary cessation of operations, loss of control over agricultural land, death of owners, and land sales caused by or related to the escalation of the war.

Therefore, the dynamics of the number of farms in Ukraine and the area of agricultural land in their use differs by year (Figure 1).

In recent years, the development of farming has been characterized by instability and a high degree of risk in the face of the impact of factors of a changing external and internal environment, which negatively affects the efficiency of production and financial activities of farms.

Thus, gross output per 1 hectare of arable land decreased by almost 8% compared to the average for the four pre-war years. Challenges to the sustainable development of Ukrainian farms are caused by both environmental conditions and their own capabilities, which are quite limited.

A number of these conditions lead to an aggravation of contradictions in the organizational and sectoral structures of agriculture.

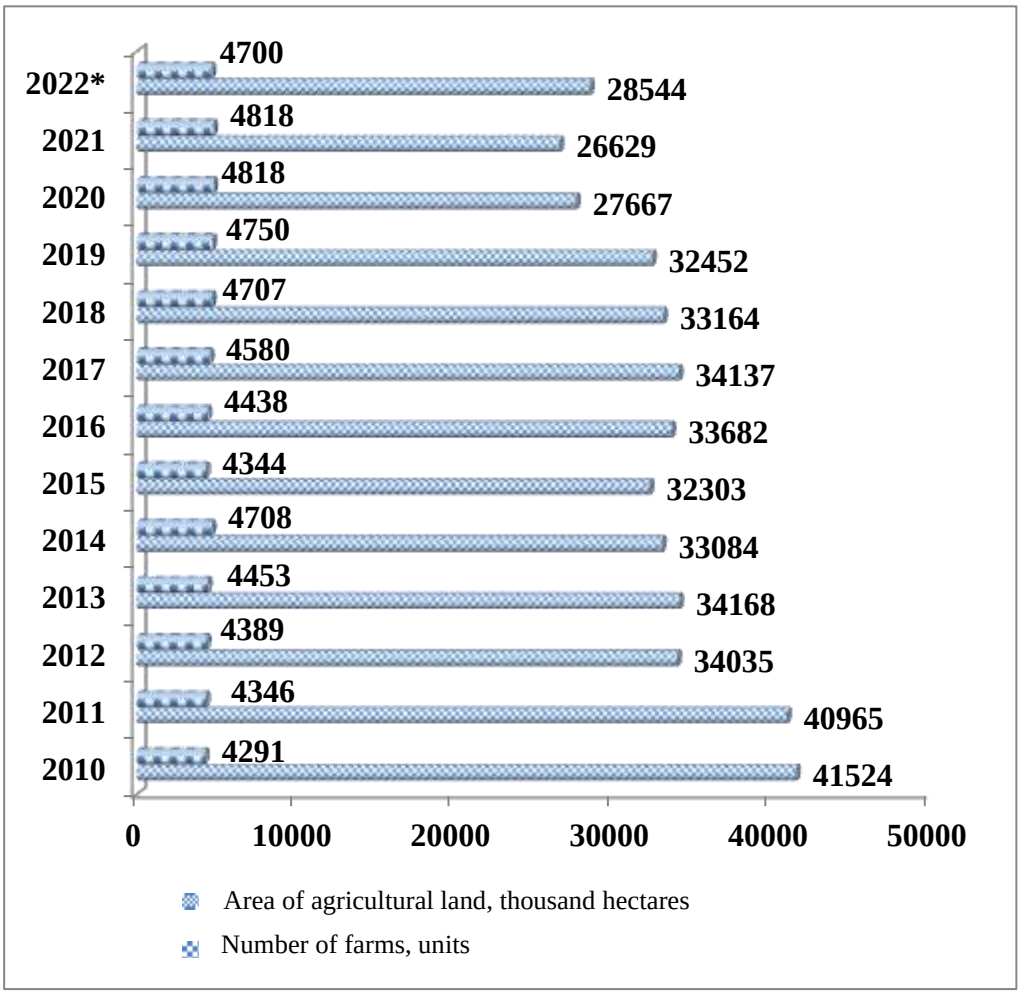

Figure 1. Dynamics of the number of farms and the area of agricultural land used by farms in Ukraine, 2010-2022

Source: State Statistics Service of Ukraine for the respective years.

The data on the number of farms in Ukraine in 2022 are taken from the State Statistics Service of Ukraine "Number of active enterprises by organizational and legal forms of management with a breakdown by the gender of the head".

*Data on the area of agricultural land in use by farms for 2022 are taken according to Ivan Slobodianyk, Executive Director of the All-Ukrainian Association of Communities, Chairman of the All-Ukrainian Congress of Farmers [https://www.epravda.com.ua/columns/2023/03/13/697907/].

Sectoral imbalances and price disparities in the agricultural sector result in low operating performance of farms, which hinders their development and integration into the organized market. Compared to other existing organizational and legal forms of management, the farming system remains less technologically advanced with a significant share of insufficiently mechanized production processes.

In wartime, farmers are increasingly exposed to force majeure circumstances. Given that some territories have been or remain temporarily occupied by Russian aggressors or are in the area of hostilities, unpredictable changes in the logistics chains of supply of inventory and sales of finished products are taking place. This forces farms to change their specialization and production technologies in a short time. In addition, about 20% of the domestic market remains inaccessible to farmers.

Farms operate in a diversified economy, which creates competitive conditions for agricultural production.

Farms, especially family farms, remain the backbone of rural society, where agricultural production is a vital economic activity for one-third of the population, although it does not provide a sufficiently high level of income. Farming plays a special role in the introduction of environmental technologies in agricultural production and in curbing labor migration in border areas.

In modern models of the agricultural economy, the scale of hired labor is often reduced due to the strengthening of the material, technical and technological base. In this sense, the farm is a unique structure that, on the path of innovative development, should ensure self-employment of the farmer's family and at the same time be a place of work for peasants - hired workers.

The current stage of development of Ukrainian farming as a potential basis of the country's agrarian system is characterized by the variability and dynamism of socio-economic processes, intensified competition in the agricultural products and resources market, and growing consumer demands for food quality in the context of martial law and the global financial and economic crisis.

Under the current conditions of farming development, the remuneration of a farmer who is the head of a family-type farm consists of retained earnings that remain after taxes and covering all costs incurred in the production, sale and marketing of agricultural products.

A farmer who wants to receive a pension accrues a salary for the last 5 years before retirement in the amount he would like to receive when he retires. Some farm managers practice paying themselves a monthly minimum wage in the amount established by law.

In family, medium-sized and large farms, the main type of compensation for employees is monetary compensation, which can be paid in the form of wages, vacation and overtime payments, and bonuses. In addition, farmers often provide their employees with additional benefits in terms of the use of inputs, sale of agricultural products, housing, food and work clothes, tuition fees, and payments to insurance and pension funds.

According to the State Statistics Service of Ukraine, the average monthly nominal salary of full-time employees in agriculture in Ukraine in 2015 was UAH 3,140, respectively, in 2019 - UAH 8,738, 2020 - UAH 9,734, 2021 - UAH 1,733, and in military year 2022 - UAH 1,243.

Cash compensation is the main part of compensation to employees. It is also an object for payroll taxes to the pension and centralized social insurance funds. The farmer is responsible for these charges.

Payments to employees for overtime work are made for hours worked in excess of the established minimum weekly rate, which is consistent with the relevant statutory standards and may vary by period of the year. The coefficient of increase in wages for work in excess of the norm is determined by the farmer and is fixed in the employment contract with the employee.

Incentive payments and bonuses are usually paid at the end of the season in the form of a specific cash amount, bonus, or percentage of the farm's wages or gross income. In particular, they are used to ensure that the employee continues to work on the farm until a certain predetermined date, after which they are paid.

Regardless of the level of development of the farm, both owners and employees need to have special knowledge of crop production, dendrology,

beekeeping, poultry, livestock, veterinary medicine, sanitation, and experience with agricultural machinery.

The ability of farmers to conduct business is characterized by the qualifications of the farm manager, which is determined by the level of general and special training, necessary production skills, and experience in farming.

An important condition for the development of farms is the possibility of obtaining (acquiring) ownership or lease of a land plot for the purpose of running a farm (issuance of state acts for private ownership of land plots and their use in the farm).

The study pays special attention to the issues of land use by farms, in particular, the dynamics of land areas. The area of agricultural land used by Ukrainian farms during the analyzed period is uneven (Table 1).

Table 1. **Distribution of Ukrainian farms by land use, 2019-2020**

Group of farms	**Number of farms**				**Total area of agricultural land, thousand hectares**		**to the total agricultural area. of land, %.**	
	units		**to the total amount, %.**					
A	1	2	3	4	5	6	7	8
Farms with agricultural land	28788	26691	88,7	83,8	4749,5	4817,8	100,0	100,0
Including area, ha								
up to 1.0	95	74	0,3	0,2	0,1	0,1	0,0	0,0
1,1 - 3,0	969	742	3,0	2,3	2,2	1,7	0,0	0,0
3,1 - 5,0	1200	985	3,7	3,1	5,1	4,2	0,1	0,1
5,1 - 10,0	2030	1729	6,4	5,4	16,0	13,6	0,3	0,3
10,1 - 20,0	3221	2797	9,9	8,8	50,0	43,7	1,1	0,9
20,1 - 50,0	9816	8795	30,2	27,6	371,5	332,4	7,8	6,9
50,1 - 100,0	4063	3947	12,5	12,4	291,6	282,5	6,1	5,9
100,1 - 500,0	5200	5369	16,0	16,9	1216,3	1258,3	25,6	26,1
500,1 - 1000,0	1229	1262	3,8	4,0	870,5	897,7	18,3	18,6
1000,1 - 2000,0	665	690	2,0	2,2	915,5	951,3	19,3	19,8
2000,1 - 3000,0	176	171	0,5	0,5	424,6	411,1	9,0	8,5
3000,1 - 4000,0	62	65	0,2	0,2	208,7	219,2	4,5	4,6
More than 4000.0	62	65	0,2	0,2	377,4	402,0	7,9	8,3
Farms that did not have agricultural land	3664	5160	11,3	16,2	x	x	x	x

Source: State Statistics Service of Ukraine for the respective years.

*Data for 2021-2022 are not available from the State Statistics Service.

Before the war, the Ukrainian agricultural market was represented by both newly established farms with the smallest land area, which averaged 4.9 hectares, and large farms with an area of more than 4,000 hectares.

Adherence to existing technologies and the introduction of new and more advanced ones largely depend on a sufficient number of agricultural machinery. The lack of machinery and its deteriorated technical condition is one of the main obstacles to farmers' development. Studies show that the provision of tractors and combine harvesters to Ukrainian farmers has been improving between 2010 and 2019 (Figure 2).

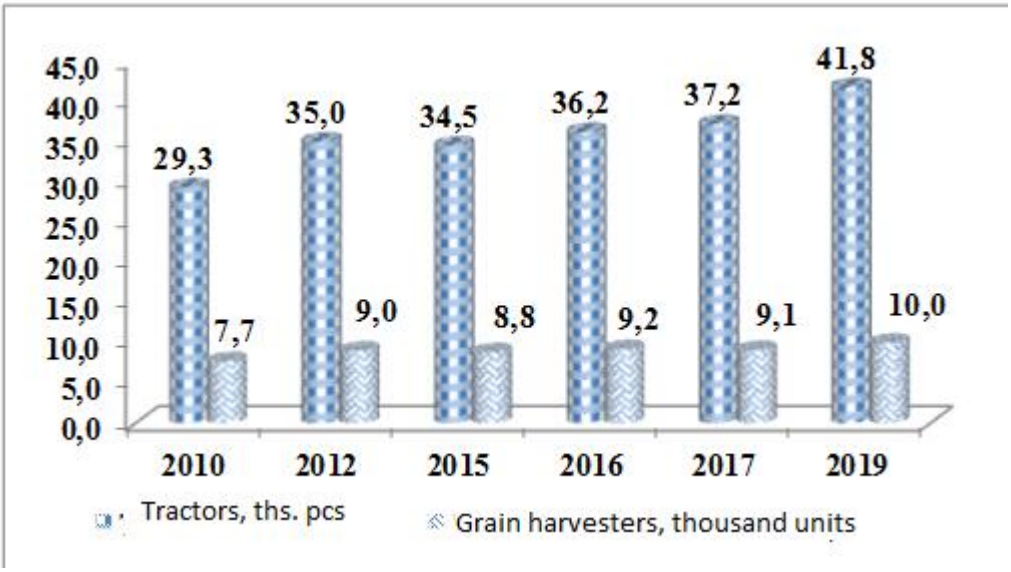

Fig. 2. **Provision of Ukrainian farms with tractors and combine harvesters in the pre-war period, 2010 - 2019.**

Source: State Statistics Service of Ukraine.

*During the period of martial law or a state of war, as well as for three months after its termination, administrative liability for failure to submit or late submission of reports does not apply. Therefore, there is no data on the availability of tractors and combine harvesters for farms in 2020-2022.

The number of tractors increased by 42.7% in 2019 compared to 2010, and the number of combine harvesters also increased by 30% over the same period.

Prior to the Russian aggression, an assessment of logistical support for newly established farms with land plots of 5, 20, and 50 hectares with a certain specialization was carried out.

The study found that for the proper functioning of a newly established family-type farm of 5 hectares, specializing in the production of cereals on 4 hectares and open-air vegetables on 1 hectare, the total cost of production facilities was UAH 1.1 million. These included a KhTZ-3512 tractor, a two-hull plow, a small cultivator with a working width of 2.5 m, two ring-spur rollers with a working width of 2 m, a SZ-3.6 grain seeder, a SO-3.5 vegetable seeder, a 400-liter mounted sprayer, a used lawn (GAZ-53), and the cost of renting a combine harvester (UAH 500 per hectare). The farm did not need a hangar to store its produce, as the farmer immediately sold it or kept it in the warehouses of other farms.

For a newly established 20-hectare farm specializing in the production of 15 hectares of grain and 5 hectares of soybeans, the total cost of production facilities was UAH 1.8 million. The research found that the following equipment was needed: an MTZ 82 tractor, a SZ-3.6 grain seeder, a KPS-4U cultivator, 3 ring-spur rollers, an OPK 2018 sprayer, a PLN 3-35 mounted three-hull plow, combine harvester rental costs (UAH 500 per 1 ha of grain, UAH 700 per 1 ha of soybean), a used lawn (GAZ-53), and a hangar with a size of at least^2 200 m.

A newly established 50-hectare farm specializing in the production of grain (20 hectares), sunflower (10 hectares), soybeans (10 hectares), and rapeseed (10 hectares) required UAH 6.3 million in production equipment. These include a used lawn (GAZ-53), a 3-35 mounted three-hull plow, a tractor MTZ 82, three ring-spur rollers, a 5-35 plow, a SZT 3.6 grain seeder (grass), a KPS 3.6 cultivator, a C 11+9 hitch (medium), an OPK 2018 sprayer, and a Slavutych combine. For storage of agricultural products, a hangar with a size of^2 500 m is required.

The war has caused significant damage to Ukraine's agriculture, with the largest share of losses attributed to the destruction and damage to agricultural machinery, resulting in estimated losses of over $4.65 billion for agricultural

producers as of February 24, 2023. The number of damaged equipment is 109601 units [See https://agroportal.ua/news/ukraina/agrosektor-ukrajini-zaznav-8-7-mlrd-zbitkiv-za-rik-viyn].

Research by scientists at the Institute of Agrarian Economics has identified priority measures to restore the development of farming in Ukraine (primarily family farming) in the postwar period.

It is substantiated that, on average, in 2019-2021, only 10% of small and medium-sized farms participated in the program of compensation for the cost of agricultural machinery. Two main reasons have been identified: insufficient production of domestic machinery for small volumes of production and too high a cost, even with 25% compensation.

Therefore, the main measures in the post-war period should be considered: the resumption of the Program of partial compensation for the cost of agricultural machinery and equipment of domestic production, which has proven to be quite effective and contributes not only to the provision of cheap domestic agricultural machinery, but also supports domestic agricultural machinery enterprises. The disadvantage of the Partial Compensation Program is the minimal presence of mini-machinery for small farms and households in the list of equipment subject to compensation, as well as the inability of small farmers and households to participate in the Program. At the same time, the abolition of an additional 15% compensation for farms in 2020 limits access to state support for farms in this category.

Therefore, to ensure maximum effectiveness of the Program, it is advisable to increase the level of partial compensation for the cost of machinery from 25% to 40%, as provided for by the Law of Ukraine "On Stimulating the Development of Domestic Machinery for the Agro-Industrial Complex", for the purchase of certain types of machinery whose competitiveness is much lower compared to foreign counterparts, such as tractors, mowers and other types of machinery, as well as for small enterprises with an area of up to 500 hectares.

Increase the share of small farms and private households to compensate for the cost of machinery from 10 to 25%.

The resumption of this program will partially solve the problem of providing small farms with land area of up to 500 hectares with appropriate and inexpensive agricultural machinery.

In 2021, Ukraine imported low-power and small-sized equipment for use in small areas from China: tractors with a capacity of up to 37 kW - 17342 units, the customs value of which was USD 49.2 million. The customs value of the tractors was 49.2 million US dollars; 34445 units of motor-blocks with a customs value of 10.1 million US dollars. 551 plows with a customs value of 23 thousand dollars. USD; 3576 seeders with a customs value of USD 2.9 million. THE TOTAL VALUE OF THE IMPORTED MACHINERY IS 2.9 MILLION USD. Due to their low cost and gradual improvement in quality, imported machinery, including Chinese-made equipment, is a strong competitor to domestic products.

In the postwar period, it is necessary to increase the production of low-power and small-sized machinery by expanding existing facilities and building new production facilities, including with the involvement of leading agricultural machinery manufacturers.

Focus efforts on the implementation of the Law of Ukraine "On Stimulating the Development of Domestic Machinery for the Agricultural Sector: Law No. 3023-III of February 7, 2002", which is aimed at prioritizing the development of domestic machine building for the agricultural sector and providing agricultural production with modern, high-performance agricultural machinery. Budgetary allocations should amount to one percent of total state budget expenditures and should be used to finance measures to support the priority development of domestic machine building for the agro-industrial complex.

Farms are participants in agricultural markets characterized by a very large number of producers and sellers and a relatively small number of buyers with large market power. Under such conditions, most farms do not have sufficient opportunities to choose an independent pricing policy, as it is largely subordinated to the pricing policy of processing companies and market intermediaries. Farmers have one significant tool to implement their pricing policy for long-term storage agricultural products - to shift the timing of their sales in such a way as to obtain a higher price for their goods compared to the price formed after harvest. It is possible to maneuver the timing of sales to a certain extent before the price increases. But there is a risk of higher production costs, which may not be recouped by the higher price, especially in times of war. Average prices for agricultural products over the period from 2010 to 2022 are shown in Table 2.

Table 2. **Average prices for agricultural products, 2010-2022**

Indicators.	**Year**					
	2010	**2015**	**2019**	**2020**	**2021**	**2022**
Grains and pulses (UAH per 1 ton)	1121	2912	3868	4794	6296	6400
Oilseeds (UAH per 1 т)	2943	7532	8321	10853	16419	15037
Sugar beet (UAH per 1 ton)	479	789	754	872	1164	1572
Potatoes (UAH per 1 ton)	2131	2436	5475	5103	4993	4520
Vegetables (UAH per 1 ton)	2552	3903	4497	4437	4680	14025
Fruits and berries (UAH per 1 ton)	2420	5895	6494	9140	8177	8126
Agricultural animals in live weight (UAH per 1 ton)	10797	21966	21966	32491	37381	45677
Milk (UAH per 1 ton)	2939	4347	8198	8840	10301	10969
Eggs, thousand units	471	1333	1206	1259	1877	2328
Wool, per 1 ton	4165	14217	25027	12537	13529	8327

Source: State Statistics Service of Ukraine for the respective years.

In 2022, according to the State Statistics Service of Ukraine, the average selling price of 1 ton of grains and legumes on farms was UAH 6,400, oilseeds - UAH 1,537, sugar beets - UAH 1,572, potatoes - UAH 350.1, vegetables - UAH 1,4025, and fruits and berries - UAH 8,126.

The proposed measures will directly contribute to the growth of production of machinery for small agricultural enterprises and increase demand

for it, and thus increase both the quality and quantity of logistics for this category of farms.

In the first year of the war, milk was sold at 10969 UAH per ton, and wool at 8327 UAH per ton.

Given that some of the territories have been or remain temporarily occupied by the aggressor country or are in the area of hostilities, forcing farms to change their specialization strategies and production technologies in a short time. Under conditions of instability, farm development strategies pay special attention to sunflower production. As the production of other crops has declined due to the occupation of some regions, mining of fields located in the liberated territories of Ukraine

An important feature of crop production is the harvested area, from which the gross harvest is recorded in the accounting records, production costs are recorded, and the area from which the crop was actually harvested is determined (Table 3).

Table 3: **The area harvested for the main crops of Ukrainian farms, thousand hectares**

Indicator.	**Year**						**2022 to 2010,%.**
	2010	**2015**	**2019**	**2020**	**2021**	**2022**	
Grains and pulses - total	2146	2288	2610	2582	2815	2010	93,7
Sugar beet	46,0	14,7	9,0	9,6	9,4	9,5	20,7
Sunflower	899	1040	1265	1366	1402	1095	121,8
Potatoes	10,1	7,7	4,2	5,6	6,0	4,7	46,5
Vegetables	13,3	8,9	8,1	7,7	7,0	3,8	28,6
Fruits and berries	7,4	9,8	11,9	10,2	10,2	8,8	118,9

Source: State Statistics Service of Ukraine for the respective years.

The analysis of Table 3 shows that in Ukraine, the total harvested areas of cereals and legumes and sunflower decreased by 6.3%, sugar beets by 79.3%, potatoes by 53.5%, and vegetables by 71.4% during the analyzed period. At the same time, the harvested areas of sunflower and fruits and berries increased by 21.8% and 18.9%.

Modern Ukrainian farm development strategies envisage specialization in the production of the most efficient crops, including wheat, barley, corn, millet, buckwheat, sugar beet, sunflower, soybeans, rapeseed, potatoes, and vegetables.

Increased crop production plays a crucial role in the development of many sectors of the Ukrainian economy, especially agriculture. Therefore, an important indicator of the functioning of farms is the yield, which is calculated based on the gross harvest of main, repeated and inter-row crops and the actual harvested area. The yield of major crops by farms in Ukraine for the period from 2010 to 2022 is shown in Table 4.

Table 4. **Dynamics of yields of major crops in Ukrainian farms, t/ha**

Indicator.	**Year**						**2022 to 2010, %, in**
	2010	**2015**	**2019**	**2020**	**2021**	**2022**	
Grains and pulses - total	21,9	33,4	44,0	37,4	50,4	41,8	190,9
Sugar beet (factory)	250,8	422,3	502,8	445,1	549,6	587,4	234,2
Sunflower	13,4	20,8	24,5	18,0	23,6	19,0	141,8
Potatoes	159,5	163,2	196,9	196,8	215,5	226,7	142,1
Vegetables	159,2	316,3	368,3	373,9	346,7	269,8	169,5
Fruits and berries	49,7	69,8	83,7	86,8	154,9	154,4	310,7

Source: State Statistics Service of Ukraine for the respective years.

Table 4 shows that the yields of the main crops of Ukrainian farms vary from year to year, which is partly due to the influence of weather and other conditions. Thus, the yield of cereals and legumes has been constantly fluctuating during the analyzed period. In 2022, it increased by 90.9% compared to 2010.

Over the same period, vegetable and sugar beet yields increased by 69.5% and 134.2%, respectively. The use of mineral and organic fertilizers helps to increase the yield of all crops on farms.

Today, Ukrainian agriculture is one of the largest fuel consumers among all sectors of the national economy, using more than 25% of diesel fuel and 5% of gasoline. The annual consumption of diesel fuel in agriculture in the pre-war

period was more than 1300 thousand tons, and motor gasoline - more than 88 thousand tons.

More than 85% of diesel fuel is used for agricultural operations, and up to 15% for transportation. Other operations consumed a smaller amount of this resource. Consumption of motor gasoline for transportation work reached 56% and 43% for agricultural work.

Given that about a third of the sown area will not be planted this year, fuel consumption will decrease: to about 900 thousand tons of diesel fuel and 60 thousand tons of gasoline of various octane ratings. During the spring works, agricultural producers may use 250-270 thousand tons of diesel fuel and 15-20 thousand tons of gasoline.

As of January 27, 2023, according to the Ministry of Finance of Ukraine, diesel prices in January this year even fell by 2.4 UAH/l to reach 52.76 UAH/l, and gasoline prices - 47.53 UAH/l (-3.5 UAH/l during the month). The Ukrainian petroleum products market is highly import-dependent, so retail prices depend on rising global oil prices and the dollar. According to research conducted by the Institute of Agrarian Economics, the retail price of diesel fuel depends on the world oil price and the dollar exchange rate by 79.3%, and other factors by 20.7%. Under the current conditions, the reduction of the tax rate (VAT) on fuels and lubricants in Ukraine from 20% to 7% plays a stabilizing role in fixing prices in the fuel market.

Throughout the hostilities in 2022, the cost of fuel was rising, taking into account rising oil prices, the dollar, and other factors such as logistics transportation, dealer costs, and gas stations' own costs.

The high cost of fuel is one of the reasons that significantly affects, among other things, the ability of farmers to effectively conduct the sowing campaign in 2023. Recognizing the urgency of this problem, appropriate amendments were made to the legislation aimed at reducing the price of fuel and preventing its potential shortage, in particular: it is allowed to sell and use

gasoline and diesel fuel that meets the Euro 2 and Euro 3 environmental standards; the VAT rate for the sale of fuel remains reduced to 7% for gasoline, other petroleum products, heavy distillates, liquefied gas, propane, and isobutane.

Crop production is of great national importance. Some products are consumed in their natural form, others, and this is a significant part, are used as raw materials for the automotive and food industries, and some as animal feed. Data on the production of agricultural crops by Ukrainian farms are shown in Table 5.

The analysis of the data in Table 3.5 shows that an important place among crop production in Ukrainian farms is occupied by grain and legume production, which is the basis of crop production and all agricultural production. During the analyzed period, its production has been growing at a fairly rapid pace and in 2022, compared to 2010, it increased by 79%.

Table 5. **Crop production in Ukrainian farms, thousand tons**

Indicator.	**Year**						**2022 to 2010, %, in**
	2010	**2015**	**2019**	**2020**	**2021**	**2022**	
Grains and pulses - total	4703	7650	11490	9649	14195	8407	179
Sugar beet (factory)	1155	619	460	423	517	550	48
Sunflower	1209	2167	3099	2465	3309	2079	172
Potatoes	161	126	94	113	130	108	67
Vegetables	212	283	294	291	243	101	48
Fruit and berry crops	37	68	100	91	161	141	381

Source: State Statistics Service of Ukraine for the relevant years

Sunflower production (up 72%) and fruit and berry crops (up 281%) also performed well in 2022. Due to the war, sugar beet and vegetable production in 2022 decreased by 52% compared to the base year of 2010.

As a result of the Russian invasion, Ukraine has significantly lost cattle, pigs, and poultry, which were concentrated in the territories that are currently temporarily occupied or where active hostilities are taking place (Table 6).

The analysis of Table 6 shows that the number of cattle in Ukrainian farms increased by 17% between 2010 and 2022, and the number of cows by 23%. Due to the war, the number of pigs (-16%), sheep and goats (-31%), horses (-85%), and bee colonies (-44%) has significantly decreased. The destruction of Chornobaivka, Chornobaivka Nova, and Areal-Snihurivka poultry farms by the aggressor country, the bombing of Kyiv Poultry Farm, damage to Makariv Poultry Farm, and others led to a shortage of chicken eggs in the country in the first year of the war.

A well-developed mechanism for the functioning of agribusiness includes a complex system of relations between farmers and the state, cooperatives and large agricultural holdings, as well as market infrastructure entities. The state plays an important role in this mechanism.

Table 6. Dynamics of livestock and poultry in Ukrainian farms, thousand heads, 2010-2022

Indicator.	Year						2022 to 2010, %.
	2010	2015	2019	2020	2021	2022	
At the end of the year; thousand heads							
CATTLE	95,3	106,3	103,3	104,0	110,4	111,4	117
including cows	37,4	41,7	42,9	43,6	46,7	45,9	123
Pigs	294,1	276,1	284	292,9	279,5	247,6	84
Sheep and goats	57,9	43,5	36,1	34,9	36,7	40,1	69
Horses	3,3	1,6	1	0,8	0,6	0,5	15
Rabbits	0,8	4,3	1,5	1,7	3,5	к	
Bird	2878	2539	4535,2	4749,9	5167,1	1590,2	55
Bee colonies, thousand	8,8	5,6	4,6	5,6	6,0	4,9	56
Production of livestock products							
Meat (in slaughter weight), thousand tons	47,6	52,3	69,2	77,4	86,4	76,5	161
Milk, thousand tons	112,1	177,4	209,2	223,6	243,9	255,6	228
Eggs, mln.	78,4	75,5	134,3	132,8	144,2	108,7	139
Wool, t	128	69	49	36	42	31	24
Honey, t	215	120	98	84	121	96	45

Source: State Statistics Service of Ukraine for the respective years.

A well-developed mechanism for the functioning of agribusiness includes a complex system of relations between farmers and the state, cooperatives and

large agricultural holdings, as well as market infrastructure entities. The state plays an important role in this mechanism. The problem is that farms (in Ukraine, the largest number of them are registered in the total number of farms with a cultivated area of 20.1-50.0 hectares), on the one hand, and large agricultural holdings (for example, Kernel Agroholding with 363 thousand hectares of cultivated land (in 2023), which is the largest producer and exporter of sunflower oil in Ukraine, and a supplier of agricultural products to world markets, on the other hand, are not equivalent.

Farms are less competitive in the production of similar types of products. In addition, they produce products that cannot be stored for a long time. This is used by agriholdings to establish their monopoly position on the agricultural market and the market for inputs. They have the ability to dictate prices for crop and livestock products, as well as for inputs, and thereby appropriate a portion of the land rent. This is particularly evident in Ukraine today. Moreover, processing enterprises often refuse to buy products from agricultural enterprises in order to create a shortage of food and raise prices, thus putting them in a difficult economic situation.

Farms are heavily dependent on loans for their operations. The share of loans in the sources of capital investment financing is low, and it has declined since 2018. The main factors behind the decline in the share of loans in sources of investment financing are high bank lending rates and insufficient support for commercial banks' lending to agricultural producers' investment projects. When formulating their lending policies, banks often overestimate inflation expectations and loan interest rates. Budgetary support for agricultural producers plays a certain positive role in lending to them. In particular, in 2023, UAH 9.6 billion, or 60% of its value, is provided for the "5-7-9" credit budget program. However, 98-99% of the support under this program in 2022 is provided for the operating activities of agricultural producers.

Thus, farms are strongly influenced by internal and external conditions, which together contribute to their sustainable development. Ukraine's natural conditions are favorable for farming, and with a large number of trained professionals capable of farming, farming can flourish in Ukraine.

The current conditions of instability in which farms operate necessitate the use of different types of investment strategies to ensure their survival in the face of war.

Farmers should use strategies aimed at producing new types of products while simultaneously developing new markets where a particular farm can most effectively realize its advantages. In a time of war, investment-oriented niche strategies are also a key to farm survival. Farmers should continue to reorient themselves to domestic and local markets, revise crop rotations with the introduction of niche crops that have different logistics and export timeframes. This will reduce the pressure on the currently limited logistics.

Vegetable, berry, and horticultural farming, as well as fish farming, which generate high added value, could become promising niche areas for farms.

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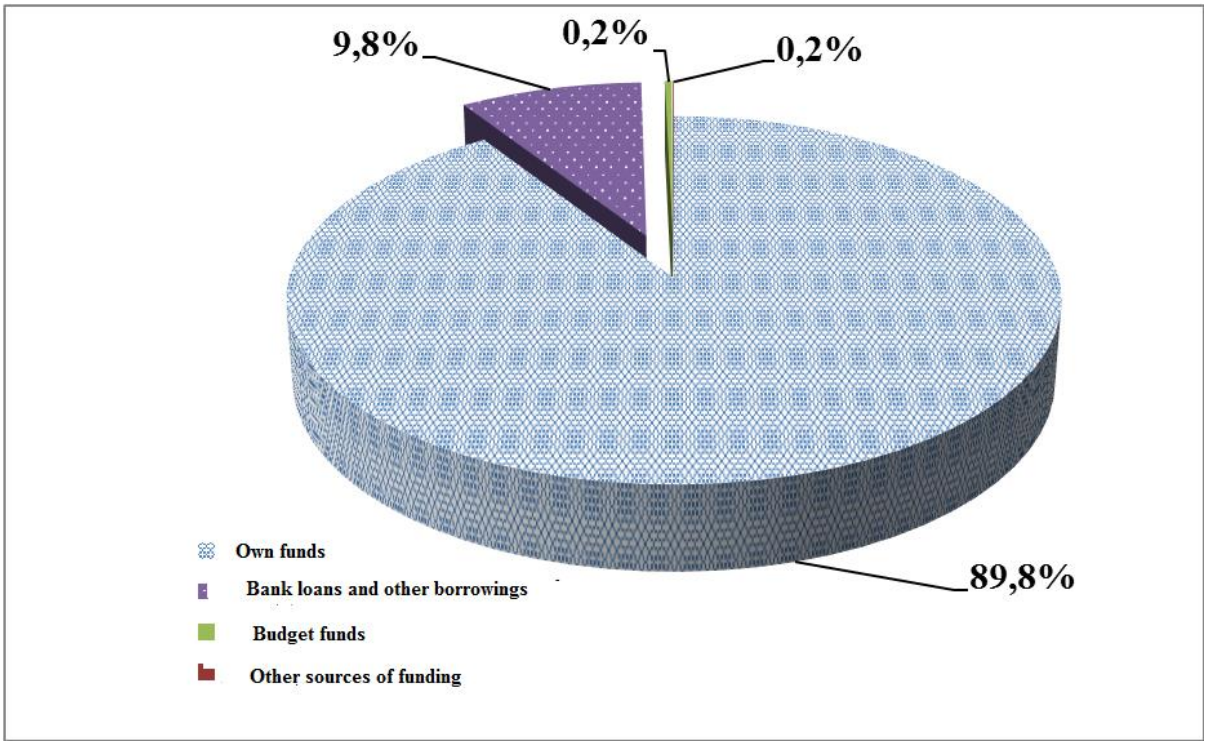
SECTION VI
EVALUATION OF THE EFFECTIVENESS OF STRATEGIES OF INVESTMENT DEVELOPMENT OF FARMS

In the current environment of instability, farms implement strategies that are primarily concerned with the survival of the farm. The evaluation of these strategies in the course of research was carried out by analyzing the state and trends in the development of their ordinary activities, which include operational, investment, and emergency activities.

The development of farms depends primarily on the availability of material and technical means, which are based on material investments - capital investments. Studies of the structure of sources of financing capital investments in agriculture, including in farms in conditions of instability, have shown that the ability of farms in the pre-war years 2018-2021 to attract additional sources of financing was significantly limited (Fig. 1).



Source: Authors' calculations based on data from the State Statistics Service of Ukraine

Figure 1. **Structures of sources of capital investment financing in agriculture**

We take into account that statistical data on small enterprises reflect trends in changes and the level of economic performance of farms. Therefore, the efficiency of Ukrainian farms was calculated based on the data of small enterprises.

The average annual share of own sources of financing for capital investments in agriculture, including farms, was 89.8% in 2018-2021, and bank loans amounted to 9.8%. Budget financing and foreign sources accounted for only 0.4% at that time. Funds and other financial sources were not available at all. The lack of attracted sources of investment financing hinders the development of agriculture and the economy as a whole. It is advisable that the share of borrowed and other sources of capital investment financing should be 25-30%, but not exceed 1/3 of their total volume, which meets the conditions of financial independence and sustainable development of agribusiness.

A monographic study of selected farms in the Cherkasy region, Uman district, established the structure of funding sources in 2023 (Fig. 2).

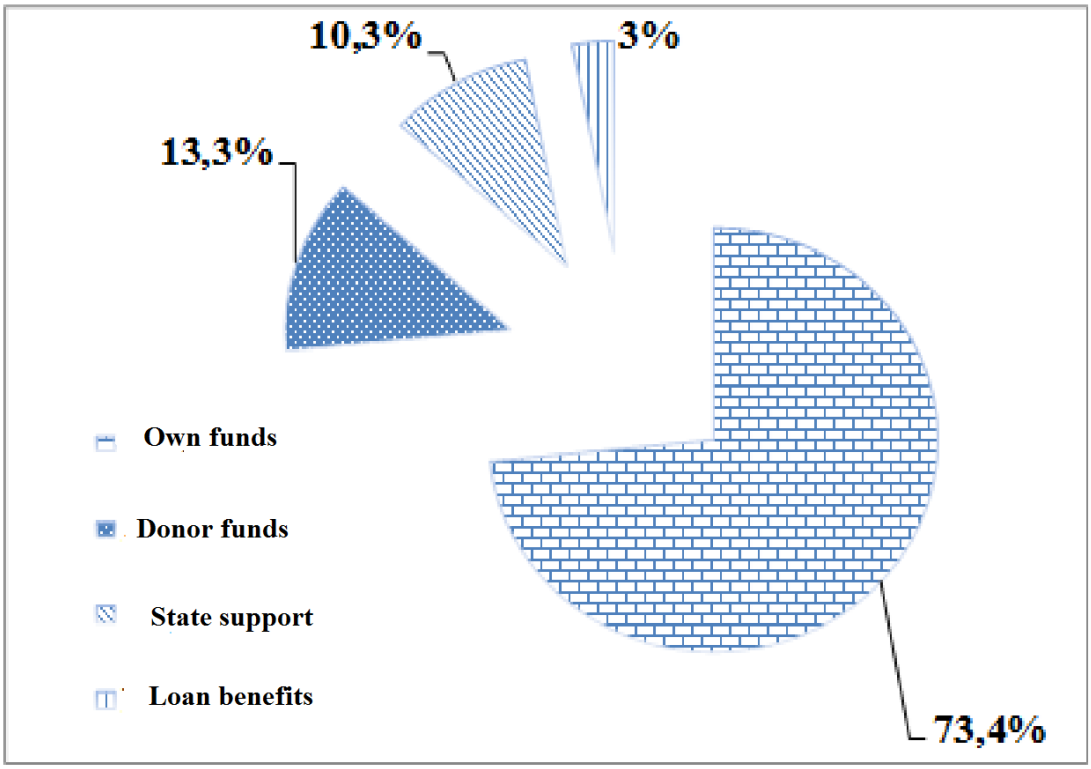


Figure 2. **Sources of financing for farms, 2023**
Source: questionnaire survey of farmers in Cherkasy region, Uman district.

However, during the war, the structure of sources of financing for farms underwent significant changes. In 2023, farmers received support from both the state and international donors. Concessional lending, business development grants, and simply free seeds and fertilizers.

The analysis of Fig. 2 shows that in 2023 there were some changes in the structure of sources of financing for farms. However, the main source is still the farms' own funds (73.4%), due to the war, global donors began to support farms, and grant programs to support family farms appeared (13.3%). State support accounts for 10.3%, and concessional lending for 3%.

A negative feature of the investment process in the national agriculture in the context of its instability and limited sources of financing was the decrease in the participation of small agribusinesses, including farms (Table 1).

Table 1: **Dynamics of the structure of capital investments in agriculture by business entities, 2010-2021**

Year	Capital investments of agricultural enterprises in % of their total				
	Total	in particular			
		great	medium	small	of them, microenterprises
2010	100	5,6	75,2	19,2	3,5
2011	100	к	к	-	-
2012	100	15,3	57,4	27,3	7,0
2013	100	12,1	58,8	29,1	6,9
2014	100	9,4	58,6	32,0	8,4
2015	100	13,1	49,6	37,3	8,8
2016	100	5,4	50,3	44,3	12,1
2017	100	6,9	50,2	42,9	10,1
2018	100	12,4	50,1	37,5	9,3
2019	100	18,4	49,1	32,5	5,7
2020	100	13,6	54,6	31,8	1,4
2021	100	15,8	51,6	32,6	2,1

Source: State Statistics Service of Ukraine "Capital Investments of Enterprises by Types of Economic Activity with a Breakdown by Large, Medium, Small and Micro Enterprises (2012-2021).

While the share of small enterprises in total capital investment was 44.3% in 2016, it was 42.9% in 2017, 37.5% in 2018, and slightly deviated from 32% in 2019-2021. During this period, the share of investments by microenterprises decreased particularly sharply (from 10-12% in 2016-2017 to 1-2% in 2020-

2021.) Conversely, the corresponding share of large and medium-sized agricultural enterprises increased. The decline in the level of investment activity of small enterprises in agriculture is due to the deterioration of their economic conditions, a reduction in state support, and a decrease in their own and borrowed sources of investment financing. Small enterprises sell most of their output to market intermediaries at relatively lower prices. They face higher risks of losing products and property as a result of raider attacks, and have fewer opportunities for lending and government support.

Supporting and stimulating the investment activities of small agribusinesses in an unstable environment should be one of the most important tasks of the state's agricultural policy. This support should be provided through partial compensation of the cost of agricultural machinery and equipment of domestic production, especially for small agricultural producers, credit support for investment projects of small and medium-sized agricultural producers in the amount of 50-70% of the credit rate of an authorized commercial bank, and through other economic and financial mechanisms and organizational measures.

The source of capital investment remains the farms' own financial resources, including profits. The structure of the financial performance of large, medium and small enterprises in agriculture in 2010-2022 is shown in Table 2.

The dynamics of the structure of the financial result of agricultural enterprises of different sizes in 2010-2022 reflects the contradiction between changes in the share of large farms in total capital investments and a decrease in their share in the financial result.

Thus, while the share of large enterprises in total capital investments in agriculture increased during this period, the financial result, on the contrary, decreased significantly. For medium and small enterprises, especially microenterprises, the trend of changes in these indicators is opposite in nature.

Table 2. **Structure of the financial result of business entities in agriculture in 2010-2022, %.**

Year	Total sources	including			
		big	medium	small	In particular, microenterprises
2010	100	15,1	71,4	13,5	1,0
2011	100	к	к	-	-
2012	100	19,8	50,8	29,4	7,1
2013	100	25,6	46,0	28,4	7,3
2014	100	24,3	42,8	32,9	6,9
2015	100	24,3	42,3	33,4	9,2
2016	100	13,4	47,0	39,6	11,3
2017	100	11,7	51,2	37,1	6,0
2018	100	15,8	53,9	30,3	7,0
2019	100	5,4	73,5	21,1	6,3
2020	100	10,7	49,3	40,0	13,2
2021	100	20,2	42,7	37,0	10,6
2022	100	21,4	45,6	33,1	7,7
Average for the years					
2012-2013	100	22,7	48,4	28,9	7,2
2014-2018	100	17,9	47,4	34,7	8,1
2019-2021	100	8,1	61,4	30,5	9,8
2021-2022	100	20,8	44,2	35,1	9,2

Source: calculated by the authors according to the State Statistics Service of Ukraine (Financial results before taxation of enterprises by type of economic activity with a breakdown into large, medium, small and micro enterprises for 2010-2022).

Note: k - data were not made public in order to meet the requirements of the Law of Ukraine "On State Statistics" regarding the confidentiality of statistical information (primary and secondary blocking of vulnerable values).

Possible reasons for such atypical structural shifts in investments and financial results may include large and other business structures concealing their income, channeling their potential benefits to intermediary entities, decreasing profits or even losses of state corporations, implementation of their investment projects with long payback periods, etc.

The formation of investment-oriented strategies for the development of farms is largely determined by the actual level of their sustainability and the procedure for achieving it. Determination of the type of strategy for a farm depends on its readiness to implement various investment-oriented strategies,

which depends on the area of land use, specialization, actual technical and technological level of economic activity, qualification level of management and employees of the farm, their ability to perceive innovations, the level of their cooperation with representatives of scientific institutions and extension services. We propose 6 types of investment-oriented strategies depending on the level of sustainability they achieve (Table 3).

Table 3: **Types of investment-oriented development strategies that can be implemented by Ukrainian farms in the face of instability**

No. n/p	**A group of farmers farms by level of sustainability**	**Type of development strategy**
1.	Explicitly sustainable	Growth strategy
2.	Medium level of sustainability	Strategy for revitalizing operations
3.	Conditionally stable	Strategy for achieving a state of permanent sustainability
4.	With a predominance of instability	Sustainability strategy to improve the level of sustainability
5.	Unstable	Strategy for increasing the level of investment attractiveness of the farm
6.	Unsustainable companies with signs of bankruptcy	Strategy for preventing bankruptcy and restoring solvency

Source: compiled by the authors

Material costs account for up to 60% of the total cost of agricultural production. Therefore, optimizing them through various innovative solutions and reducing their use can be a significant saving for the company. Mineral fertilizers account for 20-25% of production costs, fuel - 15-20%, seeds - 10%, plant protection products - 5%, and electricity - 3%.

An analysis based on farms in Vinnytsia region in 2022 found that the cost of growing major grain crops increased by an average of 30% compared to 2021. For example, while in 2021, 25-30 thousand UAH had to be invested per hectare, and the cost of production per ton of grain reached 4-5 thousand UAH, in 2022 these figures were 35-40 thousand UAH and 7-8 thousand UAH, respectively, taking into account the decrease in yields.

The cost increase would not have been such a problem if grain prices had not fallen at the same time. If in 2021, at a cost of 4 thousand UAH/t, the

average price of grain was 7-8 thousand UAH/t, the level of production profitability was positive - about 50%. This made it possible to cover costs and generate a good profit for development.

In 2022, at a cost of 7.5-8 thousand UAH/t, average grain prices fell in late summer and early fall to 5 thousand UAH, making the production of major grain crops unprofitable. And this is despite the fact that grain prices on world markets have been rising and are currently around $350-400 per ton.

That is, the cost of 250-280 dollars. USD is acceptable for Ukraine, so that farms could feel much more comfortable: 10-11 thousand UAH/t is the level that would cover costs and provide at least a minimum profit for development. Agrarians are well aware of the reasons for this situation: blocked sea routes, large carry-over stocks of grain, part of the unharvested crop in the field, high cost of road and rail logistics, all of which negatively affect the value of the harvest.

In 2021, agricultural producers received the largest profit in the history of Ukraine's independence - about USD 9.00 billion. USD. In 2022, according to the calculations of the scientists of the Institute of Agrarian Economics, the profitability of crop production is expected to decrease to 0.8-1.0 billion dollars. USD.

In 2023, the total income of agricultural enterprises will also decline, as we should expect both a further decline in yields and a minimal increase in production costs. As a result of the rise in price of basic inputs, farmers will have to simplify their cultivation technology: the vast majority of farms have already reduced mineral fertilizer use by 30-50% last year, and there are those that did not use it at all. The average yield of winter wheat will be at best 35-40 centners per hectare, compared to last year's 45-50 centners per hectare. The gross production of winter wheat in the country as the main

grain crop may decrease by 15-20%, and if the occupied territories are excluded, by 30%.

Based on the results of a sample survey and research on the example of small and medium-sized farms in Vinnytsia and Cherkasy regions, scientists of the Institute of Agrarian Economics found that the expected production costs of farms in 2023 will be about 27.0 thousand UAH per 1 ha. This will be only 1.9 thousand UAH (+7.6%) higher than the pre-war 2021 figure of 25.1 thousand UAH (Table 4).

Table 4. **Cost estimates based on questionnaire surveys of farms in Cherkasy and Vinnytsia regions, 2021 and 2023.**

Indicator.	2021			2023		
	Expenses, UAH thousand	%	UAH/ha	Expenses, UAH thousand	%	UAH/ha
Labor costs	1981	11,8	2956	1286	7,1	1919
Seeds and planting material	1276	7,6	1904	1378	7,6	2057
Fuel and lubricants	2024	12	3020	2170	12	3238
Fertilizers	2520	15	3761	4767	26,4	7115
Plant protection products	888	5,3	1325	1386	7,7	2068
Rent	2241	13,3	3345	2200	12,2	3284
works and services of other organizations	450	2,7	672	424	2,3	632
taxes	1447	8,6	2160	1083	6	1617
Expenses for maintenance of fixed assets, current repairs and maintenance	2547	15,2	3801	2739	15,2	4088
including depreciation and amortization	1996	11,9	2979	2146	11,9	3203
Other expenses	1372	8,2	2048	625	3,5	932
Insurance payments	54	0,3	80	8	0,04	12
Total expenses	16798	100	25072	18065	100	26962

Source: sample survey of small and medium-sized farms in Vinnytsia and Cherkasy regions by researchers of the Institute of Agrarian Economics.

Taxes Personal income tax on salary -408641 UAH Personal income tax on rent -406447 UAH Social security tax (rent) 67339 UAH Unified social tax on salary 4756945 UAH Fixed 89124 UAH TOTAL 1447245 UAH*

The way out of this situation could be solutions in the following areas: further unblocking the Black Sea ports, increasing the capacity of the railroad, and gradually reorienting the agricultural sector to processing and

livestock development. But this will require significant investment resources over the next 2-3 years.

The economic activity of any farm is associated with certain costs that have a significant impact on the production of agricultural products and are divided into elements.

The slight increase in production costs is due to a number of cuts. The application of mineral fertilizers will be reduced from 4-5 cents to 2-2.5 cents. The number of main and auxiliary employees, as well as the payroll, will be reduced by almost UAH 1.0 thousand per hectare. In addition, in order to reduce the use of fuel and lubricants, technological operations will be reduced by 20-30%, which will also negatively affect yields due to simplified technologies.

In 2023, the lion's share of material costs is made up of: mineral fertilizers - UAH 7.1 thousand, i.e. 26.4% of all production costs; fuel and lubricants - UAH 3.2 thousand (12.0%), plant protection products and seeds - UAH 2.1 thousand (7.7%).

More than 1/6 of production costs will be spent on the maintenance of fixed assets, current repairs and maintenance. It will amount to UAH 4.1 thousand (15.2%), of which 11.9% will be depreciation charges.

Settlements with shareholders and rent will amount to UAH 3.3 thousand (12.2%).

In addition, the company will spend UAH 1.9 thousand (7.1%) on labor costs and another UAH 1.6 thousand (6.0%) on taxes.

A monographic study on the example of one of the farms of Vinnytsia region, which has an area of agricultural land of 670 hectares under cultivation, investigated the costs in terms of 3 main crops, winter wheat, corn and sunflower (Table 5).

Taking into account these costs, the scientists of the Institute of Agrarian Economics calculated the break-even points of crop yields - the conditions

under which the profit will cover all the costs of the farmer to ensure the cultivation of agricultural products and will be equal to zero.

Table 5. **Estimation of costs of a typical farm in Vinnytsia oblast by crops**

Indicator.	Winter wheat (275 ha)			Corn (205 ha)			Sunflower (130 ha)		
	Costs. thousand UAH	%	1 ha	Expenses thousand UAH	%	1 ha	Expenses thousand UAH	%	1 ha
Labor costs	528	7,3	1919	393	7,0	1919	249	7,2	1919
Seeds and planting material	276	3,8	1004	475	8,5	2317	516	14,8	3971
Fuel and lubricants	657	9,1	2387	694	12,4	3383	539	15,5	4149
Fertilizers	2162	30	7862	1655	29,6	8075	470	13,5	3613
Plant protection products	687	9,5	2500	216	3,9	1052	334	9,6	2567
Rental fee	903	12,5	3284	673	12	3284	427	12,3	3284
Works and services of other organizations	174	2,4	632	130	2,3	632	82	2,4	632
Taxes	445	6,2	1617	331	5,9	1617	210	6	1617
Expenses for maintenance of fixed assets, current repairs and maintenance	1124	15,6	4088	838	15	4088	531	15,3	4088
including depreciation and amortization	881	12,2	3203	657	11,7	3203	416	12	3203
Other expenses	256	3,6	932	191	3,4	932	121	3,5	932
Insurance payments	3	0,05	12	2	0,04	12	2	0,04	12
Total expenses	7215	100	26237	5599	100	27311	3482	100	26784

Source: monographic study

In 2023, the break-even point for winter wheat yields will be 60.0 c/ha at the market price of 1 ton of wheat at UAH 4,500 (as of September 19 this year);

corn for grain - 67.5 c/ha at the price of 1 ton at UAH 4,000; sunflower - 27.0 c/ha at the price of 1 ton of this crop at UAH 10,000.

Given the lower yields of these crops and the production costs incurred, growing these types of agricultural products will be unprofitable for the farmer.

In the context of Russia's full-scale invasion of Ukraine, he noted, financial support provided by the state to small farms up to 120 hectares in the amount of UAH 3,100 per hectare is extremely important, as well as support from donor countries that provide funds for the purchase of mineral fertilizers and seeds by farms. Another successful form of support for agricultural producers is lending under the 5-7-9 program for capital expenditures for the purchase of agricultural machinery and equipment.

One of the emergency activities of farms is their insurance against unforeseen events. Farm insurance is a real help to farmers. Currently, there are a large number of insurance companies in Ukraine that offer insurance services to agricultural enterprises. One of them is ASKA Insurance Company. It provides insurance services to farms in the following areas: insurance of agricultural machinery (tractors and various types of self-propelled machines), farm animals, winter crops, yield index insurance and other insurance services. In addition to the standard risks, there is also risk coverage: "Errors in service during agricultural operations". Such errors may be unintentional actions of persons that result in the overturning of the insured object or its collision with other objects within the insurance contract area.

In today's challenging environment, to ensure further break-even production, farms must strengthen the economical use of material resources while introducing innovative solutions and smart management and planning.

SECTION VIII
STRATEGY AND PROSPECTS FOR INVESTMENT DEVELOPMENT OF FARMS

The strategy for the development of the agricultural sector of Ukraine's economy should be aimed at forming an effective social sector of the state's economy capable of meeting the needs of the domestic market and ensuring leading positions in the world market.

The goal of the investment-oriented strategy should be to develop farming as a highly efficient, domestically and internationally competitive sector of the economy that ensures food security, production of high-quality agricultural products in volumes sufficient to meet the needs of the population and processing industries, and a reliable economic basis for socio-economic development of rural areas.

Based on the above, the main goal of ensuring the sustainable development of a farm should be to solve the most urgent strategic tasks of the farm with the minimum expenditure of resources involved.

A number of scientists such as Yu. Lupenko, M. Malik, O. Shpykuliak, and V. Mamchur have developed a concept for the development of family farms for the period up to 2030, the implementation of which will make it possible to form a strategically important way of family farming to significantly influence the sustainable development of agriculture and rural areas. It will ensure systematic, comprehensive and predictable state policy for the development of family farms, as well as stimulate the de-shadowing of agriculture, in particular through legislative improvements to the taxation system in the field of land relations and agricultural entrepreneurship. Promote official employment and income legalization through preferential taxation. Introduce a transition period for changes in the tax burden for family farms, expand the economic basis for the development of rural communities and rural development policy; increase

the capitalization of family farms. It will increase the production of niche agricultural products, guaranteeing the creation of additional favorable conditions for effective rural employment. It will also ensure the development of rural areas and the preservation of the rural way of life as part of the priorities for achieving the Sustainable Development Goals.

Farming is a very laborious business that farmers spend 30 to 35 years of their lives doing, so it is advisable for them to develop current strategies that cover a period of 1-2 years, as well as long-term strategies of 5-10 years.

Strategic management is the basis of management, and the activity of creating and implementing a strategy in fact sooner or later affects any management work in every enterprise. Based on this, it is possible to formulate general principles on which the strategic activities of farms should be based:

1) Each farm is an open socio-economic system that changes, develops and restructures in a dynamic, often unfavorable environment;

2) Newly established farms have a high level of flexibility and reactivity, which allows some of them to ensure survival. Then they become slower, which means that special measures need to be developed for change and development, which take the form of a more or less sound strategy that takes into account both external and internal factors;

3) The consistent development of a farm is associated with the formulation of clear, simple and achievable goals, which are embodied in a system of technical, economic, quantitative and qualitative indicators (e.g., profit, product quality), as well as in a system of strategies for achieving them, which are interpreted in a "strategic set";

4) Even if a strategic management system is applied with a focus on a "strategic set," there comes a time when it loses its relevance and begins to hinder the development of the farm. To avoid this negative situation, strategies need to be constantly reviewed and updated;

5) The mechanism of farm operation should include a strategic subsystem aimed at compiling, analyzing and reviewing the balance of external and internal factors, formulating goals and development strategies that provide for the development and adjustment of measures to shape the environment, within possible limits, and adapt the farm to it. Experience shows that most farms that focus only on internal problems fail;

6) support for changes and innovations of various types should be provided by an effective system of motivation, social and psychological support that facilitates strategic actions;

7) Ensuring the dynamism of changes by accelerating practical actions to implement strategic plans based on an appropriate system of regulation, control and analysis;

8) creating a production capacity and a system of external relations that are conducive to change and enable the achievement of future goals.

9) For financially unstable farms, an additional principle is the application of anti-crisis measures.

When determining the principles of forming an investment-oriented strategy for the development of a farm, it is important to take into account the interests of all participants in the economic activities of farms, as well as to harmonize the use of economic, labor and material resources with a focus on continuous improvement of social efficiency.

An investment-oriented development strategy is necessary for any farm that wants to succeed in order to determine the direction in which it will develop. In essence, the choice of strategy for a farm means that out of all the possible ways of development and ways of action that are open to the farm, it chooses a specific direction.

Investment strategies for farms differ because their managers have different ages, levels of education, skills, and experience. Therefore, their farm development strategies are different:

- Moderate development strategies: they should be used by farmers who have reached an advanced age;
- strategies of active (offensive) development (inherent in young farmers who are more active and mobile);
- strategies with a broad front (innovative).

Farms should develop and implement these types of innovation strategies in the course of their development:

1) a defensive strategy that involves a set of countermeasures aimed at preventing other farms from entering the market. It also takes into account changes in market tastes and needs;

2) imitation innovation strategy, which aims to minimize risk, so farms copy successful innovations of other farms;

3) Dependent innovation strategy is characteristic of farms that are at a certain stage of a single technological chain with cooperative principles. At the same time, their products are not crucial for the production of the final product. Therefore, the innovation strategy of such farms depends on the requirements of those farms that are the main ones in the cooperative ties;

4) Traditional innovation strategy - typical for farms where innovations are fixed for a relatively long period of their life cycle;

5) The innovation strategy of "by chance" is acceptable for farms that do not conduct their own R&D activities, but use the information and opportunities in the external environment that are most available.

The innovative activities of farms are driven by increased competition in the agricultural market and Ukraine's integration into the international economic space.

An investment-oriented farm development strategy is a system of strategic goals that should include environmental sustainability. Therefore, the farmer is faced with goals, the achievement of which will ensure the strategic advantages of his farm over competitors.

Farms should achieve their goals through the use of technological, organizational and economic levers and tools, as well as operational, financial, investment, social and environmental policies.

The main strategic goals of farm development, taking into account the goal, can be:

- ensuring the sustainable position of the farm. The main goal is to reproduce the production and sale of products, resources, capital, reduce production costs, strengthen market competitiveness, determine the amount of investment and its directions;

- development of new areas of development, which aims to elaborate a structural policy, introduce new technologies, and develop information systems.

- ensuring optimal profitability - determined by the volume of sales, the level and rate of return on the invested capital or assets of the farm, as well as the rate of annual growth in sales and profit, capital structure, and price.

The goals of sustainable development of a farm should be determined by such principles as profitability, sustainability, or new directions of development.

As a result of the ranking, the goals of farms can be divided into the following categories: profitability, sustainability, and new directions of development.

In addition to the above goals, farms should focus on different goals by the timeframe for achieving them, i.e., define long-term and short-term goals.

Long-term goals have two functions:

1. Setting goals for five or more years in advance encourages farmers to act now to achieve long-term targeted results in the future (a farm that aims to double its production within five years cannot wait until the third or fourth year of its strategic plan to start increasing production and markets).

2. Having defined long-term goals encourages farmers to weigh the consequences of their current decisions in terms of long-term outcomes. The

problem with short-sighted decisions is that they put the farm's long-term market position at great risk.

Short-term goals reveal the immediate and short-term results to be achieved. They show the speed at which the farm should develop in each area and the level of performance planned for the next two or three current periods. The short-term goals of the farm may be identical to the long-term goals in certain periods when the farm, in achieving its strategic goals, solves strategic tasks. For example, if a farm has a long-term goal of achieving a 20% increase in profits, and each year and in each period of time it strives to get closer to this goal, then the short-term and long-term goals for achieving profit growth are the same.

Long-term and short-term goals of farms may not coincide. This situation arises in the process of achieving some complex, multi-parameter goal, when the interaction of several different target areas is necessary at each segment of short-term planning.

Decisions on investment strategy are inextricably linked to the level of financial achievement of the farm. When making a particular strategic decision, choosing a particular goal of his farm, the farmer must evaluate and rationally use the total resources available to the farm.

However, investment strategies for family farms, medium-sized farms, and large farms differ.

Strategies for family-type farms should ensure maximum savings in production costs, reduce the consumption of net profit and use it for investment, gradually reorient it to the production of new less capital-, labor- and energy-intensive and knowledge-intensive products oriented to the domestic market and implement farm projects to jointly promote such products to the market.

Since medium-sized farms have limited opportunities to acquire additional land, they should choose strategies to deepen specialization and increase production concentration, prioritize the use of income for investment,

cooperate and integrate with processing enterprises, and participate in sales on domestic and foreign markets.

Large farms should develop strategies that include the creation of high-tech production, processing, storage and marketing facilities, the establishment of auxiliary industries, facilities for the provision of agrotechnical and other services, cooperation and integration with industrial and other entities, and orientation to domestic and foreign markets.

Strategic measures for the sustainable development of farms should be implemented on the basis of an appropriate science-based investment-oriented strategy, which includes the main components of actions to achieve the strategic goals and directions of farm development (Fig. 1).

The scheme of farm development presented in Fig. 1 of the scheme of farm development takes into account that the strategic goal of this development should be understood as the most appropriate performance by farms of their functions and activities based on strategic goals, targets and priority areas of development of the agricultural sector of the economy.

The problem of reproduction of fixed assets is key to ensuring sustainable development of farms. Significant financial and other resources are required to maintain fixed assets in good condition. An important aspect of managing the process of reproduction of fixed assets of a farm is the selection of optimal sources of financing for this process.

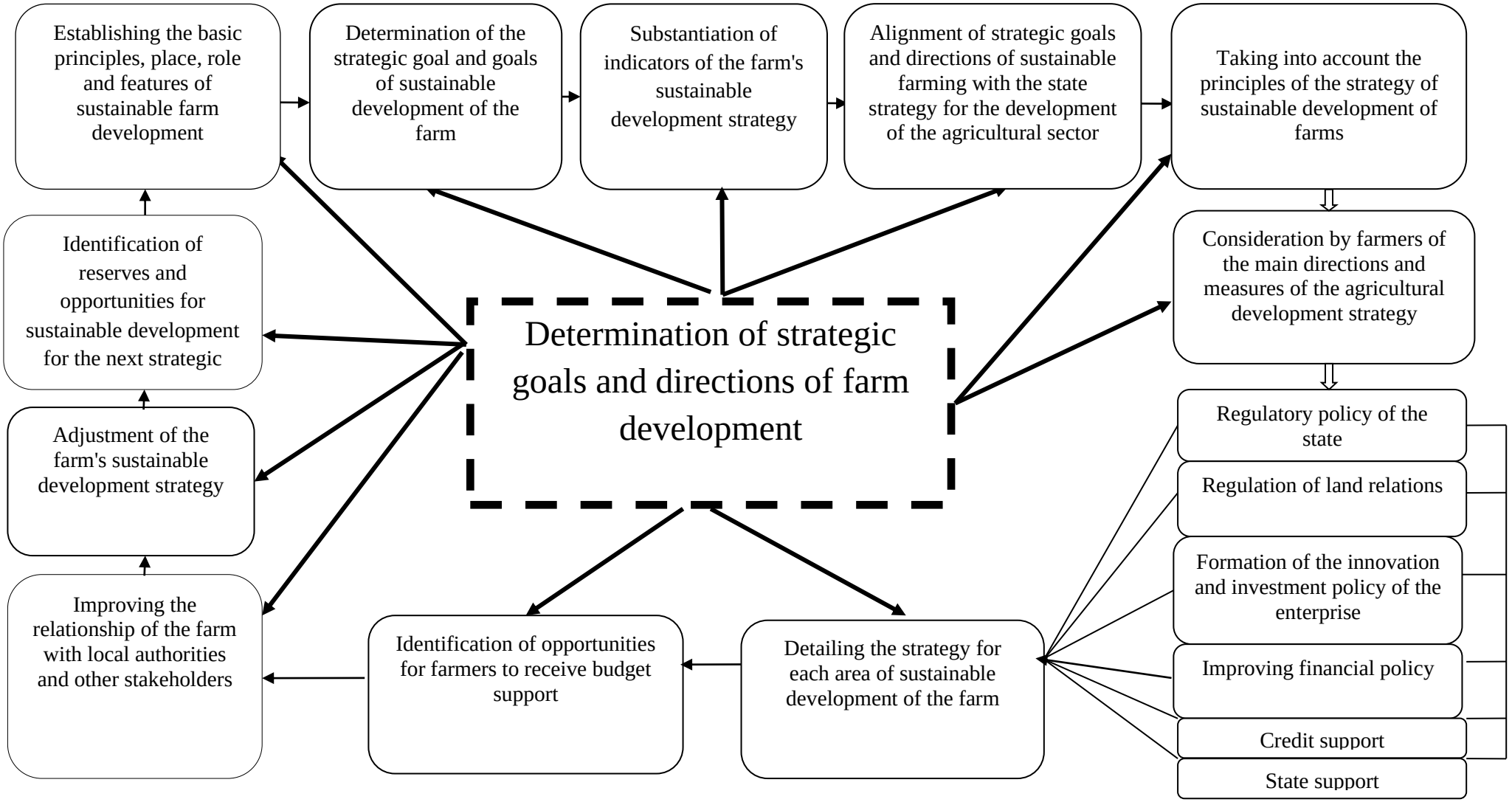


Figure 1. **Defining strategic goals and directions for farm development**

Source: Authors' research.

The development of farms requires capital investments. Therefore, an investment strategy should be part of the farm development strategy. The level of machinery renewal in this sector is 10% of the need. Currently, capital expenditures are hardly financed, especially the costs of livestock reproduction and planting perennial crops. Currently, various mechanisms of rural lending are not sufficiently used so that the financial market can meet the diverse needs of rural areas in terms of purpose and cost.

In the future, the dynamics of agricultural development, and farms in particular, will be significantly influenced by the nature of innovation processes.

According to V.O. Ivanchenko, in addition to the production of basic traditional products, farmers, as entrepreneurs, in search of their niche in the domestic and foreign markets, can specialize in crop production: growing medicinal plants, mushrooms, flowers, fruit seedlings, berry plants, ornamental plants, vegetable and melon seeds, etc.

The structure of capital is related to the peculiarities of each of its components, i.e. equity and debt. On the one hand, a company that uses only equity capital has the highest financial stability, and on the other hand, a company that uses borrowed capital has a higher financial potential for its economic development (by generating additional assets) and the possibility of increasing the return on equity.

Studying the policy of the capital valuation strategy, T.V. Golovko and S.V. Sagova considered this issue from the point of view of optimizing the capital structure. In their opinion, optimization of the capital structure is one of the most important and complex tasks that are solved in the process of strategic assessment of enterprise financing in modern conditions.

When developing a strategic policy for the capital structure of a farm, an important task is to forecast a capital structure that, at the lowest cost of capital, will help maintain stable incomes for farmers. Financing from external sources

is effective for the farm, but up to a certain point. The benefits of financial leverage disappear for farms that have too much debt in their capital structure, which increases risk and the potential for insolvency.

When choosing development strategies, farms should give preference to those that provide for expanded capital reproduction and consistently choose for implementation those strategy options that provide first high (12%), then medium (9%) and moderate (6%), and finally low rates (1-3%) of capital reproduction. Enterprises that ensure expanded capital reproduction should implement a growth strategy, those with medium rates should implement a strategy of intensifying their activities, and those with moderate rates should implement a strategy of achieving a state of permanent sustainability. In the presence of simple capital reproduction, a strategy for increasing the level of sustainability should be formed.

The main objective of strategic capital analysis is to optimize the ratio between equity and debt, which results in the highest profit for the business.

When making any decision, a farm must evaluate and utilize its resources, including its own:

- own - family reserves, income from operating activities of the farm, income from long-term financial investments, working capital immobilized in investments, additional capital, reserve capital;
- borrowed funds - bank loans, targeted government loans, investment loans;
- borrowed - unreimbursed targeted financing, loan debt, etc.

In wartime, farmers are increasingly exposed to force majeure circumstances. Given that some territories have been or remain temporarily occupied by Russian aggressors or are in the area of hostilities, unpredictable changes in the logistics chains of supply of inventory and sales of finished products are taking place. This forces farms to change their specialization and

production technologies in a short time. In addition, about 20% of the domestic market remains inaccessible to farmers.

Due to the actual shutdown of the grain corridor, the European embargo on Ukrainian agricultural products and the difficulty of farmers' adaptation to the economic shocks of the first year of the war with Russia, grain exports will be significantly limited in the 2023-2024 marketing period. Given the current conditions, in order to avoid losses, farmers should review their business objectives and strategies during the crisis period, with the key goal of transforming their goals from profit to successful market functioning.

Diversification programs and niche strategies may be acceptable for family farms in the current environment. Diversification should be viewed as the production of new types of products with the simultaneous development of new markets. For a farm, diversification means choosing the type of activity in which a particular farm can most effectively realize its advantages. Farmers should continue to reorient themselves to domestic and local markets, revise crop rotations with the introduction of niche crops that have different logistics and export timelines. This will reduce the pressure on the currently limited logistics. Promising niche areas for farms could include vegetable, berry, and horticultural production, as well as fish farming, where high added value is generated.

Land resources are necessary for all sectors of the national economy, but their role in different spheres of social production is different. While in industry, except for mining, land is only a spatial basis, in agriculture it is the main means of production [4, p. 206].

The introduction of a land market and the lifting of the moratorium on land sales in the country could provoke a total sale of land for nothing. In 2023, the average price per hectare is 39 thousand hryvnias. In 2022, agricultural land plots were sold for an average of UAH 99 thousand per hectare [See

https://www.dw.com/uk/dva-roki-rinku-zemli-v-ukraini-masovogo-skupovuvanna-dilanok-ne-vidbulosa/a-66141699].

Due to the war in the occupied, de-occupied and other affected territories of Ukraine, investment activities of farmers have been completely or partially suspended. The costs incurred are used to restore destroyed facilities, support economic activity and other similar needs. These losses can be fully compensated through investments only in the post-war period.

Almost 8 million hectares of fields are mined, which will cost $800 million a year, of which funding sources account for $280-320 million, or more than UAH 11 billion.

According to the Ministry of Agrarian Policy of Ukraine, the explosion of the Kakhovka HPP caused losses, which, according to preliminary estimates, could amount to up to $10 billion over the next five years, or $700-800 million in potential sources of investment financing per year. Investors' environmental losses have increased significantly. More than 200,000 hectares of land have been contaminated by mines and unexploded ordnance. Due to the war, 40% of households in rural areas have stopped their economic activities, and therefore will not make their numerous small investments in its development.

The traditional areas of agricultural production intensification in the future will be mechanization, reclamation and chemicalization [8]. The modern directions of agricultural production intensification are: breeding and seed production, genetic engineering, the use of biotechnology and microprocessors for growing crops in closed ground and in livestock production [10].

The purpose of intensifying the production activities of a farm is to increase the output of high-quality products per unit of land area or per head of livestock, as well as to improve the economic efficiency of agricultural production.

An important area of intensification for farms will be the introduction of comprehensive mechanization and automation of production, which involves

the creation of high-performance and advanced machine systems tailored to the specifics of farm production. Of particular importance is improving the quality and reliability of agricultural machinery, which is the basis for high efficiency of its use.

In the process of farm intensification, it is envisaged to use the most modern machinery and equipment that can significantly increase labor productivity and production efficiency [5].

Balanced fertilizer application increases soil fertility and provides high production efficiency for agricultural producers (Tables 1 and 2).

Table 1. **Application of mineral fertilizers (in active substance) by agricultural producers in Ukraine, 2010-2022**

Indicators.	**2010**	**2015**	**2019**	**2020**	**2021**	**2022**
Planted for the harvest of the reporting year, thousand tons	1064	1415	2143	2489	2584	1832
nitrogen (N)	777	1468	1468	1716	1770	1214
phosphorus (P_2O_5)	158	223	367	433	451	324
potassium (K_2O)	129	207	308	340	363	294
Fertilized area, thousand hectares	12614	14455	16370	16378	16732	12734
Share of fertilized area, %.	70	81	91	93	92	88
Fertilized area per 1 ha, kg	84	98	131	152	154	144
sown area	58	79	119	140	142	126
Planted under agricultural crops, thousand tons	1061	1412	2139	2484	2580	1828

Source: State Statistics Service of Ukraine for the respective years.

The actual rise in natural gas prices in 2021-2022 led to an increase in mineral fertilizer prices, as it forms 70% of the price of mineral fertilizers. In general, the chemical industry of Ukraine consumed 6.0-8.5 billion cubic meters of natural gas in the pre-war period. The main consumption of natural gas was for the production of mineral fertilizers: 75% of it is used as a raw material for

fertilizer production, and 20% is used as energy. It should be remembered that the share of natural gas in the cost of nitrogen fertilizer production is 80%.

As a result of the current increase in gas prices, fertilizer prices in Ukraine reached their highest level since the country's independence in October 2021. At the same time, both domestic and imported products have risen in price.

While at the beginning of 2021, domestically produced ammonium nitrate (nitrogen fertilizer) cost 9000 UAH/t with delivery, in 2023 it is more than three times more expensive - 27000-30000 UAH/t. Urea (concentrated nitrogen fertilizers) with delivery is now sold at 28000 UAH/t, or almost three times more expensive. At the same time, not only nitrogen fertilizers, but also complex fertilizers such as nitrogen+phosphorus+potassium are rising in price. Nitroammophoska costs between UAH 15,000 and UAH 18,600 per ton, which is 50% more than pre-war prices.

Farmers will definitely reduce the use of fertilizers, as the additional effect of their use does not compensate for the cost of their purchase. First and foremost, small and medium-sized farms and family farms with small land holdings of up to 400-500 hectares and insufficient working capital to purchase fertilizers will be affected. While the share of fertilizer costs in the structure of production costs of all enterprises was 13.7%, in farms this figure reaches 20-25%. As a result, farms are experiencing a decrease in crop yields and profitability, primarily in the first place.

According to the calculations of the Institute of Agrarian Economics, the rise in gas prices to UAH 20-28 thousand per 1000 cubic meters will lead to a rise in the price of mineral fertilizers by -UAH 4055 -billion in 2022 if their application was at the level of 2020-2021. As a result, the production cost of agricultural products will increase by 10-12%. If we also take into account that the rise in gas prices will also lead to an increase in the cost of electricity, fuel, other direct costs and payments for the services of third-party organizations that

also include gas consumption in the cost of their products, this will add another -35% to the -production cost of agricultural products.

The rise in fertilizer prices will affect the choice of crops in the spring of 2023, and crop cultivation technologies will be adjusted. Given the current situation on the mineral or other fertilizer market, farmers will have to significantly reduce their use and possibly their sown areas, which will lead to a shortfall in the harvest in 2023. Farmers will face a choice: either to reduce the area under crops or to sow the same amount of crops but apply less fertilizer.

The consequence could be an inevitable reduction in production, an increase in production costs, and a rise in prices for socially important food products. This may also affect the export of domestic agricultural products. There may be a reduction in the area under energy-intensive crops, such as indoor and outdoor vegetables, potatoes, and sugar beets, which will become unprofitable due to the rise in the cost of mineral fertilizers and fuel and lubricants.

Soil depletion is a natural phenomenon that every farmer faces. Plants extract nutrients from the fertile soil layer, and this becomes a major cause for concern as its condition deteriorates. The use of organic fertilizers allows you to create healthier soil, saturating it with useful elements, improving its structure and making it more nutritious. The organic fertilizers used by farms include bedding and non-bedding manure, poultry manure, peat, sapropels, and various composts. The dynamics of organic fertilizer use by Ukrainian agricultural producers in the period from 2010 to 2022 is shown in Table 2.

Organic fertilizers help to retain water and nutrients, increasing the fertility of the field. Their use provides plants with the necessary nutrients and increases yields.

Table 2: **Application of organic fertilizers by agricultural producers in Ukraine, 2010-2022.**

Indicators.	2010	2015	2019	2020	2021	2022
Planted for the harvest of the reporting year, thousand tons	9964	9663	10430	10223	10746	9728
Fertilized area, thousand hectares	406	442	773	961	1032	736
Share of fertilized area, %.	2,2	2,5	4,3	5,4	5,7	5,1
Applied per 1 ha, kg processed area	24350	21811	13419	10600	10381	13222
sown area	544	539	578	576	590	670
Planted under agricultural crops, thousand tons	9874	9636	10406	10210	10721	9716

Source: State Statistics Service of Ukraine for the respective years.

Protecting plants from pests, diseases and weeds is one of the most important factors that ensure stable high crop yields. In Ukraine, more than 3000 species of pests have been registered that damage useful plants, of which 680 cause significant damage, 480 species are pests of crops and 200 species are pests of forests. According to the FAO, more than 40% of crops are lost annually to pests, including about 37% before harvest and 9% during storage. Modern plant protection is based on a significant amount of information characterizing the spread, development, and economic importance of pests. Only as a result of timely receipt and full processing of this information can optimal decisions be made that ensure the preventive nature of protective measures and their high profitability. By using the required amount of pesticides, an agricultural producer can save up to 10 centners of wheat, 95 centners of sugar beet, 40 centners of potatoes, and 15 centners of fruit per hectare. The use of pesticides by agricultural producers in Ukraine in 2019-2022 is shown in Table 3.

Table 3: **Pesticide application by agricultural producers in Ukraine, 2019-2022**

Indicators.	Year			
	2019	2020	2021	2022
Applied under the crop of the reporting year, thousand tons	24,3	24,6	27,0	19,4
Cultivated area, thousand hectares	16136	16136	16644	12914
Share of cultivated area, %.	90	91	91	89
Applied per 1 ha, kg fertilized area	1,5	1,5	1,6	1,5
sown area	1,3	1,4	1,5	1,3
It is used for agricultural crops. crops, thousand tons	23,9	24,2	26,5	19,1

Source: State Statistics Service of Ukraine for the respective years.

The use of biological products has a number of advantages over chemical plant protection products, including: high biological activity against susceptible pest species; aftereffect, which manifests itself in the death of pests in subsequent developmental stages and in subsequent generations; no development of resistance in insects to microorganisms; the possibility of using them in different phases of plant vegetation and no threat of accumulation of toxic substances in the environment.

The development of biologization of plant protection in Ukraine is an important issue, the successful solution of which determines the level of competitiveness of agricultural products in the global, European and domestic markets, especially at the current stage, when Ukraine is on a course to the market of organic crop production grown with the predominant use of biotechnology and minimization of chemicals.

Due to the unpredictability of the market, most farmers will make decisions on plant protection products for the spring sowing season in February-March. However, there are systemic farms that, despite all the difficulties, manage to work as planned, so they are already contracting and purchasing the necessary crop protection products. Today, it is difficult for agricultural

enterprises to prepare for the season, as it is impossible to predict the area of crops for the 2023 harvest. So it is possible that some plant protection products may be in short supply. Logistics and the ability to store in warehouses add to the difficulties, as some products require electricity.

We believe that there will be a minimal rise in the price of plant protection products by 3-5%. Moreover, the government has extended the validity of the license for storage, transportation and use of pesticides for another 90 days after its termination or cancellation.

Land reclamation is also an important area of crop production intensification, which ensures increased productivity of agricultural land and economic efficiency of production. Land reclamation is an effective factor and, in many cases, a prerequisite for improving land fertility, which is the basis for high and sustainable crop yields.

For farms, an alternative to chemical plant protection against pests and diseases is biological protection with the help of entomophages and entomopathogens [4, p. 608]. In the future, the use of such entomophage as trichogramma is promising. Its use on winter wheat against the bollworm provides (according to research institutions) an increase in yield by 1.6-2 c/ha, on corn against the stem borer by 1.8-2.3, on cabbage against the bollworm and whitefly by 20-30, on peas against the bollworm and moth by 1.3-1.8, on sugar beet against the bollworm and meadow butterfly by 15-20 c/ha.

At the current stage, it is time for the formation of the sixth technological mode in the economy, so the next stage of the push for sustainable farm development will be based on nanotechnology, biotechnology, genetic engineering and molecular biology, which will significantly improve the efficiency of agricultural production.

Today, crop and livestock breeding is one of the most effective areas of intensification. This direction is associated with the development of high-

yielding crop varieties and highly productive breeds of livestock and poultry and is one of the agrobiological factors of intensification.

Farmers should use the advances in biotechnology, which offer great opportunities to dramatically increase the potential productivity of plants and animals.

In the strategic perspective, it is especially important for farms to use the biological product Baikal EM-1, which helps to ensure cost-effective supply of high quality food products in agriculture while carefully using natural resources.

This biological product promotes the cultivation of environmentally friendly agricultural products. The fruits of plants have a high content of nutrients and are stored for a long time. The taste and quality of fruits are improved (higher content of vitamins, carotene, starch, protein, etc.). "Baikal EM-1" increases the yield of vegetable crops by 2-5 times, and grain and fodder crops by 10-50%. Inhibits the growth of harmful microorganisms, protecting germinating seeds and plants from diseases. Effectively restores soil fertility by recycling organic matter, which increases the amount of nutrients readily available to plants. One liter of EM preparation is enough to produce 1 ton of EM compost, which replaces 5 tons of organic fertilizers. Farms in the Cherkasy region mainly specialize in growing crops, primarily corn and grain. A monographic study of the Monastyryshche district of Cherkasy region found that the main share of corn production is 59% and winter wheat 38%, while other crops account for 3%.

Farmers do not engage in livestock farming because they do not have sufficient funds to develop this capital-intensive industry. Moreover, the production of most types of livestock products is still unprofitable [8].

When justifying the specialization of farms, it is necessary to perform sequential calculations, which include the following: justification of the farm's need for a resource base (land, machinery and equipment, labor resources, buildings and structures, financial resources) [6]; study and preliminary

selection of alternative options for the intended specialization of production [5]; analysis of the estimated production costs and possible profits from each of the industries and their combination [11]; determination of the amount of investment or authorized capital for

In addition, the choice of production direction and specialization should be assessed taking into account the advantages of running efficient industries, their more effective compatibility, high natural and climatic adequacy to local natural and climatic conditions, their competitiveness in the context of market transformation, and the lowest risk of operation.

For a farm to be productive, it must be specialized in both livestock and crop production. The farmer should choose the option of farming that is most profitable under the given conditions. In this case, the farm may have both a partial and a complete production cycle.

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SECTION IX
STRATEGIC NATURE OF INVESTMENT ACTIVITIES OF FARMS DURING THE WAR AND POST-WAR RECONSTRUCTION

Ensuring the development of farms in the strategic perspective will depend on the creation of favorable conditions and indirect support for farmers' investment activities. This is relevant in any scenario of military operations, political, economic and other changes in the country and the world. The future nature of the investment development of farms will largely depend on eliminating the risks of war, as well as a system of measures to create a favorable investment climate for private investment, its security and indirect support.

During the war and the postwar period, it is necessary, first of all, to provide budgetary assistance for the demining of agricultural land and the restoration of destroyed farm property. It is especially important to take measures to counteract the investment crisis. To this end, investment and other support for agriculture should be reoriented to meet the needs of farmers, especially in the frontline and other areas affected by the war. Support and stimulation of investment activity of farms in the conditions of war should be carried out through partial compensation of the cost of agricultural machinery and equipment of domestic production, credit support for investment projects in the amount of 50-70% of the credit rate of an authorized commercial bank and through other economic and financial mechanisms and organizational measures.

In order to increase investment in farms in the postwar period, it is necessary to:

1. Reinstate the Program of partial compensation for the cost of agricultural machinery and equipment of domestic production and extend this program to mini-machinery and equipment for farms.

2. Provide state aid for the establishment of a new farm.

3. Expand credit support for investment projects of family farms.

4. Develop and disseminate model investment mini-projects for small farms, as well as introduce a mechanism for their preferential lending.

5. Develop a mechanism to compensate for the loss of capital investments in farms as a result of military aggression;

6. Develop a procedure for assessing the losses of capital investments of farms as a result of the war and prepare relevant materials for further use.

7. Promote innovation, start-ups and the realization of new business ideas of farmers.

8. Organizationally promote the expansion of the network of agricultural service cooperatives for the joint use of agricultural machinery and participation of small farms in them.

9. Introduce a mechanism for reimbursing investors for the construction of manure storage facilities on livestock farms, wastewater treatment plants, land, water and environmental protection measures.

10. Promote the development of organic farming infrastructure.

Farming in the strategic perspective will remain uncertain and risky, as it is affected by war-related risks, weather conditions, legislation, state and local governance. Therefore, when developing any investment-oriented strategy, a farmer should pay considerable attention to risk diversification. To this end, it is necessary to strengthen the typical organizational form of agricultural production of a farm with auxiliary enterprises and industries, primarily for processing agricultural products, providing services for the sale of products, consumer services, etc.

In addition to meeting their own and their families' needs, farmers will participate in solving social problems in rural areas, primarily employment, and attracting credit and own funds from farms, as well as funds from relevant government and non-government programs and funds, and equity capital. The formation of economic relations is aimed at ensuring profitability, taking into

account the normative level of effective activity of participants with invested capital (Fig. 1).

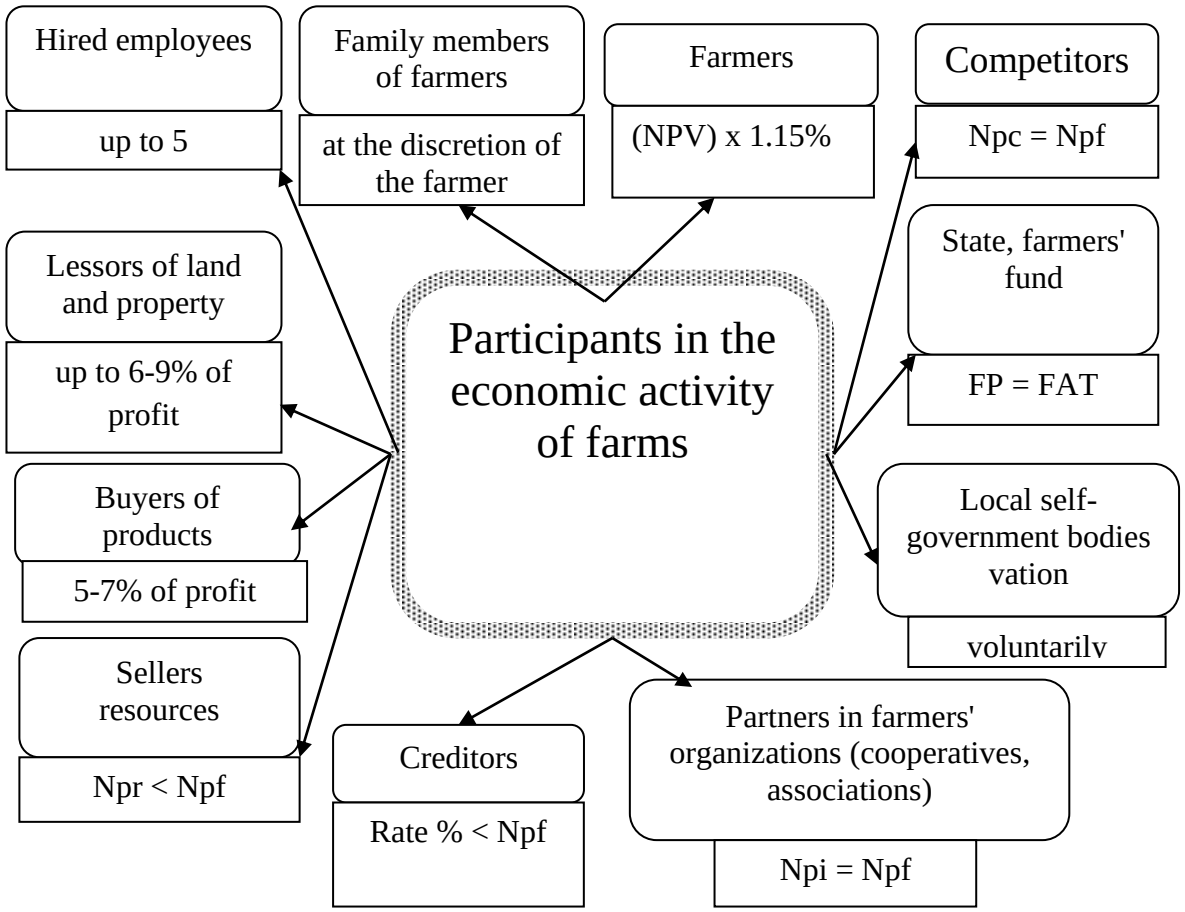

Fig. 1. Model of building economic relations based on the balance of profitability levels of farm participants

Source: Authors' elaborations.

Under the current economic relations, the lion's share of net revenues from the sale of agricultural products flows through the price mechanism to intermediary structures, in particular export-oriented multinational companies, which reduces the ability of agricultural producers to form sources of investment financing. In these circumstances, they try to achieve cost recovery by maintaining relatively low levels of employee wages and rents for land plots used by citizens, who bear the brunt of distorted economic relations. In the context of the war, price gaps in economic relations have widened. With distorted prices, a grain producer receives less than half of the final price of the

product, which prevents him from forming the sources of investment financing necessary for development

Economic relations between participants in the lease of agricultural land are also distorted. The normative valuation of 1 hectare of this land, which is less than $1,000, does not correspond to its economic value and is incomparable with the prices of other investment resources and the benefits of intermediaries and suppliers. The supported average land rent rate (8%) is low compared to its market (fair) value. As a result, in many cases, the balance of economic interests between the participants in investment projects is not in balance.

In order to solve the acute problems of investment development of farms during the war and post-war reconstruction, a number of measures should be taken.

During the war, we should maximize the use of budgets of all levels, grant support and entrepreneurial activity to eliminate damage to social facilities in the village and environmental pollution;

In the period of post-war reconstruction, to grant the affected and depressed rural regions the status of priority development areas, to create an effective mechanism for compensating farmers for part of their costs of creating and purchasing production facilities depending on the number of jobs, to introduce additional tax incentives for investment projects to create new jobs and financial support for the creation of farmsteads in depopulated rural areas and their autonomous resource supply,

Organizational and financial support for the implementation of investment projects to create capacities of agricultural production cooperatives, support for investment projects for the production, procurement, processing and marketing of agricultural products produced in rural households, organizationally facilitate financial leasing of machinery, equipment and breeding livestock for the needs of farms, give priority to investment projects for the production of certified organic and balanced agricultural products

When designing state support measures and increasing its volume to the level of the minimum needs of farms in the short and medium term, preference should be given to mechanisms that provide for the provision of this support on a repayable basis, primarily through the mechanism of cheaper loans. In the period of post-war reconstruction, it is advisable to encourage farms to voluntarily participate in the creation of social infrastructure facilities in villages; to formulate and implement effective mechanisms for investment support for the development of the social sphere in villages that are part of territorial communities. Priority in such support should be given to the de-occupied and military-affected regions and rural areas.

Investment support for environmental protection measures in rural areas should be provided at the expense of farms that have resumed their operations, as well as state and local budgets.

Particular attention should be paid to environmental assessments of projects in rural areas whose owners apply for state and grant funding, as well as other types of incentives and support. It is advisable to introduce new mechanisms to compensate farmers for investment costs of environmental and ecological protection facilities, primarily manure storage facilities, chemical warehouses, hazardous substances disposal facilities, polluted wastewater treatment facilities, etc.

In assessing the state of sustainability in the development of farms, it is advisable to use the authors' division of farms into six groups: pronouncedly sustainable, medium level of sustainability, conditionally sustainable, with a predominance of unsustainability, unsustainable and unsustainable with signs of bankruptcy, to distinguish within these groups subgroups of farms that provide social effects and environmental costs, and to develop special development strategies and reproduction processes for them (Table 1).

In the process of meeting their own and their families' needs and the demand of the population, farmers invest in investments and innovations in various areas.

Table 1: **Achieving the level of sustainable development of farms based on special investment-oriented development strategies**

Farms by level of sustainability	**Characterization of the farm by sustainability level**	**The appropriate type of strategy**	
Explicitly sustainable	Active processes of production of products, resources, capital and economic relations that ensure the competitiveness of products, its active operating, investment and other activities and cost recovery over a long period of time. *Environmental and social component*	Growth strategy	
Medium level of sustainability	All of these benefits of sustainable farms are not fully realized. *Environmental and social component*	Strategy for revitalizing operations	
Conditionally stable	They do not have losses, but their profits do not change significantly over time. *Environmental and social component*	Strategy for achieving a state of permanent sustainability	
With a predominance of instability	They are characterized by a decrease in the efficiency of farms, which is manifested in a relative decrease in the return on capital, an increase in the length of the farm's operating cycle, and an increase in the average cost of liabilities. *Social component*	Sustainability strategy to improve the level of sustainability	
Unstable	Financial instability and cash flow problems arise	Strategy for increasing investment attractiveness and financial recovery of the enterprise	
Unsustainable companies with signs of bankruptcy	Farms that are unable to pay their debts on time, and the growth rate of expenses exceeds the growth rate of cash receipts	Strategy for preventing bankruptcy and restoring the farm's solvency	

Source: author's research.

Investing in knowledge allows farmers to continuously improve their knowledge of their chosen profession, cultivation technology and type of business.

The sustainable development of farms depends to a large extent on the professionalism and skill of the farmer. Most farm managers have a good knowledge of production technology and are able to make the right business decisions, keep records of products, costs and revenues, and engage in commercial activities.

However, the dynamism of social development and the unpredictability of its social and economic processes leads to the "aging" of the information received by the farmer and the insufficiency of the knowledge he has acquired, which can have a negative impact on the competitiveness of his farm. Therefore, professional training programs are an important form of service for farmers. For example, in the Cherkasy region, at the Uman National University of Horticulture at the Institute of Postgraduate Education and Extension, farmers can improve their skills through such programs:

- for agronomists and horticulturists (the program is designed to improve the skills of agronomists, managers and specialists of agricultural enterprises, farmers engaged in fruit growing and fruit nursery);
- Vegetable agronomists (the category of students includes vegetable agronomists, managers, specialists of agricultural enterprises and farmers engaged in growing vegetables);
- Seed agronomists (the category of trainees is agronomists-seed growers from farms included in the State Register of Seed and Planting Material Producers);
- managers of small agricultural units and separate subdivisions;
- chief agronomists, agronomists of agricultural enterprises of all forms of ownership;
- managers of agricultural enterprises of various forms of ownership.

Farmers should take advantage of opportunities to improve their knowledge at various agricultural exhibitions. In particular, the International Exhibition of Profitable Highly Efficient Agriculture - InterAGRO, which is the epicenter of agricultural machinery and equipment innovations; the International Exhibition of Efficient Livestock and Poultry Production - Agro Animal Show; the International Exhibition of Livestock and Poultry Production - Animal Farming Ukraine, etc.

In the production of crop or livestock products, farmers should consider investing in new varieties and hybrids, new breeds and species of animals, and cultivation technologies. When organizing material and technical support, farms should invest in new technological equipment, purchase of soil cultivation units, construction of buildings and structures for the development of the farm.

Innovations of farms in the future allow them to implement the results of research and development in the form of new plant varieties, breeds and species of animals and poultry, new or improved food products, materials, new technologies in crop production, materials, new technologies in crop production, livestock and processing industry, new fertilizers and plant and animal protection products, new methods of prevention and treatment of livestock and labor, new forms of organization and management of various sectors of the economy, which allow to increase

A tool and mechanism that reduces the cost of access to innovation is the cooperation of farms with research institutions [1]. For example, a monographic study found that successful farms in the Monastyryshche district of Cherkasy region cooperate with the Myronivka Institute of Wheat named after V. M. Remeslo and the Odesa Institute of Selection and Genetics.

An agro-innovation is the end result of the introduction of an innovation in the field of agriculture (plant variety, animal breeds, plant or animal protection products, cultivation technologies, etc.) that has provided economic, social, environmental and other types of effects [1].

The bioclimatic potential of Ukraine in general and the central Forest-Steppe zone and Cherkasy region in particular makes it possible to grow the main types of crops. The introduction of technologies for growing modern varieties developed on the principles of adaptive crop production is a significant means of increasing crop production [1].

Seeds are the basic unit of any agricultural production, the starting point of the plant's life cycle and the basis of the harvest. The quality of seeds is crucial for the success of production, whether it is a microenterprise or a large farm.

Over the past 15 years, spending on seeds in crop production has increased from UAH 1.7 billion to UAH 50.0 billion. The share of seeds and planting material in the total expenditures has remained virtually unchanged, accounting for about 10% of total expenditures annually.

Seed costs in the analyzed period grew under the influence of various factors: further intensification of the seed industry, which resulted in the growth of seed production costs and the improvement of its quality simultaneously; higher market prices for all means of production; and an increase in the share of more expensive purchased seeds, especially foreign breeding. At the same time, agricultural producers account for their own seeds at cost, while purchased seeds are accounted for at purchase price.

According to estimates by scientists at the Institute of Agrarian Economics, Ukraine needs 0.6-0.8 million tons of spring crop seeds. To ensure sowing of spring grains, namely spring barley, up to 300 thousand tons, spring wheat - 40.0 thousand tons, oats - 30-35 thousand tons and peas - 80.0-100.0 thousand tons are needed. Up to 100-110 thousand tons of hybrid seeds are also used annually for corn, 30-35 thousand tons for sunflower and 200-250 thousand tons of soybeans.

The increase in the cost of imports is due to higher prices for imported seeds, which are already several times higher than for domestic seeds. As a

result, Ukrainian farmers annually sell 70-75 thousand tons of hybrid seeds of foreign corn, 27-30 thousand tons of sunflower, 5-7 thousand tons of rapeseed and 0.6-0.7 thousand tons of sugar beet.

The main reasons for the demand for foreign-bred hybrids compared to domestic hybrids are: higher yields, higher quality of EU and US seeds compared to domestic seeds, trust in foreign seeds due to the presence of counterfeit products on the domestic market, high brand name of EU and US breeding companies.

Today, our country's dependence on imported seeds is particularly evident in sugar beet, winter rye and rapeseed, peas, sunflower, soybeans and vegetable crops. This is, in a way, the hook on which the entire national agriculture is hung. This means that there is a threat of stopping the supply of seeds to Ukraine from abroad in the event of any unfavorable scenario - economic, medical (e.g., Covid-19) or military.

It can be stated that in only 4 other niche crops do we have 100% of domestic seeds. These are buckwheat, millet, triticale, and oats. In contrast, in recent years, the production of domestic pea seeds has significantly decreased - 7.2% and spring wheat - 39.6%.

In addition to conditioned seeds, other seeds are also used. All over the world, it is called Farm Saved Seed - that is, the farmer's own seed, seed for the farmer. This does not apply to hybrids, but only to plant varieties - wheat, barley, other cereals, soybeans, potatoes. Its share in Ukraine is quite significant, about 90% of all seeds used for sowing.

Considering the availability of seeds, there are enough seeds for production purposes for all crops, and most of them have high germination rates, varietal purity, hybrid type and genetic homogeneity. However, a significant part of uncertified seeds has signs of counterfeiting, falsification, i.e. substandard seeds, which significantly reduces the expected yield and quality of grain. This is our additional and possible reserve. In addition, the Ministry of

Agrarian Policy and Food of Ukraine canceled additional seed certification procedures during martial law, including the recognition of foreign certificates.

Leasing is one of the measures of perspective financing of innovative development of agricultural enterprises [1]. Leasing, as defined by V. Ivanyshyn, is an economic lever for ensuring the uninterrupted reproductive cycle of fixed capital in enterprises with unsatisfactory economic condition [1].

This form of fixed capital investment is becoming increasingly widespread in modern conditions [2]. Leasing promotes faster and wider introduction of innovations in production, and therefore it is in line with the strategy of sustainable development of farms. New equipment that a company can obtain under a leasing agreement pays off due to higher labor productivity, greater efficiency, better product quality, etc. [1,2].

The expediency of leasing is also confirmed by the experience of countries with developed market relations []. In France, 120 companies operate in the field of agricultural leasing, 96 in Germany, and 68 in the UK. John Deere sells 20% of its machinery under leasing agreements, and these volumes are increasing annually. The share of leasing operations in the total amount of domestic investments is: in Italy - 12%, in the UK - 22%, in the USA - about 1/3 of the volume of domestic investments (131 billion dollars) [1].

Cooperation and integration is one of the ways to ensure sustainable development of farms [1]. Thus, L.V. Moldovan and V.V. Zinovchuk note that in a market economy, cooperatives are an integral part, it is not only a type of enterprise or a form of management, but also the ideology of survival of agricultural producers in a market economy, a transnational idea, without the application of which a fair attitude to agricultural producers simply cannot exist [1].

Therefore, an important condition for the development of farms is the implementation of joint projects. However, as Y. Danko notes, a characteristic feature of the current stage of development of the agricultural sector of the

country's economy is the insufficient development of cooperation processes, the importance of which cannot be underestimated [1].

According to O.O. Shkolny [1], the traditional role of a cooperative is to increase the profitability of producers by reducing costs, increasing market power, and reducing risk and uncertainty.

The number of farmers' cooperatives used to be higher, but then their number decreased. Cooperatives that were initially established even with the participation of relatives ceased to operate because the members could not share the profits among themselves.

K.O. Prokopenko [1] notes that farmers have limited access to resources due to the possibility of their delivery. The reason for this is the lack of cooperatives that serve small producers, which leads to higher prices for working capital. Machinery and equipment are also available only to profitable large enterprises, while small producers face obstacles due to the lack of cooperation in the use of machinery. Farms have virtually no access to credit cooperation, as the system of lending to small producers and rural credit cooperatives is at an early stage of development.

In order to increase competitiveness and increase sales, farms use the so-called marketing cooperation, which takes various forms of cooperation between independent producers or wholesalers [2]. It involves the organization of common sales structures by farms by investing capital in their creation and operation. This results in concentration of goods from different farms in one place and concentration of sales of homogeneous goods from disparate suppliers, which makes it possible to offer customers a wider choice of goods and reduce the cost of goods circulation.

The development of cooperative initiatives of Ukrainian farmers is most influenced by two groups of factors: organizational and market. Organizational factors of cooperation development are mainly related to changes in agricultural management at the macroeconomic level, radical reform of property relations,

functioning of a large number of independent market participants, democratization of production relations, etc. State support for the creation of farmers' cooperatives is practically absent.

According to the Law of Ukraine "On Farming", the Association of Farmers and Private Landowners of Ukraine is the representative body of Ukrainian farms. It was created to ensure the rights and legal interests of Ukrainian citizens who run farms, as well as to create favorable conditions for the development of farms. According to V.O. Ivanchenko, it is now necessary to intensify and direct the activities of regional farmers' associations to strengthen the economic and social role of farming in the agricultural sector. Accordingly, associations need to focus on two priority tasks: organizational support for the development of farms; generalization and dissemination of best practices of farms [1].

In order to achieve sustainable development, it is advisable for farms to form cluster structures, taking into account the development of market demand for final products and their capabilities to attract capital for the production and marketing of agricultural products, their harvesting, storage, processing and sale, in accordance with the author's proposals, substantiated by the example of a regional horticultural cluster (Fig. 3).

In the European Union, small family farms are disappearing at a high rate The European Union's Common Agricultural Policy (CAP) has promoted an industrialized model of food production and distribution. Monoculture production and intensive livestock farming have come to the fore, relying on chemicals, mechanization, cheap labor, and favorable policy incentives that encourage expansion and expansion, writes UkrAgroConsult. The same approach is still maintained in the CAP directions for the new budget period of 2021-2027. But this is happening against the backdrop of a growing awareness among the European public of the numerous looming environmental, social and economic crises facing the agricultural sector.

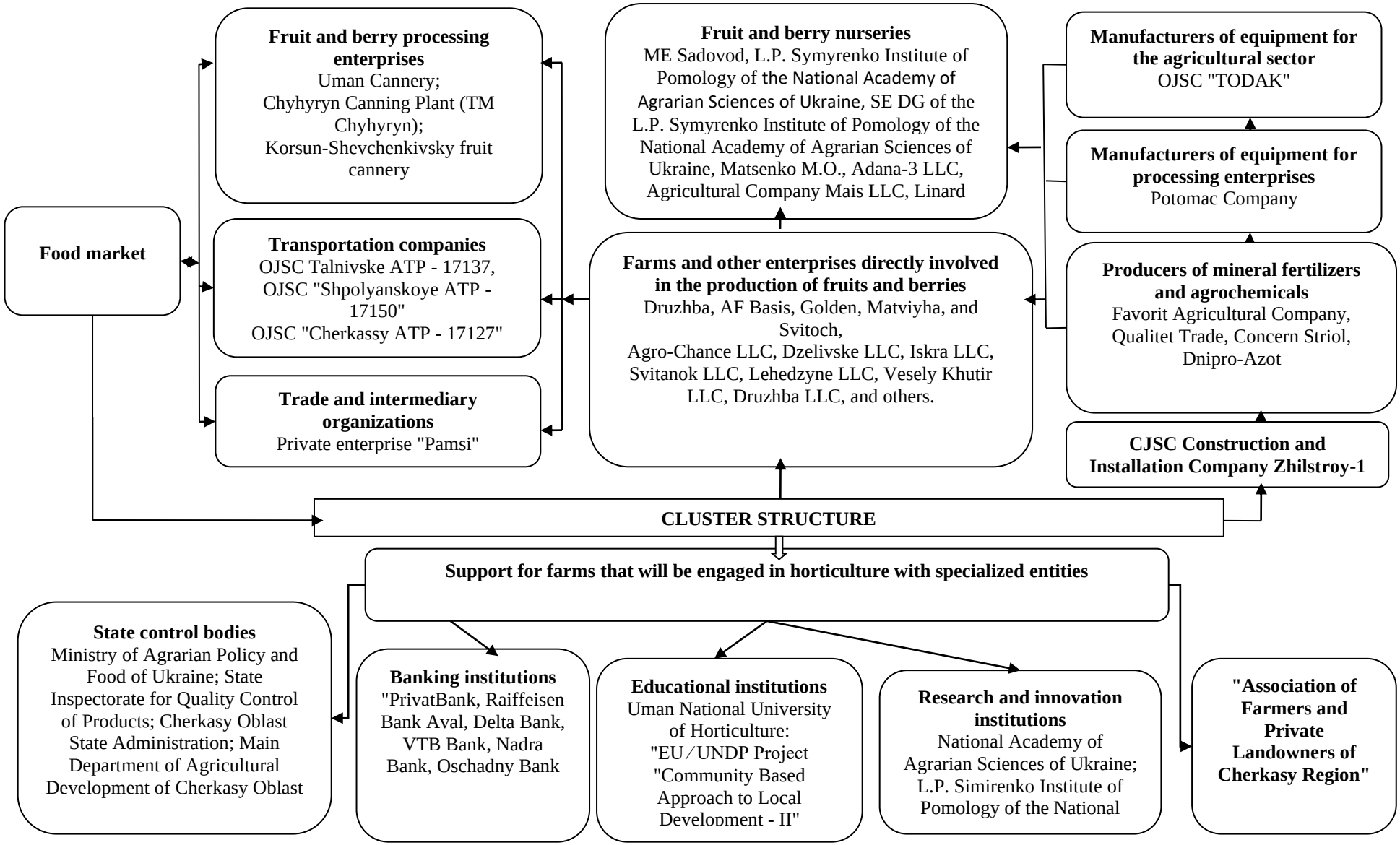

Figure 3. **Cluster model for fruit and berry farms at the regional level**

Source: developed by the author.

"Smallholders are now the backbone of EU agriculture: 93% of the EU's 9.8 million farms are less than 50 hectares in size, and two-thirds are less than 5 hectares. It is this base of producers that can (and has already begun to) stimulate the necessary transition to agroecological and other sustainable systems of production and distribution of agricultural products," the experts say.Smallholder farms can also provide vital labor absorption services and gainful employment in rural areas. The knowledge-intensive nature of agroecology can help build trust and solidarity in devastated rural communities. "At the same time, the industrial model is destructive for small producers. As a result of its application, small family farms in the EU are disappearing at a high rate. Between 2005 and 2016, the number of farms under 50 hectares decreased by 29.4%. In real terms, this amounts to just over 4 million farms. And this does not include many farms that are considered too small to be included in the statistics." Because of the war, small farms are being actively pushed out of the market, undermining the viability of rural areas. But there is a simple and inexpensive solution for policy makers: support sustainable producers and redistribute food chains. For various reasons, the number of small agricultural producers is declining in Ukraine as well. According to the State Statistics Service, in 2015-2017. The number of small and micro-enterprises in agriculture, hunting and related services decreased by 1.8%, and the number of individual entrepreneurs decreased by 17.9%. In 2018, the number of private households decreased by 0.9%, and the area of land in their use by 0.7%.

It is advisable for central and local authorities to accelerate the development of Ukrainian farming:

- to promote an increase in the number of farms by transforming households and private farms into family farms;

- satisfying the desire of peasant landlords to withdraw from tenant structures - agricultural holdings, agricultural firms, cooperatives and other organizations of land shares;

- Acquisition of land ownership through land purchase and sale agreements for the establishment of family farms by new participants, including retired military personnel of the farming movement;

- integration of municipally owned land inherited by urban residents, people returning from abroad, and others into farming;

- to remove from the current legislation, in particular the Land Code of Ukraine, the norms that pose an existential threat to agriculture, the rural system, and the nation as a whole. In particular, the provisions that introduce legal entities to the list of subjects of ownership of agricultural land as of January 1, 2024, and provide for the concentration of land plots owned by one person to be 10 thousand hectares.

The national interest is served by the current legislative norms that promote the further development of the land market, according to which only individuals - citizens of Ukraine - have the right to purchase a land plot not exceeding 100 hectares per person;

- suspend land sales during martial law;

- to return to the formation and further development of agricultural service cooperation as a condition for increasing production efficiency and farmers' access to supply and sales markets;

- to prevent the Verkhovna Rada of Ukraine from adopting Draft Law No. 6013 "On Peculiarities of Regulation of Business Activities of Certain Types of Legal Entities and Their Associations in the Transition Period", which provides for the elimination of the legal status of a farm as a business entity, in particular, to send appropriate appeals to reject this draft law.

It is advisable to start developing a program for the postwar development of farming and the revival of rural socio-economic space and prepare proposals for the Government to consider and adopt it.

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SECTION X
FOREIGN EXPERIENCE IN ENSURING SUSTAINABLE DEVELOPMENT OF FARMS

In accordance with the EU-Ukraine Association Agreement, the agricultural sector in Ukraine continues to undergo a comprehensive course of reforms aimed at, among other things, sustainable rural development, increasing the competitiveness of agricultural production, improving the quality and safety of agricultural products, and preserving natural resources.

Strategies for the development of the agricultural sector should define the long-term goals of these reform processes. Thus, they represent an important basis for developing short- and medium-term agricultural policy decisions. In this context, the newly restored Ministry of Agrarian Policy and Food of Ukraine plans to develop and adopt the "Strategy for the Development of the Agricultural Sector of Ukraine until 2030".

The implementation of strategic goals requires ensuring the economic sustainability of both individual business entities and the balanced and stable development of the agricultural sector as a whole, and one of the priority areas for their research is the use of state support.

State support has a positive impact on the economic sustainability of farms, as it ensures higher growth rates of production efficiency and smooths out sharp fluctuations. The state policy on support of farms is carried out through implementation: The Laws of Ukraine "On the State Budget of Ukraine for 2023", "On State Support of Agriculture of Ukraine" and "On Farming", approved by the Resolution of the Cabinet of Ministers of Ukraine No. 1158 dated 19.09.2007, and other resolutions of the Cabinet of Ministers of Ukraine that determine the procedure for using budget funds in 2023 for financial support of agricultural enterprises, in particular, construction of livestock farms and complexes, purchase of new equipment and leasing.

The main content of the national agricultural policy is to provide indirect investment support and stimulate private investment. In the context of instability, especially due to the war, the possibilities of allocating budget funds for investment purposes are very limited, although they are being formed. Amount of state support for agricultural producers: UAH 5.9 billion in 2019, UAH 4.0 billion in 2020, UAH 4.5 billion in 2021, and UAH 4.6 billion in 2022. In 2023, no state support for agrarians is foreseen, instead, they are offered grants, loans and compensations. It is expected to be restored in 2024.

The current budget support for agricultural producers is largely investment-based, as it is directed to greenhouse construction, planting perennial crops, livestock breeding, land reclamation, etc. In 2023, it is also planned to provide grant support for the creation or development of greenhouse farming, horticulture, berry growing, viticulture, and other industries. In 2022, EUR 50 million was allocated from the EU budget program for emergency support to small agricultural producers.

The European Union provided small farmers with subsidies of three thousand one hundred hryvnias per hectare. To do this, they had to register with the State Agrarian Register, submit an application, wait for its approval, and submit the relevant documents to receive financial assistance.

In 2023, Ukrainian farmers received support from the international donor USAID (United States Agency for International Development), which provided seeds and mineral fertilizers free of charge. To receive such support, farms had to meet the following criteria: they had to be small producers who officially leased or owned between five and five hundred hectares, and these lease or ownership agreements had to be registered in the system (the state could see them), so that the farmer was working officially.

For example, a monographic study found that a number of farms in the Cherkasy region of Uman district received free corn and sunflower seeds, as well as mineral fertilizers for sowing (urea and nitroammophoska).

The Food and Agriculture Organization of the United Nations (FAO), with financial support from the Governments of Japan and Norway, is

implementing a program to support small farmers during the fall sowing campaign in 2023. Applications for participation in the program were accepted through the State Agrarian Register until July 20, 2023 [1].

The program is being implemented in the nine regions of Ukraine most affected by the war, namely Sumy, Chernihiv, Donetsk, Kharkiv, Dnipropetrovs'k, Zaporizhzhia, Mykolaiv, Kherson and Odesa regions. As part of the program, each selected farmer will receive 2 tons of winter crop seeds, enough to sow 10 hectares of land. Applicants can choose one of two winter crops: wheat or barley.

The program is open only to individual entrepreneurs and individuals who operate in the above-mentioned regions and own or lease agricultural land of 5 to 100 hectares.

According to the Ministry of Agrarian Policy of Ukraine, in 2023, the program to support farms and other agricultural producers will be extended. In particular, this applies to the budget subsidy per 1 hectare of cultivated land for agricultural activities and a special budget subsidy for the maintenance of cattle of all productivity areas. This year, the state has focused on supporting small farmers, in particular by paying subsidies and grants per hectare of cultivated land and per head of cattle.

In the context of instability, agricultural policy is implemented inconsistently and does not significantly affect the development of the agricultural economy, as it is not sufficiently aimed at supporting and stimulating investment. The average level of state support for agriculture in Ukraine in 2019-2022 is $14 per 1 hectare of land, which is insufficient. If this situation continues, existing and new threats to the economy and society will intensify.

It is advisable to use the experience of the European Union, the United States, Canada, and the Nordic countries in terms of state regulation and support of farms.

Generalization of this experience allows us to identify the following main links of state regulation [1]:

- regulating prices for agricultural products through various mechanisms to ensure that rural producers have normal business conditions in years with unfavorable market conditions;

- limiting the volume and regulating the structure of agricultural production to prevent overproduction;

- tax regulation aimed at stimulating the development of agricultural enterprises, taking into account their specifics (size, specialization, etc.);

- Widespread use of credit support through lower interest rates and reimbursement (deferral) of principal payments;

- economic support for agricultural enterprises facing unfavorable natural and climatic conditions;

- regulation of export and import operations for agricultural raw materials and food;

- state funding of the most important programs for the development of the agricultural sector (combating water and wind erosion, etc.);

- scientific and information support for rural producers and their social support.

State payments in the agricultural sector in developed Western countries are not so much about stimulating production as about solving social problems - maintaining farmers' incomes, supplying the population with affordable food, developing rural areas and agricultural infrastructure, and taking environmental measures. This is the essence of the current Common Agricultural Policy (CAP) of the European Union [1]. The proposed principles of such a policy are: free trade at the same prices between the contracting parties; preference for products produced in these countries over imported ones; use of any mechanisms to support domestic prices for agricultural products [2].

At the same time, the European Union annually spends more than 40 billion euros on CAP implementation, i.e. 45% of its budget, while the contribution of agriculture to the EU's gross domestic product is only about 2%.

At the same time, 80% of all EU expenditures on the Common Agricultural Policy are spent on subsidies to support prices and incomes of farmers [4].

Maintaining high prices within the EU is one of the most expensive ways to subsidize income, so it was decided to reduce prices somewhat. For example, direct payments were introduced to farmers if they do not exceed the previous level of production. State payments are made per hectare of land or per head of livestock in case of unfavorable production conditions [4].

One of the main mechanisms in the system of state regulation of the agricultural market in foreign countries is to maintain an appropriate price level and price equilibrium. The price regulation system is aimed at maintaining farm prices at a level that allows producers not only to recover their own production costs but also to carry out expanded reproduction.

The European Union's Common Agricultural Policy provides for the use of such a tool as quotas to regulate the agricultural market. Its essence lies in the fact that maintaining prices for products leads to their overproduction, so quotas are introduced for the production of certain types of products (milk, sugar, alcohol, starch) in order to maintain a high level of domestic prices, prevent overproduction, and reduce costs from the EU budget [4].

The European Union has established price subsidies for the purchase of machinery, land reclamation, and farm modernization. Some EU countries provide direct subsidies from the state budget to farms located in unfavorable natural conditions. These payments should be used to modernize production. Significant government subsidies are allocated to combat water and wind erosion.

All developed economies have crop insurance programs. A system of compensation payments from the state budget insures farmers against adverse weather conditions, floods, epidemics, etc. There are also budgetary payments related to "regional support", which allow farmers to conduct agricultural production on an expanded basis in areas with unfavorable weather conditions [4].

The countries of the European Union actively stimulate national agriculture, in which the cost of production per unit is usually higher than the world market [4]. In this case, import and export opportunities of commodity producers are taken into account, and the specifics of the mechanism of support for the agricultural sector in each country depend on natural, economic, geographical, and foreign economic conditions [4].

For example, state support in the Republic of Poland is provided through advances for direct payments and payments for RDP area. In 2021, the advances were paid at the highest level allowed in the European Union and amounted to 70% for direct payments and 85% for RDP payments. The Agency transferred all funds only to the accounts specified by farmers in their applications for producer registration. In this year's campaign, approximately 1.3 million farmers applied for direct subsidies, and the financial package for their implementation amounted to 15.63 billion zlotys (Table 1).

In 2021, approximately 1.3 million Polish farmers applied for direct subsidies, and the financial package for their implementation amounted to PLN 15.63 billion. Expenditures for agriculture, rural development, agricultural markets and fisheries, realized in separate parts of the state budget, including expenditures provided for in separate provisions, are planned to amount to PLN 16.3 billion in 2022. In 2023, the total amount of payments is PLN 16.97 billion.

Janusz Wojciechowski, the European Union Commissioner for Agriculture, outlined the most important tasks to be implemented with the help of the Common Agricultural Policy funds and other funds available to the European Union.

The first task is to preserve the potential of small and medium-sized farms throughout the European Union. This is especially important for the Republic of Poland. Across the EU, 4 million small and medium-sized family farms have been lost over the past ten years. This process must be stopped.

Table 1: **Direct payments to farms in the Republic of Poland, 2021 and 2023.**

Indicator.	2021		2023		2023 to 2021, %. (PLN)
	PLN (PLN)	UAH (UAH)	PLN (PLN)	UAH (UAH)	
Total support, billion	15,63	134	16,97	146	109
includes:					
Additional income support for young farmers, PLN/ha	308,59	2654	280,33	2411	91
Animal husbandry					
Payment for livestock, PLN/each	336,73	2896	343,46	2954	102
Payment to cows, PLN/each	426,51	3668	439,41	3779	103
Payment to sheep, PLN/each	114,47	984	116,44	1001	102
Payment to goats, PLN/each	51,56	443	47,84	411	93
Crop production					
Payment for legumes and seeds, PLN/ha	685,7	5897	823,91	7086	120
Payment for fodder plants, PLN/ha	457,46	3934	471,53	4055	103
Payment for hops, PLN/ha	2087,75	17955	1985,54	17076	95
Payment for potatoes and starch, PLN/ha	1210,32	10409	1501,05	12909	124
Payment for sugar beet, PLN/ha	1547,13	13305	1391,96	11971	90
Payment for tomatoes, PLN/ha	3371,12	28992	2047,34	17607	61
Payment for strawberries, PLN/ha	1313,93	11300	1237,42	10642	94
Payment for flax, PLN/ha	558,7	4805	463,1	3983	83
Payment for fiber hemp, PLN/ha	198,05	1703	134,35	1155	68

Source: Agency for the Reconstruction and Modernization of Agriculture of the Republic of Poland (UAH 8.6 to PLN as of 10/16/2023).

These farms need to be strengthened, which is why redistributive payments and eco-programs are so important, and if programmed correctly, can also serve family farms very well.

Deputy Prime Minister and Minister of Agriculture Henryk Kowalczyk noted that the phenomenon of the decline of farms in the Republic of Poland in rural areas, which is currently observed, should slow down mainly due to the increase in direct payments, as well as support for young farmers, planned in the National Strategic Plan for 2023-2027, reaching the level of 200 thousand

zlotys. During the first five years, young farmers will also receive increased direct payments. These are the incentives that these payments are supposed to cause inevitable demographic changes in rural areas, so that these farms will be preserved.

For fulfilling the requirements, the farmer receives a bonus of PLN 150,000, paid in installments, i.e. the 1st installment is 80% of the amount of aid, the 2nd installment is 20% of the amount of aid.

According to the Census of Agriculture, the number of livestock farms in the Republic of Poland fell from 914 thousand in ten years to 574 thousand. Thus, the European Union has lost 340 thousand farms. The reasons for this situation can be seen, for example, in the pig sector, particularly in the presence of the ASF virus. Therefore, sustainable livestock farming, in conditions of welfare, in harmony with the land, not large-scale industrial farming, but smaller, can count on very great support from the European Union.

The Republic of Poland operates under the terms of the Green Deal. Neither greenhouse gas emissions nor the use of pesticides or antibiotics are high in this country. All of these indicators are below the European Union average. Countries with high emissions will have to make special efforts to reduce these indicators and contribute to the achievement of the EU-wide targets.

The European Union has a vision for the development of rural areas by 2040, which is to ensure that they are not left behind and that they can count on support not only from the common agricultural policy, but also from all the funds available to the EU under Article 174 of the Treaty on the Functioning of the EU, where rural areas are listed as one of the three (along with post-industrial and difficult natural conditions) that deserve special attention. It has often happened that rural areas have received less attention than urban areas. Rural residents have the same right to decent living conditions as urban residents, public transportation (transport exclusion is a huge problem in rural

areas today). They have the same right to access to education, healthcare and cultural benefits of the European Union.

In order to improve the mechanism of state support for Ukrainian farms, it is necessary to increase its volume to a level that will contribute to the competitiveness of their products in the short and medium term, and in the long term will reach the level of developed countries. Farm managers need to be able to properly prepare documents for obtaining state support through the mechanism of compensation for partial costs of building livestock and other facilities, purchasing new agricultural machinery, and preferential lending and leasing.

HOW FARMERS LIVE IN THE EU

(Gregory Peron on the peculiarities of farming in different European countries).

We are what we eat. In ancient times, our ancestors used to say so. Today, this thesis raises many questions. What is healthier - animal or vegetable food? The health of the nation depends on the way we eat, and even more importantly, on the production of food. It turns out that the everyday life of Europeans has a lot to do with the state of agricultural development. It produces the basic supplies for the preparation of tasty and healthy food. Due to the development of modern technologies and the invention of new modified products, agriculture is challenging artificial flavors, substitutes, preservatives and colors. For example, there is no substitute for real fresh milk. And this is a fait accompli. It's another matter when the diagnosis of "food addicts" spreads around us, who prefer the taste of food to its benefits. Again, stimulating the natural development of agriculture prevails here as well. So, we can talk about what farming in Europe is like in the language of facts.

A European farmer is first and foremost a businessman

In Europe, those involved in agricultural development are often referred to as businessmen. People here are primarily interested in mandatory certification of products in order to sell them on the market as their own property. No one in Europe intends to buy up. And the requirements for farmers in Europe are very loyal. Thus,

unlike retail chains, which are obliged, for example, to comply with cucumber size standards, farmers are not subject to this. It should be remembered that in EU countries, huge capital is invested in agriculture. In most countries, farmers even enjoy government support. In the UK, for example, the share of government subsidies in the cost of agricultural production is over 25%, which is one of the largest in the world.

It is noteworthy that Europe has decided once and for all that it must provide itself with everything, especially natural products. Accordingly, the EU allocates huge funds to the food sector to support farmers. But it does so in a thoughtful, optimal way. In fact, only a part of the funds goes in the form of direct payments to farmers (currently, direct support to a European farmer averages 243 euros per hectare). Another item involves interventions in the agricultural market: this is a kind of reserve for emergencies, force majeure, and price regulation. In addition, expenditures to support rural areas are extremely important. It is through this that the environment where agricultural producers live and work is developing.

The peculiarity of running a European farming business is primarily in the development of infrastructure in remote towns and villages. The more agriculturally attractive a particular area is, the more developed the system of communication with a modern city is. A European farmer benefits from the efficiency of bringing his products to the processing line or even to the consumer.

Potential EU members are assessed by their prospects in the agricultural sector

The proportion of aid to farmers in the so-called old stable European countries and in the new EU members looks quite fair and specific, but it is very different. For example, France, Belgium, and the United Kingdom subsidize 310, 447, and 247 euros per hectare of direct support to farmers, respectively, but much less - 47, 57, and 46 euros per hectare - for rural development. This is understandable, because these countries have managed to build a decent infrastructure and now only support it. These are the consequences of 50 years of common agricultural policy.

The situation is quite different for the newcomers to the EU. For example, in 2008 Bulgarian farmers received 55 euros per hectare of direct support, but 191 euros per hectare for territorial development. But this directly opens the door for the newly

elected EU members to a bright agricultural development. The same trend is observed in the Baltic States, Poland, and Croatia. The economic and social conditions of the countries joining the European community are actually leveling out. As the situation changes, the support changes: in 2013, Bulgaria received 190 euros per hectare for farmers and 130 euros per hectare for the territory. And, for example, Lithuania received 143 euros per hectare for farmers and 96 euros per hectare for administrative areas.

From the above, we can assess which social perspective factor has an impact on the development of such an important sector for EU national economies as agriculture. If we consider farming as a prospect, it is a definite plus for any businessman in Europe. Even the Association Agreement signed by the EU member states with potential participants provides for significant efforts to develop agriculture. This is perhaps the first issue that worries Europeans when assessing the capacity of candidates to join the community.

Farmers find additional sources of income

In addition to agricultural business, every European businessman has the opportunity to realize his plans when the economic situation becomes more difficult. For example, it is well known that dairy production in rural areas offers farmers in Germany a wide range of opportunities to feed their families. However, as the effects of the economic crisis have intensified, one of the farmers notes that 60 cows are not enough to feed two families. That's why the farmer decided to save money and not even depend on expensive energy. With the help of a special biogas plant, he provides himself with the right amount of heat and electricity for his production needs. With this in mind, small farms in Germany are gradually turning into agricultural mini-factories, where biogas plants help farmers to gain an additional source of income and energy independence.

The conditions in which European farmers live make each of them fight for a place in the sun. So it turns out that rational ways of doing business and progress are born in the minds of farmers.

The emergence of farming as a special form of agricultural formation in Ukraine dates back to 1989-90. In 1991, there were 2.7 thousand hectares of farms, and the total area of agricultural land was 52.5 thousand hectares. At that time, farming was most widespread in the Western region. This was due to the diversity of the rural population, farm resettlement, an increase in the size of household plots, and a number of other factors.

In Ukraine, as in most highly developed countries, the agricultural sector is dominated by the family form of management. This is evidenced by the fact that almost 75% of farms in our country are based on the labor of one family, about 25% are based on two or three families, and only a small number are based on more than three families.

Features of work:

Compared to private farms, farms have much larger plots of land; a high level of labor mechanization; adhere to production technology requirements; apply innovations and modern technologies; have established links with banks, insurance companies, and other business entities; have better information support; and have a higher level of employee qualifications and education.

Farming is a very risky business, and much of it depends not on humans but on the weather, the market, and his majesty, chance. However, a well-organized farm can be very profitable.

Requirements for individual traits

A farmer must possess such traits as high efficiency, physical strength and endurance, and the ability to work even in adverse weather conditions (for example, in an open field in bad weather). Of course, he or she needs knowledge and skills related to the specifics of the agricultural products he or she is engaged in.

Requirements for professional training

A true farmer cannot do without knowledge of crop production, dendrology, beekeeping, poultry, and animal husbandry, depending on the direction of the farm. Experience with agricultural machinery is also required. Regardless of the

level of the farm, special knowledge of the basics of agricultural technology, animal husbandry, veterinary medicine, sanitation; methods of processing agricultural products; safety rules for working with agricultural machinery and equipment, peculiarities of working with pesticides, fertilizers, herbicides used in agriculture, etc. is required.

Nature of work

The work of a farm worker is classified as medium-duty physical labor. Both women and men of all ages can work as farm workers. A farmer organizes and performs a wide range of labor operations, as he or she has to operate machine and tractor units, perform repair, locksmithing, welding, construction work, engage in breeding, collection, processing, livestock preservation, feed preparation, control of crop pests, and provide veterinary care to animals.

Medical restrictions:

Almost any healthy person can work as a farm worker, but it is not advisable for people with general diseases that limit mobility (diseases of the cardiovascular system, joints, kidneys, etc.) to take up this profession.

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SECTION XI
STATE SUPPORT FOR FARMS

The agro-industrial complex and its most important sector, agriculture, play an important role in the development of the national economy. Farms are a special form of business in the agricultural sector. A farmer carries out business activities independently to produce and sell marketable agricultural products to generate income and increase equity. Farming as a form of entrepreneurial activity of peasants with the creation of a legal entity uses land plots and biological assets for the production of livestock and crop production, as well as its processing.

The financial work of a farm should be understood as a system of using various forms and methods to financially support their operation and achieve their goals.

Financial support of farms is, first of all, a sufficient amount and structure of financial resources for the implementation of all the goals of economic activity in order to make a profit, which are at the disposal of the enterprise regardless of the sources of their formation.

In modern conditions, financial support of farms is carried out in the following forms: the use of own resources for development; lending on the basis of mobilization and redistribution of temporarily free funds; budget financing on a non-refundable basis at the expense of state and local budgets [1, p. 149].

The issue of adequate financial support for farms is an important problem both for ensuring normal conditions for their management and for their development in the future. Under current conditions, they face an important task of finding and attracting the necessary financial resources and their efficient use.

Government support plays a significant role in the development and stability of farms.

The state provides financial support to farms through the Ministry of Agrarian Policy and Food, which is the first-level budgetary fund manager, and the Ukrainian State Farm Support Fund, which is the second-level budgetary fund manager.

Financial support is provided on a competitive basis within the funds allocated in the state budget for the relevant purposes.

Areas of financial support for farms:

1. partial reimbursement of expenses to farmers related to agricultural advisory services (except for newly created ones);

2. financial support for newly established farms to receive agricultural advisory services;

3. a budget subsidy per unit of cultivated land (1 hectare) for newly established farms;

4. a special budget subsidy for keeping cows of all productivity areas for a farm that owns five or more cows identified and registered in accordance with the law;

5. financial support for farmers to carry out production activities and diversify production;

6. financial support for family farms without obtaining the status of a legal entity for the purchase of agricultural land.

As a result of Russia's aggressive war against Ukraine, our farmers continue to suffer significant losses in their economic activities.

Given that small agricultural producers are the main source of food security in the country and the main producers of products for domestic consumption, EUR 50 million was allocated for their emergency support as part of the EU's budget support to Ukraine in 2022.

The support was provided under the budget program KPKVK 2801500 "Support to farms and other agricultural producers" through the Ukrainian State Fund for Support of Farms by providing:

- a budget subsidy per unit of cultivated agricultural land (1 hectare) for agricultural activities - in the amount of UAH 3,100 per 1 hectare, but not more than UAH 372,000 per recipient;
- a special budget subsidy for keeping cattle (cows) of all productivity areas - in the amount of UAH 5,300 per cow, but not more than UAH 530,000 per recipient.

These funds were used to provide a budget subsidy (hectares) to 21,467 recipients for 424,631.9 hectares; a special budget subsidy for cow keeping to 1,247 recipients for 62,090 cows[2].

Mykola Solsky, Minister of Agrarian Policy and Food of Ukraine, emphasized that this year's support for the agricultural sector is aimed at improving the liquidity of farmers. Accordingly, a number of programs that proved successful last year will be continued. In particular, the EU's subsidy program for small farmers with up to 100 cows or 1 to 120 hectares of land under cultivation will be renewed.

This program will work through the platform of the State Agrarian Register. Last year, the World Bank allocated 50 million euros for it, and this year the amount has been increased to 80 million dollars.

He added that this year the Partial Guarantee Fund will be launched. This will be an additional collateral for obtaining a loan. We are talking about UAH 720 million from the state and the World Bank. The funds will be available to those who have up to 500 hectares under cultivation. The program to create gardens and greenhouses will also continue.

Mr. Solsky emphasized that there will be new programs, including those from the European Investment Bank to provide agricultural loans. In addition, funds of $50 million will be allocated to support agro-processing, as well as the development of biomethane and bioethanol production.

The Minister summarized that in general, support for the agricultural sector in 2023 should be better than it was last year, in particular, thanks to

international organizations such as the World Bank, FAO, USAID, the European Investment Bank, the European Union, the governments of Canada, Germany and other countries [3].

Since the beginning of the year, 9.7 thousand Ukrainian farmers have received UAH 46 billion in bank loans for farm development, including more than UAH 28.2 billion under the government program "Affordable Loans 5-7-9" by 7.5 thousand enterprises.

The following regions attracted the most loans under the Affordable Loans 5-7-9 program:

- Kirovohrad region - UAH 3.4 billion allocated for 1107 farms;
- Vinnytsia - UAH 3.0 billion - for 904;
- Odesa - UAH 2.8 billion for 699;
- Kyiv - UAH 2.7 billion for 578.

The "Affordable Loans 5-7-9" program simplifies access to bank lending for micro and small businesses. Agrarians can receive a loan of up to UAH 90 million. Loans are granted at 5-9% per annum, depending on the loan category and business entity.

In addition, the Smallholder Support Program for the 2023 fall planting season is being implemented by FAO with the financial support of the Governments of Japan and Norway.

The program is being implemented in the nine regions of Ukraine most affected by the war: Sumy, Chernihiv, Donetsk, Kharkiv, Dnipropetrovs'k, Zaporizhzhia, Mykolaiv, Kherson and Odesa.

Each selected farmer will receive 2 tons of winter crop seeds to sow 10 hectares of land. Applicants can choose wheat or barley.

Currently, there are a number of problems in financing farms, especially those in the war zone and under occupation. Another major problem is relations with the tax authorities, blocking tax invoices, which needs to be resolved through the courts.

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SECTION XII
FINANCIAL SUPPORT OF FARMS IN THE SYSTEM OF FISCAL REGULATION OF PRE-WAR AND POST-WAR DEVELOPMENT OF UKRAINE

The sustainability of the agri-food production system is a strategic priority of the state policy of the vast majority of countries, which is explained by the need to ensure food security, improve nutrition, protect and promote public health and strengthen demographic potential in general by meeting the needs for safe and high-quality food at socially acceptable prices, as well as stimulating the agrarian component of the domestic economy, expanding its export potential, and protecting national interests.

One of the most progressive modern forms of entrepreneurship in the agro-industrial sector of the economy is farming, which occupies a leading position in the system of value chain formation in the agricultural sector of many countries with developed and transformational economies, and farms represent the majority of global producers of agri-food products, while acting as a catalyst for economic growth, regional and territorial development, employment, rural development, innovation, and product development. Farms produce more than 85% of the world's agri-food products, their share in the structure of global agricultural producers is approximately 90%, with the EU countries reaching 95% and the US 98%, respectively. The UN has declared 2019-2028 as the decade of family farms as the main drivers of sustainable development, and has developed recommendations for their support in the context of ensuring global food security, rational management of natural resources, environmental protection, improving human well-being and achieving sustainable development of rural areas and depressed regions [1].

An analysis of the peculiarities of the farmers' movement in Ukraine shows the slow pace of its development as a highly efficient form of agricultural production, as well as the insufficient role of farms in the activities of the

domestic agricultural sector: in the pre-war period, domestic farmers accounted for only up to 12% of gross agricultural output, including in the livestock sector, this figure did not exceed 2.5%, respectively, while the share of farms in the total number of agricultural enterprises was 67% [2]. Despite the tendency to increase the number of registered farms in recent pre-war years, in particular, in 2021 from 47.8 to 48.9 thousand, while simultaneously increasing the area of agricultural land in their use, the indicators of technical and technological equipment and profitability of their production are significantly inferior to those of medium and large agricultural enterprises, which indicates that the production and social potential of domestic farming remains unrealized.

The best international experience proves that, unlike medium and large agricultural enterprises, farms, performing important social functions of supporting employment and sustainable rural development on inclusive and green approaches, are able to maintain a higher level of resilience under the influence of negative changes in the internal and external environment, and, due to the effect of a smaller scale of production, have greater flexibility in responding to fluctuations in the conditions of agri-food markets and quickly *adapt* to them. This, in turn, makes it possible to increase the efficiency of agro-industrial production in the country as a whole and thus guarantee food security and price stability in domestic agri-food markets, stimulate sustainable socio-economic growth of rural areas and the country as a whole [3].

During the full-scale invasion of Russia and the ongoing active hostilities on the territory of our country, small farms and private peasant households have demonstrated their key role in preserving and functioning of local markets and food supply chains, ensuring food security of certain regions and territories of our country, the ability to quickly relocate production facilities, which proved their reserve of production and economic stability during the war period, high potential for creating new jobs and supporting

It should be noted that since the beginning of the military aggression of the Russian Federation, there has been a decrease in efficiency and a significant

increase in the risk of doing agribusiness by farms due to the destructive impact of the war, the destruction of crops, equipment, elevators, especially in areas of active hostilities and in the frontline and de-occupied territories, as well as due to rising prices for inputs, uncertainty with the sale of products due to military obstacles to access to markets, lack of working capital and limited opportunities to attract them, high cost of credit, and the need to modernize the mechanisms of state financial support for domestic farmers. There is no doubt that there is a need to increase the volume and modernize the mechanisms of state financial support for domestic farms during the war period, post-war recovery and stimulate the development of the farmers' movement in Ukraine in accordance with EU standards.

Until 2017, the main instrument of state financial support for Ukrainian agricultural producers, including farms, was indirect support through tax benefits, namely special VAT regimes and a fixed agricultural tax (until 2015), with little direct budget support for livestock and agricultural processing, cheaper lending, and budgetary lending to farms. After the gradual abolition of the special VAT regime in 2016-2017 under pressure from the IMF, which allowed the accumulation of funds on special accounts of taxpayers to finance their own production needs, direct budget support became the main instrument of state financial support for the development of farms, the total amount of which for all groups of agricultural producers had to be at least 1% of agricultural output. Indirect (tax) support for farms is represented by the possibility of applying a simplified taxation system in the form of a single tax for individual farms depending on the level of income and for farms-legal entities registered as single tax payers of groups 3 and 4 according to the criteria of income and scope of activity.

Budgetary support for the development of Ukrainian farms in the pre-war period was carried out on the principles of program-targeted financing/lending under the budget programs "Financial Support to Agricultural Producers" (2020-2021) and "Support for the Development of Farms" on a non-refundable

basis, as well as on a repayable basis under the budget program "Provision of Loans to Farms". A study of the directions and dynamics of budget support for farm development in the structure of direct state financial support for agricultural producers in Ukraine in the pre-war period shows its rather low level (fluctuations from a minimum of 1.3% of the total amount of budget support for agricultural producers in 2017 to a maximum of 14% in 2019, respectively), insufficient systematic, consistent and predictable planning, and interconnection with the strategic priorities of agrarian and rural development.

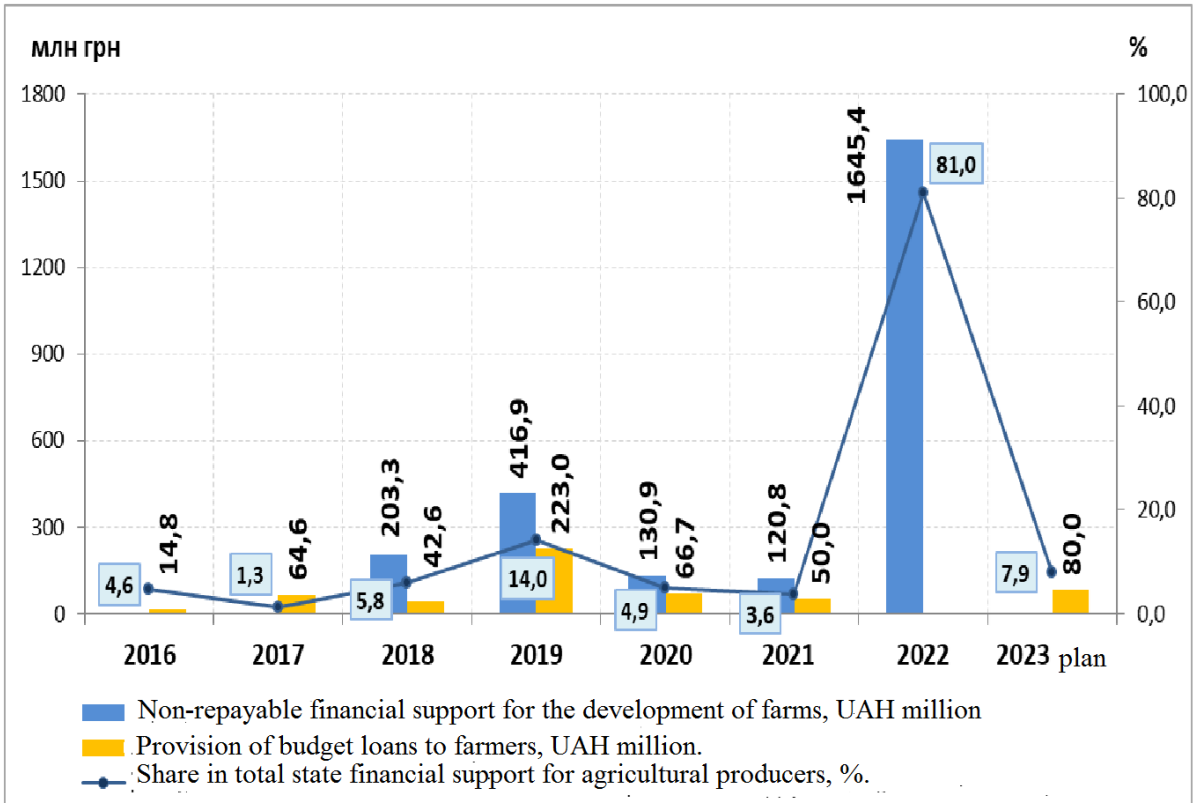

Figure 1. **Dynamics of budget support for the development of Ukrainian farms in 2016-2023.**

Source: compiled from the Ministry of Finance of Ukraine (https://www.mof.gov.ua), Ministry of Agrarian Policy and Food of Ukraine (https://www.minagro.gov.ua)

The identified trends contradict the state strategic priority of stimulating the advanced development of Ukrainian farming as a basic component of the national agri-food production system and an engine of sustainable rural development.

It is important to note that in addition to the budgetary programs of financial support for the development of farms, farmers could also participate in other budgetary support programs that were available to all groups of agricultural producers in the following areas [7]:

– partial compensation for the cost of purchased agricultural machinery and equipment of domestic production;

– financial support for the development of horticulture, viticulture and hop growing;

– partial compensation for the cost of seeds of agricultural plants of domestic production;

– financial support for agricultural cooperatives that include one or more farms;

– reducing the cost of lending to agricultural producers by partially compensating interest rates on loans and providing state guarantees, including through the Entrepreneurship Development Fund under the state program "Affordable Loans 5-7-9%", microcredit programs for SMEs and expanding their lending in rural areas, programs to support investment and lending to SMEs in priority sectoral areas;

– financial support for the development of livestock and agricultural processing by providing a special budget subsidy for existing bee colonies; partial reimbursement of the cost of animals with breeding value purchased for further reproduction; partial reimbursement of the cost of construction and/or reconstruction of livestock farms and complexes, fish farms, milking parlors, agricultural processing enterprises , including those financed by bank loans; providing a special budget subsidy for the maintenance of goats, goat mothers, flocks, sheep mothers; a special budget subsidy for the increase in the number of cows of own reproduction;

– providing budget subsidies per unit of agricultural land under cultivation;

– state support for agricultural insurance;

– reimbursement of losses from damage to agricultural crops as a result of man-made and natural disasters;

– financial support for agricultural producers using reclaimed land and water user organizations;

– state support for organic agricultural producers;

– financial support for potato producers.

After the introduction of martial law in February 2022 and the transition to a wartime budget, expenditures on budget programs for financial support of agricultural producers were reduced. As compensation, the EU provided non-refundable financial support to farms registered in the State Agrarian Register totaling UAH 1.645 billion in the form of a budget subsidy per unit of cultivated agricultural land to producers, farmers who cultivate from 1 to 120 hectares (3100 UAH per 1 hectare), the amount of which amounted to 1.316 billion UAH, and a special budget subsidy for cattle to farmers who keep from 3 to 100 cows (5300 UAH per 1 head), the amount of which amounted to 329 million UAH [8]. In addition, access to bank lending for agricultural producers in the MSME sector was simplified under the state program "Affordable Loans 5-7-9%", and a decision was made to provide state non-repayable grants for the establishment or development of horticulture, berry and viticulture (UAH 327 million), greenhouse farming (UAH 55.9 million), processing enterprises, and microgrants for the establishment or development of their own business at the expense of the reserve fund of the State Budget of Ukraine.

In 2023, state financial support for Ukrainian farms will be provided in the following areas:

– resumption of budgetary lending for production activities and diversification of production through the Ukrainian State Farm Support Fund (UAH 80 million);

– continuation of budgetary incentives for preferential lending to agricultural producers in the MSME sector under the state program "Affordable Loans 5-7-9%" and extension of its effect to the frontline, combat-affected and

de-occupied territories, introduction of a new state program "Affordable Financial Leasing 5-7-9%";

– reducing the cost of lending to agricultural producers through the Fund for Partial Guarantee of Loans in Agriculture (UAH 725.7 million);

– Providing non-refundable state grants for the establishment or development of own business, horticulture, berry and wine growing, greenhouse farming, processing enterprises, including in the areas affected by hostilities, de-occupied and frontline territories (UAH 1.8 billion);

– support for the development of water user organizations to modernize drainage/irrigation systems for farms to increase yields and productivity (UAH 201 million).

Tax support for Ukrainian farms during the war provided for the exemption of individual entrepreneurs under the simplified and general taxation systems from paying the unified social contribution, and farms operating under the simplified taxation system of groups 2 and 3 were exempt from paying the unified social contribution for mobilized employees. In addition, in 2022, the Tax Code of Ukraine was amended to exempt from the minimum tax liability, land payment and single tax agricultural land located in the territories where military operations are or have been conducted or temporarily occupied by the Russian Federation, as well as land that is under conservation or contaminated with explosive devices. It should be noted that the instrument of regulating the level of taxation of agricultural producers through the provision of tax benefits and the introduction of special taxation regimes based on sectoral or territorial characteristics as a tool for indirect state financial support and stimulation of the development of farms in times of war, especially those that restore and develop economic activity in the de-occupied and war-affected territories, is not sufficiently effective.

One of the important sources of financial support for farmers in the war and post-war periods should also be available financial and technical assistance from the EU pre-accession funds and other support programs for candidate

countries to rebuild and modernize production activities in order to move to green, digital, inclusive agricultural economy standards and accelerate accession to the European economic community. The state's priority tasks are to provide advisory services to farmers on the possibilities of financial and credit support under various programs, assistance in the preparation and submission of project applications, including through the digital platform of the State Agrarian Register of Ukraine, the Diia portal, and relevant EU digital platforms.

In addition, work is underway on draft law No. 8025 "On Amendments to Certain Legislative Acts on State Support for Agriculture and Export of Agricultural Products during Martial Law", which provides for the introduction of special non-budgetary mechanisms for state support for the agricultural sector at the expense of international financial organizations, foreign governments, other partners and donors, given the key impact of the domestic agricultural sector on global food security. To stimulate the interest of foreign partners and investors in the Ukrainian agricultural sector, it is proposed to approve regulations that will ensure that grant support and investment funds are directed primarily to the implementation of capital and long-term projects with a reliable system of war risk insurance.

Analyzing the peculiarities of the state financial support of Ukrainian farms in the pre-war and war periods, it should be noted that while the total amount of support decreased, the mechanisms for its provision were simultaneously modernized in the direction of active attraction and use of international financial assistance, transition from direct budget financing to the use of state grant support for the development of farms, provided that they meet certain economic criteria (creation of new jobs, compliance with state It is important to achieve an optimal combination of fiscal and credit instruments of financial support for farms to ensure profitability and competitiveness of their activities, maximize the achievement of strategic priorities of agrarian and rural development of the country, ensure sustainable development of rural areas and food security in the medium and long term.

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SECTION XIII
FARMS AS THE BASIS OF POSTWAR RURAL DEVELOPMENT

The revitalization of farms is one of the ways to restore Ukraine's economy in general and rural areas in particular after the war. In most countries of the world, family farms ensure food security, sustainable development of rural areas and contribute to the conservation of land resources. Family farms use more than 90% of agricultural land and produce more than 80% of the world's food [4]. The special role of family farms has been recognized by the United Nations, which has declared 2019-2028 as the Decade of Family Farming.

Farms are the most institutionally capable of ensuring that the criteria for sustainable rural development are met. They are an integral element of territorial communities and the preservation of local culture. They receive their income and sell their products mainly in local or regional markets, creating jobs both in agriculture and in other sectors of the economy [5]. Family farming, which harmoniously combines the capabilities of the family and the farm in the development of economic, environmental, social and cultural functions, has the greatest potential for sustainable rural development. It is family farms that are most interested in preserving biodiversity, rural lifestyles and resource-saving agricultural activities, forming sustainable food systems, providing employment and increasing incomes of the rural population [3]. A peasant farmer will not stop farming even if it does not provide him with anything but an average salary [1].

During the war, family farms were distinguished by their extraordinary flexibility and ability to adapt to changing economic conditions, high maneuverability in response to changing market conditions, and high mobility and dynamism in terms of the possibility of re-profiling, curtailing, and relocating production. At the same time, the negative environmental and social impacts of agroholding structures under martial law were compounded by the

complicated functioning of large-scale agricultural production and low mobility. Farms have made an invaluable contribution to ensuring the sustainability of the food system at the regional level, helping to preserve the export potential of the national economy, rebuilding infrastructure, and assisting the Armed Forces of Ukraine and volunteers.

In the Carpathian region, family farms play a crucial role in the development of rural areas due to the regional peculiarities of the development of industries. In particular, in Ivano-Frankivsk region, the share of farms that occupy an area of up to 100 hectares is 83.2% of the total number of farms in the region. The share of farms in the total number of small agricultural enterprises was 81.4%, and these farms cultivate 88.5% of the area of agricultural land occupied by small agricultural enterprises. At the same time, business associations cultivated 5.3% of the agricultural land area, accounting for 7.8% of the total; private enterprises cultivated 2.7% of the agricultural land area, accounting for 5.0% of the total; cooperatives cultivated 1.2% of the agricultural land area, accounting for 3.1% of the total, and other forms of small enterprises cultivated 0.1% of the agricultural land area, accounting for 1.0% of the total. The importance of farms in the development of the region is also confirmed by the fact that out of 13 grant recipients for the creation or development of horticulture, berry growing and viticulture, 8 are farms by legal form.

Today, family farms can be considered a global trend. After all, family farms ensure the continuity of knowledge and traditions from generation to generation, promote self-employment of the rural population, social equality and community well-being, playing an important role in ensuring the socio-economic development of the state. The key role of farms in preserving and developing local markets and food supply chains during martial law necessitates a change in agricultural policy in the future and its transformation into a more family-friendly one. Accordingly, the post-war agricultural system should be

aimed at creating competitive farms with sufficient jobs in each rural community.

Family farms are characterized by a high degree of diversification of activities, which allows the rural population to provide themselves with an appropriate level of income and adapt to unstable business conditions. An example is the craft production of agricultural products, which is becoming a powerful driver of economic development in certain areas and a source of added value and budget revenues. Also, craft activities are an effective way to develop a culture of consumption of environmentally friendly, high-quality and unique products of domestic agricultural producers, which ultimately also contributes to the development of rural areas.

Foreign experience in the development of farms shows that this form of activity is one of the decisive factors in scientific and technological progress, increasing production efficiency, creating new jobs, and reducing unemployment, which is of great importance in the context of the need for post-war recovery. The role of family farms in the development of rural areas is manifested through a number of functions (Fig. 1).

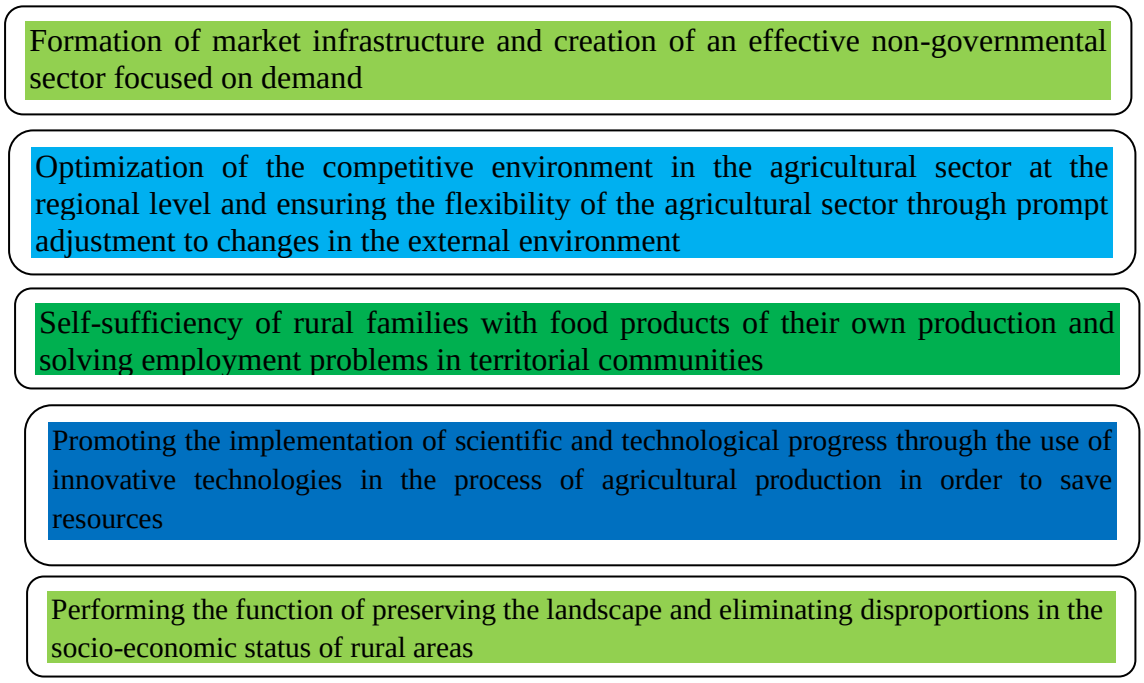

Figure 1. The **role of family farms in rural development**

One of the significant reasons that hinder the development of family farms is the low level of participation of local governments in the processes of creating and supporting their activities [2]. In addition, the low level of prestige of labor in the field of agriculture leads to a lack of interest in this type of activity and migration of young people when older people are unable to perform labor-intensive work. Accordingly, the main task of local governments today is to ensure the development of rural areas, given their high agricultural potential.

In Ukraine, the prototype of family farms is individual peasant farms. At the same time, the diverse agricultural activities of the population are spontaneous, which necessitates the justification of development and achievement of long-term efficiency through transformation into family farms. In Europe, the United States and other developed countries, it is currently difficult to find agricultural producers who, for the most part, do not have legal status and whose actions are not clearly regulated by law. Transformation processes in private farms are a requirement of the times and the need for post-war rural recovery. Opportunities to expand sales markets and gain access to state support should intensify activities in this area.

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SECTION XIV
MANAGEMENT OF LAND USE EFFICIENCY OF FARMS

A study of the importance of land in the farm economy has shown that its place and role are widely defined. In the economic sphere, it manifests itself as an object of economic activity, the material basis of production, the location of productive forces and a source of satisfaction of human needs; in the environmental sphere, it is an object of nature, an ecosystem and a biological resource; in the social sphere, it is an object of property, a place of residence and the basis of spiritual production. The implementation of land relations in these areas allows us to consider land as land capital, consisting of natural, intellectual and property capital, and its expanded reproduction and increase in value are considered to be the main task of the farmer.

We consider the management of land resources of farms as a clearly structured open process-oriented system consisting of economic, environmental, regulatory, administrative, innovation and management, and land management and technological subsystems. The subject of this system, i.e., the management subsystem, is farms and government authorities of all levels that implement the state land, agrarian and tax policies, and supervise compliance with the norms of rational use of land resources. The object of management is differentiated by the depth of the essential content of the definition of "land", covering land and its fertility, land resources and their capitalization, land and their investment attractiveness, agricultural land (by type) and the efficiency of their use. The economic interests of landowners, land users, the state and society are the basis for a farmer's management decisions. The subject of management is the processes of rational and efficient organization of land use, which is carried out on the basis of economic and organizational and economic mechanisms.

The management of the efficiency of land use of farms should be strategically focused on the formation of sustainable agricultural landscapes that ensure a level of agricultural production efficiency sufficient to finance expanded reproduction and meet the interests of the farmer. The system of land

management of farms should be based on the following basic principles: systematicity; purposefulness; balance of interests of the farmer, landowners, the state and society in the use of land resources; payment for land use; sustainable development of agricultural land use; rationality and economic feasibility of land use; priority of land protection as the main means of production; responsibility and information. The functions of farm land management include planning the use of land resources; forecasting the use of land resources in the short, medium and long term; organization of land use; motivation and control of the rational use of land resources. At the state level, in addition to the above, the functions of coordination, accounting, analysis and regulation of farm land use are additionally distinguished.

It is shown that economic efficiency does not depend on the form of realization of economic and land relations. In the developed typology of efficiency of use of land resources of farms, economic, environmental, social and technical and technological efficiency are defined as its basic types. Depending on the sphere of combination of economic interests, the ecological and economic, socio-economic, production and economic, and socio-ecological and economic efficiency of land use is formed. The latter is at the same time immanent in the rational use of land resources of farms.

To assess the level of land use of farms, we have improved the system of indicators that allows us to qualitatively and quantitatively characterize the relevant state of land depending on a specific type of efficiency. This system is based on factor (ecological and landscape condition of land and intensity of land use) and resultant (efficiency of land use as a means of production and an object of management) groups of indicators. In turn, performance indicators are divided into natural and cost indicators.

The level of intensity of land use by farms is high. In particular, in 2017, 99.0% of the land was brought into economic use, of which 95.1% was plowed. At the same time, the level of forest cover decreased by half between

1995 and 2017, and by 3.3 times compared to 1995, indicating the environmental destabilization of agricultural landscapes (Table 1).

Table 1: **Intensity and environmental efficiency of land use in farms**

Indicator.	Years						
	1995	2000	2005	2010	2013	2016	2017
Level of economic utilization, %.	97,4	97,6	98,6	98,8	98,8	98,9	99,0
Level of plowed agricultural land, %.	90,9	92,3	93,3	95,1	95,2	94,9	95,1
Level of forest cover, %.	1,0	0,8	0,4	0,3	0,3	0,3	0,3
Employment (per 100 hectares of agricultural land), persons	D.	3,3	3,6	2,3	2,2	2,2	2,1
Energy availability (per 100 ha of agricultural land), kW	53,1	72,4	118,2	120,7	139,5	152,6	157,5
Share in total sown area, %: - grain crops	68,4	59,0	65,1	60,7	60,3	55,7	54,9
- industrial crops	23,1	28,4	29,3	35,8	36,7	42,1	43,2
Environmental sustainability factor	0,186	0,177	0,133	0,154	0,154	0,155	0,154
Environmental sustainability factor	0,190	0,182	0,148	0,166	0,166	0,167	0,166
Anthropogenic load factor	3,881	3,889	3,782	3,929	3,930	3,930	3,931

Notes. No data available.

Source: calculated by the author according to the State Statistics Service and the State Geocadastre of Ukraine.

The structure of farms' sown areas is environmentally inefficient, as it generally does not meet the rational standards of scientifically based crop rotation in crop rotations. In turn, unbalanced natural resource use leads to a significant deterioration of the ecological and landscape parameters of land resources. In 1995-2017, the coefficient of environmental sustainability decreased by 17.2%, environmental stability by 12.6%, and the level of anthropogenic pressure increased by 1.3%, which characterizes agricultural landscapes as unstable and degrading. Irrational use of land resources by farms results in soil fatigue, erosion processes, etc., which ultimately lead to a decrease in the efficiency of management and the quality of products (Table 2).

Table 2 - **Economic efficiency of land use in farms**

Indicator.	Years						
	2000	2005	2010	2013	2015	2020	2022
Yield, c/ha - Cereals and legumes	15,8	22,0	21,9	32,1	33,4	37,4	41,8
- sunflower	10,2	11,1	13,4	20,9	18,0	21,4	19,0
- sugar beet	186,3	238,1	250,8	376,0	445,1	486,4	587,4
- potato	128,9	150,8	159,5	225,5	196,8	182,6	226,7
- vegetables	78,2	136,5	159,2	288,2	373,9	307,9	269,8
- fruits and berries	11,5	17,3	49,7	58,5	86,8	91,3	154,4
Produced per 100 hectares of agricultural land							
Meat (in slaughter weight), t	3,8	3,9	11,1	14,3	12,0	13,0	12,9
Milk, c	31,4	26,3	26,1	35,2	40,8	42,7	42,5
Wool, kg	0,4	1,9	3,0	2,2	1,6	1,2	1,2
Honey, kg	3,8	3,2	5,0	3,9	2,8	2,8	2,4
Eggs, thousand units (per 100 hectares of grain crops)	0,8	1,0	3,5	2,8	3,3	4,1	3,8
Net s a l e s revenue agricultural products and services, thousand USD U.S. DOLLARS	4,8	16,5	31,7	49,2	45,6	48,4	44,3
Profit from sales of agricultural products and services, thousand USD USD	0,5	2,5	7,7	8,0	15,0	15,1	10,1

Notes. Net and gross profit from sales were translated into US dollars at the average annual exchange rate of the National Bank of Ukraine to offset inflation.

Source: compiled and calculated by the author according to the State Statistics Service of Ukraine.

The overall efficiency of land use by Ukrainian farms in 2000-2022 increased significantly. This was mainly due to the intensification of crop production and the growth of energy supply, the introduction of innovative agricultural technologies and the reduction of labor costs. The volume of crop production per 100 hectares of agricultural land in 2017 increased by 3.3 times compared to 2000, while livestock production

- three times. Net revenue from sales of products and services per 100 hectares of farmland increased 9.2 times, while profit increased 20.2 times.

The most profitable products are crops, including sunflower seeds and grain, as well as fruits, berries and grapes. Livestock production and sales are mostly unprofitable, except for farm milk, poultry and rabbit meat, and chicken eggs, which are in demand in certain retail rural and urban markets.

One of the constraints to improving the social efficiency of farms is the low remuneration of their employees. In 2017, the average monthly nominal

wage of farm workers was twice as low as the industry average, indicating that farmers are unable to fulfill their social role as effective employers in rural areas.

It is shown that the lease mechanism is the most important factor in the development of land use by farms. In 2003-2017, the share of their leased agricultural land increased by 1.7 times, and large and medium-sized farms operate entirely on leased land. However, unlike agricultural enterprises, the rent for land shares in farms, especially in small farms, was much lower: in 2017, it amounted to only 4.9% of the normative monetary value. In-kind rent prevailed among the forms of rent, which leads to the inefficiency of the institution of lease land relations of farms.

The organizational and economic mechanism for the use of land resources of farms should be based on the following principles: historicism; systematicity; purposefulness; coherence of interests of the mechanism's subjects; adaptability to changing environmental conditions; maximum realization of the potential of farms; innovation; rational use of land resources; emergence; stimulation of farming development and rural preservation.

Currently, one of the main reasons for the decline in the efficiency of land use by farms is the failure to comply with scientifically sound crop rotations and application rates for organic (in 2016, 3.2% of farms applied them on an area of 56.9 thousand hectares), mineral (the share of fertilized sown area in 2003-2016 did not exceed 45%) and microfertilizers (according to expert estimates, 3-5% of farmers use them). According to the calculations, in 2012-2016, the soils of Ukrainian farms received a total of 5.95 t/ha of arable land of humus, 9.3 c/ha of nitrogen, phosphorus and potassium, 10.6 c/ha of calcium and magnesium, which is equivalent to a loss of about 68.7 thousand UAH/ha. We consider smart specialization management to be a strategic direction for improving the efficiency of land use by farms. Under the smart specialization of farms we understand an innovation-oriented system of spatial planned development of socially and environmentally balanced agricultural production of competitive

products, which also includes a purposeful process of separation as a result of the division of socially distributed labor of industries and types of economic activity, characterized by homogeneous output, technical and technological support and qualifications of personnel, and accompanied by an increase in the efficiency of land and resource use. In the context of the transition to smart specialization, farming is becoming innovation-oriented, and the state should do its best to promote innovation and investment activities, transfer of innovations to agricultural production, and stimulate the sale of niche agricultural products.

The tools for smart specialization of farms include the digitalization of agribusiness, innovative agricultural technologies, the organic industry, government interventions for innovative products, training and retraining of personnel for innovative farming. The organizational forms of implementing the smart specialization policy are clusters in the agri-food sector formed with the participation of farms, closed farm value chains, network forms of farm cooperation, product integration, involvement of farmers in agro-technology parks, national technology platforms, startups, etc.

The farm value chain is a set of interconnected phases of the production and marketing process aimed at increasing the efficiency of the farm by maximizing the economic effect of economic activity in the target commodity market. At the same time, farm value chain management is a systematic process of organizing, motivating and coordinating production and economic activities at all links of the chain, constant monitoring of the rational and environmentally friendly use of land resources, production of high quality products and their sale within a given time frame to increase the competitiveness of the farm in the market and maximize the satisfaction of the final consumer solvent demand. The functionality of the farm value chain includes the positioning of the farm and its products in the agricultural market, resource availability and production, the uniqueness of the created goods and the set of managerial competencies of the farmer as the main manager.

In order to increase the efficiency of farming in the context of the transition to the smart specialization model, it is justified to create a national information center (hub) for farming development in Ukraine. Its goals are to transfer innovative technologies, implement a system of rational and environmentally friendly land use and bioethical animal husbandry, ensure the development of electronic trade in agricultural and knowledge-intensive products, monitor agricultural markets to identify free market niches, ensure cooperation between farmers and financial institutions to facilitate their obtaining loans, integrate the farm sector into international agricultural markets, etc. To ensure the effective operation of the hub, the following principles must be adhered to: ensuring transparency, honesty and ethics in doing business; protection of perfect economic competition; freedom and democracy in farmers' management decisions; continuous improvement of farm value chain management mechanisms; adaptability and flexibility in accordance with changing environmental conditions; loyalty to new innovative solutions of competitors; guaranteeing environmental safety of farming; non-disruption of the farming sector; and.

The management of the farm value chain involves four blocks of management decisions: improvement of the production process, improvement of specialization, improvement of the product, and modernization of the value chain. The most effective forms of implementing optimized farm value chains are farm cooperation and contracting of agricultural products as a network integrative quasi-cooperation. The form of implementation of contractual relations involving farms is "network farms" or "network cooperatives". The synergistic effect of network farming is to provide additional benefits from economies of scale, organize joint use of resources and sales of finished products, and distribute production and commercial risks between the customer and the producer. At the state level, this contributes to increased employment in rural areas, the development of small farming, family farms and their integration into agricultural markets.

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CONCLUSIONS AND SUGGESTIONS

Investment activities in farms have been fully or partially suspended due to the war in the occupied, de-occupied and other affected territories of Ukraine. The costs incurred are used to restore destroyed facilities, support economic activity and other similar needs. These losses can be fully compensated through investments only in the post-war period.

Investment activity in farms has long been constrained, including during the war, by the following: underdevelopment of production and service agricultural cooperation and lack of agricultural advisory services; insufficient security of farmers' economic activity and invested capital, raiding, deficiencies in the judicial and law enforcement systems; growing aridity in agricultural areas; negative demographic processes, reduction in the number of workers, including skilled workers; low level of

Mitigation of the negative impact and complete elimination of the factors associated with the above-mentioned investment problems in the postwar period will contribute to their growth. This will also be facilitated by changes in the investment strategies of farms to restore their operations, create agro-industrial clusters, achieve environmental and social effects, and balance the interests of participants in farmers' investment projects.

When designing state support measures and increasing its volume to the level of the minimum needs of farmers in the short and medium term, preference should be given to mechanisms that provide for the provision of this support on a repayable basis, primarily through the mechanism of cheaper loans. Priority should be given to such support in the de-occupied and war-affected regions and rural areas.

During the war and the postwar period, it is necessary, first of all, to provide budgetary assistance for the demining of agricultural land and the restoration of destroyed property of agricultural producers. It is especially important to take measures to counteract the investment crisis in farms. To this

end, investment and other support for agriculture should be reoriented to meet the needs of farmers, especially in the frontline and other areas affected by the hostilities. Support and stimulation of investment activities of farms in the conditions of war should be carried out through partial compensation of the cost of agricultural machinery and equipment of domestic production, credit support for investment projects in the amount of 50-70% of the credit rate of an authorized commercial bank and through other economic and financial mechanisms and organizational measures.

Undoubtedly, family farms now play an important function in the agriculture of every country, contributing a decisive share to agricultural production. The country has embarked on the path of developing family farming as a viable, sustainable, scientifically proven model based on private ownership, individual management and family, the three main components of family entrepreneurship. In order to realize the potential of family farms at the national level, certain problems need to be solved: first of all, the regulatory and legal support of family farms, the demographic, economic, socio-cultural conditions in which they are located, and the implementation of agricultural, environmental and social policies that contribute to the sustainability of family farms.

Appendix 1

Formation and Development of Farming in the Agricultural Sector of the Ukrainian Economy

Farm-type business entities	**Key institutional changes**
before 1991 (Soviet era)	
Households in rural areas: 6359.7 thousand units, 2.35 million hectares of agricultural land (as of January 1, 1991) *Farms*: 255 units, 4 thousand hectares of agricultural land (as of January 1, 1991)	
From 1991 to 2000 (the era of private land ownership)	
Households in rural areas: 6454.4 thousand units, 3.42 million hectares of agricultural land (as of January 1, 1996), of which 3. 0 million hectares are used for private households 6260.3 thousand units, 6.2 million hectares of agricultural land (as of January 1, 2001); 3. 49 million hectares for private households *Peasant (farm) households*: 27867 units, 649.0 thousand hectares of agricultural land (as of January 1, 1996); 34092 units, 1906.6 thousand hectares of agricultural land (as of January 1, 2001)	The Land Code of Ukraine No. 561-XII of December 18, 1990 (no longer in force): *right to obtain ownership* *land plots for personal subsidiary farming* The Law of Ukraine "On Peasant (Farm) Economy" No. 2009-XII of 20.12.1991: the *right to establish a peasant (farm) and to receive a land plot for its operation free of charge*
From 2000 to 2015 (the period of establishment of small-scale business)	
Households in rural areas: 6020.8 thousand units, 8.71 million hectares of agricultural land (as of January 1, 2005) 4,834.6 thousand units, 12.2 million kerosene per year (2015) *Private peasant farms*: 4915.3 thousand units, 3.66 million hectares of agricultural land (as of January 1, 2005) 4108.4 thousand units, 2.6 million hectares of agricultural land (2015)	Presidential Decree " On Urgent Measures to Accelerate Reform of the Agricultural Sector of the Economy": *the right of free withdrawal of members of collective agricultural enterprises with land and property shares* The Law of Ukraine "On Personal Peasant Farming" of May 15, 2003 - *transfer of land plots of no more than 2.0 hectares to individuals in ownership or lease for personal farming, with the possibility of increasing them by allocating in-kind shares to family members]*

Number of peasant (farm) households: 37007 thousand units, 3.23 million hectares of agricultural land (as of January 1, 2005) 32303 thousand units, 4.34 million hectares of agricultural land (2015)	
2016 - present (the period of family farming development)	
	Continuation of Appendix 1
Households in rural areas: 4779.1 thousand units, 13.7 million hectares (2017) 4656.5, 12.4 million hectares of agricultural land (2021) *Private peasant farms*: 4,031.7 thousand units, 2.55 million hectares of agricultural land (as of January 1, 2018) 3321.5 thousand units, 2.54 million hectares of agricultural land (as of January 01, 2022) *Number of peasant (farm) households*: 34137 thousand units, 4.58 million hectares of agricultural land (2017) 31851 thousand units, 4.82 million hectares of agricultural land (2020)	The Law of Ukraine "On Amendments to the Law of Ukraine "On Farming" to Stimulate the Establishment and Operation of Family Farms" No. 1067-VIII of March 31, 2016: the right to establish a family farm without the status of a legal entity; The Law of Ukraine "On Amendments to the Tax Code of Ukraine and Certain Laws of Ukraine on Stimulating the Establishment and Operation of Family Farms" No. 2497-VIII of July 10, 2018: family farms without the status of a legal entity were entitled to choose a simplified taxation system at the single tax rate of the fourth group (with a land area of 0.5-20 hectares)

*Based on the results of research and methodological generalizations

Appendix 2

For the information of **farmers** (useful information)

1. **Ukrainian State Farm Support Fund**

It is a state budgetary institution that implements state policy to support the establishment and development of farms.

www.udf.gov.ua

2. **A portal for entrepreneurs.**

Training, grants, support www.sme.gov.ua/program _type/prog ramymizhnarodnoyi-tehnichnoyi- dopomogy/

3. **Ukrainian Horticulture Business Development Project (UHBDP)**

Offers farmers to watch free educational webinars on the production, marketing, certification and value addition of agricultural products at any time: www.uhbdp.org/ua/teaching/webinars

4. **Online farmer assistant**

20 free courses for farmers: www.kurkul.com/ spets- proekty/438-top-20-bezkoshtovnih-kursiv-dlya- fermeriv

5. **Intensive online course "Agronomy"**

Created by the Ukrainian Agribusiness Club with the support of the EBRD:

www.courses.prometheus.org.ua/courses/course - v1:UCAB+AGRO101+2021_T1/about

6. **Meteo Farm**

A unified service for forecasting weather, the likelihood of disease and pest occurrence. Users of this service can track agro-climatic conditions according to weather stations in any particular field, store this information in an archive, predict the start of field work based on measured precipitation and temperature data, correctly "catch" the moments for spraying fields, and ultimately get a better harvest at lower costs: www.meteo.farm/?utm_source= kurkul&utm_medi- um article

7. **A platform for communication between large grain enterprises and ordinary farmers**

This resource allows you to track purchase prices for grains and pulses:

www.zernotorg.ua/?utm_source=kurkul.com&utm_medium=article&utm_campaign=promo

8. **Zernovoz.ua: an all-Ukrainian service created to unite grain cargo owners and carriers**

A service for searching and ordering transport for grain transportation. It is aimed at simplifying the selection of transport for customers and opening access to new orders for carriers:

www.zernovoz.ua/uk_UA/?utm_source=kurkul.com&utm_medium=article&utm_campaign=promo

A large amount of useful, largely already developed information can be found on the following websites: Resource Center "Gurt" www.gurt.org.ua

Information portal of non-profit organizations of Ukraine "Public Space" www.prostir.ua/category/grants

"The Big Idea www.biggggidea.com

All-Ukrainian Association of Village and Settlement Councils www.vassr.org

Information about training and internships is posted on the websites:

"Platforma www.platfor.ma Mladinfo www.mladiinfo.eu

"Unistudy www.unistudy.org.ua/short-term/training

9. **Association of Farmers and Private Landowners of Ukraine (AFZU).**

https://farmer.co.ua, https://www.facebook.com/ groups/1383588171874581, **https://www.facebook.com/profile.php?id=100054466946375.**

AFZU:

a) represents the interests of citizens who run farms before the President of Ukraine, the Verkhovna Rada of Ukraine, central and local executive authorities and local self-government bodies;

b) submit proposals for improvement of the legislation regulating the activities of farms for consideration to the central executive body responsible for the formation of the state agrarian policy. The President of the HFZU may be a member of the board of the central executive body that implements the state agrarian policy and participate in its meetings in an advisory capacity.

Appendix 3

Guidelines for the farmer

We channel the passion of our veterans so they can earn a meaningful, financially sustainable place in the agricultural community. This may include full-time or part-time employment or an important supplement to disability-related income.

WE BELIEVE in the meritocracy of American agriculture, where personal responsibility for one's actions and individual initiative in achieving one's goals can create personal success. We believe in the fundamental dignity of physical labor.

WE RECOGNIZE the diversity of crops, methods, scales and markets available to our veterans. We honor, guide, and support the practical farming path chosen by each veteran.

WE STRIVE to leverage our work through a network of partnerships. This allows us to more effectively help more veterans, especially those who are starting their civilian careers.

WE SUPPORT all valid national, regional, or specific efforts to connect veterans with agriculture and to encourage cooperation rather than competition with other groups that provide services to our nation's veterans.

WE SPONSOR and encourage both employment and self-employment in agriculture, and equally value the contributions of all members of the agricultural industry that feed America. We recognize the wide range of employment opportunities in the agricultural economy.

We RESPECT the privacy of our veterans and will help when we can to get them the support they need to make them stronger farmers. We support and treat the whole veteran. We know of a large number of veterans who return with both visible and invisible wounds.

WE RECOGNIZE the geographical and psychological isolation common to farmers. Establishing contact between our farmers and a sense of community among them is an important part of our mission."

Uniting around life's problems is a direct path to cooperation in business.

Appendix 4

Land use in different business entities in 2021

Categories of farms	Quantity	Area of agricultural land, thousand hectares	%	Produc-. gross output, UAH million	%	land utilization rate
Total						
All categories of farms		39490	100	712566	100	1,000
including:						
Agricultural enterprises together with farms	39301	20823	52,7	484101	67,9	1,288
of them:						
farms	26629	4969	12,6	90260	12,7	1,007
agricultural enterprises without farming	12672	15854	40,1	393842	55,3	1,377
Households	15055	18668	47,3	228465	32,1	0,678
including crop production						
All categories of farms		39490	100	580268	100	1,000
including:						
Agricultural enterprises with farms		20823	52,7	413005	71,2	1,350
of them:						
farms		4969	12,6	86421	14,9	1,184
agricultural enterprises without farming		15854	40,1	326584	56,3	1,402
Households		18668	47,3	167263	28,8	0,610
animal husbandry						
All categories of farms		39490	100	132299	100,0	1,000
including:						
Agricultural enterprises with farms		20823	52,7	71096	53,7	1,019
of them:						
farms		4969	12,6	3839	2,9	0,231
agricultural enterprises without farming		15854	40,1	67258	50,8	1,266
Households		18668	47,3	61202	46,3	0,979

Appendix 5

Grain production in all categories of Ukrainian farms, 2021-2022

Area.	Total, thousand hectares			Gross harvest, thousand tons			Yield, c/ha		
	2021	**2022**	***2022 to 2021, %.***	**2021**	**2022**	***2022 to 2021, %.***	**2021**	**2022**	**2022 to 2021, %.**
Vinnytsia	890	803	*90,2*	6536	3564	*54,5*	73,4	44,4	*60,5*
Volyn	327	304	*92,8*	1509	1359	*90,0*	46,1	44,7	*97,0*
Dnipropetrovsk	1150	1020	*88,7*	4949	3271	*66,1*	43,0	32,1	*74,5*
Donetsk	596	184	*30,9*	2228	544	*24,4*	37,4	29,5	*79,1*
Zhitomirskaya	552	459	*83,1*	3357	1987	*59,2*	60,8	43,3	*71,3*
Transcarpathian	83	79	*95,4*	363	306	*84,4*	43,6	38,6	*88,4*
Zaporizhzhya	1014	286	*28,2*	3838	770	*20,1*	37,9	26,9	*71,1*
Ivano-Frankivsk	155	145	*93,5*	1010	844	*83,6*	65,3	58,3	*89,4*
Kyiv	676	612	*90,5*	4567	2978	*65,2*	67,6	48,7	*72,0*
Kirovogradskaya	900	860	*95,6*	4981	3887	*78,0*	55,4	45,2	*81,6*
Luhansk	392	85	*21,6*	1391	253	*18,2*	35,5	29,9	*84,3*
Lviv	315	326	*103,3*	1828	1905	*104,2*	58,0	58,5	*100,9*
Nikolaevskaya	951	705	*74,2*	3926	2134	*54,4*	41,3	30,3	*73,3*
Odesa	1238	1178	*95,2*	5105	3062	*60,0*	41,2	26,0	*63,0*
Poltava	1011	886	*87,7*	5980	5097	*85,2*	59,2	57,5	*97,2*
Rivne	319	281	*88,2*	1727	1403	*81,3*	54,2	49,9	*92,2*
Sumy	722	539	*74,6*	4261	3472	*81,5*	59,0	64,4	*109,2*
Ternopil	487	443	*90,8*	3304	2643	*80,0*	67,8	59,7	*88,1*
Kharkivskaya	1061	578	*54,5*	4937	2445	*49,5*	46,5	42,3	*90,9*
Kherson	814			3529			43,4		*0,0*
Khmelnitskaya	626	554	*88,5*	4831	3516	*72,8*	77,2	63,4	*82,2*
Cherkassy	708	648	*91,5*	5150	3659	*71,0*	72,7	56,5	*77,6*
Chernivtsi	121	123	*102,2*	729	665	*91,3*	60,5	54,0	*89,3*
Chernigovskaya	841	630	*74,9*	5977	3956	*66,2*	71,1	62,8	*88,3*
TOTAL	**15948**	**11773**	***73,8***	**86010**	**53864**	***62,6***	**53,9**	45,8	***84,8***
Total	**15948**	**11773**	*73,8*	**86010**	**53864**	*62,6*	53,9	45,8	84,8

Appendix 6

Gross agricultural output of Ukraine in constant prices in 2016

Indicators.	Year				average 2018-2021	Average growth rate	2022	2022 in % to:	
	2018	2019	2020	2021				2021	mid-2018-2021
all categories of farms									
Total gross output, UAH billion	671,3	681,0	612,1	712,6	669	1,020	532,1	74,7	79,5
including									
crop production	529,3	538,7	473,4	580,3	530	1,031	416,3	71,7	78,5
animal husbandry	141,9	142,3	138,7	132,3	139	0,977	115,9	87,6	83,5
per 100 hectares of agricultural land, UAH thousand									
of all	1692	1724	1550	1804	1693	1,022	1684	93,3	99,5
including									
crop production	1334	1364	1199	1469	1342	1,033	1318	89,7	98,2
animal husbandry	358	360	351	335	351	0,978	367	109,5	104,5
agricultural enterprises									
Total gross output, UAH billion	438,0	449,8	395,7	484,1	442	1,034	343,5	71,0	77,7
including									
crop production	367,7	376,8	323,2	413,0	370	1,040	279,5	67,7	75,5
animal husbandry	70,3	73,0	72,5	71,1	72	1,004	64,0	90,0	89,2
per 100 hectares of agricultural land, UAH thousand									
of all	2094	2143	1862	2325	2106	1,035	2062	88,7	97,9
including									
crop production	1758	1795	1521	1983	1764	1,041	1678	84,6	95,1
animal husbandry	336	348	341	341	342	1,005	384	112,5	112,4
households									
Total gross output, UAH billion	233,3	231,2	216,4	228,5	227	0,993	188,6	82,6	83,0
including									
crop production	161,7	161,9	150,2	167,3	160	1,011	136,7	81,8	85,3
animal husbandry	71,6	69,3	66,2	61,2	67	0,949	51,9	84,8	77,4
per 100 hectares of agricultural land, UAH thousand									
of all	638	707	693	732	692	1,047	735	100,4	106,1
including									
crop production	366	441	422	458	422	1,078	472	103,0	111,9
animal husbandry	273	266	271	274	271	1,001	263	96,0	97,1

Appendix 7

Agricultural output of Ukraine (in constant prices of 2016), UAH mln.

Area.	Agricultural products			*including*					
				crop production			livestock products		
	2021	2022	*2022 to 2021, %.*	2021	2022	2022 to 2021, %.	2021	2022	*2022 to 2021, %.*
Vinnytsia	59 468	48 597	*81,7*	42 039	31 537	*75,0*	17 429	17 060	*97,9*
Volyn	17 078	16 565	*97,0*	12 089	11 970	*99,0*	4 989	4 595	*92,1*
Dnipropetrovsk	44 501	35 993	*80,9*	34 617	27 025	*78,1*	9 884	8 968	*90,7*
Donetsk	20 954	5 547	*26,5*	16 713	3 609	*21,6*	4 241	1 937	*45,7*
Zhitomirskaya	29 256	24 441	*83,5*	24 364	20 129	*82,6*	4 892	4 311	*88,1*
Transcarpathian	7 857	7 898	*100,5*	4 218	4 294	*101,8*	3 639	3 605	*99,1*
Zaporizhzhya	28 176	7 064	*25,1*	25 569	5 978	*23,4*	2 607	1 086	*41,7*
Ivano-Frankivsk	14 527	14 252	*98,1*	9 240	9 013	*97,5*	5 287	5 238	*99,1*
Kyiv	40 758	32 271	*79,2*	30 391	23 144	*76,2*	10 367	9 127	*88,0*
Kirovogradskaya	37 139	32 125	*86,5*	33 536	28 538	*85,1*	3 603	3 587	*99,6*
Luhansk	13 745	4 091	*29,8*	12 572	3 232	*25,7*	1 173	859	*73,2*
Lviv	25 834	26 713	*103,4*	18 540	19 619	*105,8*	7 294	7 094	*97,3*
Nikolaevskaya	29 067	16 334	*56,2*	26 599	14 420	*54,2*	2 468	1 915	*77,6*
Odesa	33 106	22 685	*68,5*	30 308	20 015	*66,0*	2 798	2 669	*95,4*
Poltava	42 319	42 205	*99,7*	35 993	36 092	*100,3*	6 327	6 113	*96,6*
Rivne	17 598	16 855	*95,8*	13 812	13 196	*95,5*	3 787	3 658	*96,6*
Sumy	28 200	26 427	*93,7*	24 773	23 853	*96,3*	3 427	2 575	*75,1*
Ternopil	27 499	26 218	*95,3*	22 573	21 149	*93,7*	4 926	5 069	*102,9*
Kharkivskaya	37 049	16 367	*44,2*	32 245	14 571	*45,2*	4 804	1 796	*37,4*
Kherson	30 772	1 509	*4,9*	27 796	875	*3,1*	2 976	634	*21,3*
Khmelnitskaya	39 752	35 711	*89,8*	33 351	28 886	*86,6*	6 401	6 825	*106,6*
Cherkassy	42 766	37 333	*87,3*	30 034	25 447	*84,7*	12 732	11 886	*93,4*
Chernivtsi	11 171	10 263	*91,9*	8 400	7 638	*90,9*	2 771	2 626	*94,8*
Chernigovskaya	33 976	26 920	*79,2*	30 497	23 678	*77,6*	3 480	3 242	*93,2*
TOTAL	**712 566**	**534 380**	***75,0***	**580 268**	**417 908**	***72,0***	**132 299**	**116 473**	***88,0***
areas where no military operations took place	**449 871**	**397 851**	**88,4**	**353 114**	**304 548**	**86,2**	**96 757**	**93 303**	**96,4**
areas where military operations took place	***262 696***	***136 529***	***52,0***	***227 154***	***113 359***	***49,9***	***35 542***	***23 170***	***65,2***
Total	**712 566**	**534 380**	***75,0***	**580 268**	**417 908**	***72,0***	**132 299**	**116 473**	***88,0***

Appendix 8

Regional structure of commodity products of agricultural enterprises in Ukraine in 2021 (%)

Area.	**Crop production**	**Including.**									**Livestock products**	**Including.**				
		Grain	Sunflower	Soybeans	Rapeseed	Sugar beet	Potatoes	Vegetables	Fruits and berries	Grapes		CATTLE	Pork	poultry meat	Milk	Eggs
Vinnytsia	79,5	45,1	19,8	5,5	6,7	1,0	0,0	0,2	1,1	0,0	20,5	1,0	1,0	12,6	4,9	0,9
Volyn	74,5	37,9	11,4	5,4	18,5	0,5	0,0	0,1	0,6	0,0	25,5	2,4	3,6	8,0	8,9	0,0
Dnipropetrovsk	84,6	40,7	31,0	0,4	8,4	0,0	0,5	2,7	0,8	0,0	15,4	0,5	4,5	5,7	1,8	2,8
Donetsk	86,6	45,2	38,0	0,1	0,9	0,0	0,0	0,8	0,4	0,0	13,4	0,9	4,3	0,8	3,5	3,8
Zhitomirskaya	86,9	54,5	16,2	6,5	8,4	0,1	0,8	0,4	0,0	0,0	13,1	1,3	3,2	0,4	7,6	0,0
Transcarpathian	90,1	41,3	5,0	35,6	0,0	0,0	0,0	0,0	0,0	0,0	9,9	0,0	4,7	0,0	0,0	0,0
Zaporizhzhya	93,6	49,6	31,2	0,7	10,9	0,0	0,0	0,4	0,2	0,0	6,4	0,4	2,3	0,3	1,0	0,8
Ivano-Frankivsk	72,0	32,4	10,8	12,4	15,5	0,0	0,0	0,3	0,3	0,0	28,0	1,0	25,6	0,3	1,2	0,0
Kyiv	69,0	42,4	15,0	4,4	3,4	0,3	0,2	1,1	0,1	0,0	31,0	1,3	6,7	2,8	6,5	7,6
Kirovogradskaya	94,3	51,9	37,3	1,0	3,1	0,9	0,0	0,0	0,0	0,0	5,7	0,5	2,8	0,0	2,3	0,0
Luhansk	97,1	40,0	56,9	0,0	0,0	0,0	0,0	0,0	0,0	0,0	2,9	0,5	0,4	0,0	1,6	0,0
Lviv	67,7	27,0	5,4	12,2	11,8	7,9	1,1	0,6	0,5	0,0	32,3	0,7	12,1	17,0	1,3	0,5
Nikolaevskaya	96,6	52,1	28,6	0,3	9,9	0,0	0,0	4,7	0,1	0,4	3,4	0,3	0,6	0,0	2,1	0,3
Odesa	96,7	55,9	22,6	0,3	15,2	0,0	0,0	0,4	0,1	1,0	3,3	0,6	1,7	0,0	0,8	0,0
Poltava	82,1	50,2	24,0	3,9	1,0	2,6	0,0	0,0	0,0	0,0	17,9	1,5	4,0	0,1	10,5	1,7
Rivne	80,0	50,3	7,4	10,2	11,0	0,0	0,0	0,0	0,0	0,0	20,0	0,7	1,5	9,2	4,8	0,0
Sumy	91,9	53,7	29,3	5,4	3,2	0,0	0,0	0,1	0,0	0,0	8,1	1,1	1,0	0,1	5,0	1,0
Ternopil	83,7	43,8	12,6	7,4	16,9	1,6	0,5	0,4	0,3	0,0	16,3	0,9	5,6	1,5	5,6	2,6
Kharkivskaya	86,0	47,2	36,3	0,7	0,0	0,0	0,1	0,7	0,1	0,0	14,0	1,2	3,0	2,2	7,6	0,0
Kherson	96,0	45,8	22,0	10,1	13,0	0,0	0,7	3,5	0,6	0,1	4,0	0,3	0,8	0,0	2,8	0,0
Khmelnitskaya	88,7	51,4	16,1	7,6	10,9	1,8	0,0	0,1	0,3	0,0	11,3	1,1	2,9	1,0	6,0	0,0
Cherkassy	80,8	50,1	22,7	2,3	2,3	0,7	0,3	2,5	0,1	0,0	19,2	1,6	2,9	2,3	9,4	0,2
Chernivtsi	67,8	20,5	15,0	18,0	11,0	0,0	0,0	0,0	3,2	0,0	32,2	0,7	6,9	22,7	0,8	0,0
Chernigovskaya	91,7	61,5	23,6	2,5	3,4	0,1	0,5	0,0	0,0	0,0	8,3	1,1	1,5	0,1	5,4	0,0