FEATURES OF THE DEVELOPMENT AND CONTENT OF STARTUPS AND INNOVATIVE PROJECTS OF AGRICULTURAL ENTERPRISES AND THE CONCEPT OF THEIR MANAGEMENT FOR COMPETITIVE DEVELOPMENT

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The subject of the article is to define the role of innovative projects and startups of agricultural enterprises in ensuring competitive development, to identify common and distinctive features between them, to substantiate concepts and management tools for achieving efficiency and payback and profitability. Innovations in agriculture perform important functions, contribute to the modernization of food production and significantly improve its quality. They are
based on ideas and concepts, development and implementation processes, as well as the management of agricultural startups as the newest form of innovation, innovative projects on new technologies and modern methods of operation, taking into account the benefits for potential consumers. These innovations include all research and development related to the creation and testing of innovative ideas, which usually end in their practical implementation. The principles of formation of innovative projects and startups, stages and possible risks of their implementation are established. The types and areas of application are presented. Possible synergies from the implementation of these forms of innovation for the revival and development of rural areas are identified. Additional attention is paid to the development and implementation of social agro-startups and innovative projects to promote the preservation and development of human capital of agricultural enterprises and rural communities. The concepts of management and sources of investment for the introduction of innovations in the form of startups and investment projects in the activities of agricultural enterprises for competitive development are proposed. In order to preserve and further develop Ukraine’s high image as a global food producer and ensure innovative models of agricultural enterprise development at the national and global level, innovative measures should be taken in various forms and on a much larger scale. This will ensure the adoption of organizational, legal and economic measures to introduce resource-saving, safe and environmentally friendly technologies for the production of agricultural products and their processing at the level of the best international models and standards.

Предметом статті є визначення ролі інноваційних проєктів та стартапів аграрних підприємств у забезпеченні конкурентоспроможного розвитку, виявлення спільних та відмінних рис між ними, обґрунтування концепцій та інструментів управління для досягнення ефективності та окупності й прибутковості. Інновації в сільському господарстві виконують важливі функції, сприяють модернізації виробництва продовольчої продукції і значно покращують її якість. В їх основі лежать ідеї і концепції, процеси розробки і впровадження, а також управління аграрними стартапами як
новітньою формою інноваційної діяльності, інноваційними проєктами щодо нових технологій та сучасних методів діяльності з урахуванням переваг для потенційних споживачів. Ці інновації включають в себе всі дослідження і розробки, пов’язані зі створенням і перевіркою інноваційних ідей, які зазвичай закінчуються їх практичною реалізацією. Встановлено принципи формування інноваційних проєктів та стартапів, етапи й можливі ризики їх реалізації. Наведено типи й напрями та сфери застосування. Визначено можливі синергетичні ефекти від реалізації вказаних форм інновацій для відродження і розвитку сільських територій. Додаткова увага приділена розробці та впровадженню соціальних агростартапів та інноваційних проєктів для сприяння збереження і розвитку людського капіталу аграрних підприємств і сільських громад. Запропоновано концепції управління та джерела інвестування впровадження інновацій у формі стартапів та інвестиційних проєктів у діяльність аграрних підприємств з метою конкурентоспроможного розвитку. Впровадження інновацій з допомогою стартапів та інноваційних проєктів має супроводжуватись постійним моніторингом отримання технічних і екологічних вимог систем управління якістю, принципів інклюзії та соціальної відповідальності. Концепції управління ними повинні передбачати соціальну направленість та синергетичні ефекти для сільських територій. Інноваційним аграрним підприємствам та проєктам необхідно надавати якщо не бюджетну підтримку, то податкові преференції. Для розробки стартапів доцільно залучати капітал великих національних агрохолдингів та несільськогосподарських бізнесових структур і на комерційних засадах, і на засадах приватно-державного партнерства.

Keywords: agricultural enterprises, startups, innovative projects, efficiency, investment, management, competitive development.

Ключові слова: аграрні підприємства, стартапи, інноваційні проєкти, ефективність, інвестиції, управління, конкурентоспроможний розвиток
**Problem statement.** Innovations in the system of agricultural enterprises and agriculture in general can be viewed from two conceptual positions: as a process that is carried out in a certain order and has quantitative and qualitative indicators and indicators that allow it to be interpreted from the point of view of the process approach; as a new product (material, technology, work, service), a certain improvement or change that is the result of the implementation of the innovation process.

Innovations in agriculture perform important functions, contribute to the modernization of food production and significantly improve its quality. They are based on ideas and concepts, development and implementation processes, as well as the management of agricultural startups as the newest form of innovation, innovative projects on new technologies and modern methods of operation, taking into account the benefits for potential consumers. These innovations include all research and development related to the creation and testing of innovative ideas, which usually end in their practical implementation. Therefore, the development and management of startups, innovative projects, and their implementation is a relevant, theoretically and practically significant task.

**Analysis of recent research and publications.** The relevance of this issue is indicated by the large number of publications on the subject: L. Bandorina, O. Bulavka, V. Yevtushenko, A. Zelisko, B. Kosovych, M. Kudinova, M. Ihnatenko, A. Mazur, L. Marmul, I. Romaniuk, M. Tymoshenko, etc. Modern innovations are understood as a "solid" basis for the competitive development of the agrarian economy, rural areas and sustainable environmental management and reproduction of the population. At the same time, it is extremely important to "introduce innovations in the organization and management of agricultural enterprises", in the activities of rural communities, and in the creation of accessible infrastructure for business and for the life and recreation of people in rural areas.

We believe that one of the most important factors for the sustainable, competitive development of agricultural enterprises and the rural areas where they are located can be innovations focused on specific priorities and strategies for their
development; the distribution of public funds and foreign support grants in times of war; regional and national production, social, infrastructure, and digital projects and programs. And while innovation projects are more traditional in theory and practice, startups, their content, and the relationships between them are much less developed, unlike other industries, and therefore require in-depth study.

**Formulation of the objectives of the article.** The purpose of the article is to identify the features and define the role of startups and innovative projects in ensuring the competitive development of agricultural enterprises; to substantiate the principles and concepts, directions, areas and priorities for their implementation in order to increase resource productivity and production efficiency, to obtain synergistic effects for rural areas; to solve social and human development problems in rural areas.

**Presentation of the main research material.** Rural areas should not differ from urban areas in terms of comfort for life. On the contrary, it exceeds it by its proximity to nature as the most desirable environment for the human body. It should also offer agricultural workers or enterprises attractive conditions for the creation and location of production, an acceptable level and quality of life [1, p. 14]. In turn, enterprises or innovative companies should carefully consider the specifics of the village so that their projects do not harm it and the rural population.

Innovative processes in agricultural production perform the same functions as in other sectors of the economy, but their implementation must take into account the specifics and uniqueness of food products, the specifics of doing business in rural areas. Therefore, its innovative development is influenced by a number of factors, the most important of which can be divided into the following groups: natural resources and agro-climatic conditions; socio-economic situation; sales conditions (demand for products and commercial activities in rural areas); choice of alternative sources of income.

The critical elements of managing start-ups and innovative projects and making management decisions regarding them in agricultural enterprises, taking into account the above factors, should be an understanding that: technological
changes take time; the introduction of innovations at the initial stage can negatively affect production volumes and financial and economic results; innovations are a source of development not only for agricultural enterprises but also for rural areas where they are located.

With regard to the process of food reproduction, innovations are divided into the following substantive groups: organizational and managerial innovations; production and technological innovations; breeding and genetic innovations; socio-ecological innovations. We believe that this list should include innovations in the digital economy, digital finance and e-commerce; information and communication innovations; and innovations in alternative activities, including those implemented with the help of startups. The proposed innovations can have positive results and effects if at least one of the three conditions is met [2-5]:

1. Managing the development of agricultural production and rural areas on an innovative basis involves the destruction of traditional ideas about rural areas as a source of labor to meet the needs of agriculture and other industries; the need for low-skilled workers for cities.

2. Management of the development of innovations in agricultural enterprises and rural areas should be based on a systematic approach. That is, we are talking about systemic management with elements, methods and approaches of process and situational (mainly anti-crisis and creative) management.

3. The management of innovative projects of agricultural enterprises should take into account the interests of local rural residents and rural areas.

In our opinion, these requirements should be extended to agricultural startups. They are much less represented compared to innovative projects, but have great growth potential. A startup is defined as a young company founded to create unique new products and services, generate innovative ideas, and rapidly implement innovations. Or it is a company that finds an idea and creates a business. Their features are largely reflected by typing.

Thus, modern economic thought distinguishes at least 6 such types: scalable technological; small (bakery, farm shop, cheese dairy, etc.) and large businesses;
lifestyle startups (hobby as a business); for sale; social. Startups were presented in agribusiness a few years ago: BIOsens – a portable laboratory that can be carried in your pocket; UA-Robotics EcoBox – to automate and accelerate plant growth; Kray Technologies – a drone for field processing with a capacity of up to 47 hectares per hour and a 70% reduction in pesticide use while maintaining efficiency.

Of course, Ukrainian startups in the digital sphere receive international recognition and funding, but their applications are also used in agricultural enterprises, educational and research institutions. According to international rankings, in 2018, 205 startups were developed and implemented in Ukraine, which ranked 42nd out of 137 countries. However, the top three places were as follows: USA - 45000; India - 5200; UK - 4702. Ukrainian startups have received billions of dollars in investment and have gained a billion-dollar capitalization. But, as the experience of advanced countries shows, they have a very significant potential for growth.

In general, startups can be seen as innovative projects that have certain stages of implementation and management concepts; mechanisms for attracting investment and accelerating implementation. They determine the digital future of the agricultural sector, but also have high implementation risks due to the lack of templates and fundamental novelty. Approximately 75% or 3 out of 4 startups fail. Therefore, in accordance with their characteristics, it is advisable to use the following management concepts that help to significantly reduce risks:

1. Projects in Controlled Environments (PRINCE2) - provides structured management of startup development stages with a set of appropriate management tools for each of the selected stages. 2. The Scrum concept provides a quick response to changes in requirements and adaptation to them; it is used mainly in IT projects. 3. The Kanban concept helps to solve several startup tasks simultaneously based on the optimal distribution of tasks and resources among all participants and professes the principle of "just-in-time" execution. 4. Lean Startup or "lean startup" means the use of scientific approaches in management
and customer feedback in the process of launching completely new products [6, p. 43].

Supporting the development of innovations in agricultural enterprises can have a synergistic effect on the arrangement and organization of rural areas. The directions of innovation activity and the types of expected effects from their implementation are shown in Table 1. The determining vector of innovative development in modern conditions is the development of not only transport communications, but also the provision of access to goods and services through mobile devices and the use of the Internet, the use of software products, other online information and its processing and analysis. Therefore, building an effective information infrastructure that guarantees access to the Internet for agribusiness and the rural population should be an important component of managing the innovative development of agricultural enterprises.

**Table 1. Areas of development and implementation of start-ups and innovative projects in the agricultural sector and their synergistic effect on rural areas**

<table>
<thead>
<tr>
<th>Areas of innovation development and implementation</th>
<th>Importance for rural development</th>
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<tr>
<td>Implementation of modern technologies</td>
<td>Developing infrastructure and increasing labor productivity in rural areas</td>
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<tr>
<td>Changes in the way human resources are managed</td>
<td>More effective systems of motivation and incentives, increased efficiency and the ability of human resources to perceive and implement innovations</td>
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<tr>
<td>Training focused on mastering the latest knowledge and skills</td>
<td>Improving the qualifications and productivity of human resources in rural areas, identifying skills for creating innovations and creativity</td>
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<tr>
<td>Changes in the organizational structure of rural development management</td>
<td>More flexibility, adaptability to changing environmental conditions and efficiency of the system of innovative rural development</td>
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<tr>
<td>Informatization</td>
<td>Quick access to information, saving time on functions that can be automated</td>
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To fully achieve this innovative goal, the following areas need to be implemented [7-11]:

- improving and accelerating economic activity in rural areas and
optimizing the living conditions of the rural population and workers by reducing legislative and administrative restrictions on the use of IT infrastructure for agribusiness, purchasing software products and digital financial instruments, and implementing innovative ideas;

- digital representation of the activities of state and regional governance institutions, ensuring easy access to public information through the Diia app and its applications, and the development of the national Digital State program in general.

In the case of rural areas, product innovations that can have a significant impact on the development of agribusiness, the agricultural sector, and the areas themselves include digital changes and improvements in administrative services provided to businesses and the population. The task of managing innovative development means providing customers with new opportunities. Therefore, e-services can be of great importance, as they greatly simplify the work and contribute to objectivity, clarity, impartiality, reduced human involvement and lead times. However, the introduction of modern technologies in rural areas requires a modern hardware platform, the purchase of the necessary software, and the organization of courses and trainings to improve the skills of officials.

Innovative technologies, therefore, should contribute to improving the efficiency of public administration and local self-government [12, p. 15]. In turn, the development of an innovative entrepreneurial culture in rural areas, stimulating the active participation of rural residents in public life will be the key to the introduction of innovations in the activities of agricultural enterprises, at least their favorable factor. State regulation and support of innovation should be carried out in the following areas: identification and support of priority areas and strategies of innovation; development and implementation of state, sectoral, regional and local innovation programs.

They also include the development of a regulatory framework, economic mechanisms for supporting and stimulating innovation; protection of the rights and interests of innovation entities; financial support for innovation projects; preferential taxation of innovation organizations; support for the functioning and
development of modern innovation infrastructure. These proposals were
recognized at the legislative level in the Law of Ukraine "On Priority Areas of
Innovation Activity of Ukraine" of October 16, 2012, No. 5460-ME (5460-17)
[13].

In agricultural production, innovative processes should be aimed at
increasing production volumes by improving soil fertility, increasing crop yields
and animal productivity; improving product quality; overcoming the processes of
degradation and destruction of the natural environment and greening the industry;
reducing energy and resource costs. They should increase the efficiency of
irrigated and drained lands; ensure savings in labor and material costs; and
preserve and improve the environment.

In this regard, the innovation policy in the field of crop production should be
based primarily on the use and improvement of breeding methods, i.e. the creation
of new crop varieties with high production potential. It also includes the
introduction of scientifically based farming systems; the use of hybrid zoned seeds;
restoration of natural soil fertility and other reclamation.

One of the main areas of innovation in animal husbandry is biotechnological
livestock systems using genetic and cellular engineering methods aimed at creating
and using new breeds of animals with improved productive qualities and disease
resistance [14, p. 43]. Equally important in the development of the innovation
process in livestock are technological and technical innovations related to
mechanization and automation of production processes, modernization and
technical re-equipment of production aimed at increasing labor and resource
productivity.

The introduction of adaptive, energy- and resource-saving technologies in
livestock production based on innovation with widespread use of automation and
computerization of the industry, new generation machinery and equipment,
robotics and electronic technologies, restoration and improvement of production
and technical potential is a key area of innovation in the agricultural sector.
However, insufficient funding is a traditional problem for basic agricultural
science and applied research.

In addition, the development of innovations is negatively affected by factors related to the knowledge generation system, namely: the mismatch between the amount of funding and the amount of work that needs to be done to complete the research correctly; passive participation of agricultural entities in research; lack of knowledge of foreign languages by scientists, which results in lack of access to international sources of information, insufficient cooperation with major world research centers; weak interaction of the sectoral innovation system actors in the process of disseminating.

To solve these problems and further digitalize the agricultural sector, it is advisable to use international support programs [15-16]. For example, the European grant program SmartAgriHubs offers funding for innovation centers in the agricultural sector (development, customization, provision of digital transformation and innovation services). The program provides for coverage of 70 to 100% of the costs of applicant projects. In addition, projects that have won grants receive the following implementation benefits: the opportunity to obtain the status of a regional partner in the agri-food sector; free training and conduct of innovative experiments; access to the European innovation network. The program is primarily aimed at developing and implementing digital innovations.

The achievement of productivity growth and food security of the country is directly related to the increase in the efficiency of research and the transfer of modern technologies [17]. In this regard, domestic agricultural science is facing qualitatively new challenges, which are expressed in the need to significantly expand research, accelerate the production of results and improve their quality, and intensify international cooperation to exchange experience. Therefore, effective innovation activities should be organized in agriculture to address the challenges of complex mechanization and automation of production processes, diversification of production, and deep processing of products based on modern technologies.

Ukraine has significant opportunities for large-scale development of renewable natural resources. Its vast territory and almost all types of natural and
climatic conditions make it a unique country for agricultural development. It is the existing natural potential and unique human capital represented by highly educated, skilled and tolerant people and hardworking employees that have made it one of the world's leading agricultural producers.

Conclusions. In order to preserve and further develop Ukraine's high image as a world food producer and to ensure innovative models of development of agricultural enterprises in the national and global dimensions, it is necessary to use innovative measures in various forms and on a much larger scale. This will ensure the adoption of organizational, legal and economic measures to introduce resource-saving, safe and environmentally friendly technologies for the production of agricultural products and their processing at the level of the best international models and standards.

The introduction of innovations through startups and innovative projects should be accompanied by constant monitoring of compliance with the technical and environmental requirements of quality management systems, the principles of inclusion and social responsibility. Their management concepts should include a social focus and synergistic effects for rural areas. Innovative agricultural enterprises and projects should be provided with tax preferences, if not budget support. To develop startups, it is advisable to attract capital from large national agricultural holdings and non-agricultural business structures on a commercial basis and on the basis of public-private partnerships.

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