



RESEARCH ARTICLE

Financial sustainability of Georgian agribusiness: An empirical and policy analysis

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Abstract

The agricultural sector remains a vital component of Georgia's economy, with agribusiness playing a key role in rural employment, food security and export potential. However, the financial sustainability of agribusiness faces significant challenges due to market volatility, limited access to finance, infrastructure constraints and climate-related risks. This study evaluates the financial sustainability of Georgian agriculture by analysing sector-specific financial indicators, institutional support mechanisms and structural bottlenecks. Using a combination of qualitative and quantitative methods, including financial ratio analysis and strengths, weaknesses, opportunities and threats (SWOT) assessment, the study identifies critical risk factors and highlights untapped opportunities for growth and resilience. The regression results indicate that liquidity has a statistically significant positive effect on profitability, while leverage and climate-related risks negatively affect financial performance. Findings suggest that while the sector has considerable development potential, particularly through modernisation, improved access to finance and integration into the European Union (EU) market, systemic weaknesses must be addressed through targeted government policies, strategic investment and capacity-building initiatives. Overall, the study contributes to a better understanding of the financial viability of Georgia's agribusiness sector and offers policy-oriented recommendations to support long-term sustainable development.

Keywords: agribusiness in Georgia; financial sustainability; mountainous regions; policy and institutional frameworks; profitability and liquidity

Introduction

Agriculture has historically been one of the cornerstones of Georgia's economy, significantly contributing to employment, rural development and national food security. Recently, agribusiness, the commercial dimension of agriculture comprising production, processing, marketing and distribution has gained increasing importance as the country seeks to modernise its rural economy and align itself with international trade standards, especially in the context of integration with the European Union (EU). Despite its strategic importance, the agribusiness sector in Georgia continues to face numerous challenges that undermine its financial sustainability. Structural limitations, such as fragmented land ownership, outdated technologies and insufficient infrastructure, are compounded by external factors, including global market fluctuations and climate variability. Moreover, access to finance remains a critical barrier for small and medium-sized agribusiness enterprises. Small and medium-sized enterprises (SMEs) often struggle to obtain credit due to high collateral requirements and underdeveloped rural financial services. This study aims to assess the financial sustainability of agribusiness in Georgia by analysing key economic indicators, evaluating the effectiveness of state support mechanisms and identifying both constraints and growth opportunities. By offering an in-depth understanding of current financial conditions and the

institutional framework of the sector, research seeks to inform evidence-based policy decisions and contribute to designing targeted interventions that support long-term sustainable development in Georgian agriculture.

The financial sustainability of agribusiness has attracted increasing scholarly attention worldwide, especially in the context of emerging and transition economies. The Food and Agriculture Organization underscores that agribusiness sustainability hinges not only on efficient production and technological innovation but also on access to adequate financing, stable market conditions and supportive institutional frameworks (1). These elements collectively influence the resilience and growth potential of agricultural enterprises.

Recent studies in emerging economies highlight the significant role of digital inclusive finance in improving farmers' access to credit and investment capacity (2). While this study focuses on China, the mechanisms of digital finance and social embeddedness are directly applicable to emerging rural economies such as Georgia. For instance, an empirical analysis of rural farmers' financing intention of inclusive finance in China demonstrates that digital finance and social enterprise embeddedness substantially moderates farmers' willingness and ability to obtain inclusive financial services, thereby enhancing financial resilience.

Inclusive finance has emerged as a critical mechanism for promoting rural entrepreneurship and reducing poverty in developing economies. The access to inclusive financial instruments significantly increases farm households entrepreneurial activities and supports sustainable rural transformation in poverty-stricken areas of China (3). These findings reinforce the notion that inclusive finance serves not only as a credit tool but also as a catalyst for broader structural change in rural economies. Recent evidence suggests that social entrepreneurship acts as a bridge between financial inclusion and sustainable rural development. The study argues that social enterprises in post-independence Indonesia have contributed to empowering local communities, enhancing financial literacy and fostering self-sustaining agricultural models (4). Their study highlights how social innovation can mitigate structural financial constraints in rural economies and stimulate inclusive growth.

A critical analysis of subsidy programmes in Georgia, noting improvements in fund allocation transparency but highlighting ongoing issues related to equitable access and administrative capacity (5). They advocate for tailored policies that address the specific needs of small and medium agribusiness enterprises to ensure sustainable sector growth. Unlike study, who focused on subsidy administration, this study is the first to integrate regression-based firm-level financial analysis with regional geographic factors and climate risk in the Georgian context (5).

The relationship between regional development policy and firm-level financial performance has long been recognised as a key determinant of local economic resilience. The effective regional development strategies enhance the competitiveness and financial performance of small and medium enterprises by improving infrastructure, institutional support and access to finance (6). These findings are particularly relevant for rural agricultural enterprises, where regional policy often shapes the structure of credit availability and innovation incentives. This holistic perspective enables policymakers and stakeholders to identify not only financial health but also external risks and opportunities.

Entrepreneurs can customise their strategies to address the specific challenges of crop and livestock farming by identifying important elements such as revenue, self-financing and long-term investment. This information helps in creating successful risk management plans, ensuring long-term growth and financial stability. Additionally, it assists legislators in creating targeted assistance programs and regulations tailored to the specific needs of different types of farms. Ultimately, this comprehensive knowledge increases productivity, reduces costs and open up new market opportunities, all of which contribute to the overall expansion and sustainability of the agricultural sector (7). This study similarly examines how revenue diversification and self-financing affect farm sustainability but extends this to the specific institutional context of Georgian agribusiness.

Financial management in the agribusiness sector has been increasingly recognised as a key driver of both firm-level efficiency and macroeconomic growth. According to paper, sound financial management practices including budgeting, investment planning and risk control enhance agribusinesses capacity to withstand market shocks and contribute to national economic development (8). This theoretical linkage between agribusiness finance and economic growth provides a foundation for evaluating financial security within rural and agricultural enterprises.

Financial sustainability has become a central concern for agri-food enterprises, particularly in contexts where brand certification and regional identity influence market performance. The financial performance of members of the Protected Designation of Origin (PDO) Parma Ham Consortium and conclude that maintaining financial sustainability depends not only on profitability and liquidity ratios but also on the capacity to align production practices with environmental and quality standards (9). Their findings suggest that integrated financial and sustainability management frameworks can improve long-term resilience in the agri-food sector.

Integrated or connected agribusiness activities can significantly influence financial performance by diversifying revenue streams and reducing risk exposure. The firms engaged in connected activities such as combining primary production with processing or marketing exhibit higher financial performance and resilience compared to firms operating in isolation (10). These findings reinforce the importance of vertical and horizontal integration strategies for financial security in the agricultural sector.

Despite the growing emphasis on financial sustainability and inclusive finance, agribusinesses continue to face structural and operational barriers. The key obstacles identified including limited access to finance, inadequate infrastructure, knowledge gaps and institutional weaknesses and propose a conceptual framework for analysing sustainable agribusiness development (11). Their findings underline the need for integrated strategies that combine financial instruments, policy support and innovation to enhance resilience in agricultural enterprises.

Understanding the structural and financial sustainability of agricultural enterprises requires integrated modelling approaches. A comprehensive model proposed that combines financial, operational and structural indicators to assess enterprise resilience (12). Their approach underscores the importance of considering both internal management practices and external environmental factors when evaluating agricultural financial security. According to paper, in order to make informed decisions and effectively allocate resources, farmers and agricultural businesses need to understand the factors that determine financial stability on farms (13).

Digital transformation in agribusiness is increasingly recognised as a critical factor for resilience and sustainability, particularly under intensifying climate crises. emphasise The state regulation plays a pivotal role in guiding the adoption of digital technologies, ensuring financial inclusion and enhancing operational efficiency in the sector (14). Their study highlights that coordinated regulatory frameworks can accelerate sustainable innovation and strengthen the adaptive capacity of agricultural enterprises.

Inclusive agribusiness approaches have gained prominence in the context of climate change, where financial mechanisms are critical to supporting adaptation and resilience. The access to tailored financial products enables smallholder farmers and agribusinesses to implement climate-smart practices, invest in resilient infrastructure and reduce vulnerability to environmental shocks (15). Their study underscores the necessity of integrating financial inclusion strategies into sustainability and risk management frameworks.

Effective financial risk management is crucial for sustainable agricultural development, particularly when aligned with corporate social responsibility (CSR) practices. Previous researchers argue that

integrating corporate social responsibility (CSR) into financial strategies not only mitigates risks but also strengthens food security and long-term sustainability (16). Their study demonstrates that CSR-oriented risk management frameworks can enhance the resilience of agricultural enterprises against market and environmental uncertainties.

Despite a growing body of research, there is a notable scarcity of up-to-date, sector-specific studies examining the financial sustainability of Georgian agribusiness in the context of recent economic development and climate-related challenges. This gap underscores the need for comprehensive evaluations that integrate both quantitative financial data and qualitative institutional analyses to inform effective policy making.

Against this background, the core research question guiding this study is how financially sustainable agribusiness enterprises in Georgia are under current economic, institutional and regional conditions, with particular attention to structural constraints and policy effectiveness. Unlike previous studies that focus primarily on agricultural productivity or general rural development, this research explicitly examines financial sustainability through a combined analysis of financial indicators, institutional support mechanisms and regional disparities. In doing so, the paper contributes novel empirical evidence by linking firm-level financial performance with broader policy and regional development considerations in the Georgian context.

Materials and Methods

Research design

The study employs a longitudinal comparative design, tracking financial indicators across 2015–23 and benchmarking Georgian agribusiness performance against Eastern European regional averages.

This study adopts an analytical research design aimed at assessing the financial sustainability of Georgia's agribusiness sector. The research combines quantitative analysis of financial and economic indicators with qualitative policy analysis to capture both measurable financial performance and the institutional context shaping sectoral outcomes.

Data sources

The empirical analysis is based on annual data covering the period 2015–23. The dataset was compiled from multiple official sources, including the National Statistics Office of Georgia (GeoStat), the Ministry of Environmental Protection and Agriculture of Georgia and the National Bank of Georgia. Additional macroeconomic and sectoral indicators were obtained from international databases such as the World Bank and the Food and Agriculture Organization (FAO).

The analysis relies on aggregated sector-level data, resulting in a total of 9 annual observations. While this limits the use of more complex panel techniques, it allows for a consistent evaluation of trends in financial sustainability at the national level.

Analytical techniques

The study employs a range of analytical and comparative methods, including descriptive statistical analysis, financial ratio analysis and comparative assessment across time periods. Policy analysis is applied to evaluate the effectiveness of state support instruments and institutional frameworks. These methods are used in an

integrated manner to ensure consistency between empirical findings and policy interpretation.

Quantitative methods

The linear regression model aims to assess the impact of liquidity and leverage on the financial performance (measured by return on assets - ROA) of Georgian agribusinesses. Model specification:

$$ROA_i = \beta_0 + \beta_1 \times \text{Current ratio}_i + \beta_2 \times \text{Debt equity ratio}_i + \varepsilon_i \quad (\text{Eqn. 1})$$

Where:

ROA_i = Return on assets of agribusiness i

Current ratio_i = Current ratio indicating liquidity

$\text{Debt equity ratio}_i$ = Debt to equity ratio indicating leverage

β_0 = intercept

β_1, β_2 = coefficients representing the effect of liquidity and leverage respectively

ε_i = error term

The empirical analysis was conducted using a stepwise regression approach. The baseline model initially included core financial variables, while the extended model incorporated additional factors such as government subsidies, farm size and climate-related risks. This approach allows for a more comprehensive assessment of financial sustainability by comparing simplified and expanded model specifications.

The extended regression model includes additional explanatory variables to capture structural and environmental dimensions of financial sustainability. Government subsidies are measured as the total annual amount of financial support received by agribusiness enterprises (in GEL). Farm size is measured in hectares, reflecting the scale of agricultural operations. The climate risk index is constructed based on the observed frequency and intensity of climate-related shocks, including droughts and extreme weather events. All data were obtained from national statistical sources and relevant institutional reports for the period 2015–23.

Qualitative methods

Qualitative data were collected through semi-structured interviews with key stakeholder groups, including public sector representatives, agribusiness practitioners and local population members involved in agricultural activities. A purposive sampling approach was used to select participants with relevant experience and knowledge of the sector. In total 500 interviews were conducted during the study period.

The interviews focused on key issues such as access to finance, institutional support and climate-related challenges. The collected qualitative data were analysed using thematic analysis to identify recurring patterns and insights, which were then integrated into the overall analytical framework to complement the quantitative results. All interviews were conducted on a voluntary basis and respondents were assured of confidentiality.

Results

To deepen the empirical dimension of the analysis, particular attention is paid to agribusiness activities in Georgia's mountainous regions, where financial sustainability challenges are more pronounced. These areas are characterised by higher production costs, limited market access and weaker financial infrastructure

compared to lowland regions. Empirical indicators show that agribusiness firms operating in mountainous regions tend to exhibit lower profitability ratios and higher financial vulnerability, despite benefiting from targeted state support programmes. This case-oriented perspective provides additional evidence of how geographic and structural factors shape financial outcomes within the agribusiness sector, complementing the overall analysis of financial performance from 2015–23.

Key financial indicators and growth trends

The financial sustainability of Georgian agribusinesses from 2015–23 shows a complex interplay of progress and ongoing challenges. Analysis of key financial ratios reveals gradual improvements in profitability, constrained liquidity and cautious leverage strategies. Return on assets (ROA) increased from 3.2 % in 2015 to 5.6 % in 2023, with an average annual growth rate of approximately 7.2 %. Similarly, the net profit margin rose from 4.5 % to 6.9 % (Table 1), while ROA trends are presented in the same table.

Regression analysis

Regression analysis indicates that liquidity has a positive and statistically significant effect on profitability ($\beta = 2.85$, $p < 0.001$) (Table 2). Georgian agribusinesses maintain moderate leverage, with the debt-to-equity ratio indicating moderate leverage levels, averaging 0.6 (SD = 0.12). Notably, small and medium enterprises (SMEs) have significantly lower leverage (average D/E = 0.4) compared to larger firms (average D/E = 0.7), confirmed by *t*-test results ($t = 3.2$, $p < 0.01$), reflecting limited access to credit for smaller businesses.

To enhance the robustness of the analysis, the baseline regression model was extended by incorporating additional explanatory variables, including government subsidies, farm size and climate-related risks (Table 3). While the initial model focuses on the core financial determinants of profitability, the extended model provides a more comprehensive framework by accounting for structural and environmental factors. This stepwise modelling approach improves the explanatory power of the analysis and

allows for a clearer interpretation of how additional variables influence financial sustainability across different types of agribusiness enterprises. The results indicate that subsidies and farm size have a positive and statistically significant effect on profitability, while climate-related risks exert a negative impact. This confirms the importance of both financial and structural factors in shaping agribusiness performance. The regression relationships are further illustrated in Fig. 1.

Discussion

An increase in the net profit margin indicates better operational efficiency. The current ratio averaged 1.1 (SD = 0.15), suggesting limited buffers to meet short-term liabilities. The quick ratio was even lower at 0.8 (SD = 0.10), revealing reliance on inventory to maintain liquidity. Seasonal patterns were evident, with liquidity tightening during planting and harvesting seasons, exacerbating cash flow pressures. However, these profitability figures remain below the Eastern European regional average ROA of 8.4 %, highlighting persistent efficiency gaps (17). These findings confirm that liquidity constraints remain a significant structural challenge. Qualitative insights from stakeholder interviews and literature review enrich these findings. Georgia's diverse agro-climatic conditions enable the production of high value crops such as grapes, nuts and fruits, supporting an average annual export growth of 12 % from 2015–23 (18). However, fragmented land ownership with 65 % of farms under 2 hectares limits mechanisation and economies of scale. Infrastructural deficits, including inadequate rural roads and insufficient storage facilities, increase operational costs and reduce product competitiveness.

Government subsidies have increased by 35 % between 2018 and 2023, expanding support programs. Nevertheless, access remains uneven, with bureaucratic obstacles and limited administrative capacity hampering effective distribution, especially for smaller agribusinesses. Integration into the EU market through the deep and comprehensive free trade area (DCFTA) agreement

Table 1. Key financial indicators of Georgian Agribusiness Enterprises, 2015–23

Financial indicator	2015 value	2023 value	Average annual growth rate (AAGR)	Notes
Return on assets (ROA)	3.2 %	5.6 %	7.2 %	Below the regional average (8.4 %)
Net profit margin	4.5 %	6.9 %	6.5 %	Improved operational efficiency
Current ratio	1.0	1.2	N/A	Limited liquidity buffer
Quick ratio	0.7	0.9	N/A	Reliance on inventory
Debt to equity ratio (D/E)	0.6	0.6	Stable	Lower in SMEs (0.4) vs. larger firms (0.7)

Table 2. Regression analysis

Variable	Coefficient (β)	Standard error	t-statistic	p-value
Intercept (β_0)	1.23	0.45	2.73	0.007
Current ratio (β_1)	2.85	0.80	3.56	<0.001
Debt to equity ratio (β_2)	-1.47	0.65	-2.26	0.026

Table 3. Multiple regression modelling results

Variable	Coefficient (β)	Standard error	t-statistic	p-value	Interpretation
Intercept (β_0)	0.98	0.38	2.58	0.011	Base ROA when all predictors are zero
Current ratio (β_1)	2.76	0.72	3.83	<0.001	Higher liquidity increases profitability
Debt to equity ratio (β_2)	-1.31	0.59	-2.22	0.028	Higher leverage reduces profitability
Subsidy amount (β_3)	0.0025	0.0008	3.12	0.002	More subsidies correlate with higher ROA
Farm size (β_4)	0.045	0.015	3.00	0.003	Larger farms have better financial returns
Climate risk index (β_5)	-2.10	0.75	-2.80	0.006	Greater climate risk lowers profitability

ROA: return on assets.

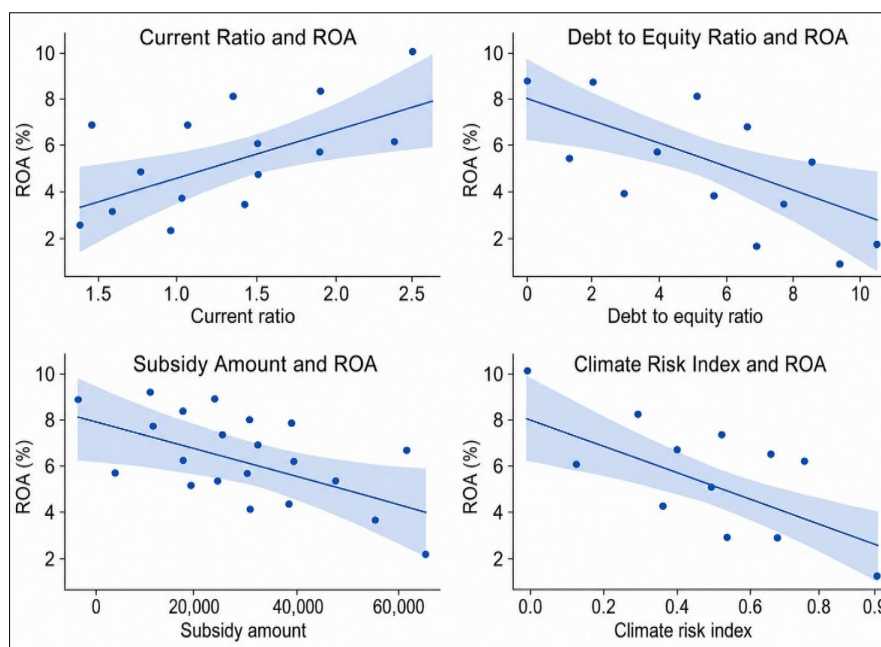


Fig. 1. Regression analysis of financial sustainability in Georgian agribusiness.

Graph a - after “see Graph a” → Current ratio vs ROA; Graph b - after “see

Graph b” → Debt to equity vs ROA; Graph c - after “see Graph c” → Subsidy amount vs ROA; Graph d - after “see Graph d” → Climate risk vs ROA.

presents significant opportunities but requires compliance with stricter quality and regulatory standards, posing challenges for smaller producers. At the same time, the regression results indicate that government subsidies have a positive and statistically significant effect on profitability, confirming their role as an important financial support mechanism within the agribusiness sector. However, the uneven distribution of subsidies suggests that their effectiveness may depend on improved targeting and administrative efficiency.

Environmental risks are intensifying, with a 15 % increase in drought frequency over the last decade causing yield reductions estimated at 8–12 % in affected regions (19). These climate factors heighten financial risk and necessitate adaptive measures.

In addition to financial considerations, the findings have broader implications for agricultural production systems. Financial sustainability directly affects the capacity of agribusinesses to adopt improved crop management practices, invest in climate-resilient technologies and respond to environmental stress factors. Therefore, strengthening financial resilience can contribute to enhancing overall agricultural productivity and sustainability, including plant-level performance and adaptation to changing climatic conditions.

Together, the data indicate that while Georgian agribusiness is on a trajectory of modest financial improvement, liquidity constraints and limited access to credit restrict investment capacity, particularly for SMEs. These findings call for policy actions focused on enhancing financial instruments tailored to the sector’s seasonal cash flow needs, investing in rural infrastructure, facilitating land consolidation and streamlining subsidy processes.

A SWOT-based synthesis of the findings highlights key structural dynamics within the sector. Strengths include favourable agro-climatic conditions and growing export potential, while weaknesses are associated with fragmented land ownership, limited access to finance and infrastructural constraints. Opportunities arise from integration into EU markets and technological modernisation, whereas threats are primarily linked to climate risks, market volatility

and institutional inefficiencies.

Capacity-building initiatives and technological adoption must be promoted to improve productivity and resilience. Strengthened collaboration between government, financial institutions and private sector actors is vital to create a supportive ecosystem for sustainable agribusiness development.

Limitations of the study

Despite its comprehensive approach, the study has certain limitations. The analysis relies on available secondary data, which may not fully capture informal financial practices within agribusiness. In addition, firm-level microdata is limited, constraining the depth of disaggregated financial analysis. While these limitations constrain the level of disaggregated analysis, they do not affect the overall robustness of the study and provide a foundation for future empirical research.

Conclusion

This study examined the financial sustainability of agribusiness enterprises in Georgia, focusing on both internal financial indicators and external environmental factors. The empirical analysis, based on multiple regression modelling, revealed that liquidity (as measured by the current ratio) has a strong and statistically significant positive impact on profitability (ROA). In contrast, high leverage (debt-to-equity ratio) and increased climate-related risks negatively affect financial outcomes. Government subsidies were found to have a positive and statistically significant effect on profitability, indicating their role in supporting financial performance within the agribusiness sector. However, the magnitude of this effect suggests that while subsidies contribute positively to profitability, their overall impact may depend on effective targeting and efficient allocation.

The study contributes to the literature by providing an integrated assessment of financial sustainability in Georgian agribusiness, combining quantitative financial analysis with qualitative institutional insights. By linking firm-level financial indicators with structural and regional factors, the research offers a

more comprehensive understanding of the sector's development constraints and opportunities.

The findings highlight a set of critical challenges for Georgian agriculture, including limited access to effective financial instruments, vulnerability to climate uncertainty and inefficiencies in subsidy implementation. At the same time, these challenges point to clear policy priorities. Targeted financial instruments, improved subsidy allocation mechanisms, investments in rural infrastructure and the promotion of climate-resilient agricultural practices are essential to strengthen sectoral resilience.

Overall, the study underscores the need for a comprehensive and coordinated policy approach to support the long-term financial sustainability of agribusiness in Georgia. Future research could build on these findings by incorporating firm-level panel data, conducting comparative analyses across regions of the South Caucasus and applying dynamic modelling techniques to assess financial resilience under conditions of economic and climatic uncertainty.

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Authors' contributions

GA conceptualized the study, developed the methodology, carried out the software development, performed validation, formal analysis, investigation, resource management, data curation and prepared the original draft, reviewed and edited the manuscript. The author has read and approved the final manuscript.

Compliance with ethical standards

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References

1. FAO. Georgia: Agricultural sector review. Rome: Food and Agriculture Organization of the United Nations; 2024.
2. Aisaiti G, Liu L, Xie J, Yang J. An empirical analysis of rural farmers' financing intention of inclusive finance in China: The moderating role of digital finance and social enterprise embeddedness. *Ind Manag Data Syst.* 2019;119(7):1535–63. <https://doi.org/10.1108/IMDS-08-2018-0374>
3. Liu T, He G, Turvey CG. Inclusive finance, farm households entrepreneurship and inclusive rural transformation in rural poverty-stricken areas in China. *Emerg Mark Finance Trade.* 2019;57(7):1929–58. <https://doi.org/10.1080/1540496X.2019.1694506>
4. Imanuella SF, Idris A, Kamaruddin N. Social entrepreneurship and rural development in post-independence Indonesia. *Soc Enterp J.* 2025;21(1):46–66. <https://doi.org/10.1108/SEJ-12-2023-0155>
5. Katamadze D, Abuselidze G, Katamadze G. Problem of agribusiness management in Georgia. *Int Multidiscip Sci GeoConf SGEM.* 2020;20(5.2):389–400. <https://doi.org/10.5593/sgem2020/5.2/s21.048>
6. Locke S. Regional development policy and small medium enterprise financial performance. *Australas J Reg Stud.* 2006;12(2):191–204.
7. Gadanakis Y. Advancing farm entrepreneurship and agribusiness management for sustainable agriculture. *Agriculture.* 2024;14(8):1288. <https://doi.org/10.3390/agriculture14081288>
8. Sheyoputri ACA. Theoretical review: Financial management in the agribusiness sector and its implications for economic growth. *Atestasi J Ilm Akunt.* 2024;7(2):828–51. <https://doi.org/10.57178/atestasi.v7i2.887>
9. Iotti M, Bonazzi G. Financial sustainability in agri-food companies: The case of members of the PDO Parma Ham Consortium. *Sustainability.* 2023;15(5):3947. <https://doi.org/10.3390/su15053947>
10. Dono G, Buttinelli R, Cortignani R. Financial performance of connected agribusiness activities in Italian agriculture. *Bio-based Appl Econ.* 2022;11(2):147–69. <https://doi.org/10.36253/bae-12211>
11. Brenya R, Akomea-Frimpong I, Ofosu D, Adeabah D. Barriers to sustainable agribusiness: A systematic review and conceptual framework. *J Agribus Dev Emerg Econ.* 2023;13(4):570–89. <https://doi.org/10.1108/JADEE-08-2021-0191>
12. García CR, Marín H. An integrated model to study the structural and financial sustainability of agricultural enterprises. *Acta Hortic.* 2005;674:313–20. <https://doi.org/10.17660/ActaHortic.2005.674.37>
13. Szafraniec-Siluta E, Strzelecka A, Ardan R, Zawadzka D. Determinants of financial security of European Union farms—A factor analysis model approach. *Agriculture.* 2024;14(1):119. <https://doi.org/10.3390/agriculture14010119>
14. Imanbayeva Z, Abuselidze G, Bukharbayeva A, Jraoua K, Oralbayeva A, Kushenova M. State regulation of the digital transformation of agribusiness in the context of the climate crisis intensification. *Economies.* 2024;12(10):270. <https://doi.org/10.3390/economies12100270>
15. Oostendorp R, van Asseldonk M, Gathiaka J, Mulwa R, Radeny M, Recha J, et al. Inclusive agribusiness under climate change: A brief review of the role of finance. *Curr Opin Environ Sustain.* 2019;41:18–22. <https://doi.org/10.1016/j.cosust.2019.09.014>
16. Polukhin AA, Panarina VI. Financial risk management for sustainable agricultural development based on corporate social responsibility in the interests of food security. *Risks.* 2022;10(1):17. <https://doi.org/10.3390/risks10010017>
17. World Bank. Georgia agricultural sector update. Washington (DC): World Bank; 2022.
18. National Statistics Office of Georgia. Agriculture of Georgia – Statistical yearbook 2010–22. Tbilisi: Geostat; 2023.
19. OECD Publishing. Innovation, productivity and sustainability in food and agriculture: Main findings from country reviews and policy lessons. Paris: OECD Publishing; 2020.

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