Economics and Business Management

16(2), 152-167
Journal homepage: https://economicscience.com.ua/en
Received: 23.01.2025 Revised: 15.04.2025 Accepted: 22.05.2025

UDC 338.43:631.147(477) DOI: 10.31548/economics/2.2025.152

Yuliia Pereguda*
Doctor of Economic Sciences, Associate Professor
National University of Life and Environmental Sciences of Ukraine
03041, 15 Heroiv Oborony Str., Kyiv, Ukraine
Interregional Academy of Personnel Management
03039, 2 Frometivska Str., Kyiv, Ukraine
https://orcid.org/0000-0002-1434-2509

Transformation of Ukrainian agricultural business in the context of transition to a circular green development model

Abstract. Finding ways to develop Ukrainian agribusiness in the context of the transition of economic systems at different levels to a circular green development model is a pressing and critical task to improve national and food security, as well as to ensure sustainable growth of the national economy. The study aimed to formulate directions for accelerating the transition of Ukrainian agricultural enterprises to a circular green business model by identifying trends and problems in the development of the country's agro-industrial complex, defining the specifics of Ukraine's transition to a circular green model, and identifying the advantages and challenges that accompany the process of transitioning agribusiness to a circular green development model. The study was based on the integrated use of such methods as: literary analysis; data collection and analysis (desk research); bibliographic method; comparative evaluation; economic analysis; Ishikawa diagram; systematisation, grouping and logical generalisation. The study highlighted the need for agricultural enterprises to adopt a circular green development model as part of the transition to post-industrial business principles. The economic analysis identified trends and problems in the development of Ukraine's agro-industrial complex, as well as the challenges that accompany the country in its transition to a circular green development model. The study identified the positive aspects of the transition of Ukrainian agricultural enterprises to a circular green development model. Separately, using the Ishikawa Diagram, the cause-and-effect relationships of the problems of transition to a circular green model of agribusiness development in Ukraine were identified, where six groups of problems were identified (institutions, society, markets, technology, personnel, and finance). Ways of reforming the agricultural business of Ukraine within the framework of ensuring the transition to a circular green model of development were proposed. The results obtained in the course of the study are of high practical

Suggested Citation:
Pereguda, Yu. (2025). Transformation of Ukrainian agricultural business in the context of transition to a circular green development model. *Economics and Business Management,* 16(2), 152-167. doi: 10.31548/economics/2.2025.152.

*Corresponding author

importance for Ukrainian agricultural producers, as they accelerate the transition to a circular green development model and increase competitiveness and resilience to economic challenges

Keywords: ecology; economy; competitiveness; post-industrial transition; resources; reforms

INTRODUCTION

The transformation of economic systems at various levels (global, international, national, sectoral, regional, groups of enterprises, individual enterprises, individual households) in the context of the transition to a post-industrial model of development puts forward new requirements for doing business and for business units to find their directions of strategic development. The most popular models of strategic development for business units in the post-industrial transition are the "green" development model and the "circular" development model. The most popular models of "green" and "circular" development are for business units belonging to sectors that have a critical negative impact on the environment, both in individual countries and in the world, which includes the agricultural sector.

Foreign and Ukrainian scholars have paid considerable attention to the transition of agricultural business to a "green" or "circular" model of development. In their research, American scientists M. Khanna *et al.* (2024) addressed the issue of introducing and developing a circular bioeconomy in the food and agricultural sectors of the economic systems of states. The researchers tried to combine two modern models of business development (circular and bioeconomy) into a comprehensive one (circular bioeconomy), as well as present five critical ways to achieve a circular bioeconomy within a market economy. The approach of Indonesian scientists S.P. Mulya *et al.* (2024), who studied the peculiarities of implementing the circular economy in agriculture, considering the regional peculiarities of agribusiness development. The researchers identified twelve features that affect the implementation of the circular economy in agribusiness in different regions of the world, namely: raw materials, circularity, waste, processes, inputs, sector/subsector, dimensions, type of object, regional aspects, procedures, purpose, and policies/systems.

J.F. Velasco-Muñoz *et al.* (2021) studied the problems of implementing the circular economy in agriculture and agricultural business and drew attention to the fact that the theoretical basis of the circular economy is not fully adapted to the practical challenges posed by agricultural business. The researchers analysed the principles and strategies of the circular economy that can be used by business units in the agricultural sector. Scientists from China and Bangladesh, Z. Chen *et al.* (2022) studied the peculiarities of green agriculture development in China, focusing on the study of the geographical structure of green agribusiness in the country, highlighting the specifics for individual regions of China. Identification of the causes of imbalance in the development of green agribusiness in different regions of China was emphasised.

N.V. Fedorchuk (2021) analysed the implementation of the EU's European Green Deal programme in Ukraine (European Commission, n.d.) with an emphasis on Ukrainian agribusiness. Based on the study of the practice of implementing the programme for agribusiness in the European Union, the author makes recommendations for Ukrainian agricultural producers and describes the risks and challenges that the implementation of the programme for Ukrainian agriculture poses. A.I. Shvets (2022) revealed the benefits of the circular economy for Ukraine and possible priority areas of circular economy development for the country. The impact of the EU's European Green Deal programme on Ukraine (European Commission, n.d.) and the study of how the Ukrainian economy can integrate into European initiatives for the development of the circular economy were emphasised.

Ukrainian scientists V. Shebanin *et al.* (2024) analysed the peculiarities of implementing the circular economy in the agricultural sector of Ukraine, considering the peculiarities of its development, which were formed, including under the influence of Russian military aggression. The study noted the problems of intensifying the implementation of circular economy principles in the agricultural business of Ukraine. O.S. Pavlenko (2023), based on an

assessment of the current state and prospects for the introduction of the "green economy" model in agribusiness in the world, as well as a study of the Concept of "Greening the Economy with Agriculture GEA", proposes the main directions for the development of Ukrainian agribusiness within the framework of the introduction of the "green economy" model.

Given the importance of the agricultural sector for Ukraine's economy and the impact of agricultural business on the national business environment, as well as the limited research on the transition of agricultural enterprises to the circular green model (CGM), there is a need to find ways to accelerate the transition of Ukrainian agricultural enterprises to the circular green model, which will combine the components of both circular and green models of business unit development. The aforementioned defined the study aim to determine ways to reform the agricultural business of Ukraine within the framework of ensuring the transition to a circular green model of development.

MATERIALS AND METHODS

The following methods were used to conduct the study: literature analysis; data collection and analysis (desk research); bibliographic method; comparative assessment; economic analysis; Ishikawa diagram; systematisation, grouping and logical generalisation. The research period is from 2010 to 2024. The method of literature analysis identified the issues of scientific research on the "green" and "circular" economy in general and in the field of agricultural business in particular. The literature analysis identified the approaches of scientists to determine the benefits of using the green and circular economy in the agro-industrial complex, as well as the problems of using the green and circular economy in agribusiness. The data obtained in the course of the literature analysis became the basis for the development of the author's approach to the formation of advantages and problems of the transition of Ukrainian agribusiness to a circular green model of development. The literature analysis was based on the works of M. Khanna *et al.* (2024), J.F. Velasco-Muñoz *et al.* (2021), V. Shebanin *et al.* (2024) and other scholars.

The desk research method involved the use of data from the State Statistics Service of Ukraine for 2010-2024 on: GDP, the volume of the agro-industrial complex of Ukraine (State Statistics of Ukraine, 2025a); the volume of national exports, exports of products of the country's agro-industrial complex, the foreign trade balance and the foreign trade balance for agricultural products of Ukraine (State Statistics of Ukraine, 2025b). The desk-based method of the study also involved the use of data on the Global Green Economy Index (GGEI) by country (Cape Verde, Tanzania, Niger, the United States, Mexico, Trinidad and Tobago, Japan, China, Israel, India, Uzbekistan, New Zealand, Australia, Denmark, Sweden, Germany, France, Italy, Ukraine, Iceland, Malta) for the period from 2005 to 2023 (The Green Growth Index, n.d.b). The data for the study were taken from the year of the first GGEI calculation (2005) to the last year when data were available (2023). The data obtained during the desk study were used to analyse the impact of the agro-industrial complex on the development of the Ukrainian economic system to determine the level of transition of the Ukrainian economic system to a circular green development model.

The method of comparative assessment compared the models of strategic development of business units within the post-industrial transition (circular, green, socially oriented, social, digital, innovative, classical), which further substantiated the recommendations on the need for agribusiness to switch to a circular green development model. The method of economic analysis was used to identify patterns and trends in the development of the agro-industrial complex of Ukraine, including exports and the foreign trade balance. It determined the dynamics of development of the agro-industrial complex of Ukraine in 2010-2024. The following key indicators were used for the analysis: Country's GDP; Country's agro-industrial complex; Share of agro-industrial complex in GDP; National exports; Exports of agro-industrial complex products; Share of agro-industrial complex products exports in Ukraine's national exports; Foreign trade balance of Ukraine; Foreign trade balance for agro-industrial complex products of Ukraine (State Statistics of Ukraine, 2025a; State Statistics of Ukraine, 2025b).

The use of the Ishikawa Diagram (Ishikawa, 1968) presented the cause-and-effect relationships of the issues of transition to a circular

green model of agribusiness development in Ukraine by the groups of key problems identified (institutions, society, markets, technologies, personnel, finance). The methods of systematisation, grouping and logical generalisation were used in the study to systematise information, formulate conclusions and scientific proposals of the article.

The study was conducted using the following legal and regulatory documents: Resolution of the Cabinet of Ministers of Ukraine No. 932-p (2016), Resolution of the Cabinet of Ministers of Ukraine No. 820-p (2017), Ministry of Environmental Protection and Natural Resources of Ukraine (2018), Resolution of the Cabinet of Ministers of Ukraine No. 117-p (2019), Law of Ukraine No. 2697-VIII (2019), Law of Ukraine No. 2320-IX (2023).

RESULTS AND DISCUSSION

The transformation processes occurring at different levels of economic systems (global, international, national, sectoral, regional, groups of enterprises, individual enterprises, individual households) and caused by the accelerated transition to a post-industrial model of economic development require businesses to respond adequately and choose effective directions of strategic development (Gibson, 1993). It is necessary to determine the right model for strategic development within the framework of post-industrial transition, since the chosen model of strategic development determines the competitiveness of the enterprise and its products (works, services) in sales markets, including external ones, the efficiency of resource use, as well as the level of loyalty to the business unit on the part of its counterparties, including consumers of products (works, services) and personnel. There are several main models of strategic development that can be chosen by business units in the post-industrial transition, each of which has unique characteristics (Table 1).

Table 1. Comparative assessment of models of strategic development of business units in the framework of post-industrial transition

Evaluation feature	Models of strategic development of business units in the post-industrial transition						
	Circular	Green	Socially oriented	Social	Digital	Innovative	Classic
Key objective	Customer satisfaction through the introduction of circularity in production	Customer satisfaction based on zero (positive) environmental impact	Customer satisfaction through increased social support for employees and society	Social support for employees and social responsibility	Customer satisfaction through the digitalisation of business processes	Customer satisfaction through the implementation of innovative solutions in business processes	Customer satisfaction through the most efficient use of resources
Key performance indicators	Profit and reduced use of new resources	Profit and ecosystem restoration and development	Profit and social protection of staff and society	Social protection of staff, specific social groups and society as a whole	Profit and digital efficiency	Profit and innovation efficiency	Profit
Key element of business processes	Circularity	Eco-friendliness	Social support	Social protection	Digitalisation	Innovation	Access to resources
Relationship with counterparties	Co-operation	Co-operation	Social support	Social protection	Co-operation	Co-operation	Exploitation of the asymmetry of information
Relationship with competition	Competition and equal struggle	Competition and equal struggle	Competition and equal struggle	Co-operation	Competition and equal struggle	Competition, equal struggle and cooperation	Antagonistic struggle

Table 1, Continued

Evaluation feature	Models of strategic development of business units in the post-industrial transition						
	Circular	Green	Socially oriented	Social	Digital	Innovative	Classic
Attitude towards staff	Training and maximum involvement in business processes	Training and supporting green initiatives	Training and professional development	Inclusive professional development and social protection	Development of digital competences and digital replacement	Training and supporting innovative activity	Increase productivity, efficiency and effectiveness
Areas of implementation in business activities	All	All	All	Limited quantity	All	All	All

Source: compiled by the author based on research of V. Dutot & C. Van Horne (2015), U.A. Cullen (2021), O. Prokopenko *et al.* (2024)

The peculiarities of the models of strategic development of business units in the post-industrial transition require their combined use by businesses. On the other hand, limited resources inhibit the yse of any models in conjunction. It is necessary to set priorities, considering the specifics of production activities and the requirements of consumers, society and government institutions. Under these conditions, agribusinesses should implement a circular green model of strategic development. This is especially substantial for agribusinesses in countries where the agricultural sector is a key sector of the economy, including Ukraine.

Every year, the global agricultural business generates up to 1.6 billion tonnes of food waste and 3.3 billion tonnes of greenhouse gases and is the fifth largest polluter of the global ecosystem (Magnus, n.d.). On the other hand, to provide food for the growing world population by 2050, the agricultural sector needs to increase agricultural production by 70% (Aznar-Sánchez *et al* 2019). Ensuring production growth while reducing the burden on ecological systems in the agricultural sector is possible only through the transition to a circular green development model. Those countries that ensure a rapid transition to a circular green model of development of national agricultural producers will receive increased national and food security; new drivers for economic development; improved environmental situation; increased competitiveness of national agricultural products in global, international and national markets; increased prosperity of the population; and sustainable and innovative development of the economic system and society. This situation requires accelerating the transition to a circular green model of development of the agro-industrial complex, agricultural business and agricultural enterprises of Ukraine.

Agricultural business is one of the leading areas of business activity in Ukraine. The agricultural sector is the driver of the national economic system and accounts for a significant share of the national GDP (Table 2). For the analysis in Table 2, the following statistics were used: 2010 (the year of recovery of Ukraine's economy after the global crisis); 2014 (the year before the economic crisis in Ukraine); 2017 (the year of the peak of crisis manifestations in the Ukrainian economy); 2018 (the year of the beginning of the recovery of Ukraine's economy after the economic crisis); 2019 (the year of the pandemic); 2021 (the year of recovery from the pandemic crisis in Ukraine); 2022-2024 (the years of military development of the Ukrainian economy).

Table 2. Analysis of the dynamics of GDP and the agro-industrial complex (AIC), as well as the share of the AIC in Ukraine's GDP, 2010-2024

Metric	Years									2024 in %, before	
	2010	2014	2017	2018	2019	2021	2022	2023	2024	2010	2023
GDP, billion UAH	1,079.4	1,586.9	2,981.2	3,560.3	3,977.2	5,450.9	5,239.1	6,628.0	7,658.7	709.5	115.6

Table 2, Continued

Metric	Years									2024 in %, before	
	2010	2014	2017	2018	2019	2021	2022	2023	2024	2010	2023
AIC, billion UAH	80.4	161.2	303.4	361	356.6	593.4	449.2	500.5	544.6	677.4	108.8
Share of the agricultural sector in GDP, %	7.4	10.2	10.2	10.1	9.0	10.9	8.6	7.6	7.1	95.5	94.2

Source: calculated by the author based on the State Statistics of Ukraine (2025a)

According to the analysis in Table 2, it is possible to note that the agro-industrial complex (AIC) occupied a significant share in the Ukrainian economy during the study period, which ranged from 7.1% of the national GDP (2024) to 10.9% of the national GDP (2021). Table 2 also shows the significant impact of socio-political challenges on the Ukrainian agro-industrial complex. Thus, in 2019, at the beginning of the pandemic, in the context of 11.7% GDP growth, production in the national agro-industrial complex decreased by 1.2%, while Russian military aggression against Ukraine and logistical problems with the outbreak of war led to a significant drop in agricultural production (-24.3% in 2022 by 2021) and a slow recovery of the agro-industrial complex (-8.2% in 2024 by 2021) in the context of of a rapid recovery of the country's economic system (+40.5% in 2024 by 2021). According to Table 2, it is possible to conclude that until 2021, the agro-industrial complex was one of the drivers of the Ukrainian economy. Thus, while Ukraine's GDP grew by 405.0% between 2010 and 2021, the national agro-industrial complex grew by 638.1% over the same period. In 2022-2024, the situation in the agro-industrial complex deteriorated, requiring the search for new strategic solutions to accelerate the development of agribusiness in the country, where one of the key solutions could be the introduction of a circular green model of strategic development by Ukrainian agricultural enterprises.

During the study period, Ukraine's agricultural sector had a critical impact on national exports (Table 3). For the analysis presented in Table 3, statistical data for key periods of Ukraine's economic development was used: 2010 was marked by the recovery from the global crisis, 2014 was the pre-crisis stage in Ukraine, 2017 was characterised by the deepest crisis manifestations, 2018 marked the beginning of economic growth, 2019 was the year of the pandemic, 2021 was the year of recovery from the pandemic crisis, and 2022-2024 was the period of military restructuring of the Ukrainian economy.

Table 3. Analysis of the dynamics of national exports and exports of agricultural products, as well as the share of agricultural exports in Ukraine's total exports, 2010-2024

Metric	Years									2024 in %, before	
	2010	2014	2017	2018	2019	2021	2022	2023	2024	2010	2023
Export, million USD USA	51,430.5	53,901.7	43,264.7	47,335	50,054.6	68,072.3	44,135.6	36,182.9	41,733.1	81.1	115.3
Export AIC, million USD USA	9,936	16,668.9	17,756.9	18,611.8	22,144.1	27,708.9	23,390	22,000.7	24,683.2	248.4	112.2
Share of AIC in total exports, %	19.3	30.9	41.0	39.3	44.2	40.7	53.0	60.8	59.1	306.1	97.3

Source: calculated by the author based on the State Statistics of Ukraine (2025b)

According to Table 3, the share of exports of agricultural products grew during the study period and reached 60.8% of total national exports in 2023. At the same time, crisis manifestations in the national economy (the crisis of 2014-2017, the pandemic of 2019-2020, and Russian military aggression against Ukraine since 2022) led to an increase in the share of agricultural exports in national exports. At the same time, the decreasing impact of the crisis on the national economic system led to a decline in the share of agricultural exports in national exports (2018, 2021, 2024). Based on the analysis in Table 3, it is possible to conclude that the devaluation and inflationary processes occurring in the country as part of the economic crisis have a positive impact on the export of agricultural products. On the other hand, there is a significant potential for increasing exports of agricultural products by using new models of agribusiness development in the country, one of which could be a circular green model of strategic development. The foreign trade balance of agricultural products had a positive impact on the foreign trade balance of Ukraine during the study period (Table 4). To analyse Table 4, statistical data for key years was used: 2010 – recovery after the global crisis, 2014 – pre-crisis period in Ukraine, 2017 – peak of the economic crisis, 2018 – start of the economic recovery in Ukraine, 2019 – start of the pandemic, 2021 – recovery from the pandemic crisis in Ukraine, 2022-2024 – period of military transformation of the Ukrainian economy.

Table 4. Analysis of the dynamics of the foreign trade balance and the foreign trade balance by agricultural products of Ukraine, 2010-2024

Metric	Years									2024 in %, before	
	2010	2014	2017	2018	2019	2021	2022	2023	2024	2010	2023
Foreign trade balance, USD million USA	-9,309.5	-527.0	-6,342.5	-9,852.6	-10,745.5	-4,770.8	-11,160.2	-27,384.1	-29,018.1	311.7	106.0
Foreign trade balance of the AIC, million USD USA	4,174.1	10,609.7	13,455.7	13,556.3	16,408.1	19,962.0	17,348.8	15,046.5	17,043.1	408.3	113.3

Source: calculated by the author based on the State Statistics of Ukraine (2025b)

An analysis of Table 4 shows that, in the context of Ukraine's negative foreign trade balance in the years selected for the study, the foreign trade balance in agricultural products was positive in all the years selected for the study. The data in Table 4 indicate an increase in the foreign trade balance for agricultural products in the period from 2010 to 2021, and problems in 2022-2024 caused by economic problems due to Russian military aggression against Ukraine and logistical problems. Given the above, it is possible to conclude that the agricultural sector can have a decisive impact on reducing and eliminating Ukraine's negative foreign trade balance. To do this, it is necessary to search for and implement new models of agribusiness development in the country, one of which could be a circular green model of strategic development.

In the future, it is appropriate to assess the level of transition of Ukraine's economic system to a circular green model of development using the Global Green Economy Index (GGEI). The GGEI covers 160 countries and is calculated based on 18 indicators, measuring both the country's progress on these indicators since 2005 and the distance of each indicator from the Sustainable Development Goals (SDGs), the Paris Climate Agreement and the Aichi Biodiversity Targets (The Dual Citizen, 2025). The Global

Green Economy Index scores range from 1 to 100: 1-20 – very low transition; 20-40 – low transition; 40-60 – moderate transition; 60-80 – high transition; 80-100 – very high transition. The highest score of 100 indicates that the country has achieved its sustainable development goals (The Global Green Growth Institute, 2025).

For the assessment, data for the year when the GGEI was first calculated (2005) and the most up-to-date data available (2023) were selected. At the same time, the Global Green Economy Index of Ukraine in the years of the study with the countries by region of the world that have the highest (leaders) and lowest (outsiders) values of the index, as well as economically developed and developing countries that have the greatest influence on the global economic system, were compared (Table 5).

Table 5. Assessment of the global, international and national economic systems for the transition to a circular green development model in 2005-2023

Region/country	Year and place of the country in the region		Abs. deviation
	2005	2023	
Africa			
Cape Verde	58.20 (1)	47.18 (5)	-11.02
Tanzania	37.63 (9)	55.56 (1)	17.93
Niger	20.69 (24)	24.49 (24)	3.80
The highest GGGI value in Africa	58.20	55.56	-2.64
The lowest GGGI value in Africa	20.69	24.49	3.80
USA			
USA	58.60 (1)	60.31 (2)	1.71
Mexico	58.41 (2)	61.64 (1)	3.23
Trinidad and Tobago	29.56 (20)	30.29 (20)	0.73
Maximum GGGI value in America	58.60	61.64	3.04
Minimum GGGI value in America	29.56	30.29	0.73
Asia			
Japan	66.00 (1)	61.83 (1)	-4.17
China	52.07 (6)	58.33 (3)	6.26
Israel	52.11 (5)	49.24 (10)	-2.87
India	40.88 (14)	43.54 (14)	2.66
Uzbekistan	19.87 (33)	25.83 (33)	5.96
Maximum GGGI value in Asia	66.00	61.83	-4.17
Minimum GGGI value in Asia	19.87	25.83	5.96
Oceania			
New Zealand	58.08 (1)	56.33 (1)	-1.75
Australia	50.12 (2)	53.67 (2)	3.55
Maximum GGGI value in Oceania	58.08	56.33	-1.75
Minimum GGGI value in Oceania	50.12	53.67	3.55
Europe			
Denmark	74.64 (1)	76.77 (2)	2.13
Sweden	73.17 (2)	78.72 (1)	5.55
Germany	68.08 (7)	75.83 (4)	7.75
France	65.10 (12)	68.85 (17)	3.75
Italy	66.28 (9)	68.06 (19)	1.78
Ukraine	50.87 (30)	51.31 (33)	0.44
Iceland	27.60 (38)	52.23 (31)	24.63
Malta	38.06 (36)	31.76 (38)	-6.3

Table 5, Continued

Region/country	Year and place of the country in the region		Abs. deviation
	2005	2023	
Europe			
Maximum GGGI value in Europe	74.64	78.72	4.08
Minimum GGGI value in Europe	27.60	31.76	4.16
Maximum global GGGI value	74.64	78.72	4.08
Minimum global GGGI value	19.87	24.49	4.62

Note: the country's position in the region according to GGGI is indicated in brackets
Source: calculated by the author based on The Green Growth Index (n.d.a), The Green Growth Index (n.d.b)

Ukraine has demonstrated a moderate level of transition to a circular green development model throughout the study period (Table 5). At the same time, over the period from 2005 to 2023, there was a positive trend in the Global Green Economy Index for the country (+0.44). However, negative aspects of Ukraine's transition to a circular green development model are clearly visible, namely in terms of transition, Ukraine was among the outsiders in Europe (in 2005, 30th place out of 38 countries, in 2023, 33rd place out of 38 countries), which carries significant risks and a decrease in the competitiveness of the national economic system and its components, especially in the markets of the European Union; during the study period, Ukraine lost places according to the GGEI among European countries (-3 places), which indicates that the country is lagging behind in the introduction and implementation of measures to ensure the transition to a circular green development model; the growth rate of the Global Green Economy Index for Ukraine in On the other hand, the value of the Global Green Economy Index for Ukraine leaves an adequate basis for increasing the country's transition to a circular green development model, where agricultural enterprises can become drivers of such a transition. Ukraine has already formed a legislative and regulatory framework for the transition of the national economic system and the agricultural sector to a circular green development model. The following legislative and regulatory documents can be identified: Resolution of the Cabinet of Ministers of Ukraine No. 932-p (2016), Resolution of the Cabinet of Ministers of Ukraine No. 820-p (2017), Ministry of Environmental Protection and Natural Resources of Ukraine (2018), Resolution of the Cabinet of Ministers of Ukraine No. 117-p (2019), Law of Ukraine No. 2697-VIII (2019), Law of Ukraine No. 2320-IX (2023).

As part of the transition to a circular green model of development, Ukrainian agribusiness should address the benefits and challenges of the transition to the CSM. Scientific studies conducted by scientists have separately identified the benefits of either a green or a circular development model for Ukrainian agribusiness, which carries limitations. O. Kovalova (2025) highlighted the advantages of the Smart economy, which includes the green economy. The benefits include human capital development, increased labour mobility, and improved quality and inclusiveness of education. I. Samoilyk & M. Vernygora (2023) addressed the following benefits of the circular economy for agribusiness in Ukraine: accelerating digitalisation; improving product quality and quality control over production; accelerating integration into international and global food systems; improving logistics. N. Usata (2023) highlighted the following benefits of the circular economy for the national agro-industrial complex: waste reduction; resource saving; increased innovation activity of enterprises; reuse of resources; synchronisation of supply and demand; stimulation of economic system growth. A. Shvets (2022) identified the following advantages of the circular development model: resource saving; resource reuse; development of innovative activities; improvement of the quality of meeting the needs of the population; and an increase in income of all economic actors. The transition to a circular green model of agribusiness development in Ukraine will have benefits for the national economy, agricultural producers, society, and households (Table 6).

Table 6. Benefits of transitioning Ukrainian agribusiness to a circular green development model

Subject	Advantages
The national economy	Acceleration of economic growth; increase in the competitiveness of the country's economy; increase in innovation; reduction of resource costs; improvement of resource efficiency; increase in exports; reduction of the negative foreign trade balance; increase in investment; and development of human capital.
Agricultural producers	New incentives for growth; increased competitiveness of agricultural products in national and foreign markets; increased investment attractiveness; increased innovation activity; improved quality of personnel; increased customer loyalty to the company and its products.
Society	Improvement of the environmental situation; reduction of the area of landfills; improvement of the quality of agricultural products; improvement of the quality of life; increase in the quality and inclusiveness of education; reduction of health problems among the population.
Households	Increased incomes; increased labour market supply; improved quality of agricultural products; increased educational opportunities.

Source: compiled by the author of the study

Identification of problems and barriers to the transition to a circular green model of agribusiness development in Ukraine is a key scientific, theoretical and practical aspect. Studies address the problems of transition to either a green or a circular model of development of agribusiness enterprises, which have limitations. O. Kovalova (2025) identified the disadvantages of the Smart economy, which includes the green economy. The disadvantages include resistance of the population (staff, employees); the presence of institutional traps; ineffective human capital management. N. Ilchenko & O. Marchenko (2024) identified four groups of problems of transition to a circular model of development: regulatory (institutional), market, technological, and cultural. I. Samoilyk & M. Vernygora (2023) addressed the following disadvantages of the transition of agribusiness to a circular model of development: disruption of supply chains; increased transaction costs, especially in the case of exports; and the need for a radical restructuring of operational processes. It is worth highlighting the key groups of problems of transition to the circular green model of agribusiness development in Ukraine, which can be presented in the form of the Ishikawa Diagram (Ishikawa, 1968) in Figure 1.

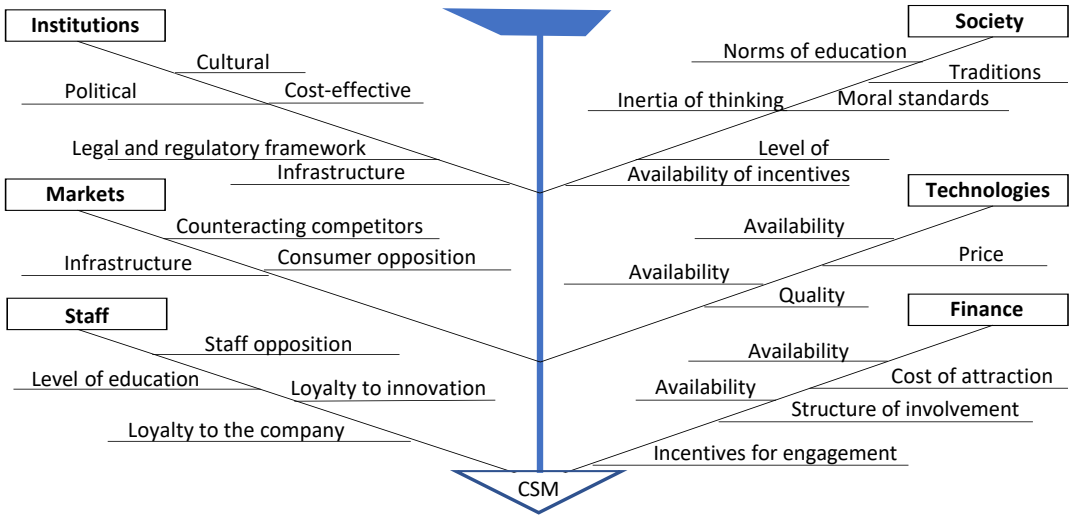

Figure 1. Ishikawa diagram of the cause-and-effect relationships of the problem of transition to a circular green model of agribusiness development in Ukraine

Source: compiled by the author of the study

According to the Ishikawa diagram (Fig. 1), it is possible to distinguish six groups of problems of transition to the circular green model of agribusiness development in Ukraine: the presence and development of cultural, political, economic, infrastructure institutions, as well as the legislative and regulatory framework; problems of society development (upbringing, traditions, morality, education, incentives, inertia of thinking); market development (competitors, consumers, infrastructure); availability, accessibility, price and quality of technologies; development and behaviour of personnel (education, resistance, loyalty to innovations and enterprises); availability, price of attracted Taking into account the study, it is appropriate to outline the ways of reforming the agrarian business of Ukraine in the framework of ensuring the transition to a circular green development model:

1. Transformation of corporate strategies of agricultural enterprises with a shift in their focus to greener production and sales, development of green technologies, introduction of circular business principles, and innovation.

2. Reformation of the system of staff training/retraining with a focus on developing inclusive professional competences, stimulating innovation, developing digital competences, and environmental literacy.

3. Development of digitalisation of production and management processes to reduce resource consumption, promote resource reuse, and reduce negative environmental impact.

4. Changes to production and operational activities with a focus on reducing the negative impact on the environment and increasing the circularity of production processes.

5. Transformation of management activities with a shift in focus to involve managers in the development, implementation and effective implementation of green and circular management solutions.

6. Changes in corporate culture to increase loyalty and support of green and circular management solutions by managers and employees.

7. Search and elimination of institutional traps in the production, economic and management activities of enterprises in the context of the development, implementation and effective implementation of "green" and "circular" management solutions.

8. Reformation of the system of relations with competitors and contractors, including state institutions, on the principles of ensuring equality of relations and fair competition in the context of developing, implementing and effectively implementing "green" and "circular" management solutions.

9. Increased influence on society and individual social groups to introduce green and circular principles into social and economic relations.

10. Development of markets to promote the introduction of green products and products based on circular technologies.

11. Active influence on external institutions, including the country's legislative and regulatory framework, to accelerate the transition to a circular green development model.

The results of the study demonstrate the need for comprehensive reform of Ukraine's agrarian business towards a circular green development model. Transformation of corporate strategies, implementation of environmental and digital solutions, updating of the personnel training system, changes in management approaches and corporate culture, as well as active influence on markets, society and the legislative environment are necessary for the transition of Ukrainian agribusiness to a circular green development model. Ensuring the rapid transition of Ukraine's agricultural business to a circular green development model will create long-term and sustainable benefits for Ukraine's economic system, agricultural producers, society and households.

When ensuring the transition of Ukrainian agribusiness to a circular green model of development, it is necessary to address the features of the CGM. U.A. Cullen (2021) addressed the transformation of institutions as the main feature of the transition to a circular economy, S.P. Mulya *et al.* (2024) identified twelve key features of the transition to a circular model of agribusiness development (raw materials, circularity, waste, processes, inputs, sector/subsector, dimensions, type of facility, regional aspects, procedures, purpose, and policies/systems), O. Prokopenko *et al.* (2024) shifted the focus to increasing profits as a key feature of the transition of enterprises to a green development model.

In the study, the features of the circular and green models of strategic development of business units in the post-industrial transition are detailed by key goal; key performance results; key elements of business processes; attitude to competitors, contractors and staff; areas of implementation in business activities. This approach is more detailed and structured.

At the same time, A.H. Samo *et al.* (2023) identified the following areas for the transition of agricultural producers to a green development model: development of formal institutions, state support, technology development (without specifying technologies), economic incentives, infrastructure development, personnel training, competitiveness, and innovation development (without specifying areas). Z. Xiang *et al.* (2024) emphasised green intellectual capital and innovations in the field of sustainable business models as key components of the transition of business entities to a green development model. The proposals offered in the study are broader and more adapted to Ukrainian agricultural producers, although they are partially similar to those of A.H. Samo *et al.* (2023) in terms of training and technology development (with an emphasis on digital technologies), as well as to the proposal of Z. Xiang *et al.* (2024) in intellectual capital development and innovation.

The transition to a circular green model of development has its advantages and disadvantages. O. Kovalova (2025) identified four basic advantages (human capital development, increased labour mobility, improved quality and inclusiveness of education) and four basic disadvantages (resistance of the population (staff, employees), institutional traps, ineffective human capital management) of the transition to a green development model. I. Samoilyk & M. Vernygora (2023) analysed four key advantages (digitalisation, quality, integration and improved logistics) and three key disadvantages (supply chains, transaction costs and change in operational processes) of the transition to a circular model of development. A. Shvets (2022) highlighted the following advantages of the circular development model: optimisation of resource use (savings, reuse), innovation, meeting the needs of the population, and income. Instead, N. Ilchenko & O. Marchenko (2024) addressed the following problems of transition to a circular model of development: transformation of institutions, development of markets, development and use of technologies, and adaptation of cultural development to a new model of economic relations. The study divides the benefits of the transition to a circular green development model into four groups (for Ukraine's economic system, agricultural producers, society, and households) and presents them in a broader way than in the works of other scholars. The disadvantages of the transition to the CGM are presented in the form of an Ishikawa diagram and divided into six groups, which disclosed them more widely than in the works of Ukrainian and foreign scientists.

It is possible to conclude that there are significant opportunities for the development of the agro-industrial complex and agricultural enterprises of Ukraine within the framework of the transition to the CGM. The transition to the circular green model of development will improve the completeness of Ukrainian agribusiness in foreign and domestic markets and will provide a new impetus for the development of both individual enterprises and the agricultural sector and the national economy.

CONCLUSIONS

The study proved the need to accelerate the transition of Ukrainian agribusiness to a circular green model of development. Based on a comparative assessment of the models of strategic development of business units within the post-industrial transition (circular, green, socially oriented, social, digital, innovative, classical), as well as statistics on the environmental impact of the agro-industrial complex (annually the global agricultural business generates up to 1.6 billion tonnes of food waste and 5 billion tonnes of greenhouse gases. Tonnes of food waste and 3.3 billion tonnes of greenhouse gases, making it the fifth largest pollutant for the global ecosystem. It was determined that the circular green development model is optimal for agricultural enterprises, especially in countries that have a developed agricultural sector of the national economy, which includes Ukraine.

An analysis of the development of Ukraine's economy and agriculture in 2010-2024 has highlighted the key importance of agriculture

and agribusiness for the country's economic system (more than 7% of GDP was accounted for by agriculture during the study period), as well as the problems and constraints that hinder the development of agricultural enterprises. The study proved that the Russian military aggression has significantly slowed down the development of agribusiness in the country, the agro-industrial complex grew by 108.8% in 2024 compared to 2023 against 115.6% growth of the national economy, and agribusinesses should seek new ways to develop, where the transition to a circular green model of development should be a key one.

The study of the level of transition of Ukrainian economic system to a circular green development model based on the Global Green Economy Index (GGEI) revealed significant problems and lagging, especially in comparison with the EU countries (30th place out of 38 European countries in 2005 and 33rd place out of 38 European countries in 2023), as well as an adequate basis for accelerating the transition. The study notes the existence of an established legislative and regulatory framework for the transition of the national economic system and the agricultural sector to a circular green model of development.

Based on the study of scientific developments, the study identified the benefits of transition to a circular green model of agribusiness development in Ukraine for the national economy, agricultural producers, society and households. Separately, based on the Ishikawa Diagram, the cause-and-effect relationships of the issues of transition to a circular green model of agribusiness development in Ukraine were formed, with six groups of key problems identified (institutions, society, markets, technology, personnel, and finance). At the end of the study, the authors formulated ways to reform the Ukrainian agribusiness to ensure the transition to a circular green model of development, which is of practical value for state institutions, the country's agro-industrial complex and Ukrainian agricultural enterprises.

Prospects for further research in the field of ensuring the transition of Ukrainian agribusiness to the CDM are formation of mechanisms for the transition of agricultural enterprises of various sizes to the circular green development model; identification of the most promising areas for the implementation of foreign experience, primarily that of the European Union, to stimulate Ukrainian agribusiness in the framework of the transition to the circular green development model.

ACKNOWLEDGEMENTS

None.

FUNDING

None.

CONFLICT OF INTEREST

None.

REFERENCES

[1] Aznar-Sánchez, J.A., Piquer-Rodríguez, M., Velasco-Muñoz, J.F., & Manzano-Agugliaro, F. (2019). Worldwide research trends on sustainable land use in agriculture. *Land Use Policy*, 87, article number 104069. doi: 10.1016/j.landusepol.2019.104069.

[2] Chen, Z., Sarkar, A., Rahman, A., Li, X., & Xia, X. (2022). Exploring the drivers of green agricultural development (GAD) in China: A spatial association network structure approach. *Land Use Policy*, 112, article number 105827. doi: 10.1016/j.landusepol.2021.105827.

[3] Cullen, U.A. (2021). Exploring a circular business model: Insights from the institutional theory perspective and the business model lens. *International Journal of Entrepreneurship and Innovation*, 24(1), 1-12. doi: 10.1177/14657503211055574.

[4] Dutot, V., & Van Horne, C. (2015). Digital entrepreneurship intention in a developed vs. emerging country: An exploratory study in France and the UAE. *Transnational Corporations Review*, 7(1), 79-96. doi: 10.5148/tncr.2015.7105.

[5] European Commission. (n.d.). *The European Green Deal*. Retrieved from https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal_en.

[6] Fedorchuk, N.V. (2021). European Green Deal and the agricultural sector of Ukraine: Expectations and challenges. *State and Regions. Series: Economics and Business*, 3, 27-31. doi: 10.32840/1814-1161/2021-3-4.
[7] Gibson, D.E. (1993). Post-industrialism: Prosperity or decline? *Sociological Focus*, 26(2), 147-163.
[8] Ilchenko, N., & Marchenko, O. (2024). European experience in implementation of circular economy principles. *Uzhorod National University Herald. Series: International Economic Relations and World Economy,* 50, 146-152. doi: 10.32782/2413-9971/2024-50-25.
[9] Ishikawa, K. (1968). *Guide to Quality Control*. Tokyo: JUSE.
[10] Khanna, M., Zilberman, D., Hochman, G., & Basso, B. (2024). An economic perspective of the circular bioeconomy in the food and agricultural sector. *Communications Earth & Environment*, 5, article number 507. doi: 10.1038/s43247-024-01663-6.
[11] Kovalova, O. (2025). Current digital trends of innovative development of agribusiness in the conditions of smart economy. *Digital Economy and Economic Security*, 1(16), 207-212. doi: 10.32782/dees.16-31.
[12] Law of Ukraine No. 2320-IX "About Waste Management". (2023, June). Retrieved from https://zakon.rada.gov.ua/laws/show/en/2320-20?lang=uk.
[13] Law of Ukraine No. 2697-VIII "On the Key Principles (Strategy) of the State Environmental Policy of Ukraine for the Period till 2030". (2019, February). Retrieved from https://zakon.rada.gov.ua/laws/show/2697-19?lang=en#Text.
[14] Magnus, C. (n.d.). *Planting the seeds of sustainable agriculture with a circular economy*. Retrieved from https://www.publicissapient.com/insights/circular-economy-and-agricultural-transformation.
[15] Ministry of Environmental Protection and Natural Resources of Ukraine. (2018). *The strategy for low-carbon development of Ukraine until 2050*. Retrieved from https://mepr.gov.ua/diyalnist/napryamky/zmina-klimatu/pom-yakshennya-zminy-klimatu/strategiya-nyzkovugletsevogo-rozvytku-ukrayiny-do-2050-roku.
[16] Mulya, S.P., Hudalah, D., Salim, W., & Prilandita, N. (2024). Review of the circular economy implementation in the agriculture sector: A regional development approach. *Circular Economy and Sustainability*, 5, 1509-1533. doi: 10.1007/s43615-024-00463-6.
[17] Pavlenko, O.S. (2023). Sustainable development of agribusiness in the concept of green economy. *Entrepreneurship and Trade*, 39, 118-123. doi: 10.32782/2522-1256-2023-39-14.
[18] Prokopenko, O., Chechel, A., Koldovskiy, A., & Kldiashvili, M. (2024). Innovative models of green entrepreneurship: Social impact on sustainable development of local economies. *Economics Ecology Socium*, 8, 89-111. doi: 10.61954/2616-7107/2024.8.1-8.
[19] Resolution of the Cabinet of Ministers of Ukraine No. 117-p "On Approval of the National Waste Management Plan until 2030". (2019, February). Retrieved from https://zakon.rada.gov.ua/laws/show/117-2019-%D1%80#Text.
[20] Resolution of the Cabinet of Ministers of Ukraine No. 820-p "On the Approval of the National Waste Management Strategy in Ukraine until 2030". (2017, November). Retrieved from https://zakon.rada.gov.ua/laws/show/820-2017-%D1%80#Text.
[21] Resolution of the Cabinet of Ministers of Ukraine No. 932-p "On Approval of the Concept for the Implementation of State Policy in the Field of Climate Change for the Period up to 2030". (2016, December). Retrieved from https://zakon.rada.gov.ua/laws/show/932-2016-%D1%80#Text.
[22] Samo, A.H., Savastano M., & Abdullah, U. (2023). *Strategizing for the growth and sustainability of green agriculture enterprises: A developing country perspective.* Retrieved from https://surl.li/hknpev.
[23] Samoilyk, I., & Vernygora, M. (2023). Strategic perspectives of the agriculture sector development under the global circular economy conditional. *Herald of Khmelnytskyi National University. Economic Sciences*, 3, 378-385. doi: 10.31891/2307-5740-2023-318-3-58.

[24] Shebanin, V., Shebanina, O., Kormyshkin, Iu., Drobitko, A., & Potryvaieva, N. (2024). Circular economy of the agricultural sector: Strategies and challenges in the context of globalisation. *Scientifc Horizons*, 27(9), 148-161. doi: 10.48077/scihor9.2024.148.
[25] Shvets, A.I. (2022). Circular economy as a new model of Ukrainian economy development in the European integration process. *Economic Bulletin of Dnipro University of Technology*, 1, 43-49. doi: 10.33271/ebdut/77.043.
[26] State Statistics of Ukraine. (2025b). *The Ukraine's foreign trade in goods*. Retrieved from https://ukrstat.gov.ua.
[27] State Statistics of Ukraine. (2025a). *The Gross domestic product*. Retrieved from https://ukrstat.gov.ua.
[28] The Green Growth Index. (n.d.a). Retrieved from https://dualcitizeninc.com/global-green-economy-index.
[29] The Green Growth Index. (n.d.b). Retrieved from https://greengrowthindex.gggi.org.
[30] Usata, N. (2023). Conceptual foundations of the circular economy in agriculture. *Acta Academiae Beregsasiensis. Economics*, 4, 153-163. doi: 10.58423/2786-6742/2023-4-153-163.
[31] Velasco-Muñoz, J.F., Mendoza, J.M.F., Aznar-Sánchez, J.A., & Gallego-Schmid, A. (2021). Circular economy implementation in the agricultural sector: Definition, strategies and indicators. *Resources, Conservation and Recycling*, 70, article number 105618 doi: 10.1016/j.resconrec.2021.105618.
[32] Xiang, Z., Xiu-e, Z., & Liu, Y. (2024). Does green entrepreneurial orientation improve the sustainable performance of agribusiness? Evidence from China. *SAGE Open*, 14(3). doi: 10.1177/21582440241271110.

Юлія Перегуда
Доктор економічних наук, доцент
Національний університет біоресурсів і природокористування України
03041, вул. Героїв Оборони, 15, м. Київ, Україна
Міжрегіональна Академія управління персоналом
03039, вул. Фрометівська, 2, м. Київ, Україна
https://orcid.org/0000-0002-1434-2509

Трансформація аграрного бізнесу України в умовах переходу на циркулярну зелену модель розвитку

Анотація. Пошук шляхів для розвитку українського агробізнесу в умовах переходу економічних систем різного рівня на циркулярну зелену модель розвитку є актуальним та критично важливим завданням для підвищення рівня національної та продовольчої безпеки, а також забезпечення стійкого зростання національної економіки. Метою наукової роботи було формування напрямів прискорення переходу українських аграрних підприємств на циркулярну зелену модель ведення бізнесу на основі виявлення тенденцій та проблем розвитку агропромислового комплексу країни, визначення особливостей переходу України на циркулярну зелену модель, а також ідентифікації переваг та проблем, що супроводжують процес переходу агробізнесу на циркулярну зелену модель розвитку. Дослідження базувалося на комплексному використанні таких методів, як: літературного аналізу; збору та аналізу даних (кабінетне дослідження); бібліографічного методу; компаративної (порівняльної) оцінки; економічного аналізу; Діаграма Ісікави; систематизації, групування і логічного узагальнення. В результаті дослідження було виявлено необхідність використання агропідприємствами циркулярної зеленої моделі розвитку в межах переходу економічних систем на постіндустріальні принципи ведення бізнес-діяльності. Економічний аналіз дозволив виділити тенденції та проблеми розвитку агропромислового комплексу України, а також проблеми, що супроводжують країну в межах переходу на циркулярну зелену модель розвитку. В результаті дослідження виявлено позитивні сторони переходу українських аграрних підприємств на циркулярну зелену модель розвитку. Окремо, за допомогою використання Діаграми Ісікави, було визначено причино-наслідкові взаємозв'язки проблематики переходу на циркулярну зелену модель розвитку агробізнесу України, де було виділено шість груп проблем (інститути, суспільство, ринки, технології, персонал, фінанси). Запропоновано шляхи реформування аграрного бізнесу України в межах забезпечення переходу на циркулярну зелену модель розвитку. Отримані в ході дослідження результати мають високу практичну значимість для виробників аграрної продукції України, оскільки вони дозволяють агровиробникам прискорити перехід на циркулярну зелену модель розвитку та підвищити конкурентоспроможність і стійкість економічним викликам

Ключові слова: екологія; економіка; конкурентоспроможність; постіндустріальний перехід; ресурси; реформування