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## The role of economics and management in the development of sustainable business models of agricultural enterprises

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**Abstract.** The relevance of this topic lies in the need to use economic and management strategies that can help agricultural enterprises adapt to a changing environment and ensure sustainable and resilient growth in the future. The purpose of the study was to examine the impact of economic and managerial factors on the development of agricultural enterprises, with a focus on creating sustainable business models.

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The methods used were analytical, statistical, and comparative. The paper examines the role of economics in the formation of sustainable business models of agricultural enterprises, focusing on optimizing the use of resources and adapting to market conditions. It is found that economic aspects include optimization of production processes, cost management and analysis of market trends. Efficient use of resources is a key aspect of sustainable business models of modern agricultural enterprises. The use of advanced technologies, such as precision farming and process mechanization, helps to increase productivity and reduce costs. Management of such market factors includes strategic planning, risk analysis and search for new development opportunities. An example of successful use of innovative technologies in agriculture is given on the sample of the American company John Deere. The article describes the strategy for developing sustainable business models for the Ukrainian company Myronivsky Hliboproduct, which includes the introduction of advanced agricultural technologies, diversification of production, optimization of resource use, development of local markets, improvement of risk management and promotion of social development of local communities. It is noted that the unfavourable conditions of war and economic instability pose serious challenges to the agricultural sector, but such conditions can also stimulate the search for new, more sustainable, and efficient business approaches. As a result, the development of sustainable business models for agricultural enterprises requires a comprehensive approach and systematic measures aimed at optimizing production, managing risks, and promoting the social development of local communities. The practical significance of the study lies in the possibility of increasing competitiveness, resource efficiency and sustainability in a changing market environment, which contributes to the sustainable development of the agricultural sector

**Keywords:** sustainable business models; management strategies; innovation; social responsibility; waste management

## INTRODUCTION

The modern economy requires constant analysis and improvement of management strategies in all sectors of the economy, including the agricultural business. The development of agricultural enterprises in the context of sustainable business models is becoming an important task, given the current challenges and needs of society. The relevance of this area is determined not only by the fact that the agricultural sector is a key player in ensuring food security and economic development, but also by the fact that it faces numerous challenges that require new management approaches. Climate change, limited resources, increasing competition in the market and changes in consumer preferences are just some of the factors that affect the agricultural sector.

The issues that arise in connection with the development of sustainable business models in the agricultural sector are very broad and diverse. It covers economic, social, and environmental aspects, and also takes into account the impact of external factors such as market competition, regulatory policy and innovative technologies. The study of these aspects helps to identify the best strategies and approaches to building a sustainable business in the agricultural sector. One of the key components of the success of sustainable business models of agricultural enterprises is effective management. This includes not only optimizing production processes and resource potential, but also developing strategies for market adaptation, investment planning and risk management. This approach allows agricultural enterprises to adapt to changing market conditions and ensures sustainable growth in the long term.

In order to understand and analyse the role of economics and management in the development of sustainable business models of agricultural enterprises, it is worth considering the opinions of various researchers who have devoted their studies to aspects of agriculture, management and sustainable development. O. Shubalyi *et al.* (2020) focus in their study on the need for efficient use of resources and innovative approaches to ensure the sustainable development of the agricultural sector. They emphasize the key economic principles that contribute to sustainable production and increase the efficiency of agricultural enterprises I. Novak *et al.* (2023), in turn, explore a strategic approach to agribusiness management with a focus on achieving sustainable development. They analyse key aspects of management, such as planning, control, and analysis, which determine the competitiveness of enterprises. A.D. Nugroho and Z. Lakner (2022) pay attention in their study to the impact of economic factors on sustainable production in agribusiness. The authors explore the role of financial management and strategic planning in ensuring the sustainable development of agricultural enterprises. T. Mulyk and Y. Mulyk (2020) consider the importance of innovative technologies in improving the efficiency of agricultural enterprises in their work. They study different types of innovations and their impact on business activities. J.I. Uduji *et al.* (2019) study the impact of social responsibility on the sustainable development of agricultural enterprises in their publications. They analyse the interaction of enterprises with society and the impact of their actions on the social sphere. J. Jägermeyr *et al.* (2021) study the impact of the agricultural sector on the environment

and develop strategies to reduce the environmental footprint of agricultural enterprises.

In general, researchers analyse key aspects such as efficient use of resources, strategic management, the impact of economic factors, innovation, social responsibility, and environmental sustainability. However, aspects such as the impact of market and political factors on the sustainability of business models of agricultural enterprises, as well as aspects of risk management and strategies for adapting to changes in the current global environment remain insufficiently studied. The purpose of the study is to conduct a comprehensive analysis of the role played by economic aspects and process management in the formation and further development of sustainable business models of agricultural enterprises.

## MATERIALS AND METHODS

The methodology for the study of agricultural enterprises included several key steps aimed at collecting and analysing information to assess their financial sustainability and sustainable development. The initial step was a systematic analysis of specific data on the financial position of agricultural enterprises such as John Deere and MHP. The selected companies play a key role in agriculture and are considered world leaders in their respective industries. John Deere is known for its advanced technologies and innovations in agriculture, while MHP is one of the largest agricultural holdings in Ukraine and represents an important player in the global grain and poultry market. To obtain financial data on these companies, we analysed their financial statements for 2019-2023. To ensure the reliability of the data, we analysed their consolidated financial statements, which are public information and subject to certain reporting standards (2023 Annual Report, 2023; Investor relations & corporate governance, n.d.). This analysis included the study of key indicators such as revenues, expenses, net profit, shareholder value, investments in innovative technologies and social programmes.

To achieve the objectives of the study, various methods were used to assess the impact of factors on the sustainable development of agricultural enterprises in an objective and comprehensive manner. Comparative analysis was used to assess the effectiveness of various strategies and approaches used in the agricultural sector. This method made it possible to compare the performance of enterprises at the local and international levels, identify successful and ineffective practices, and identify key aspects that affect their sustainable development. In order to apply statistical analysis methods, in particular correlation analysis, the relevant financial and strategic indicators that have an impact on the financial performance of enterprises were first selected. After selecting the indicators, the relevant data from the financial statements reflecting

the financial activities of the enterprises were collected. The data was then analysed using correlation analysis to establish statistically significant relationships between the selected indicators and the financial result. The analytical approach was used to formulate conclusions and recommendations based on the results obtained. The systematic analysis of the data was carried out considering the theoretical concepts of sustainable development and business models, which allowed understanding their role in the context of achieving successful development of agricultural enterprises. The recommendations were formulated based on the best practices and strategies aimed at improving the sustainability and efficiency of agricultural enterprises in the current environment.

A comprehensive approach was used to develop a strategy for the development of sustainable business models for the enterprise, which included several methods and tools. An analysis of the enterprise's internal factors assessed its current resources, ability to innovate, and level of organizational culture. This analysis allowed us to identify the strengths and weaknesses of the enterprise, as well as the resources that can be mobilized to achieve strategic goals. External factors were analysed, including market trends, the competitive environment, and the regulatory context. This analysis helped to understand the opportunities and threats affecting the company's operations and identify strategic directions for development. In addition, best practices and strategies that promote sustainable development in the agricultural sector were used to develop the strategy. This included studying successful enterprises, analysing their strategies and practical examples of implementing sustainable business models.

## RESULTS

The role of economics in shaping sustainable business models for agricultural enterprises is crucial, as the efficient use of resources and the ability to adapt to market conditions determine their competitiveness and viability in the long term. Economic aspects include optimization of production processes, cost management, the ability to analyse market trends and ensure financial sustainability. In addition, sound financial planning and investment strategy allow agricultural enterprises to innovate and introduce new technologies, which helps to increase productivity and reduce negative environmental impacts (Schoneveld, 2020).

Efficient use of resources is an integral part of modern agricultural enterprises that strive for sustainable development. It is an important aspect of sustainable business models that ensures not only economic benefits but also environmental sustainability and social responsibility. Optimizing land use is a key element in ensuring high productivity and efficiency of production. The introduction of modern agricultural technologies,

such as precision farming and the use of genetically modified plant varieties, allows for optimal conditions for crop growth and development, which in turn leads to higher yields and reduced losses (Rose *et al.*, 2019). Water resource management requires improved irrigation systems, water conservation technologies, and rational use of water resources. Rational use of energy resources is an important component of sustainable development. The introduction of energy-efficient technologies and the use of renewable energy sources helps to reduce energy costs and reduce emissions of harmful substances into the environment. Overall, the efficient use of resources not only contributes to the profitability of agricultural enterprises, but also ensures their sustainability and resilience in the long term. This requires the introduction of advanced technologies, rational management, and a constant search for new approaches to optimizing production.

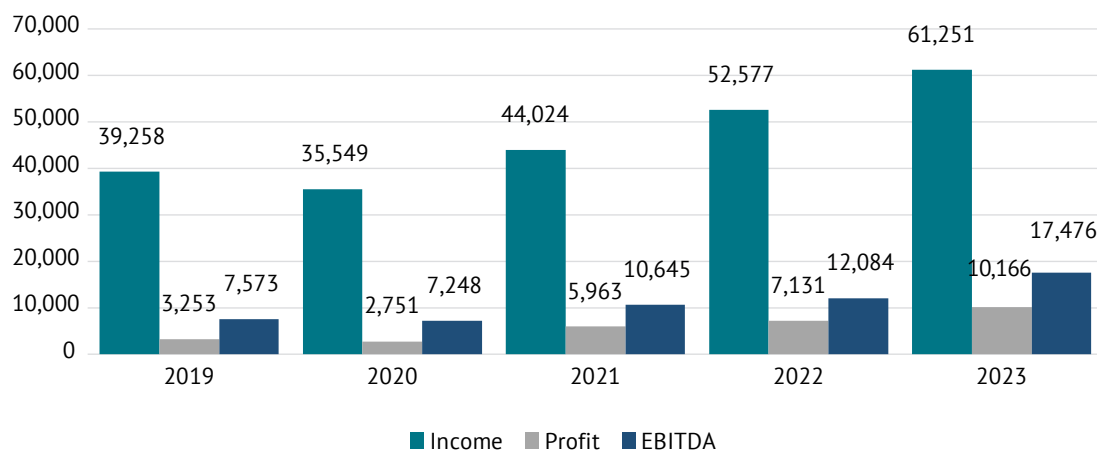
The financial aspect of the sustainable development of agricultural enterprises covers a wide range of activities that determine their sustainability and competitiveness in the long term. Sound financial planning plays a key role in ensuring efficient use of resources and maximizing profitability. This involves analysing financial flows, setting budgets, and developing strategies to reduce costs and optimize revenues (Fenyves *et al.*, 2015). In addition, the use of investments to introduce innovative technologies is an important element of sustainable development. Investments in equipment modernization, introduction of environmentally friendly technologies and product quality improvement allow enterprises to remain competitive and meet modern market requirements. The impact of market forces on the sustainability of agricultural business models is an integral part of their success and sustainability. Changes in supply and demand, price competition, and regulatory restrictions can have a significant impact on the efficiency of enterprises. In this regard, successful agricultural enterprises must have a flexible and adaptive business strategy that allows them to respond quickly to changes in market conditions. This may include seeking new development opportunities, optimizing production processes, and developing competitive pricing strategies. Effective management of these market factors is critical to ensuring business success and sustainability in a constantly changing and unpredictable market environment.

The role of management in the development of sustainable business models of agricultural enterprises includes several key aspects that contribute to the success and sustainability of the enterprise in a changing market environment. Strategic management and planning play a crucial role in the formation and development of sustainable business models of agricultural enterprises. Effective strategic analysis allows enterprises to align their actions with long-term goals and choose optimal development directions, considering both internal and

external factors affecting their operations (Donner *et al.*, 2020). This allows businesses to adapt to changes in the market environment and respond in a timely manner to emerging challenges and opportunities. Careful planning allows for efficient resource allocation, avoidance of unnecessary costs, and balanced operation of all business units. In addition, it helps to increase labour productivity, reduce production cycle times, and improve product quality, which in turn has a positive impact on the company's competitiveness and profitability.

The use of innovative technologies in agriculture is a necessary step to ensure the sustainable development of agricultural enterprises. Advanced agricultural technologies such as precision farming, process mechanization and digital solutions play a key role in increasing productivity and reducing costs. Precision farming uses modern technologies such as global positioning systems (GPS) and sensors to maximize the use of land resources. This allows for precise dosing of fertilizers and crop protection measures, avoiding over- or under-fertilisation, and reduces costs of inputs such as fertilizers and pesticides (Michels *et al.*, 2020). Mechanization of processes simplifies and speeds up production operations, ensuring efficient use of labour and reducing labour costs. The use of modern agricultural machinery, such as tractors, combines and seeders, can increase the speed and quality of agricultural work. The use of digital solutions, such as farm management systems and agricultural drones, helps businesses collect and analyse large amounts of data to make better management decisions. This helps to optimize production processes, increase resource efficiency, and reduce losses.

One example of a company that successfully uses innovative technologies in agriculture is the American company John Deere. This company is one of the leading manufacturers of agricultural machinery and equipment, and implements advanced agricultural technologies in its farm fields and production facilities. John Deere uses GPS systems and precision farming technologies to optimize the use of resources and increase yields. For example, their tractors are equipped with automatic steering systems that allow for precise steering and optimize the location and depth of tillage, minimizing overlap, and over-seeding. This helps to reduce the cost of fuel, fertilizers, and crop protection products, while ensuring optimum yields. In addition, John Deere actively uses digital technologies to monitor and manage production processes. They implement farm management systems that collect and analyse data on yields, soil moisture and other parameters to optimize production decisions. They also use agricultural drones to monitor plant growth and detect pests and diseases, which allows them to respond to problems quickly and efficiently. The company's revenues, net profit, and shareholder value increased significantly in 2019-2023 due to technology (Fig. 1).



**Figure 1.** Financial performance of John Deere from 2019 to 2023, USD million

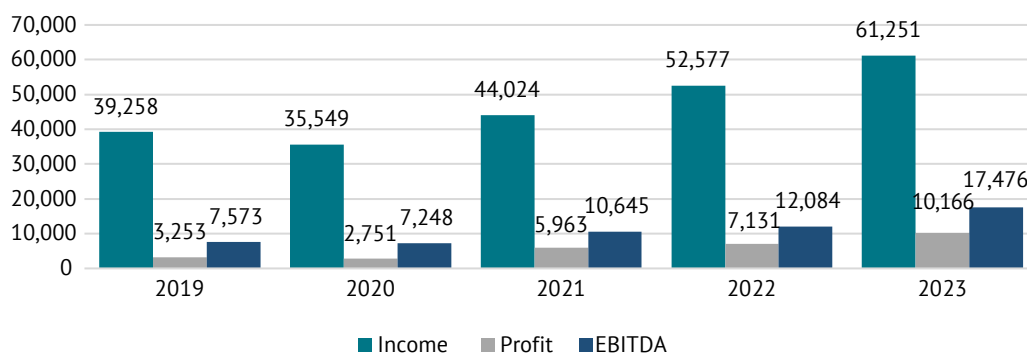
**Source:** developed by the authors based on data from 2023 Annual Report (2023)

The table shows that John Deere has shown a steady upward trend in revenue and profit over the past five years. From 2019 to 2023, the company's revenue increased by almost 56%, reaching \$61.3 billion in 2023. This demonstrates the success of the company's development strategy and its ability to adapt to market changes. Corporate social responsibility is becoming an increasingly important component of sustainable business models. Active involvement in the development of local communities reflects a company's commitment to its social and environmental footprint. For example, businesses may engage in charitable giving, sponsoring local projects or initiatives aimed at improving the quality of life of residents. Supporting social programmes is also an important aspect of social responsibility. This may include providing social services for employees, such as health insurance, pension plans, and professional support (De Olde & Valentinov, 2019). Such programmes help to improve the quality of life of employees and increase their motivation and productivity. Compliance with labour and environmental standards is also an important aspect of corporate social responsibility. This means creating safe and healthy working conditions for their staff, as well as reducing negative environmental impacts (Zoskior *et al.*, 2021). For example, businesses can implement energy-efficient technologies, reduce air emissions, and use renewable energy sources.

The state of development of sustainable business models of agricultural enterprises is dynamic and depends on many factors, such as economic conditions, political situation, technological progress, as well as regulatory policies and incentives from the state. The development of sustainable business models for agricultural enterprises in Ukraine, especially since the outbreak of war in 2022, has been subject to serious challenges. The war, accompanied by economic and political instability, has significantly complicated the operating environment of the agricultural sector and

its ability to implement sustainable practices. One of the biggest challenges has been the threat to worker safety and reduced production capacity due to the hostilities and population displacement. This has resulted in reduced production, disrupted supplies and loss of access to markets, which has negatively impacted the financial position of many agricultural enterprises. On the other hand, the military events have also encouraged businesses to look for new, more sustainable, and efficient approaches to doing business. Reduced access to imported inputs and markets has forced companies to turn to domestic resources and develop local markets. This can stimulate innovation in the use of land, water, and energy to ensure sustainable production (Nehrey *et al.*, 2022). Furthermore, war can also accelerate the process of reforming the agricultural sector, including liberalizing legislation, simplifying procedures and encouraging investment in sustainable business models. State support aimed at supporting agricultural enterprises in this difficult time can play a key role in facilitating their recovery and development.

The case study is a Ukrainian company in the field of food and agro-technologies – the private joint-stock company MHP. The company has significant resources in line with its status as a holding company. This includes large land areas for crops, modern equipment for tillage, cultivation and processing, and a wide network of employees. MHP's organizational culture can be described as high, as it is committed to achieving high standards of efficiency, innovation, and corporate responsibility. MHP demonstrates a high level of innovation capability (Investor relations & corporate governance (n.d.)). This is evidenced by their investments in modern technologies to increase production efficiency, such as the introduction of precision farming, the use of high-yielding genetically modified seeds, and improved resource management. Figure 2 shows MHP's key financial indicators for 2019-2023.

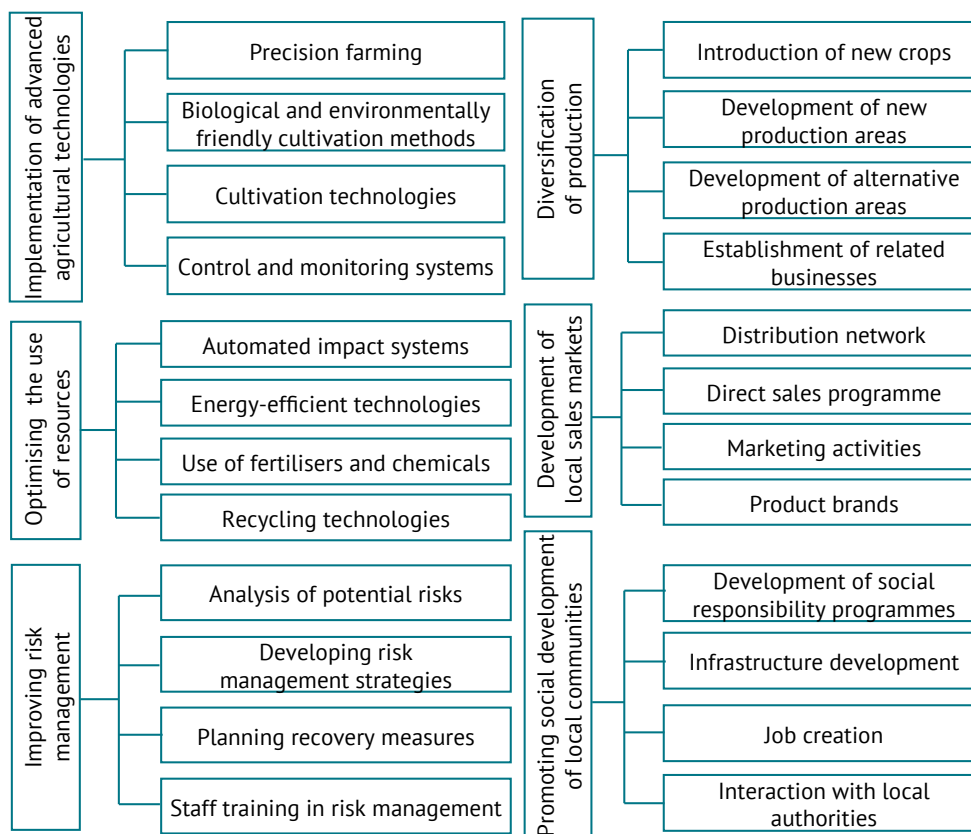


**Figure 2.** MHP's financial performance from 2019 to 2023, USD million

**Source:** developed by the authors based on data from Investor relations & corporate governance (n.d.)

Over the past 5 years, the company has shown significant revenue growth, which indicates its stability and potential for development. However, fluctuations in the level of profits indicate possible difficulties faced by the company in different economic conditions. The sustainability and effectiveness of management strategies that allow the company to adapt to changes in the market and achieve positive financial results in the

medium term are important. A strategy for the development of sustainable business models for MHP has been proposed, which includes the following key areas: introduction of advanced agricultural technologies, diversification of production, optimization of resource use, development of local markets, improvement of risk management, and promotion of social development of local communities (Fig. 3).



**Figure 3.** Strategy for developing sustainable business models for MHP

**Source:** developed by the authors

Several measures can be considered to introduce advanced agricultural technologies at MHP. Precision agriculture: the use of modern technologies such as

geographic information systems (GIS), remote sensing and navigation systems to analyse and optimize the use of land resources. Investing in modern equipment

such as seeders with automatic depth control, combines with crop monitoring systems and tillage equipment with automatic control. This allows increasing efficiency and reducing fuel and time consumption. Hydroponics, aeroponics and other advanced methods of growing plants can be used to ensure optimal growth conditions and yields. It is also worth considering the use of artificial intelligence and machine learning to predict plant development and respond to potential problems in a timely manner. Soil, climate, and plant monitoring systems, as well as automated irrigation, fertilizer, and crop protection management systems, should be implemented. This helps to optimize resources and ensures regular control over production. Use of biological plant protection methods and environmentally friendly fertilizers to reduce the environmental impact of agricultural activities.

To implement the strategy of diversifying production, MHP could expand its range of agricultural products by introducing new crops that can be grown at the enterprise. For example, additional types of cereals, vegetables, berries, or fruit trees can help expand markets and reduce production risk. Using land resources for the development of alternative production activities, such as forestry, beekeeping, or energy crops, can help to expand the enterprise's activities and reduce production risk. Considering the possibility of establishing complementary activities, such as agritourism, farmers' markets or the production of raw materials for local processing, can help to reduce risk and dependence on individual crops. To optimize the use of resources, MHP can install modern irrigation systems that automatically monitor soil moisture and meteorological conditions. Energy-efficient equipment and lighting systems can be used, as well as alternative energy sources such as solar panels or wind turbines. The introduction of agricultural waste recycling technologies and their use as sources of additional resources or energy will minimize losses and reduce the negative impact on the environment. The development of local markets includes expanding the sales network at the local level to reduce dependence on foreign markets and ensure stable demand for products. This means actively involving local consumers in the consumption of products, developing marketing strategies to increase brand awareness, and expanding the range of goods and services that meet the needs of local consumers.

Improving risk management involves considering potential challenges, such as natural disasters, economic fluctuations and political instability caused by war, and developing strategies to manage them. This means systematic risk analysis, development of emergency plans and monitoring of risk management measures to reduce the impact of risks on the business and ensure sustainability. Promoting the social development of local communities involves the development and implementation of social responsibility programmes and

projects. This may include financial support for local initiatives, infrastructure development and provision of social services. These strategic measures are aimed at ensuring the sustainability and successful development of MHP in the face of war and economic instability. By implementing the above initiatives, the company can seek not only to overcome the dangers and difficulties associated with the unpredictable current geopolitical and economic climate, but also to ensure stability and successful development in the near future.

The results of the study show that the economic aspect plays an important role in the formation of sustainable business models of agricultural enterprises. Efficient use of resources and the ability to adapt to market conditions determine their competitiveness and viability in the long term. Optimization of production processes, cost management, analysis of market trends and financial stability are key aspects that affect the efficiency of agricultural enterprises. As an important component of sustainable development, the economic aspect requires attention to financial planning and investment strategies that allow businesses to innovate and implement new technologies.

## DISCUSSION

Efficient use of resources is an integral part of modern agricultural enterprises striving for sustainable development. Optimizing land use, implementing modern agricultural technologies and managing water and energy efficiently helps to increase productivity and reduce negative environmental impact. The role of financial stability and efficient use of resources in ensuring the long-term viability of enterprises is also important. M.J. López-Serrano *et al.* (2021) also aim to analyse the economic aspects of sustainable agricultural development, in particular, cost optimization and financial planning. These authors explore how agricultural enterprises can use their resources and cash efficiently to achieve sustainable development. Cost optimization can include the rational use of raw materials, energy, and other resources, as well as cost management at different stages of production. Comparing with the current study, which also includes an analysis of the economic aspects of sustainable development, we can see some common points. Both studies focus on financial planning and cost management as key components of successful sustainable agricultural development. Both studies look at the efficient use of resources and cash to ensure sustainability and balance in agriculture.

The role of governance in the development of sustainable business models for agricultural enterprises includes several key aspects that contribute to the success and sustainability of the enterprise in a changing market environment. Strategic management and planning play a crucial role in the formation and development of sustainable business models of agricultural enterprises. Effective strategic analysis allows enterprises

to align their actions with long-term goals and choose optimal development directions, taking into account both internal and external factors affecting their operations. N. Siebrecht (2020) also studied the impact of strategic planning on the success of implementing innovative solutions in agriculture. He analysed the effectiveness of different strategic approaches, such as horizontal and vertical integration, as well as adaptive management. In addition, he studied the impact of strategic partnerships with other industries, such as technology companies and research institutions, on the creation of innovative solutions in agriculture. The results of this study are similar to the current study in that they also analyse the strategic aspects and impact of innovation on agricultural development. However, the current study is more focused on describing specific strategies and innovations that are considered in the context of sustainable development. The author's study is more general in nature, describing various aspects of strategic planning and innovation in agriculture.

In modern agriculture, innovative technologies are becoming the basis for efficient farming (Hajiyeva et al., 2024). One of the most important technologies that plays a key role in this process is precision farming. Mechanization of processes involves the use of modern agricultural machinery to perform various agricultural operations. For example, modern tractors, combines and other machines can increase the speed and quality of work, reduce labour costs, and improve the management of production processes (Musayeva et al., 2024). The use of farm management software, sensors for data collection, analytical systems for information processing, and other information and communication technologies is also important. The study by K. Takahashi et al. (2020) aims to research the impact of innovative technologies on agriculture, their use to increase productivity, and reflects an important aspect of modern agricultural development. The authors examine specific technologies, such as artificial intelligence, blockchain, modern agricultural machinery, and others, and their impact on agricultural production efficiency. Compared to the current study, common aspects can be identified, but the authors' study is more specific and focuses on individual technologies and their impact on specific aspects of production. Whereas, the current study looks at the broader context of innovation in agriculture and its impact on sustainable development.

In their study, M. Tudi et al. (2021) analysed the environmental impact of agricultural activities and the supply of environmentally friendly technologies, emphasizing the importance of a balanced approach to agricultural development that takes into account its impact on the natural environment. This research includes analysis of greenhouse gas emissions, soil and water pollution, and the impact of agrochemicals and other chemicals on ecosystems. The current study also examined the effectiveness of technologies such as

reducing the use of chemical fertilizers, using alternative energy sources and other initiatives aimed at reducing the negative environmental impact of agricultural activities. The authors focused more on specific aspects of the environmental impact of agriculture and proposed specific technological solutions, while the current study looked at general aspects of environmental responsibility.

Corporate social responsibility is becoming an increasingly important element in the development of sustainable business models (Yatsiv & Cherevko, 2022; Yatsiv et al., 2022). Active involvement in the development of local communities reflects a company's commitment to social and environmental issues. Businesses can make charitable contributions, support local projects or initiatives aimed at improving the quality of life of residents (Polinkevych, 2023). Support for social programmes is an important aspect of corporate responsibility, including the provision of social services to employees, such as health insurance, pension plans and professional support. The study by J. Janker and S. Mann (2020) aims to explore the interaction between businesses and local communities to promote social and economic development. This study examines aspects such as the impact of enterprises on the local economy, job creation, support for social programmes and other initiatives aimed at improving the quality of life of the local population. Similar to the current study, the authors also note the importance of social aspects of sustainable development, such as support for local communities and social programmes. There is a commonality in the approach to studying the social aspects of sustainable development, in particular, the interaction between businesses and local communities, but the authors' study focuses more on specific interactions between businesses and communities.

The study by E. Loizou et al. (2019) analyses the impact of political factors on agricultural development and regulatory policy setting, which includes an analysis of legislative and regulatory initiatives established by the government that affect the activities of agricultural enterprises. This includes an assessment of subsidies, tariffs on imports and exports of agricultural products, and environmental and land regulations. The current study does not discuss political aspects directly, but points to the impact of economic and political instability on agriculture. This may mean considering the overall political situation and its impact on the business environment, including the effectiveness of government support programmes for agriculture, the level of investment in the sector, and the degree of stability of legislation and regulatory policies (Matviishyn & Harbarynina, 2023).

In general, the key aspects of sustainable agricultural development, such as economic, managerial, social, environmental, and political factors, were identified. The research results showed that effective cost



management, strategic planning, innovation, and partnerships with local communities are key components of sustainable agricultural development. The importance of using environmentally friendly technologies and considering the political influence on the industry was also emphasized. Considering these aspects, it can be said that achieving sustainable agricultural development requires a comprehensive approach that considers various aspects.

## CONCLUSIONS

This study analysed various aspects of sustainable agricultural development and their interrelationship with economic, environmental, social, and political factors. In particular, the importance of cost optimization and financial planning, the introduction of innovative technologies, resource, and risk management, as well as interaction with local communities and compliance with social responsibility standards were explored.

The paper highlights the importance of efficient use of resources and rational financial planning as key aspects of sustainable agricultural development. The introduction of innovative technologies has proved to be an effective means of increasing productivity and reducing the negative impact on the environment. It was found that social responsibility and interaction with local communities contribute to the formation of a positive image of the enterprise and ensure its sustainability in the long term. In addition, this study draws attention to the impact of market factors and governance on the success of agricultural business models. Modern

agriculture is in a constant state of flux, as the market environment is subject to frequent changes, such as changes in supply and demand, competitive pressures, and changes in regulatory requirements.

Examples of successful companies such as John Deere confirm that the introduction of advanced technologies and social responsibility not only improves production efficiency, but also builds a stable reputation and market positioning. The company's net profit increased from \$3,253 million in 2019 to \$10,166 million in 2023. The study also led to the development of a strategy for sustainable business models for MHP, which has seen fluctuations in financial results depending on various external and internal factors. The development strategy included a wide range of initiatives, such as the introduction of advanced agricultural technologies, diversification of production, optimization of resource use, development of local markets, risk management and social responsibility.

Further research could focus on the impact of new technologies, such as artificial intelligence, on production efficiency and resource management in agriculture. In addition, an important area of research could be the analysis of the social impact of agricultural enterprises on local communities and rural development.

## ACKNOWLEDGEMENTS

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## CONFLICT OF INTEREST

None.

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## **Роль економіки та менеджменту у розвитку сталих бізнес-моделей аграрних підприємств**

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**Анотація.** Актуальність даної теми полягає в необхідності використання економічних та управлінських стратегій, що може допомогти аграрним підприємствам адаптуватися до змінного середовища та забезпечити стале та стійке зростання у майбутньому. Мета дослідження полягала у вивченні впливу економічних та управлінських факторів на розвиток аграрних підприємств з орієнтацією на створення сталих бізнес-моделей. Серед використаних методів було застосовано аналітичний, статистичний та порівняльний. У роботі досліджено роль економіки в формуванні сталих бізнес-моделей аграрних підприємств, зосереджуючись на оптимізації використання ресурсів та адаптації до ринкових умов. Виявлено, що економічні аспекти включають оптимізацію виробничих процесів, управління витратами та аналіз ринкових тенденцій. Ефективне використання ресурсів є ключовим аспектом сталих бізнес-моделей сучасних аграрних підприємств. Застосування передових технологій, таких як точне землеробство та механізація процесів, сприяє збільшенню продуктивності та зменшенню витрат. Управління такими факторами ринку включає стратегічне планування, аналіз ризиків та пошук нових можливостей розвитку. Наведено приклад успішного використання інноваційних технологій у сільському господарстві на прикладі американської компанії John Deere. Описано стратегію розвитку сталих бізнес-моделей для української компанії Миронівський хлібопродукт, яка включає впровадження передових агротехнологій, диверсифікацію виробництва, оптимізацію використання ресурсів, розвиток місцевих ринків збуту, вдосконалення управління ризиками та сприяння соціальному розвитку місцевих громад. При цьому зазначено, що несприятливі умови війни та економічної нестабільності створюють серйозні виклики для аграрного сектору, проте такі умови можуть також стимулювати пошук нових, більш сталих та ефективних підходів до бізнесу. Як результат, розвиток сталих бізнес-моделей аграрних підприємств вимагає комплексного підходу та систематичних заходів, спрямованих на оптимізацію виробництва, управління ризиками та сприяння соціальному розвитку місцевих громад. Практичне значення дослідження полягає в можливості підвищення конкурентоспроможності, ефективності використання ресурсів та забезпеченні стійкості в умовах змінного ринкового середовища, що сприяє сталому розвитку аграрного сектору

**Ключові слова:** сталі бізнес-моделі; стратегії управління; інновації; соціальна відповідальність; управління відходами

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