University of Agronomic Sciences
and Veterinary Medicine of Bucharest
Faculty of Management
and Rural Development

International Conference
"Agriculture for Life, Life for Agriculture"

BOOK OF ABSTRACTS

Section 7

Management and Economics of Rural Areas

2026
Bucharest

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Management and Economics of Rural Areas

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PUBLISHERS:

University of Agronomic Sciences and Veterinary Medicine of Bucharest, Romania - Faculty of Management and Rural Development
Address: 59 Marasti Blvd, District l, Zip code 011464, Bucharest, Romania
Phone: + 40 213 1830 75, E-mail: managementjournal@usamv.ro, Webpage: www.managusamv.ro

CERES Publishing House
Address: 106 Izbiceni Street, District l, Bucharest, Romania
E-mail: edituraceres@yahoo.com, Webpage: www.editura-ceres.ro

ISSN 2457-3256
ISSN-L 2457-3256

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RISK ASSESSMENT OF OCCUPATIONAL ACCIDENTS AND DISEASES IN AGRICULTURAL ACTIVITIES: AN APPLIED STUDY IN THREE COMPANIES FROM CONSTANȚA COUNTY, ROMANIA

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Abstract

This study investigates the occupational risks associated with activities carried out in three representative agricultural companies, using the INCDPM risk assessment methodology and the work-system approach. Results show that although the overall risk levels fall within the "acceptable" category, the structure of risk factors varies significantly depending on the operational profile of each company. In highly mechanised units, dominant risks are mechanical, technical and operational, with a substantial contribution of worker-related factors, highlighting the importance of training and preventive behaviour. In contrast, the livestock-based company is characterised by biological, ergonomic and environmental risks, which tend to be chronic and cumulative. Its lower risk level is also influenced by the fact that it is newly established and equipped with modern technology that meets international standards. The use of new technologies, smart farming solutions and digitalised systems reduces exposure to hazards and optimises operational processes. The comparative analysis confirms the need for differentiated prevention strategies tailored to the technological and organisational specificities of agricultural activities. The study emphasises the crucial role of integrated risk management in ensuring workers' health and safety.

Key words**:** *agriculture, agricultural machinery, occupational health and safety, occupational risk assessment, risk management.*

A MODEL FOR THE APPLICATION OF THE ABC COSTING METHOD IN GRAIN PRODUCTION

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Abstract

A major challenge in traditional cost-calculation methods in grain production is the allocation of indirect costs. In all farms examined, indirect costs are distributed on the basis of direct costs, which in some crops—such as rice—distorts the actual cost price by up to two or three times. Improving cost calculation in grain production therefore requires exploring opportunities for applying more advanced costing methods. This study proposes an Activity-Based Costing (ABC) model as one of the most progressive methods in accounting theory and practice. Using empirical data, the research identifies the advantages and limitations of applying ABC in grain production. When implemented correctly, ABC provides significantly more accurate information on crop cost prices, as it ensures a fairer distribution of overhead costs across different cost objects within the farm. Under current conditions in Bulgarian grain production, however, the ABC method remains difficult to apply, as most farms cannot meet its demanding requirements. Large producers face a choice between the lower cost of traditional methods and the additional investment required for ABC, which offers higher accuracy and improved cost control.

Key words: *Activity-Based Costing (ABC), grain production, cost allocation, indirect costs, farm management.*

FUNCTIONAL FRAGMENTATION AND AGRICULTURAL COMPETITIVENESS: EVIDENCE FROM BULGARIA

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Abstract

Agricultural competitiveness in Bulgaria remains structurally constrained within the European Union despite long-term policy integration and technological modernization. This study examines whether functional fragmentation, understood as the cumulative simultaneity of biological, technological, managerial, and institutional–market functions, constitutes a structural determinant of agricultural competitiveness in Bulgaria relative to the European Union benchmark, and extends the analysis through stochastic scenario projections under the European Green Deal. Using a multidimensional competitiveness index, a multiplicative fragmentation index, and a structural modelling framework combined with scenario-based stochastic simulation, the study evaluates Bulgaria's historical competitiveness position, its comparative gap vis-à-vis the European Union, and its projected path to 2030. The results indicate a weak competitiveness position, with an average composite score of −0.61, low-income generation per hectare and labour unit, and negative factor-efficiency performance. Functional fragmentation is identified as a significant structural constraint. A 10% reduction in fragmentation is associated with a competitiveness gain of 0.157 index units, while a transition toward a less fragmented structural configuration implies an improvement of 0.411 index units. The scenario results indicate stagnation under structural persistence, deterioration under stronger policy pressure, and partial recovery under adaptive adjustment.

Key words**:** *functional fragmentation, agricultural competitiveness, stochastic scenario modelling, European Green Deal, Bulgaria.*

CONSUMER PERCEPTION OF FOOD SECURITY DURING BULGARIA'S ACCESION TO THE EUROZONE

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Abstract

Bulgaria have joined the European union in 2007 alongside Romania. Ever since the process of accession have been completed the country was on track to join the eurozone and adopt the Euro as its currency, foregoing the longstanding (since 1880) national currency of Bulgarian LEV. After the fulfilment of conditions to join the Eurozone Bulgaria is adapting the Euro on the 1st of January 2026. This transition has consumers concerned about price increases for foods and consumer goods. Bulgaria, since its accession to the EU have gradually transitioned form net food exporter to net food importer with a high ratio of fresh fruits and vegetables, livestock products and processed foods currently being imported. The goal of this study is to analyse consumer's perception of their food security during the initial period of adopting the Euro as a national currency in Bulgaria. The study is conducted among consumers form the Southeast region of the country. To achieve this goal the following tasks are completed: to collect survey data from consumers on their perceived levels of food security; to draw conclusions based on statistical analysis of the collected data; and to suggest guidelines for future surveys to facilitate the continued data collection and analysis. The conducted survey results prove that consumers have felt the inflationary process of currency transition at a much higher rate than the actual recorded values – 13% vs. 3.8%. The perceived inflation does not affect the food security of most households, as almost two thirds if surveyed consumers will not change anything about their food purchasing patterns. A further study is needed to access the consumer perception when more time have passed.

Key words**:** *food prices, consumer perception, inflation, monetary transition.*

TRENDS IN SUNFLOWER CULTIVATED AREA, PRODUCTION AND YIELDS AT THE GLOBAL LEVEL AND IN THE EUROPEAN UNION, 2021-2025, AS A FEEDBACK TO FOOD AND ENERGY CRISIS, ENVIRONMENT PROTECTION, BIODIVERSITY PRESERVATION, CLIMATE CHANGE AND CONFLICTS IMPACT

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Abstract

The purpose of the paper is to study the dynamics of sunflower cultivated area, production and yield performance at the global level and in the EU in the in last five years 2021-2025 in order to identify the main tendencies in the context of food and energy crisis, environment protection and biodiversity preservation, climate change and conflicts impact. The data from USDA and Eurostat served as primary data which have been processed using trend analysis, regression equations, descriptive statistics, structural indices and comparison method. The results pointed out that in 2025, sunflower was cultivated on 33 million ha, (+1.46% than in 2021). Russia, Ukraine, the EU, Argentina and China totalized 22.9 million ha, meaning 77.6% of the global acreage with sunflower in 2021, while in 2025, they summed 24.18 Million ha, that is by 22.73% less. Despite this, seed production increased by 1.37% reaching 59 Million MT in 2025, the contribution of the major producers being: Russia 29.6%, Ukraine 18.6%, the EU 14.5%, Argentina 11.8% and China 3.5%. In the EU-27, sunflower covered 4.9 Million ha, by 9.1% more. The largest surfaces are in Romania (25%), Bulgaria (20.4%), Hungary (14.7%), France (1.41%) and Spain (13.7%), summing 87.9% of the EU area with this crop. The climate change impacted mainly in the Eastern and Southern Europe, so that seed production accounted for 8.6 Million MT in 2025, by 7.31% less than in 2021. Production declined in Romania, Bulgaria, France, but increased in Spain and Hungary. The EU-27 average yield was 1.79 MT/ha.

Key words: *sunflower, cultivated area, production, yield, trends, globally, EU.*

STUDY ON THE IMPACT OF IMPLEMENTING AN AGRIP PROJECT ON INTRA-COMMUNITY TRADE CHANGES OF ROMANIA`S DAIRY PRODUCTS WITH GREECE AND CYPRUS

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Abstract

The paper seeks to highlight the extent to which the Project, individualized by the acronym EU Dairies and ID 101021932, contributed to improving Romania`s trade balance with Greece and Cyprus, by analysing the situation of exports and imports of dairy products. The project ran from 01.01.2021 to 31.12.2021 and had a budget of € 755,654. The study refers to the trade balance situation in the period 2018-2023, and the available statistical data highlighted an improvement in the case of 2022 (decrease in the deficit with Cyprus to € 2,963 thousand and increase in the surplus with Greece to € 47,034 thousand - in the case of live animals and animal products). It can be considered that the impact of the project was variable in the case of relations with the two partners, which requires a better approach to the implementation of this type of activity.

Key words**:** *dairy products, balance trade, surplus, deficit.*

ECONOMIC EFFICIENCY OF HIGH-OLEIC SUNFLOWER HYBRIDS IN SOUTHERN BULGARIA

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Abstract

In recent years, there has been a surge in interest in developing high-oleic sunflower hybrids throughout Europe. This trend is propelled by advancements in plant breeding that have yielded hybrids with an oleic acid content of 85-92%, rendering their oil comparable in value to olive oil. Recent clinical studies have confirmed the important role of oleic acid in human health and have clearly proven its beneficial properties. From an agrobiological and technological perspective, the production and processing of high-oleic sunflower hybrids do not differ from those of traditional linoleic types. These advantages form both the foundation and a challenge for their market introduction. In recent years, high-oleic sunflower seeds have commanded prices 10–15% above those of linoleic-type hybrids, yielding further economic advantages for producers. This article assesses key indicators of economic efficiency to facilitate informed management decisions in the selection of appropriate hybrids. The analysis utilizes empirical data gathered from 2021 to 2023 at the Educational and Experimental Base of the Department of Plant Production, Agricultural University – Plovdiv, encompassing the hybrids Biser, Armada, Oliva, Etik, and Ballistic.

Key words**:** *Sunflower, high-oleic hybrids, yield, economic effect, production cost.*

THE INFLUENCE OF FOOD PRICE INDICES ON FOOD WASTE IN THE EUROPEAN UNION

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Abstract

Food waste has emerged as a critical challenge for the European Union, generating significant economic, environmental, and social costs. At the same time, food price indices have experienced notable fluctuations in recent years, influencing consumption patterns and the overall performance of the agri-food sector. This paper investigates the influence of food price indices on food waste in the European Union, aiming to identify whether changes in food prices affect the level of food waste across EU Member States. The study is based on secondary data obtained from Eurostat and the FAO Food Price Index and applies a quantitative research methodology. Descriptive statistical analysis and econometric techniques are employed to examine the relationship between food price indices and food waste indicators. The analysis focuses on identifying trends, correlations, and potential causal links between price dynamics and food waste generation.

Key words*: food waste, food price indices, agri-food sector, European Union, price dynamics, sustainability.*

AGRICULTURAL MECHANISATION AND CEREAL CROP PRODUCTIVITY IN ROMANIA: AN ANALYSIS BASED ON NATIONAL STATISTICS

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Abstract

The modernization of agricultural production in Romania represents a necessity in the context of increasing competition on the international market. Investments in advanced technological equipment, together with their efficient use in domestic agricultural holdings, can represent key success factors in enhancing competitiveness relative to farmers in the European Union. For this research, official data from national statistics for the year 2024 were processed. To assess the level of technical endowment of farms in Romania, information regarding three essential categories of agricultural machinery was selected: tractors, combine harvesters, and soil preparation equipment. With more than 169,000 tractors and approximately 26,000 combine harvesters currently in operation, Romanian agriculture demonstrates a clear trend toward increased mechanization. However, the high degree of wear of the existing machinery fleet, together with significant regional disparities, points to the persistence of structural imbalances within the sector. The density of tractors relative to agricultural land remains below the European Union average, which negatively affects productivity levels and limits the adoption of sustainable agricultural practices. Furthermore, modern soil preparation equipment is insufficiently utilized, particularly within small-scale agricultural holdings, where access to advanced technologies remains constrained. The research results highlight the need to develop and implement well-targeted agricultural policies aimed at stimulating investment in mechanization, developing support instruments tailored to farmers' needs, and ensuring the efficient use of European funds available to Romania. The adoption of these measures is essential for reducing technological gaps, strengthening the adaptive capacity of the agricultural sector, and supporting sustainable development in the long term. The study can contribute to a better understanding of the relationship between the level of mechanization and the performance of agricultural holdings in Romania, providing useful conclusions for informing public policies and guiding future research.

Key words**:** *agricultural mechanisation, cereal crops, productivity, national statistics, Romania.*

FOOD CHAIN IN BULGARIA: REGIONAL DIFFERENCES, FARMERS' MARKETS AND SUSTAINABLE DEVELOPMENT

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Abstract

This study aims to assess Bulgaria's regional production capacity by analysing the influence of cultivated area size on crop and livestock yields. The methodological approach includes comparative analysis and multiple regression to model dependencies among indicators. The regional distribution of agricultural resources is used to forecast potential production quantities and their realisation at local farmers' markets. The results show apparent differences between regions and confirm that the country has significant production capacity, sufficient both to satisfy the needs of the local population and to participate in international trade. The study emphasises the importance of the regional approach in food chain planning. It offers recommendations for policies aimed at stimulating local production, strengthening farmers' markets and achieving economic and social impact through sustainable development of the agricultural sector.

Key words**:** *production capacity, food sovereignty, regional differences, food chain, sustainable development policies.*

TRENDS IN WHEAT MAJOR GROWING AREAS, PRODUCTION, YIELDS, CONSUMPTION, EXPORT AND IMPORT AT THE GLOBAL LEVEL AND IN THE EUROPEAN UNION, 2022-2026

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Abstract

The paper aimed to examine wheat acreage, production, consumption, trade flows and price in the world and the EU in the period 2022-2026, exploring the trends and challenges in the context of climate changes and disruptions in the food chains caused by geopolitics and policies which determine changes in the hierarchy of the main "players" in the wheat market. The data from USDA and Eurostat have been processed using trend line analysis, structural indices, and comparison method. The results showed a decline by 1.4% in cultivated area which reached 215 million ha in 2025. India, Russia, China, EU and USA keep 53.4 % of the world cultivated area. Of the 24 million ha covered with wheat in the EU, 60.4% are in France, Germany, Poland, Romania and Spain. Wheat production increased by 8% from 781 Million MT in 2022 to 834.84 expected in 2026. The main producers are China, India, Russia, USA, Australia, France and Canada. Compared to the production peak of 136.1 million MT in the EU in 2025, in 2026 it is expected a decline by 5.8%. France, Germany, Romania and Poland together contribute by 81.1% to the EU output. Keeping pace with the global population growth, consumption reached 819.93 Million MT in 2026, by 4% more than in 2022. China, India, EU, Russian Federation and USA absorb 441 Million MT, meaning 53.8% of the total consumption. Germany, France, Spain and Poland are the top consumers in the EU. Wheat price is at a low level, varying between USD 250-280/MT, due to the high demand/supply ratio, except the year 2022 when the conflict started in Ukraine. New changes are visible in wheat market caused by the extreme climate phenomena impacting yields, the high input costs mainly for fertilizers and fuel, the disruptions noticed in the major exporting regions mainly from the Black Sea, affecting supply chains and routes, trade flows and food security.

Key words: *wheat acreage, production, consumption, trade, globally, EU.*

VARIABILITY OF WINTER WHEAT UNDER SOIL DROUGHT CONDITIONS IN DOBROGEA (ROMANIA)

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Abstract

The production of winter wheat crops shows year-to-year fluctuations, being strongly influenced by variations in climatic conditions and by extreme weather events. In agriculture, one of the main meteorological phenomena that has a direct and irreversible impact on crops is drought. The study focuses on the analysis of winter wheat yields obtained during the period 1991–2023 under conditions of pedological drought in the Dobrogea region (Romania). For the purpose of this study, data on the average yield per hectare provided by the National Institute of Statistics were used and processed, as well as meteorological data on precipitation and monthly average air temperatures provided by the National Meteorological Administration. In addition, data on soil moisture reserves were processed, provided by the Agrometeorological Service of the National Meteorological Administration, for dry agricultural years (2002-2003, 2006-2007, 2019-2020). Such analyses are essential in agricultural management, providing farmers with precise tools to maximize agricultural yields by minimizing risks and improving the efficiency of pedoclimatic resource use.

Key words**:** *agricultural yields, agricultural management, pedological drought, climatic variability, Dobrogea region.*

NATURAL AND CLIMATIC CHALLENGES TO THE MAIN FIELD CROPS – FOLLOWING THE EXAMPLE OF THE REGIONS OF RUSE, PLEVEN AND VELIKO TARNOVO, BULGARIA

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Abstract

Grain production is a strategic and structurally important sector in the economy of the Republic of Bulgaria, which in recent years has been under strong pressure from adverse climate change. The current study is focused on the analysis of climatic factors and their impact on the development of the sector. Within the framework of the study, the results of an empirical study of grain production in Ruse, Pleven and Veliko Tarnovo regions are presented. The state and structural characteristics of the sector for the period 2021-2024 are analyzed, identifying the main trends in its development, as well as the key problems and the factors that determine them. Based on the analysis, summarized conclusions are formulated and guidelines are proposed for increasing competitiveness and achieving sustainable development of grain production.

Key words*: *grain production, climate change, adaptation of grain producers, measures.

CHARACTERISTICS OF THE BULGARIAN WINE GRAPE MARKET

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Abstract

The paper examined the structural characteristics of the Bulgarian wine grape market. The organization of the wine supply chain was studied, and the key determinant of wine grape demand and supply were identified. Tendencies in harvested areas of wine grapevine varieties, as well as wine grape production and processing over the period 2007-2024, were assessed. Particular attention was paid to the dynamics and variability of producer prices, which were compared with price levels observed in selected European countries. Profitability in wine grape production in 2025 was assessed based on data on production activity and output obtained from the cultivation of the wine grapevine varieties Rubin, Misket kailashky and Muscat Ottonel at the Institute of Viticulture and Enology. The long-term decline in wine grape and wine production in Bulgaria revealed challenges across the supply chain. Stable farm profitability emerged as a critical condition for maintaining the supply of quality grapes and required improvements in contractual arrangements between grape growers and wineries, supported by appropriate financial and institutional measures.

Key words**:** *wine grapes, market, price, value chain, profitability.*

ASSESSING POTATO YIELD PERFORMANCE UNDER CLIMATE CHANGE IN THE EAST OF THE CENTRAL DEVELOPMENT REGION OF ROMANIA

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Abstract

This study examined potato yield performance in the eastern part of Romania's Central Development Region, where climate change significantly affects agriculture. Potato yield data were obtained from the National Institute of Statistics, while air temperature and precipitation records came from the National Meteorological Administration for 1991-2020. Results demonstrated that monthly average temperature and precipitation during the growing season strongly influenced potato yield per hectare. Yields fluctuated from a low of 8,692 kg/ha in 1991 to a high of 27,072 kg/ha in 2017. Given the variability in thermal and hydrological resources, farmers should adapt potato cultivation practices to local climate conditions by implementing resilient varieties, precision irrigation systems, and sustainable soil management practices.

Key words**:** *air temperature, precipitation, potato, yields, Central Romania Development Region of Romania.*

EXCHANGE TRADING FOR AGRICULTURAL PRODUCTS IN BULGARIA IN THE CONTEXT OF SUSTAINABLE AGRICULTURAL DEVELOPMENT

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Abstract

The stock market, as an organized market and part of the modern agrarian economy, provides mechanisms for a more efficient allocation of resources in agriculture through market pricing and risk management. On a global scale, food demand is one of the main factors determining the structure and functioning of the stock market for agricultural products. The volumes and dynamics of prices on organized markets are influenced by demographic changes, a growing population, increasing incomes and changing eating habits. This study aims to analyze the correspondence between the structure of agricultural production in Bulgaria and the development of stock trading, assessing the role of the organized market as a tool for achieving economic sustainability and managing price risk in the sector. Questions are raised regarding the sustainable development of agriculture, environmental sustainability, social justice and regulation. The study is based on an analysis of scientific literature, statistical data and market trends. The results show that global food demand not only increases the volume of the stock market, but also changes its structure, strengthening its role in international markets.

Key words: *commodity exchange, agricultural products, sustainable agriculture, price indices, food security.*

ECONOMIC EFFICIENCY OF REARING AND FATTENING LOW-WEIGHT PIGLETS AT EARLY WEANING WITH THE ADDITION OF A PORK MEAL SUBSTITUTE IN THE FIRST WEEK OF REARING

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Abstract

The article presents a comprehensive economic evaluation of reducing the suckling period from 28 to 21 days at a purebred pig farm using Landrace and Large White breeds. The analysis covered annual weaning output, the share of replacement gilts, the amount of surplus young stock for fattening, as well as revenue, cost, profit, and profitability of integrated production. Shortening the suckling period increased the annual number of weaned piglets in both breeds (Landrace: +3.0%; Large White: +5.5%) due to faster reproductive recovery in sows. This resulted in higher product sales per sow: +6.1% (+413.62 EUR) in Large White and +1.2% (+80.64 EUR) in Landrace. Economic indicators improved as revenue growth exceeded cost increases. The annual profit rose markedly in Large White by 7.0% (+210.35 EUR), while remaining nearly unchanged in Landrace (–0.1%). Profitability of integrated production increased by 1.16% (up to 82.23%) in Large White, but slightly decreased in Landrace (–1.71%). Overall, reducing the suckling period to 21 days is economically justified, enhancing sow productivity, increasing both breeding and meat output, and maintaining stable profitability. The most substantial positive effect was observed in the Large White breed.

Key words**:** *over-repair young stock, landrace, large white, profitability, economic efficiency.*

ENERGY TRANSITION AND ITS STRUCTURAL IMPLICATIONS FOR THE DEVELOPMENT OF AGRICULTURE IN THE REPUBLIC OF MOLDOVA

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Abstract

The article analyzes the energy transition as a highly important process for the Republic of Moldova, one that directly influences the development of agriculture, a sector essential for the country's economy and food security. The paper examines how changes in the energy sector, such as the wider use of renewable energy sources, improved energy efficiency, and reduced dependence on imported energy, affect the competitiveness, productivity, and resilience of agriculture in the face of crises. The analysis is based on statistical data for the period 2015–2025, drawn from national and international sources, including the National Bureau of Statistics of the Republic of Moldova and Eurostat. Descriptive and comparative analytical methods are used to highlight the main effects of the energy transition on the agricultural sector. The article focuses on several important areas: energy costs for agricultural producers, modernization of rural infrastructure, electrification of agricultural processes, and the introduction of green technologies into the agri-food chain. It also highlights the role of public policies, investments in locally based renewable energy sources, and financial support mechanisms that can help farmers transition more easily to sustainable practices. In essence, the analysis shows that the energy transition is not only a response to climate and geopolitical challenges, but also a factor that can fundamentally transform agriculture. The main conclusion is that this transition has a dual effect: in the short term, it can lead to higher costs and greater pressure on farmers, but in the medium and long term, it can help increase the competitiveness and resilience of the agricultural sector, provided that well-targeted investments are made and new technologies are adopted more rapidly in practice.

Key words**:** *energy transition, sustainable development, agri-food sector, renewable energy, economic resilience.*

THE ROLE OF PRECISION AGRICULTURE IN INCREASING THE COMPETITIVENESS OF AGRICULTURAL HOLDINGS IN SOUTH-MUNTENIA

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Abstract

Agriculture is a strategic pillar of the Romanian economy, and the South-Muntenia region is one of the most important agricultural areas of the country. The paper analyzes the evolution of cultivated areas, production and yields for the five main crops in the region, during the period 2018-2024. The study highlights the volatility of start-up costs and capitalization prices, influenced by the geopolitical context and agricultural market fluctuations. At the same time, the research analyzes the role of precision agriculture in increasing the efficiency of agricultural holdings, highlighting the differences compared to conventional agriculture and the benefits of using modern technologies. Among the identified advantages are the reduction of costs and input consumption, the efficient use of resources, increased productivity and reduced environmental impact. The paper emphasizes the importance of precision agriculture for the sustainable development and competitiveness of agricultural holdings in the South-Muntenia region.

***Key words**: South-Muntenia, agricultural yields, economic efficiency, geopolitical context, precision agriculture.*

ASSESSMENT OF EFFECTS OF FUEL SUBSIDY REMOVAL ON TECHNICAL EFFICIENCY OF STAPLE CROP PRODUCTION IN GOMBE STATE, NIGERIA

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Abstract

This study assesses the influence of fuel subsidy removal on technical efficiency (TE) of Staple Crop Production in Gombe State. Multistage, purposive and simple random sampling techniques was used to select 360 farmers, data were collected with the aid of structured questionnaires. The results revealed that majority of the respondents were male (66.94%), adults with a mean age of 60 years, married (81.67%), household size of 10 persons and above (54.44%) and good literacy level of (89.73%). Source of financing is personal savings, the SF analysis showed that coefficients of farm size (0.2734) was significant at 1%, fertilizers and quantity of seeds were both significant but at 5%, while family size, hired labour and agrochemical were all significant at 10%. This suggests that a slight increase in fuel price significantly affect staple crop production, evident from their mean TE of 56%. Gamma was 0.85. Constraints such as, high cost of petrol, high cost of transportation, labour, fertilizer, quality seeds, were the highest. Government should refine crude oil locally, tax exemption on inputs, establish mega stores, revive extension services.

Key words: *effects, subsidy removal, technical efficiency, staple crop, production.*

STUDY ON THE IMPACT OF IMPLEMENTING AN AGRIP PROJECT ON INTRA-COMMUNITY TRADE OF ROMANIAN FRUITS WITH SWEDEN AND BULGARIA

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Abstract

Romania`s foreign trade in agricultural products suffers mainly because we mostly export raw products, which generally fetch lower unit prices compared to the situation where products with a certain degree of processing are exported. In these conditions, we are talking about a generally deficient national trade balance, which can be improved by the adequate exploitation, on foreign markets, of agricultural products that present adequate food safety, traceability, authenticity, labelling, and nutrition. In the case of fresh fruit, a Project with the acronym EU FFAdv and ID 101021941 was implemented between 01.03.2021 and 28.02.2022, which had a total budget of € 825,478. The paper refers to the period 2018-2023, and the information related to Romania`s trade balance with agricultural products, in relations with Bulgaria and Sweden, highlights an improvement in the deficit for the last year analysed (decrease to € 19,246 and € 398 thousand respectively. As a first observation, it can be appreciated that, in the case of vegetable products, the project had a somewhat positive effect, and producers must aim for the superior capitalization of the existing national potential in this branch of production.

Key words**:** *fresh fruit, balance trade, surplus, deficit.*

AN ANALYSIS OF THE ROMANIAN VITICULTURE SECTOR IN THE EUROPEAN CONTEXT (1990-2024)

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Abstract

The Romanian viticulture sector has undergone substantial transformations over the past three decades, shaped by structural adjustments, European policy frameworks, and increasing climatic variability. This study analyses the evolution of Romanian viticulture between 1990 and 2024 in a European context, using official statistical data on vineyard area, grape production, wine production, wine consumption and table grape consumption. The methodological approach combines descriptive time-series analysis with comparative assessment based on national statistics, Eurostat, and OIV data. The results show that Romania remains among the leading European countries in terms of vineyard area, but its viticulture is characterized by strong fragmentation, comparatively modest productivity, and limited market competitiveness. The sector is predominantly oriented toward wine grapes, while table grape production has declined substantially, increasing dependence on imports. Wine production displays pronounced interannual variability, reflecting both climatic sensitivity and continuing structural adjustment. The findings indicate that improving the competitiveness of Romanian viticulture requires sustained vineyard modernization, technological upgrading, stronger orientation toward quality and value-added segments, and better adaptation to changing climatic and market conditions.

Key words**:** *viticulture sector, grape production, wine production, European Union, Romania.*

GARLIC CULTIVATION - ECONOMIC OPPORTUNITY AND AGRICULTURAL PROSPECTS IN ROMANIA

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Abstract

In Romania, garlic (Allium sativum L.) has become popular because it survives well during winter and can be cultivated in autumn before the frost sets in. Romanian garlic is cultivated because it is a profitable investment that brings considerable income to farmers who grow this plant, in a context where Romanian consumers are increasingly looking for Romanian products with superior nutritional qualities. In this context, garlic cultivation has become a business opportunity, with a substantial contribution from the subsidy granted, the de minimis aid being €3,000/ha in 2024, for a minimum eligible area of 0.1 ha. The paper addresses a comparative study on the productivity of garlic cultivation and the evolution of cultivated areas between 2021 and 2024 at the national level. The analysis aims to identify the development trends and productivity of this horticultural crop. Our country is a major producer, with a maximum production of 60,601 tons in 2021, after which a downward trend was recorded with 45,801 tons in 2023 and 41,628 tons in 2024, due to drought and water shortages that caused major problems for this crop.

Key words: *garlic, production, Romania, opportunity of cultivation.*

CONSUMER DEMAND FOR AGROECOLOGICAL PRODUCTS: PERCEPTUAL, MOTIVATIONAL AND ECONOMICAL DETERMINANTS

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Abstract

This study investigates consumer demand for agroecological products by examining perceptual, motivational, and economic determinants influencing consumption behaviour. The research is based on a quantitative survey conducted on 92 respondents, using descriptive statistical analysis and Chi-square testing. The findings reveal a high level of consumer interest in agroecological products, with 78.9% considering them very important and 72.8% perceiving them as healthier than conventional alternatives. Additionally, 86.8% of respondents reported a willingness to pay a premium price. However, the level of knowledge about agroecology add the adoption of agroecological practices remain low (7.6%). The study results show significant correlations between knowledge and adoption of agroecological practices, as well as between perceived health benefits and willingness to pay. At the same time, major barriers such as lack of information and uncertainty limit the transition to sustainable practices. The study highlights the existence of an attitude-behaviour gap and emphasizes the need for integrated policy interventions to support the development of agroecological markets.

Key words: *agroecological products, consumer behavior, environmental perception, food sustainability, green consumerism, sustainable agriculture.*

COMPARATIVE EVALUATION OF PLANT ESTABLISHMENT METHODS IN EGGPLANT: CASE STUDY ON MIRVAL F1 AND BLACK PEARL F1 HYBRIDS

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Abstract

Efficient cultivation of eggplants (Solanum melongena L.) is gaining renewed importance within sustainable farming strategies, as rising demand forces producers to manage land, water and labor with a degree of precision that earlier systems seldom required. Given the crop's thermophilic character, its performance depends strongly on the establishment method either open-field planting or cultivation in unheated solar tunnels, an agronomic choice that carries implications for both productivity and longer-term resource sustainability. Between 2019 and 2021, at the "V. Adamachi" Experimental Station, wore examined two hybrids, Mirval F1 and Black Pearl F1, grown under two systems. Transplanted seedlings were maintained with relatively uniform irrigation and fertilization regimes, allowing the analyze of the factors that shape yield formation and resource-use efficiency, even though minor seasonal variations still occured in practice. The comparative results indicated a consistent advantage for the protected environment: yields increased by approximately 50–70% relative to open-field production, largely due to a higher fruit load per plant and, to a smaller extent, slightly greater fruit mass. The hybrids displayed distinct adaptive patterns as well. Mirval F1 reached commercial maturity earlier and set more fruits per plant, whereas Black Pearl F1 produced larger fruits and expressed its yield potential most fully under the moderated microclimate of the tunnel structure.

***Key words*:** *eggplant (Solanum melongena L.), high tunnel cultivation, open-field production, yield components, sustainable vegetable systems.*

SUBSECTION
FARM AND COOPERATIVES MANAGEMENT

AGRICULTURAL INTEGRATION AND LAND OWNERSHIP CONSOLIDATION IN BULGARIA

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Abstract

This article examines the evolution of agricultural integration and land consolidation in Bulgaria, from post-communist land restitution to the dominance of large agro-holdings under the EU's Common Agricultural Policy, emphasizing the tension between efficiency and social equity. After 1989, land fragmentation produced over two million co-owned parcels, causing high transaction costs. Later, market forces and Common Agricultural Policy incentives drove consolidation, creating structural imbalances and marginalizing smallholders. Using theories of vertical integration, property rights, cooperation, hybrid governance, and the antitrust paradox, the study applies retrospective and structural analysis supported by land-use indicators. By 2021, only five land trusts (1.6% of entities) controlled 87% of arable land, while cooperatives and family farms declined. Hybrid organizational forms expanded but often obscured ownership and deepened inequality. By 2025, nearly 88% of arable land is expected to qualify for EU subsidies, reinforcing capital-intensive farming. The article concludes that reforms prioritize efficiency but intensify concentration, exclusion, and reduced adaptability, requiring policies that support structural diversity and inclusive governance.

Key words**:** *integration, agricultural cooperation, associations, agricultural lands, consolidation.*

MANAGEMENT PRACTICES AND MANAGEMENT DECISIONS IN COOPERATIVE ORGANIZATIONS - A STUDY CASE – BULGARIA

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Abstract

Cooperative organizations hold a significant place in the contemporary economy, combining economic goals with the principles of democratic governance and member participation. In the context of a dynamic economic environment, increasing competition, and changing regulatory frameworks, these organizations face the necessity of implementing effective management practices to ensure sustainable development and competitiveness. Management decisions must consider both economic efficiency and social responsibility, as well as the interests of the members, which further complicates the management process. The aim of the present article is to investigate management practices and the processes of making management decisions in cooperative organizations, with the emphasis placed on their institutional and functional specificity. The article analyzes the fundamental principles of cooperative governance, the management bodies and their role in the management process, as well as the applicability of established management theories within the cooperative context.

Key words**:** *cooperative governance, management decisions, sustainable development.*

THE BULGARIAN COOPERATIVE MODEL: ECONOMIC, SOCIAL AND GOVERNANCE DIMENSIONS

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Abstract

This report examines the economic, social and managerial dimensions of the current cooperative model in Bulgaria. The cooperative is a traditional and widespread legal and organizational form in various sectors of the national economy. The role of operating cooperatives for employment and regional development in the country is analyzed, and the features of cooperative management based on cooperative principles are examined - voluntariness in establishment, equality of members, democracy in making management decisions, etc. The aim of the study is to analyze the Bulgarian cooperative model as a specific legal and organizational form, combining economic activity with social responsibility, which functions on the principle of democratic governance in the conditions of contemporary challenges. The report analyzes the current state and dynamics of the cooperative sector in Bulgaria in accordance with established European cooperative practices. The results obtained reflect the contemporary challenges facing the development of Bulgarian cooperatives. In conclusion, guidelines are given for the sustainable development of the Bulgarian cooperative model as a basis for the economic, social and territorial development of the country.

Key words: *cooperatives, cooperative model, sustainable development, social economy, governance, Bulgaria.*

SUBSECTION AGRICULTURAL AND RURAL POLICIES

COMPARISON OF AGRICULTURAL MODELS UNDER DIFFERENT INSTITUTIONAL FRAMEWORKS: FORECAST OF THE TRADE BALANCE IN BULGARIA AND TURKEY UNTIL 2030

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Abstract

This study presents a comparative analysis of two agricultural models - those of Bulgaria and Turkey - developing within different institutional frameworks and policy approaches. While Bulgaria operates under a liberalized agricultural policy harmonized with the European Union, Turkey applies protectionist measures and autonomous state intervention in the sector. The aim of the study is to assess how these differences affect the agricultural trade balance by analyzing the role of two structural factors: the size of arable land and the number of researchers. Methodologically, the research is based on a comparative analysis of both indicators and agricultural policies, multiple linear regression, and trend extrapolation using data for the period 2000-2025, with forecasts extending to 2030. The results indicate that in both countries the analyzed factors exert a statistically significant impact on the agricultural trade balance. The Turkey's agricultural economy demonstrating greater structural stability of the agricultural trade balance. The scenarios for the period 2026-2030 suggest low dynamics trends. The study provides an empirical basis for formulating targeted agricultural policies aligned with the institutional context.

Key words**:** *agricultural trade balance, institutional frameworks, multiple linear regression, trend extrapolation, Bulgaria and Turkey.*

INEQUALITIES IN ACCESS TO HEALTH SERVICES BETWEEN RURAL AND URBAN ENVIRONMENTS IN THE EU AND IMPLICATIONS ON SUSTAINABLE DEVELOPMENT

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Abstract

The study examines the disparities in healthcare service access between rural and urban regions in a few EU member states and their effects on population health. In a sample of 10 European nations, the primary goal of the study was to demonstrate the connection between perceived health status and access to healthcare services, as shown by the degree of unmet medical requirements. The approach employed was based on a comparative examination of statistical data from Eurostat for the years 2016–2024, which were organized depending on the level of urbanization. Descriptive statistical methods were used in the analysis, such as arithmetic mean and rural–urban gap analysis, as well as tools for analysing the relationships between indicators, including the correlation coefficient. The results obtained highlight the existence of significant differences between urban and rural areas, both in terms of perceived health status and the level of unmet medical needs. Northern and Western European countries have high health status values and low levels of unmet needs, while Central and Eastern European countries have lower health indicators but show a trend of convergence. The analysis of rural-urban disparities highlights the fact that the rural population faces persistent disadvantages, reflected in the levels of unmet medical needs and, in some cases, in lower values of perceived health status. The conclusions of the study show that access to medical services directly influences the health status of the population, but is not the only determining factor, and it is necessary to take into account socio-economic factors and living conditions. Reducing inequalities between rural and urban areas requires integrated public policies, aimed at improving access to medical services and increasing the quality of life of the population, thus contributing to achieving the sustainable development objectives existing at European level.

Key words: *health inequalities, rural-urban disparities, unmet medical needs, sustainable development.*

AGRICULTURAL CONTRACTS: GOVERNANCE, HYBRID STRUCTURES, COSTS AND DIGITAL TRANSFORMATION

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Abstract

This study examines the governance of agricultural contracts in Bulgaria (Plovdiv, Sofia, and Varna) within the EU transition framework, applying the lens of New Institutional Economics (NIE) to assess the effects of digitalization and property rights allocation on transaction costs. Using Comparative Institutional Analysis and Discrete Structural Analysis (DSA), the research evaluates 10,121 documents, semi-structured stakeholder interviews, and administrative procedures through the "one body–one actor" heuristic, distinguishing ex ante and ex post contractual phases. The findings reveal an explosive post-2015 expansion of hybrid contractual forms. A central contribution is the identification of a "paradox of digital transformation" (PDT): technological advancement does not automatically reduce transaction costs but often redistributes or even increases them due to institutional complexity and uneven digital literacy. Hybrid governance structures reallocate opportunistic behaviour toward a broader range of intermediaries (lawyers, notaries, and banks), while contract processing time increases with transaction intensity. Geographic location and farmers' digital adaptability remain key determinants of service accessibility and governance effectiveness. The study concludes by proposing adaptive governance strategies that balance innovation with the structural realities of a transitioning economy.

Key words**:** *agricultural contracts, governance structures, hybrid forms, digital transformation, NIE .*

INTER-ANNUAL VARIABILITY OF FOOD INSECURITY – COMPARATIVE ANALYTICAL APPROACH IN AFRICA

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Abstract

Food insecurity continues to be a major challenge for sustainable development, particularly in Sub-Saharan Africa, despite the commitments established under the UN Agenda 2030 and Sustainable Development Goal 2 - Zero Hunger. This study analyses the inter-annual variability of two key indicators of food insecurity, both prevalences of undernourishment and severe food insecurity, by a comparative analysis for Democratic Republic of the Congo and Nigeria. Using FAO data available in the Our World in Data database, the research evaluates both the level and the instability of these indicators by applying descriptive statistical measures, including the mean, standard deviation, coefficient of variation, and annual absolute change. The results reveal two distinct patterns of food insecurity dynamics. In DR Congo, the indicators remain at very high levels but show relatively low variability, indicating persistent structural food insecurity. In contrast, Nigeria exhibits a more volatile trajectory, characterized by rapid increases in severe food insecurity and undernourishment during the last decade. These findings highlight the importance of analysing the variability of food insecurity indicators for designing more effective and resilient food policies.

Key words**:** *food insecurity, undernourishment, inter-annual variability, Africa, SDG 2: Zero Hunger.*

STUDIES ON THE STRUCTURE AND SCALE OF CONTRACTUAL RELATIONS IN BULGARIAN AGRICULTURE

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Abstract

This study analyzes the structure and scale of contractual relations in Bulgarian agriculture, focusing on land leasing as the main mechanism governing land use. Based on official regional data for 2020, the analysis employs indicators such as the share of leased land, average leased area per holding, an index of institutionalization, and land concentration. The results show a highly institutionalized system, with over 90% of utilized agricultural land operated under lease. Strong regional differences are observed: Northern Bulgaria is dominated by large-scale, corporate leasing and high concentration, while Southern and mountainous regions retain fragmented ownership and small-scale farming. A positive relationship between leasing intensity, land concentration, and land prices is identified. The findings underline a trade-off between economic efficiency and social and territorial polarization in Bulgarian agriculture.

Key words**:** *contractual relations, land relationship, lease structure, land markets.*

RESEARCH ON ECONOMIC RESILIENCE THROUGH THE APPLICATION OF EFFICIENT TECHNOLOGIES TO SOYBEAN CULTURE IN THE REPUBLIC OF MOLDOVA

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Abstract

Our comparative research refers to soybean cultivation in the Republic of Moldova, as an efficient crop in agroeconomic, financial and ecological terms, valuable that combines in its composition a high amount of protein on average 40% and oil 20%. Productivity of 2,000 kg of grains per hectare ensures the obtaining of about 700 kg of crude protein and 400 kg of oil, synthesized in major quantities within 3-4 years of intensive cultivation. Through economic analyses and calculations, the estimated profitability of soybean production starts from about 1.0-1.2 t/ha, and that significant economic growth in the conditions of the Republic of Moldova for this crop can be achieved only by applying an intensive technological management through the application of an integrated protection system with effective and complex remedies, which allow to reduce production costs and obtain a stable income from sales. These systems are essential in integrated pest and disease management, by interrupting the life cycle and preventing the accumulation of specific diseases and pests, reducing their abundance and adaptability. Economically efficient are reducing the consumption of chemicals, improving soil properties, increasing profit, diversity and sustainability of legume production, including soybean.

Key words**:** *soybean, global production, global harvest, integrated management, cultivation technologies*

AGRICULTURAL INCOME CONVERGENCE IN THE EUROPEAN UNION AFTER EASTERN ENLARGEMENT: EVIDENCE FROM SIGMA, BETA AND CLUB CONVERGENCE TESTS

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Abstract

This paper examines agricultural income convergence across the 27 EU member states over 2001 to 2025, focusing on post-Eastern enlargement dynamics. Using Eurostat's Indicator A, the index of real income of factors in agriculture per annual work unit (AWU, 2015 = 100), the study applies four complementary approaches: sigma-convergence analysis, absolute beta-convergence regressions with a new member state interaction term, the Phillips and Sul (2007) log-t club convergence test, and distributional dynamics through kernel density estimation and Markov transition matrices. The results reveal a statistically significant declining trend in cross-sectional income dispersion over the full period (slope = -0.009, p = 0.005), consistent with sigma-convergence, though the pattern is U-shaped, with rapid convergence during 2001 to 2015 giving way to renewed divergence after 2020. Beta-convergence estimates confirm a significant negative relationship between initial income and subsequent growth ($\beta = -0.038$, $p < 0.001$, $R^2 = 0.70$), with new member states converging faster than EU-15 incumbents. The Phillips and Sul log-t test rejects full-panel convergence (t = -2.35), identifying three clubs: a high-income group of nine countries that converges internally, a middle group of thirteen countries with internal convergence, and a low-income group of five countries that fails to converge. Policy implications point toward differentiated CAP instruments that account for club-specific convergence dynamics rather than a uniform approach.

Key words**:** *agricultural income, convergence, beta-convergence, sigma-convergence, club convergence.*

THE BENEFITS OF ESTABLISHING A LAVENDER CULTURE USING AIRTIFICIAL INTELLIGENCE

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Abstract

Romania is experiencing interest among young people in agricultural entrepreneurship, supported by the access to European funds. Gorj County has a significant agricultural potential and it stands out through a high percentage of young participants in subsidy-granting processes. Artificial intelligence is an essential tool for a farmer or entrepreneur who wants to start a modern agricultural business, transforming traditional agriculture into precision agriculture, which is more efficient and more profitable. This paper presents the important role that artificial intelligence (AI) plays in choosing the most suitable business in the field of agriculture, depending on the area, the pedoclimatic conditions, and the terrain, as well as its ability to provide intelligent tools for making good, fast, and profitable decisions, considering the possibility of analyzing large amounts of data to identify the best investment or agricultural activity options. The case study for Gorj County, in South-West Romania, is based on the method of using artificial intelligence, to simultaneously analyze economic, climatic and market factors and indicate the type of business that contributes to obtaining a qualitative and quantitative culture in the area. It has been demonstrated that lavender cultivation assisted by artificial intelligence tools is a sustainable, accessible, adaptable and profitable choice in the rural environment of Gorj County, and the use of this method in the decision-making process aims to reduce risks, optimize resources and maximize profit. The advantages of using artificial intelligence in smart agriculture include cost reduction (inputs, labor), faster and better decision-making, increased productivity/yields, reduced waste of water, fertilizers, and pesticides, and better adaptation to the climate change.

Key words**:** *entrepreneurship, agriculture, artificial intelligence, business, suitable establishment.*

THE ROLE OF PUBLIC POLICIES IN STRENGTHENING THE RESILIENCE AND COOPERATION OF AGRICULTURAL PRODUCERS IN THE CIS REGION

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Abstract

Cooperation is widely recognized as one of the key solutions to the multiple challenges faced by agricultural producers, including limited market access, low bargaining power, and vulnerability to economic shocks. The establishment and development of agricultural cooperatives and other forms of producer associations can be viewed as an evolutionary process, motivationally driven by the socio-economic interests of agricultural producers. The purpose of this article is to assess how public policies have influenced the formation, development, and effectiveness of agricultural producer cooperation in selected post-Soviet countries, with particular attention to their role in supporting resilience, market integration, and sustainable agricultural development. This article analyses the impact of relevant public policies on the development of agricultural producer cooperation in the post-Soviet period in Armenia, Georgia, the Republic of Moldova, and Kazakhstan. Using a comparative analytical approach, the study evaluates the role of various state policies in shaping cooperative development and examines both the similarities and differences in policy design and implementation across the selected countries. The findings highlight that while institutional frameworks and support instruments differ across national contexts, public policies play a decisive role in strengthening cooperative structures, enhancing producers' resilience, and fostering sustainable agricultural development. The article contributes to the academic debate on agricultural cooperation and public policy in transition economies and provides insights relevant for policymakers seeking to promote inclusive and resilient agricultural systems.

Key words**:** *cooperative, cooperation of agricultural producers, public policies.*

THE FUTURE OF EUROPEAN INVESTMENT POLICY FOR RURAL DEVELOPMENT IN BULGARIA

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Abstract

This article examines the future of European investment policy for rural development in Bulgaria in the context of the reformed Common Agricultural Policy (CAP) and the European Union's strategic priorities for sustainable growth. The analysis focuses on investments financed through EU funds as key instruments for modernising agricultural holdings, supporting small and medium-sized farms, and fostering innovation in rural economies. Particular attention is given to structural challenges of Bulgarian rural regions, including demographic decline, farm fragmentation, and limited investment capacity. The methodology is based on a review of EU and national strategic documents, combined with an analysis of relevant statistical indicators. In conclusion, the study emphasizes the need for more targeted, flexible, and locally adapted investment instruments to enhance policy effectiveness. The paper underlines that successful rural development in Bulgaria depends on efficient fund management and greater engagement of local stakeholders.

Key words**:** *Common Agricultural Policy, sustainability, investments, rural development, investment policy, operational programmes.*

THE IMPACT OF AGRICULTURAL POLICY ON INCREASING PRODUCTIVITY IN WHEAT CULTIVATION

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Abstract

Agricultural policies have an important role in increasing wheat productivity, influencing both farmers' decisions and the overall performance of the agricultural sector. The study analyses the impact of agricultural policies on increasing wheat productivity. The main public policy instruments analysed are subsidies, financial support schemes, pricing policies, investment incentives, and environmental regulations. The research highlights how public interventions influence the adoption of modern technologies, the efficiency of input use, and agricultural management practices. The results show that correctly implemented agricultural policies contribute to increasing wheat production yields, thus reducing economic and environmental risks. At the same time, the study also emphasizes the fact that inconsistent implementation of agricultural policies and limited institutional support can restrict the potential for increasing wheat productivity. The effects of agricultural policies on the sustainability of production and the stability of farmers' incomes are analysed. In conclusion, the study highlights the importance of an integrated agricultural strategy, combining financial support with innovation and professional training, to ensure sustainable development of the wheat growing sector.

Key words**:** *wheat, production, agricultural policies, SE Region, Romania, EU.*

PERCEPTION OF SMALL AND MEDIUM-SIZED PORK PRODUCERS IN THE REPUBLIC OF MOLDOVA ON FOOD SAFETY REGULATIONS AND ECONOMIC SUSTAINABILITY

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Abstract

The paper analyzes the perceptions of local pork producers and consumers in the Republic of Moldova about the regulations governing food safety and their role in economic development. The study refers to the importance of complying with standards, the impact of implementing standards on production costs, and the analysis of the competitiveness of the Republic of Moldova's market, which is currently in the process of gradual alignment with European Union norms. Through a mixed approach, data were collected through structured questionnaires and semi-structured interviews with the main actors: small and medium-sized producers, traders and consumers. The quantitative data were statistically analyzed, and the qualitative data were thematically coded to highlight major attitudes and challenges. The results show that although most producers recognize the importance of compliance, they consider the implementation of regulations to be costly and insufficiently supported institutionally. Consumers associate compliance with standards with higher product quality, but show limited information. The study concludes that institutional support, targeted training, and consumer education are essential for balancing regulatory enforcement with long-term economic sustainability in the pork sector in the Republic of Moldova.

Key words**:** *food safety***,** *pork producer sector, regulation, sustainability.*

STRUCTURAL DIFFERENCES IN THE FACTOR IMPACT ON AGRICULTURAL YIELDS IN THE EUROPEAN UNION

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Abstract

The objective of this study is to identify and evaluate the main factors that determine agricultural yields in the Member States of the European Union, as well as to highlight the differences in their influence across individual countries. The methodological approach employs factor analysis and multiple regression to assess the strength and interrelationships between the dependent variable, and three key factors: arable land, central government expenditure, and net entrepreneurial income. The regression model confirms a strong positive relationship between arable land area and yields, whereas subsidies and income exhibit a weak positive effect. The study underscores the structural differences within the EU's agricultural systems and provides a foundation for the development of differentiated policy measures tailored to the specific characteristics of individual economies, aimed at balancing economic incentives and enhancing the efficiency of agricultural production.

Key words**:** *structural differences, European Union, multiply regression, factor analysis.*

ANALYSIS OF FOOD ACCESS IN BULGARIA AS A BASIS FOR FOOD SECURITY

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Abstract

The article examines one of the four elements of food security, namely access to the necessary amount of quality food. In recent years, it has spread extremely widely, the advice of military conflicts and disruption of supply chains dictated by measures against the spread of Covid 19 have made production and this is difficult and often managers, commercial organizations and people to be carried out in the face of various challenges. In the first quarter of the 21st century, food security is faced with the difficulty of ensuring access to food products for political, economic and social reasons. Data from the Global Food Security Index (GFSI) were analyzed. The analysis included indices of real income, real expenditure and prices, the relative share of the poor by gender and age group, and the population at risk of poverty or social exclusion by gender and age. The aim is to assess the population's access to food in Bulgaria. Achieving a balance between food accessibility, trade in agricultural goods, and the fight against low incomes and inequality is key to a sustainable food system.

Key words**:** *food security, GFSI, real income, real expenditure, average price, poverty.*

RURAL POLICY OR ECONOMIC FUNCTIONALITY? A COMPARATIVE ANALYSIS OF RURAL DEVELOPMENT IN BULGARIA AND THE USA (THE CASE OF NEBRASKA)

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Abstract

Rural areas are taking an important and significant share of the territory in both Europe and the United States, providing food security and economic stability. This research`s main goal is to make a comparative analysis of the rural development strategies in Bulgaria and the USA (focusing on the state of Nebraska). The article is examining the different definitions of "rural" and how each region is supporting its agricultural sector. Based on policy analysis and macroeconomic statistical information, the results are showing a big difference: Bulgaria is following the European Union's area-based approach, while Nebraska relies on a market-driven model focused on specific agricultural programs. Even with these different types of governance, both regions are facing similar problems like demographic decline and the need for modernization. The conclusion is related to finding successful practices from both models that can be used to improve the future development of rural areas.

Key words**:** *rural governance, regional disparities, agricultural policy.*

THE ROLE OF LOCAL ACTION GROUPS IN DEVELOPING SHORT FOOD SUPPLY CHAINS IN ROMANIA (2014-2022) WITH EARLY EVIDENCE FROM THE 2023-2027 CAP STRATEGIC PLAN

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Abstract

This research evaluates the developmental trajectory of Romania's local food systems, emphasizing how Local Action Groups (LAGs) have served as instrumental financial drivers for Short Food Supply Chains (SFSCs) during the 2014-2020 and 2023-2027 programming periods The primary objective is to evaluate the extent to which the LEADER approach has facilitated the transition of small-scale producers toward integrated and sustainable markets. The methodology combines the analysis of statistical data regarding projects funded through the National Rural Development Programme (NRDP 2014-2020) and the Strategic Plan (SP 2023–2027) with a qualitative study of structural barriers identified at the local level. Findings indicate that LAGs have been essential in creating micro-distribution networks and promoting territorial branding, although producer fragmentation and the lack of logistic hubs remain major challenges. A novel contribution of this paper is the proposition of "digital proximity" as an emerging third dimension of SFSCs, complementing the established concepts of geographic and social proximity. The conclusions provide recommendations for optimizing rural development policies, emphasizing the need for digitalization and the strengthening of associative forms to ensure the resilience of local food systems.

Key words**:** *LAG (Local Action Group), Short Food Supply Chains, Rural Development, LEADER, Local Food Systems, NRDP, National Strategic Plan, digital proximity.*

INSTITUTIONAL CHALLENGES AND FRAUD RISKS IN THE MANAGEMENT OF FUNDS FOR RURAL DEVELOPMENT

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Abstract

The aim of this study is to analyze institutional challenges and fraud risks in the management of funds allocated for rural development in the Republic of Moldova, in the context of increasing access to national, European, and international financial resources. The research is exploratory in nature and relies on qualitative methods, including documentary analysis of the relevant legal framework, examination of reports issued by audit and control institutions, and a comparative review of selected European Union practices. The analysis identifies key fraud typologies affecting fund management, such as document falsification, fictitious projects, non-compliance with eligibility criteria, overstatement of expenditures, and collusion between beneficiaries and public officials. The results reveal significant deficiencies in internal control systems, monitoring procedures, and inter-institutional coordination, which increase exposure to fraud risks and reduce the effectiveness of rural development policies. Limited transparency and insufficient administrative capacity further undermine efficient resource allocation and public trust. The study emphasizes the need to strengthen institutional capacity through digitalization, improved transparency, enhanced cooperation among authorities, and alignment with European standards in fraud prevention, in order to ensure accountability and sustainability.

Key words**:** *rural development, fund management, fraud risks, institutional challenges, public finance, governance, transparency, control mechanisms.*

ANALYSIS OF THE IMPACT OF EUROPEAN FUNDING PROGRAMS FOR YOUNG FARMERS IN THE NORTH-EAST REGION OF ROMANIA

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Abstract

This study analyses the impact of European funding programs for young farmers on the development of the agricultural sector in northeastern Romania. Given the need for generational renewal in agriculture, these programs represent an essential support tool. The research methodology adopts a quantitative approach, based on the analysis of official statistical data regarding the implementation of the National Rural Development Program 2014-2020. The study primarily focuses on the dynamics and results related to Sub-measure 6.1, dedicated to supporting the establishment of young farmers. The analysis was conducted using relevant indicators, such as the number of projects submitted and selected, the rate of fund absorption, and the level of implementation. The results highlight a high level of interest in accessing funding, as well as increased efficiency in the implementation process. Furthermore, a high degree of financial absorption is observed, indicating the efficient use of available resources. The research results attest to the significant contribution of the analyzed programs to the capitalization and modernization process of farms run by young farmers.

Key words**:** *European funding, young farmers, rural development, agricultural competitiveness, funds absorption.*

THE CONTRIBUTION OF SCHOOL FOOD POLICIES TO THE DEVELOPMENT OF THE LOCAL FOOD SYSTEM

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Abstract

School food policies are increasingly recognized not only as tools for promoting health and nutrition education, but also as mechanisms with the potential to stimulate the development of local food systems. This article analyzes the role of school food policies in strengthening short agri-food chains and supporting local producers, through a conceptual and public policy review, with a focus on the European School Fruit and Vegetable Scheme. The study is based on a qualitative analysis of the specialized literature and European and national policy documents, highlighting the main mechanisms through which public food procurement can contribute to local economic development and the sustainability of food systems. In the Romanian context, the analysis reveals the existence of a significant under-utilized potential, as well as the absence of integrated tools for assessing the impact of the program on local communities. The article emphasizes the need to develop adequate analytical frameworks for the multidimensional evaluation of school food policies, as a basis for formulating more efficient and equitable public interventions.

Key words*: short agri-food chains, food public procurement, European fruit and vegetable scheme, rural development, food public policies.*

DETERMINING INTERACTIONS BETWEEN LIVESTOCK SYSTEMS AND GREENHOUSE GAS EMISSIONS: THE CASE OF ROMANIA (2008-2024)

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Abstract

Understanding the relationship between livestock structure, forage areas and greenhouse gas (GHG) emissions is essential for designing effective interventions to reduce emissions in agriculture. We analysed an annual series (2008–2024) including cattle, pig, goat, sheep herds, green forage areas and emission inventories (CO_2, CH_4, N_2O, HFC). The aim of this study is to analyse the relationship between livestock farming, areas dedicated to fodder crops and greenhouse gas emissions in Romania, based on data provided by the National Institute of Statistics, using Pearson correlation analysis and principal component analysis to investigate the links between greenhouse gas emissions, livestock numbers and areas cultivated with fodder plants during the period 2008–2024.The results show a significant reduction in pig (-47.24%) and cattle (-23.87%), while goats increased by 58.75% and sheep by 8.07%. The areas intended for green fodder remained relatively stable, suggesting an adaptation of the crop structure to changes in animal husbandry. In terms of emissions, CH_4 decreased by 25.44%, reflecting the decrease in ruminant livestock, but CO_2 increased by 81.46% and N_2O by 3.77%, an increase associated with the intensification of mechanization and agricultural practices with high energy consumption. The analysis highlights the interdependence between livestock production, plant resources and environmental impact, underlining the need for integrated policies to reduce emissions and optimize agricultural systems.

Key words: *GHG emissions, livestock, feed, statistical analysis, trends 2008-2024, Romania.*

ASSESSING THE SUPPORT NEEDS OF FARMERS IN PERI-URBAN AREAS: EVIDENCE FROM ILFOV COUNTY, ROMANIA

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Abstract

The agricultural sector in Ilfov County is characterised by a high degree of structural heterogeneity, ranging from small subsistence farms to large commercial farms operating under increasing economic and institutional pressure. In this context, the paper aims to identify the main support needs of farmers from peri-urban areas. The research is based on semi-structured interviews conducted at the level of 44 farms in 9 localities in Ilfov County. The dataset includes information on farm location, type of production, agricultural areas used, farm size category, market integration, access to advisory services, training programmes, public subsidies, financial support instruments and perceived price constraints. Using a descriptive and exploratory approach, the study analyses farmers' needs according to farm typology and territorial distribution. The results highlight disparities between communes in the north and south of the county and by farm size categories. Small and semi-subsistence farms mainly require financial support, market access and professional training. Larger farms emphasize advisory services, managerial support and legislative clarity. The study thus provides empirical evidence on the real support needs of farmers in peri-urban areas of Ilfov County.

Key words**:** *farmers, support needs, peri-urban agriculture, farm typology, Ilfov County.*

AGRICULTURAL POLICY MEASURES IN AZERBAIJAN: TOWARDS GREEN SUBSIDIES

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Abstract

The paper examines agricultural policy measures and government support programs in Azerbaijan, with a focus on transitioning towards green subsidies. It analyzes the structure of agricultural policies, the types of subsidies provided, and their impact on farm productivity, income, and sustainable development. Special attention is given to the environmental implications of existing subsidy schemes and the mechanisms required to implement climate- and eco-friendly (green) subsidies. The study combines statistical data analysis with a review of international best practices to assess the effectiveness of current support measures and to identify opportunities for improvement. Quantitative indicators and comparative analyses are employed to evaluate the potential of green subsidies to enhance both economic efficiency and environmental sustainability. The findings suggest that integrating green subsidies into Azerbaijan's agricultural policy can improve resource use efficiency, reduce environmental pressures, and strengthen the competitiveness of the agricultural sector in global markets. Overall, the study highlights the importance of policy innovation in achieving sustainable agricultural development and demonstrates the role of green subsidies in promoting climate-resilient farming practices in Azerbaijan.

Key words*: Azerbaijan, agricultural policy, subsidies, green subsidies, sustainable development, climate-smart agriculture.*

AGRICULTURAL EXPORT MARKET DIVERSIFICATION OF AZERBAIJAN: EVIDENCE FROM SELECTED EUROPEAN COUNTRIES

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Abstract

This article examines Azerbaijan's foreign trade relations with Bulgaria, Croatia, the Czech Republic, Hungary, Poland, Romania, Serbia, Slovakia, and Slovenia, with a focus on the share of agricultural and food products in import-export operations. The primary objective of this study is to analyze Azerbaijan's trade relations with the selected countries, focusing on the geographical and commodity structure, assessing the share of the non-oil sector - including agricultural products - and outlining key directions for its development. In the initial stage of the research process, the dynamics of Azerbaijan's foreign trade relations with the respective countries were thoroughly analyzed; focusing on the trends in both imports and exports. This analysis was conducted using a combination of descriptive analysis, trend analysis, and quantitative methods. Quantitative methods were employed to process the statistical data, allowing for the identification of long-term patterns and fluctuations in trade volumes. Together, these methodologies facilitated a comprehensive understanding of the changes in Azerbaijan's foreign trade dynamics with the selected countries.

Key words*: Azerbaijan, agricultural export-import, market diversification, market concentration, Herfindahl-Hirschman index.*

SUBSECTION AGRIBUSINESS AND AGRICULTURAL EXTENSION

THE IMPACT OF SYSTEMIC CRISES ON ACCOUNTING INDICATORS IN AGRICULTURAL FARMS IN ROMANIA: A COMPARATIVE ANALYSIS (2019-2021)

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Abstract

Agriculture represents a strategic sector, essential for food security and sustainable development. Between 2019 and 2021, agricultural farms in Romania were exposed to a series of systemic crises, including the COVID-19 pandemic, energy market instability, and the increasing impact of climate change. These disruptions significantly affected the financial performance of agricultural holdings, as reflected in the changes in both the structure and value of accounting indicators. This study aims to conduct a comparative analysis of the impact of these crises on key accounting indicators, assessing the level of adaptability and the resilience strategies employed by farms in Romania. By analyzing the evolution of key financial indicators in the pre-crisis period (2019) and during the crisis years (2020-2021), the research highlights how these entities responded to external pressures and the consequences on their economic and financial stability. The findings provide valuable insights into the relationship between the macroeconomic context and accounting performance, contributing to the development of support policies tailored to the actual needs of the agricultural sector.

Key words: *accounting indicators, adaptability, agricultural farms, COVID-19 pandemic, systemic crises.*

AN APPROACH FOR DETERMINING AND ANALYZING THE PRICE DYNAMICS OF DESSERT GRAPES AND WINE GRAPES

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Abstract

This article presents an approach for determining and analyzing the price dynamics of dessert grapes and wine grapes in Bulgaria for the period 2018-2024. Information concerning the two types of grapes is searched from the built relational database. The number of the agricultural products stored in the database is 41. The extracted sets of elements related to the listed two types of grapes are processed and analyzed. For this purpose, the respective set of variables must be calculated. This study also uses hierarchical cluster analysis for the indicated data. The results show that the pace of growth in the price per ton of the dessert grapes is significantly faster in 2019-2021. The increase in the indicator is 25.47% for the first of the examined year, 20.64% for the second and 16.31% for the third, respectively. Moreover, the growth pace of the mentioned indicator is relatively slower for this product in the time segment 2022-2024.During 2019, compared to 2018, the price per ton of wine grapes decreased by 8.32%.A similar case is observed in 2021, where the decline is about 3.07%.But, the values of the researched indicator for the mentioned product increase in the time segment 2022-2024, as well as in 2020.Grouping the years with relation to the values of the examined indicator (price per ton) led to the formation of three clusters for dessert grapesand two clusters for wine grapes. This approach could also be used when studying data in areas such as finance, agriculture, ecology, etc.

Key words**:** *approach, analysis, database, dessert grapes, wine grapes.*

STATUS AND TRENDS IN AGRICULTURAL LAND USE IN BULGARIA

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Abstract

Agricultural land is a fundamental and irreplaceable natural resource that underpins national food security and the economic stability of rural areas. The purpose of this article is to analyze the status and trends of employment and use of agricultural land in Bulgaria for the period 2021-2025 to achieve a more balanced and sustainable use of agricultural territories, outlining the use of ecological agricultural practices that are environmentally friendly. The dynamics of land management are monitored, analyzing changes in land use and their regional specificity. To achieve the set goal, an important group of indicators are considered - functional land use; employment and composition of the production structure of main agricultural crops; arable land, used agricultural area, area with agricultural purpose in the national and regional plan, plant protection measures carried out and fertilized areas, outlining possible directions in the use of agricultural land. The study found that Northern Bulgaria retains its role as a major agricultural production center, while in the southern parts of the country intensive processes of fragmentation and abandonment of agricultural areas are taking place. The technological analysis reveals a dominant use of nitrogen fertilizers and herbicides in cereal crops, against the background of a drastic decline in the use of phosphorus and potassium fertilizers. The need for balanced land management policies is emphasized, which would stimulate environmentally friendly practices and prevent further abandonment of agricultural territories.

Key words**:** *agricultural land, land use, trends, indicators, statistical regions.*

HISTORICAL OVERVIEW OF THE BULGARIAN ROSE OIL EXPORT

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Abstract

The Bulgarian rose oil sector origins in the late medieval period, with the spread of Rosa damascena cultivation in the Rose Valley, where unique natural conditions enabled the production of high-quality oil. During the Ottoman period, rose oil production expanded and became an important export commodity, gaining recognition in international markets for its high quality. In the nineteenth and early twentieth centuries, Bulgaria emerged as a global leader in rose oil, supplying perfumers in Europe and beyond. The socialist era brought state control and industrialization of production, ensuring stability but limiting innovation. After 1989, the transition to a market economy reshaped export structures, exposing producers to global competition and price fluctuations. This paper aims to analyse the sector's evolution and exports, accordingly we used historical economic data from the Bulgarian Ministry of Agriculture and Food and other institutions. The results show that despite past and recent challenges, Bulgarian rose oil remains a symbol of national heritage and continues to be exported worldwide, preserving its status as a high-value niche product.

Key words**:** *Bulgarian rose oil exports, Rosa damascene, Rose Valley production, Essential oil trade, agricultural heritage.*

SUBSECTION
SUSTAINABLE DEVELOPMENT
OF RURAL AREAS

GROSS DOMESTIC PRODUCT GROWTH VERSUS FOOD INSECURITY IN AFRICA - INSIGHTS FROM NIGERIA AND DR CONGO

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Abstract

Food insecurity remains one of the most persistent challenges in Sub-Saharan Africa, despite the commitments made globally through the 2030 Agenda for Sustainable Development, in particular through SDG 2 - Zero Hunger. In this context, the study analyses the relationship between economic growth dynamics and the maintenance of high levels of food insecurity in Nigeria and the Democratic Republic of the Congo, two countries rich in natural resources but characterized by significant structural vulnerabilities in terms of access to food. The analysis integrates longitudinal data on GDP per capita for the period 1990–2024 with the Global Hunger Index (GHI) and its components for the reference years 2000, 2008, 2016, and 2025. Using a comparative-descriptive approach, economic developments and the four dimensions of food insecurity are examined in parallel: population undernutrition, child wasting, child stunting, and child mortality. The results highlight the existence of a partial decoupling between economic growth and hunger reduction. Although both countries have made significant economic progress since 2000, improvements in food security have been limited, uneven, and, in some cases, reversible. The findings highlight a partial decoupling between economic growth and hunger reduction and underline the need for stronger institutions and more resilient food systems to advance progress toward SDG 2: Zero Hunger.

Key words**:** *food insecurity, Global Hunger Index (GHI), Nigeria, DR Congo, SDG 2: Zero Hunge.r*

CLIMATE CHANGE AND HYDROCLIMATIC CONSTRAINTS FOR AGRICULTURE IN THE HISTORICAL BANAT REGION OF ROMANIA

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Abstract

Climate change increasingly affects hydroclimatic conditions, with important implications for agriculture, ecosystem functioning, and regional water balance. This study examines hydroclimatic variability in the historical Banat region of Romania, located in the southeastern sector of the Pannonian Plain, an area characterized by plains, low hills, fertile soils, and a moderately continental climate influenced by western and southern air masses. The analysis was based on ERA5-Land reanalysis data for precipitation and air temperature covering the period 1990-2023. Monthly data were aggregated into annual values, spatially processed in ArcGIS Pro, and interpreted using the Standardized Precipitation Evapotranspiration Index (SPEI-3) in order to assess drought conditions and climatic water deficit. The results indicate a tendency toward increasing air temperature, pronounced interannual variability in precipitation, and a higher frequency of drought episodes, especially in the most recent years of the analyzed period. These changes suggest increasing hydroclimatic pressure on agricultural systems, mainly through intensified evapotranspiration and reduced water availability during critical vegetation periods. The findings underline the need for adaptive strategies focused on climate resilience, including improved water management, modernization of agricultural infrastructure, and the integration of sustainable practices adapted to regional conditions.

Key words**:** *climate change, hydroclimatic variability, drought, SPEI, historical Banat region, agriculture*

THE STATUS OF ORGANIC AGRICULTURE IN ROMANIA COMPARED TO OTHER EUROPEAN UNION MEMBER STATES

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Abstract

The present study aims to assess the current state of organic agriculture in Romania in comparison with other EU member states. Given the complex nature of the subject, the research has been structured based on a holistic approach that integrates multiple dimensions of the issue. This research integrates data from both European and national statistical sources (FAOSTAT, FiBL, MARD, NIS), supplemented with datasets available through open data portals and with a comprehensive review of the relevant scientific literature. Comparisons among Romania and the other EU countries regarding each studied indicator were displayed as maps visualized with www.datawrapper.de. Results show sustained growth of Romania's organic sector, ranking it among Europe's top ten by area. However, the organic share of total utilized agricultural area remains low at 5.75 %, half the EU-27 average (11.14 %). The results highlight the need to intensify the promotion of organic farming practices, increase consumer awareness, and develop local markets and short supply chains, in order to strengthen the role and visibility of organic production in Romania. Overall, the study confirms the growing importance of organic agriculture and the market for organic products.

Key words**:** *organic agriculture, organic farming, sustainable agriculture, sustainable development.*

ASSESSING FARMERS` AND FORESTERS` READINESS FOR RENEWABLE ENERGY ADOPTION AND ENERGY COMMUNITY PARTICIPATION

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Abstract

The study presents a comprehensive methodology for assessing farmers` and foresters` readiness to adopt renewable energy solutions and participate in energy communities across four European countries: Bulgaria, Estonia, Slovenia, and Spain. The assessment framework adapts the Triple Layer Business Model Canvas (TLBMC) into the Individual Triple-Layer Readiness Framework (ITLRF), which evaluates readiness across economic, technical, and social dimensions. The technical dimension reformulates the original TLBMC environmental layer for individual-level analysis (capturing the operational and informational preconditions for environmental action), while environmental values are relocated to and operationalised within the social dimension. The questionnaire examines respondent profiles, current energy situations, renewable energy awareness, investment willingness, barriers to adoption, energy community interest, support preferences, business model considerations, and future outlook. Two composite indices are constructed and validated: the RES Readiness Index (RRI) and the Energy Community Potential Index (ECPI). Respondents are segmented into categories ranging from `Ready Adopters` to `Unaware` based on weighted calculations. This multi-dimensional assessment provides a robust analytical framework for understanding the factors influencing renewable energy adoption in rural areas and offers valuable insights for developing targeted policy recommendations and support mechanisms to accelerate the rural energy transition.

Key words**:** *rural areas, energy transition, energy communities, RES adoption.*

DEMOGRAPHIC DYNAMICS AND AGRARIAN TRANSFORMATION OF RURAL AREAS IN BULGARIA: ANALYSIS OF CHALLENGES, TRENDS, AND STRATEGIC PERSPECTIVES (2024-2030)

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Abstract

The present study aims to examine the relationship between the deepening demographic crisis and the structural transformation of the agricultural sector in Bulgarian rural areas. Through an analysis of statistical data from the National Statistical Institute, Eurostat and the Ministry of Agriculture, the cyclical dependence of the processes has been deduced, expressed through the economic framework of subsidies, which encourages mechanized grain production, which in turn leads to a reduced need for labour. This, combined with better economic alternatives in urbanized centres, accelerates migration and leads to a permanent shortage of human capital, with employment in agriculture falling by 44%. The established "monoculture model" is economically rational for producers, but socially and environmentally unsustainable. By the end of 2024, the share of people over 65 years of age reaches 24.0%, creating a critical labour shortage, most pronounced in areas such as Vidin, Montana and Gabrovo. The study proves that the outflow of people follows a clear economic logic, not a paradox. In conclusion, it recommends policies aimed not simply at subsidies, but at creating vibrant communities through improved transport and digital connectivity, which would revitalize the social fabric of the periphery.

***Key words*:** *rural areas, demographic crisis, agrarian transformation, employment in agriculture, smart villages.*

SUSTAINABILITY AND ADDED VALUE OF THE COMMUNITY-LED LOCAL DEVELOPMENT APPROACH IN THE NORTHWESTERN REGION OF BULGARIA

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Abstract

The article aims to assess the long-term impact of the implementation of CLLD strategies by LAG Lom and LAG "Western Balkan" - Berkovitsa, Godech, and Dragoman, considering them as a representative model of the application of the approach in the Northwestern region. The two territories share similar demographic and structural challenges but apply different organizational and governance practices. This provides a basis for a comparative analysis focused on the factors influencing absorption capacity, project effectiveness, and the achieved socio-economic outcomes. The analysis covers the 2014-2020 programming period, which offers sufficient empirical evidence and allows for an assessment of both project implementation and the level of sustainability achieved. The comparison between the two LAGs highlights their specific approaches, institutional capacity and partnerships. Particular emphasis is placed on the added value of CLLD, ranging from economic and social effects to the strengthening of local governance. The study also formulates recommendations for improving the implementation of the approach in the 2021-2027 period, with a focus on integration, adaptability, and the sustainable building upon accumulated experience.

Key words**:** *Community-Led Local Development (CLLD), Local Action Groups, sustainability, added value, North-West region.*

SUSTAINABLE DEVELOPMENT OF BULGARIAN AGRICULTURE AND ITS ABILITY TO MEET THE SUSTAINABLE DEVELOPMENT GOALS

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Abstract

After the accession to the European Union, Bulgaria's agricultural sector was modelled by the Common agricultural policy. This led to settling of a monocultural model for an ever-increasing number of producers. The high level of specialization and concertation of production and the lack of diversity are detrimental to the sustainability of the sector. The main goal of this study is to measure the current level of achievement of sustainable development goals by Bulgarian agriculture, based on selected indicators, aligned with the "Bulgaria 2030" strategy, as well as access its ability to meet these goals by 2030. To achieve this goal the following tasks are completed: through literature review to select the key SDGs that Bulgarian agriculture can impact; to analyse the achieved levels for these SDGs in Bulgaria and to assess the ability to meet the 2030 targets. As a result of this research, we can conclude that the real factor income in Bulgarian agriculture has been declining since 2022, jeopardizing the achievement of the 2030, as well as lagging behind the European requirements to reduce ammonia emissions by 3% per year, with the target values being reached only in 2019. The share of organic production areas is doubling to 3.95% in 2024 compared to 2021 and giving a real chance to reach the target of 7% by 2028. The results are positive for the content of nitrates in groundwater, where the reported 28.18 mg/l is far below the permitted limit of 50 mg/l.

Key words**:** *agriculture, sustainability, SDGs, Bulgaria, trends.*

SUSTAINABLE CIRCULAR PRODUCTION AND CONSUMPTION TRENDS AND POLICIES IN THE EUROPEAN UNION

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Abstract

Advancing the Sustainable Development Goals (SDGs) and circular economy (CE) are crucial components of the planned European Green Deal and quite a foundational value of the European Union. Sustainable development plans and recognized public regulations are progressively aligning with the principles of a circular economy. After conceptually highlighting the synergetic correlation between the circular economy and sustainable development, this research seeks to examine how the change to a circular economic system in the EU might facilitate environmentally friendly production and consumption, as required by the SDG 12 Responsible consumption and production, eventually with the help of well thoroughly designed new policies and instruments. The methodology is based on the literature review, outcomes from the own previous research, the processing for analysis of data with tables and graphs, and the analysis and synthesis of some recent strategic and policy documents from the EU and Romania. The conclusions and recommendations refer to the premises and prospects of circular economy trends and instruments for the promotion of the Sustainable Development Goals, also with reference to the SDG 12 as a priority issue.

Key words: *circular economy, sustainable, production, consumption, policies.*

SUSTAINABLE RURAL DEVELOPMENT OF SASCA MONTANA, CARAS-SEVERIN COUNTY, ROMANIA, THROUGH THE TOURISM VALORIZATION OF NATURAL AND CULTURAL RESOURCES

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Abstract

The manuscript analyses the potential for sustainable development of the Sasca Montana commune by capitalizing on existing natural and cultural resources. The research adopts a mixed-methods approach, combining documentary and statistical analysis, assessments of infrastructure and accessibility, SWOT analysis, as well as semi-structured interviews conducted with key local stakeholders. The results highlight the presence of an exceptional natural heritage (karst landscapes, biodiversity, protected areas) and a valuable cultural heritage that remains insufficiently valorised. Although tourist accommodation facilities have diversified and increased in number, their utilization continues to be affected by seasonality and the lack of integrated complementary services. The findings confirm rural tourism and agrotourism as the main drivers of future sustainable development; however, their current impact remains moderate, being constrained by deficient infrastructure, reduced administrative capacity, and population aging.

Key words**:** *sustainable rural development, rural tourism, agrotourism, natural resources, cultural resources, Sasca Montana.*

OPTIMIZATION OF AGRICULTURAL HOLDINGS THROUGH SUSTAINABLE PRACTICES - CASE STUDY OF SACOSU TURCESC COMMUNE, TIMIȘ COUNTY, ROMANIA

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Abstract

Since ancient times, agriculture has been a vital area of human activity, being the main source of food, an important supplier of raw materials for industry, and the basic activity of the rural population. In this context, the optimization of agricultural holdings in the Romanian rural area represents an essential condition for increasing competitiveness and ensuring sustainable development, under current economic, climatic and structural pressures. The paper analyzes how sustainable agricultural practices, combined with investments aimed at increasing added value and vertical integration of the production process, contribute to improving the technical and economic performance of an agricultural holding. The research methodology is based on the use of methods for collecting, processing and interpreting statistical data, as well as on the case study method, applied to a crop farm in Sacosu Turcesc commune. The evaluation of economic performance is carried out by determining financial indicators and applying cost-benefit analysis. The conclusions confirm the economic viability of an integrated model for optimizing agricultural holdings, applicable to small and medium-sized farms in Romanian rural area.

Key words**:** *rural area, sustainable agriculture, sustainable practices, cost-benefit analysis, agricultural holdings.*

THE USE OF EDIBLE MUSHROOMS AS NON-WOOD FOREST PRODUCTS IN ROMANIA AND SERBIA – CURRENT TRENDS AND FUTURE PERSPECTIVE

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Abstract

Non-wood forest products (NWFPs), particularly edible wild mushrooms, represent important ecological and socio-economic resources in Romania and Serbia. In this context, the paper aimed to comparatively study the current tendencies and future perspective of the use of edible mushrooms as NWFPs products in these two countries. The information and data are sourced from relevant scientific literature, relevant legislation, reports and studies for both countries in the last 15 years and processed using the following research methods: general systems theory, analysis and synthesis, as well as normative and comparative approaches. Both countries possess rich fungal diversity shaped by contrasting forest compositions, ownership structures, and regulatory frameworks. Romania benefits from clearer legislation, established local markets, and significant harvesting of Boletus, Cantharellus and Armillaria species, although regional disparities and climatic fluctuations affect yields. Serbia shows comparable ecological potential but relies heavily on exports of porcini and chanterelles, with domestic value-chain development and processing capacities remaining limited. Complex administrative procedures, insufficient monitoring of fungal populations, and inadequate collector training challenge sustainable management in both contexts. Comparative analysis highlighted the need for adaptive governance, improved data collection, and investment in processing infrastructure. Strengthening education, market integration, and sustainable harvesting practices could enhance rural livelihoods while supporting the long-term ecological resilience of forest ecosystems and advancing the European forest-based bioeconomy.

***Key words:** non-wood forest products, mushrooms, Serbia, Romania, rural development.*

ASSESSMENT OF FARM SUSTAINABILITY IN THE VULNERABLE SECTORS OF THE EUROPEAN UNION – PERMANENT CROPS

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Abstract

This manuscript aims to present how and where inequalities and weaknesses appear for the farmers from the non-favourable production specializations in the implementation of the European Union`s Common Agricultural Policy. By its area payments, CAP is widely supporting the large-scale field farming systems that are characterized by comparatively low value added and production intensity. On the other hand, all the other plant production specializations that are not related to the mass field crop production might be considered as vulnerable sectors. Their recourse usage correlates to the value added creation and accumulation and furthermore, their costs are significantly higher as well. By normalizing and accumulating variables, the used approach compares all types of farming and EU Member States provided by the Farm Accountancy Data Network through all three sustainability dimensions – economics, social and environmental, represented by essential complex indicators. The references used are the average farm levels and the average of current investigated farming type. The only Member States that realized above the mean EU results are Austria, Italy, and Spain.

Key words**:** *permanent crops, vulnerable sectors, farm sustainability, CAP, Relative Comparative Assessment.*

STUDY ON THE RELATIONSHIP BETWEEN FOOD SECURITY, FOOD PRODUCTION AND RURAL AREAS IN BULGARIA

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Abstract

The relationship between food security, food production, and rural development reveals the interdependence of the so-called "triangle of sustainability", in which each component is essential and influences the others. The link between food production and rural areas is bidirectional: agriculture serves as a primary source of income and a guarantee of food security, while the absence of production and processing activities intensifies depopulation processes. The food industry occupies a strategic position in the Bulgarian economy, generating a significant share of the gross domestic product and contributing to sustainable development, public health, and quality of life. The article focuses on analyzing trends and challenges in food production and identifying directions for their development. The study applies statistical methods to analyze development trends and structural changes using data from the National Statistical Institute and Eurostat. It also analyzes the main economic indicators for the Food Production sector in Bulgaria for the period 2021-2024. The specific characteristics of individual subsectors are systematized, and potential pathways for their future development are outlined. The main results are expressed in the outlined guidelines for sustainable development of food production in Bulgaria. The study of the food production - food security - rural development interrelationships reveals a high degree of interdependence, in which the three components form the so-called "triangle of sustainability". The need for structural transformation and the implementation of a coordinated policy in the field of the food industry is put at the forefront. Ensuring national food security requires timely management decisions aimed at stimulating investment, enhancing competitiveness, developing domestic production, reducing dependence on imports, and adapting the legislative framework to contemporary dynamic conditions and long-term social stability.

Key words**:** *food security, food production, rural areas, sustainable development, relationship.*

FROM WASTE TO VALUE: ADDRESSING FOOD LOSS IN THE REPUBLIC OF MOLDOVA

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Abstract

The study aims to analyse food loss and food waste in the Republic of Moldova, with reference to both their impact on food security and sustainable development. Information was collected through the analysis of statistical and documentary sources from FAO, Eurostat, the Ministry of Agriculture of the Republic of Moldova, the World Bank, UNDP, as well as scientific literature. Data availability in the period between 2019 and 2025 was a concern for the analysis. The primary indicators were food waste volume, food waste per capita, economic losses, and distribution of food loss across the supply chain. Some of the research methods used included comparative analysis, statistical analysis, and document analysis. The results showed that in the Republic of Moldova the waste of food constitutes a problem of economic, social, and environmental dimensions. Every year around 180,000 tons of food goes to waste, more than 70 kilograms per person. Food waste has its greatest effect on food security and household budgets. The food waste problem is caused by inefficiency of the food supply chain, with about 40% of the waste coming from households. The remainder occurs during the period of production, processing, storage, and distribution. In Moldova, total economic value of wasted food is greater than 19 billion MDL each year. In addition, only a limited proportion of surplus food is redistributed to vulnerable population groups. High levels of food waste are mainly associated with inefficient consumption patterns, the limited institutional coordination between local authorities and national food waste management policies. Therefore, reducing food waste requires a multipronged approach based on public awareness campaigns, improved storage and transport infrastructure, stronger food prevention and redistribution measures, and enhanced collaboration between public authorities and private stakeholders.

Key words: *food waste, food loss, Republic of Moldova's sustainable development, food security.*

ANALYSIS OF KEY SOCIO-ECONOMIC INDICATORS IN ILFOV COUNTY. A CASE STUDY OF THE BUFTEA AREA

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Abstract

This study examines the socio-economic evolution of Ilfov County, focusing on the Buftea area as a case study, over the 2020–2024 period. The main objective is to assess recent demographic and economic trends within one of Romania's most developed regional contexts. The analysis is based on a set of main indicators, including resident population by domicile, population growth dynamics, population density, demographic composition, gross domestic product per capita, foreign direct investment, employment levels, number and rate of unemployment, average net earnings. The findings underline the strong economic performance of Ilfov County, which plays a substantial role in the national economy. Owing to its proximity to Bucharest, the Buftea area displays favorable conditions for economic integration, investment inflows and labor market expansion. Overall, the results suggest that Buftea has the capacity to strengthen its contribution to the economic framework of Ilfov County in the coming years. The analysis relies on official statistical data provided by the National Institute of Statistics, complemented by relevant specialized literature.

Key words*: socio-economic indicators, demographic dynamics, GDP per capita, labor market, Ilfov County, Buftea area.*

APPLICATION OF GEOAI TECHNIQUES IN REGIONAL ECONOMIC POTENTIAL ASSESSMENT

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Abstract

The aim of this paper is to explore the integration of Artificial Intelligence (AI) techniques within a geospatial analysis framework to evaluate the economic development potential of Sălaj County. The research focuses on the application of AI based methods in ArcGIS Pro by combining traditional Geographic Information System (GIS) functionalities with automated classification algorithms and predictive modeling tools. Socio-demographic indicators, economic datasets, and spatial statistics were employed to generate a comprehensive analytical framework suitable for territorial economic assessment. Furthermore, predictive models were implemented in order to support decision making processes and to forecast potential areas of economic growth. Results indicate that the integration of GeoAI tools significantly improves the capacity for complex spatial-economic analysis and provides valuable insights for regional development planning. The proposed methodology represents a robust and transferable framework for regional economic evaluation and offers a foundation for future research in intelligent geospatial decision-support systems

Key words: *Artificial Intelligence, GeoAI, Predictive Modelling, Regional Economic Development, Spatial Analysis.*

THE IMPACT OF TECHNOLOGICAL EVOLUTION AND EUROPEAN FUNDS FOR THE DEVELOPMENT OF RURAL COMMUNITIES. CASE STUDY – GALATI COUNTY

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Abstract

The Smart Village concept is a concept in continuous evolution that allows for the accelerated development of rural areas. Technological evolution and new digital tools developed in recent years can contribute substantially to the improvement of public services dedicated to the rural population. The paper analyzes the results of research on the level of understanding and the impact of the implementation of Smart Village projects with European funding in Galați County. It also highlights the types of innovative digital tools that can support the development of Smart Village projects. The main aspects that lead to the poor use of this development concept are identified, as well as the opportunities offered by innovative digital tools. At the same time, the paper also presents relevant opportunities for European funding and support. The paper shows that the implementation of the Smart Village concept will lead to the inclusive, resilient development of rural communities in Galați County.

Key words*: rural development, Galati County, Smart Village, digital tools, European funding, technological evolution.*

SUBSECTION AGRITOURISM AND RURAL TOURISM

FORMULATING DEVELOPMENT STRATEGIES FOR COMMUNITY-BASED AGRITOURISM IN PUJON KIDUL VILLAGE, MALANG REGENCY USING AN AHP–SWOT FRAMEWORK

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Abstract

This study aims to develop the most prioritized alternative strategies for community-based agro-tourism development in Pujon Kidul Village, Malang Regency, by utilizing the Analytical Hierarchy Process–Strength Weakness Opportunity Threat (AHP-SWOT) method. This approach serves to assess the comparison of the level of importance of internal and external factors, as well as to identify alternative strategies that are considered most objectively appropriate and measurable. The results of the analysis show that the strength factors, such as village popularity, active community participation, and economic contribution of the tourism sector, are the dominant aspects. However, serious challenges are still faced, especially the low quality of human resources and the lack of digitalization. The strategic opportunities identified include geographical proximity to Batu City and high social media exposure. Meanwhile, the main threats include competition between destinations and a decline in post-pandemic visits. The resulting priority strategies include increasing human resource capacity, digitalization training, empowering village MSMEs, and strengthening regulations and collaboration between regions. This study confirms that the AHP-SWOT approach is effective in formulating sustainable agro-tourism development strategies based on local potential.

Key words*: Community-based tourism; Agritourism; SWOT-AHP Analysis; Development Strategies.*

GAPS IN QUALITY OF TOURISM IN BULGARIAN RURAL AREAS

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Abstract

Rural areas make up a large part of Bulgaria's' landmass and play an important role for its economy. The development of these areas is dependent on their ability to sustain a competitive economic environment for the local population. Tourism services create an opportunity for additional employment and income for rural communities. The quality of these services is essential for their attractiveness among urban consumers. The goal of this study is to analyze consumers perceived quality of tourism services in Bulgarian rural areas. In order to achieve this goal, the following tasks are completed: to survey tourism service consumers in the Southeast region of Bulgaria aimed at their level of satisfaction; to implement the GAPS statistical method, based on the SERVQUAL methodology to analyze the consumer satisfaction with tourism services in rural areas in order to present strategies for future improvement.

Key words**:** *rural tourism, SERVQUAL, GAPS Model, consumer satisfaction, Southeast Region, Bulgaria.*

EFFICIENCY OF INVESTMENTS IN RURAL TOURISM BETWEEN DEVELOPMENT AND PERFORMANCE

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Abstract

Through the indicators for evaluation and efficiency, the paper aims to analyze investments in rural tourism. The study focuses on agro-tourism guesthouses, considered the most relevant tourist accommodation units for rural tourism, providing an adequate image for evaluating the efficiency of investments. At the same time, these represent the relationship between investments made, capacity created and the level of tourist demand. The study is carried out at national level, focusing on the four development macro-regions, to highlight territorial differences and investment dynamics. The analysis is based on official statistical data and indicators such as tourist circulation density, average length of stay and occupancy rate, permissible for estimating the level of demand and efficiency of investments. The study facilitates the understanding of the relationship between investments and territorial development, emphasizing the importance of using proxy indicators in regional economic analysis. With the help of the results obtained, the determining role of efficiency and regional development will be emphasized, through the intrinsic link between investments and quality management.

Key-words: *rural tourism, agrotourism guesthouses, investments, proxy indicators, efficiency, regional development, macroregions.*

HOSPITALITY SERVICE MANAGEMENT DURING THE WINTER SEASON IN TRADITIONAL MOUNTAIN AREAS. THE CASE OF MARAMUREȘ COUNTY, ROMANIA

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Abstract

The present study examines the management of winter hospitality in traditional mountain destinations, focusing on Maramureș County, Romania. In regions where tourism demand compresses into short seasonal windows, and where hospitality remains deeply embedded in local socio-cultural practices, operators face managerial tensions: sustaining service quality while navigating labour volatility, environmental pressures, and the need to preserve experiential authenticity. The analysis investigates how accommodation providers respond to these constraints during the winter peak and how such strategies shape visitor satisfaction and local economic resilience, through a mixed-methods approach that combines surveys of tourists and accommodation providers with semi-structured interviews conducted among managers across key tourism nodes, while integrating Net Promoter Score (NPS) indicators, Likert-scale, regression modelling, cluster analysis, and demand-forecasting techniques. Results suggest that establishments relying on adaptive staffing, locally anchored food supply chains, and curated winter experiences display greater operational stability under fluctuating demand. Yet structural fragilities persist, most notably infrastructure bottlenecks, rising operating costs, and growing weather volatility. Within this context, tradition-informed management emerges not as nostalgia but as a pragmatic pathway toward more resilient mountain tourism systems.

Key words: *hospitality management, winter tourism, mountain regions, sustainable tourism development.*

TRENDS IN ROMANIAN AGRITOURISM DURING 2019-2024: A PRE-AND POST-COVID-19 ANALYSIS

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Abstract

Human population needs outdoor recreational periods to reduce their stress accumulated during work periods. Agritourism is a suitable method for connecting with nature and farm products both bringing benefits for human health. The aim of this work was to analyse a six-year period (2019-2024) of touristic statistics for Romania, to identify the share of agritourism and the magnitude of COVID-19 impact on this type of tourism. The source of data was the database of National Institute of Statistics, from which the overnight stays were selected for the target years. The results indicate that agritourism had a 16% share of total tourism, which is related to guesthouses especially. While the pandemic period decreased drastically the number of tourists in 2020, in the same year the tourists in guesthouses increased slightly. This indicate a preference of tourists for accommodation that provide more fresh air and recreational activities in nature. In general, the number of tourists in guesthouses is reduced comparatively with hotels, and most of the time they belong to one single group. Compared to 2019, the trend of tourism recovery showed 24% less tourists in 2021, 10% in 2022 and similar values in 2023 and 2024. The post COVID-19 period for agritourism showed improvements in hospitality and redefining of this concept.

Key words**:** *hospitality, overnight stays, touristic specificity, tourism recovery, food and services quality.*

AGROTOURISM DEVELOPMENT IN THE GALAȚI-CAHUL-GAGAUZIA CROSS-BORDER AREA: A STRUCTURAL AND STRATEGIC ASSESSMENT

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Abstract

Agrotourism represents an important pathway for economic diversification and the sustainable valorisation of rural resources, particularly in cross-border regions. This paper analyses the agrotourism development potential of the Galați area (Romania) and the southern regions of the Republic of Moldova (Cahul, Gagauzia and Taraclia), a territory characterised by rich rural traditions, local gastronomy, viticulture and valuable natural landscapes, which remain insufficiently integrated into coherent tourism products. The study is based on secondary data and institutional documents, aiming to assess the structural and strategic framework for agrotourism development in the analysed cross-border area. The methodology combines descriptive statistical analysis, a comparative territorial approach, and the application of SWOT and PESTEL analyses, supported by the triangulation of statistical databases, regional development strategies and public policy documents, including materials related to the cross-border project ROMD 00389. The results reveal significant territorial disparities, with Galați County showing a more advanced tourism infrastructure and higher tourism flows, while the southern regions of the Republic of Moldova remain less developed, despite their considerable natural and cultural potential. The research findings also highlight a set of development pathways for the region with significant potential, particularly in the areas of cross-border cooperation, the valorisation of rural heritage, and the orientation of activities towards sustainable forms of tourism. In this context, the paper outlines several strategic directions aimed at supporting the design and promotion of integrated agritourism services, as well as strengthening cross-border cooperation, thereby contributing to the enhancement of competitiveness and sustainability in Galați County and the southern part of the Republic of Moldova.

Key words**:** *agritourism, territorial disparities, tourism infrastructure, regional development, cross-border cooperation, sustainability.*

INVESTMENTS. THEORY VERSUS APPLICABILITY. PARTICULARITIES AND THE ROLE OF STRUCTURAL FUNDS IN RURAL TOURISM IN ROMANIA

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Abstract

This study, a review, aims to analyze the concept of investment from the perspective of economic and financial literature, following both its theoretical foundations and its applicability in specific economic contexts, namely in rural tourism. The main definitions of investment, its components, relevant investment typologies, as well as the differences between general investments and those made in the rural environment are presented. In this context, the analysis extends to the rural environment, focusing on rural tourism, as a distinct investment field, characterized by its own structural particularities, with the aim of identifying the differences between general investments and those specific to this sector. As a result, the approach aims to highlight the structural particularities, which determine the limitation in the direct application of classical theoretical investment models. At the same time, the analysis is extended to the role of European funding for the rural environment, with an emphasis on the EAFRD and the relevant measures from the PNDR, in the development of rural tourism in Romania. The focus is on analyzing the discrepancies between theoretical foundations and investment reality, underlining the need to adapt classical models to the specifics of the rural environment. The results of the analysis highlight the existence of a gap between the theoretical foundations of investments and economic reality, especially in sectors characterized by structural rigidity, institutional constraints and limited local resources. In this sense, the main conclusion of the paper converges on the fact that the success of investments in rural tourism depends not only on the volume of invested capital, but also on the quality of implementation, integration into the local economy and the ability to preserve authenticity as an essential economic resource.

Key words: *investments, risk, return, rural tourism, EAFRD, rural development, Romania.*

RESEARCH ON THE DEVELOPMENT OF AGROTOURISM ACTIVITIES IN THE ROMANIA–REPUBLIC OF MOLDOVA CROSS-BORDER AREA

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Abstract

Agrotourism represents an important component of sustainable rural development, particularly in cross-border regions characterized by shared cultural heritage, similar natural resources, and potential for cooperation. This study analyzes the development of agrotourism in the Romania–Republic of Moldova cross-border area, focusing on tourism indicators, spatial distribution, and comparative dynamics between the two countries. The comparative evaluation developed in this paper uses quantitative information extracted from national statistical reports available in Romania and the Republic of Moldova for the years 2008-2024, supplemented by findings generated through the CROSS2MAP project (ROMD00389). To examine agrotourism dynamics in the selected area, the research considers multiple statistical variables related to rural accommodation infrastructure and tourism activity, such as lodging capacity, visitor arrivals, overnight stays, and the expansion of agrotourism establishments. The results reveal significant disparities between the two countries in both quantitative and structural terms. Romania demonstrates a consolidated agrotourism sector, supported by infrastructure development, access to European funding, and strong tourism demand. In contrast, the Republic of Moldova exhibits a developing sector characterized by limited capacity and uneven territorial distribution. The findings confirm that geographical proximity alone does not ensure similar levels of development, which are instead determined by structural factors such as investment capacity, infrastructure, and institutional support. At the same time, the study highlights the potential for cross-border cooperation, based on complementarities between the two countries. The research contributes to a better understanding of agrotourism dynamics in cross-border regions and provides relevant insights into the development of integrated policies aimed at supporting sustainable rural development.

Key words**:** *agrotourism, border regions, rural development, cross-border cooperation, spatial distribution.*

WHERE RURAL TOURISM MEETS SMART AGRICULTURE: A BIBLIOMETRIC ANALYSIS

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Abstract

Rural tourism is increasingly acting as a catalyst for the adoption of digital solutions in rural areas, and is reshaping agriculture and rural development through smart technologies. This paper examines the intersection and reinforcement of rural tourism and smart agriculture, based on a bibliometric analysis of 584 articles published in the Web of Science Core Collection between 2016 and 2025. The analysis was conducted with VOSviewer and covers publication dynamics, funding structure, and thematic organisation of the field. The results show a rapidly expanding research domain, with an average annual growth rate of 26% and almost 79% of the corpus concentrated in the second half of the interval. The share of funded papers reaches 57%, dominated by EU framework programmes and by national agencies in Central, Eastern and Southern Europe. The keyword co-occurrence map identifies five thematic clusters: (1) rural tourism and sustainable development; (2) precision agriculture; (3) smart agriculture and digitalisation; (4) climate-smart agriculture and food security; and (5) the smart village paradigm, which acts as the conceptual hinge that connects the other four. The novelty of the paper lies in bringing these two largely parallel streams of literature together within a single bibliometric framework, in linking the observed publication dynamics to the European policy and funding architecture that supports them, and in consolidating examples of good practice that show how smart agriculture and rural tourism develop one another on the ground.

Key words*: rural tourism, smart agriculture, bibliometric analysis, smart village, sustainable rural development.*

SUBSECTION ENVIRONMENTAL ECONOMICS AND BIOECONOMY

EVALUATING THE PRECIPITATION DEPENDENCE OF CROP FARMS - CASE STUDY IN THE ROMANIAN PLAIN

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Abstract

Cereal crops in the Romanian Plain are increasingly affected by drought, with significant economic consequences for farmers. The study analysed a 10-year period of wheat, corn, and sunflower production in a non-irrigated vegetable farm, where the only source of water was natural precipitation. The aim was to assess the correlation between yield variation and monthly precipitation levels in the critical development phases of each crop. An analysis of the production process capability was applied under current working conditions, but also in two simulated scenarios: partial irrigation and full coverage of water requirements. The results highlight high economic risks associated with rain-fed agriculture, especially in the case of corn. Sunflower presented the greatest productive stability under drought conditions, while corn proved to be the most vulnerable. The study emphasizes the essential role of irrigation in reducing variability and ensuring production security in the Romanian Plain. Targeted investments in irrigation systems, especially for medium-sized farms, are essential for increasing agricultural resilience and aligning with Sustainable Development Goal 2 – Zero Hunger of the 2030 Agenda.

Key words**:** *weather dependence, wheat, corn, sunflower, drought, agriculture.*

PLANT RESEARCH CENTERS OF EXCELLENCE AS DRIVERS OF THE EUROPEAN BIOECONOMY AND SOCIO-ECONOMIC DEVELOPMENT

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Abstract

The bioeconomy is a key driver of sustainable regional development, as it fosters innovation and promotes the efficient resource use. The bioeconomy and Centers of Excellence are closely connected, as Centers of Excellence serve as knowledge hubs that advance the bioeconomy while generating positive socio-economic impact and supporting sustainable development at the regional level. The study aims to present a comparative analysis of four European Centers of Excellence specialising in plant research. The survey applies a comparative case study methodology to examine the Centers of Excellence, selected for their scientific impact and involvement in European research frameworks related to the bioeconomy. The findings show that all four centers are catalysts for the development of the bioeconomy by supporting value chains, fostering start-ups and spin-offs, and transferring results into applied solutions in the agro-food industry. In addition, they have a substantial socio-economic impact, related to job creation, investments and the support of innovation-friendly business ecosystems. By promoting collaboration between academia, industry, and public institutions, they contribute to economies that are more resilient and support Europe's transition towards sustainable models.

Key words**:** *sustainability, knowledge transfer, new business models.*

NAVIGATING THE BIOECONOMY PATH: SURVEY INSIGHTS INTO BUSINESS MOTIVATIONS AND BARRIERS ACROSS BULGARIA AND EUROPE

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Abstract

The bioeconomy is increasingly recognized as a key pathway toward sustainable economic transformation in response to environmental pressures and resource constraints. Despite its growing policy relevance, bio-based businesses continue to face significant challenges, particularly in emerging and less mature bioeconomy ecosystems. This paper examines the key motivations, barriers, and enabling factors shaping the development of bio-based enterprises in Bulgaria and across Europe. The study applies a mixed-methods approach, combining a cross-national survey of bio-based businesses conducted between January 2025 and January 2026 with qualitative insights from selected case studies and semi-structured interviews. The survey captures firm-level perspectives on innovation drivers, regulatory and financial constraints, market access, and sustainability-oriented strategies. The findings indicate that environmental commitment and innovation potential are primary motivations for engagement in bio-based activities, while regulatory complexity, limited access to finance, and market uncertainty remain major barriers. Comparative analysis reveals both common challenges across Europe and context-specific constraints affecting Bulgarian firms. This research contributes empirical evidence to ongoing bioeconomy development debates and is part of HORIZON-CL6-2023-ZEROPOLLUTION-01-4.

Key words**:** *bioeconomy, bio-based businesses, development barriers, sustainability, Bulgaria and Europe.*

VOLUNTARY CARBON MARKETS IN AGRICULTURE: A COMPARATIVE ANALYSIS BETWEEN ROMANIA AND THE EUROPEAN UNION

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Abstract

The transition to climate neutrality has increased the importance of agriculture in reducing greenhouse gas emissions. In this context, voluntary carbon markets are increasingly being used to promote conservation agriculture practices, but the application of carbon certification at the farm level remains limited by technical difficulties and economic uncertainties. The aim of this study is to identify the differences between the voluntary carbon market in Romania and the voluntary carbon market in the European Union. The scientific approach has two objectives: aiming to assess technological gaps by benchmarking three European reference platforms against initiatives in Romania based on four performance indicators - MRV technology, certification standards, access costs, and payment model, as well as identifying operational mechanisms capable of increasing farmers net income. The study tests the hypothesis that remote sensing integration cuts monitoring costs by over 50% compared to physical sampling methods and that compliance with international standards is essential for access to foreign markets. The results confirm that satellite monitoring is a lower-cost solution with better performance than solutions based on physical samples and field visits.

Key words**:** *carbon farming, carbon markets, digital MRV, economic sustainability.*

SUBSECTION
DIGITAL ECONOMY
AND INNOVATION
IN MODERN AGRICULTURE
AND FOOD CHAIN

CRITICAL ANALYSIS OF THE EFFECTIVENESS OF EUROPEAN DIGITAL INNOVATION HUBS (EDIHS) IN THE AGRI-FOOD SECTOR

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Abstract

European Digital Innovation Hubs (EDIHs) are mandated to accelerate digital transformation across sectors, yet their effectiveness within small-scale agribusiness remains insufficiently examined. This study assesses the impact of EDIH services in Bulgaria, Romania, Slovenia, Greece, Spain, and Turkey, focusing on return on investment, operational efficiency, and sustainability, while identifying barriers that limit access for small farms. Methodologically, the research utilizes a comprehensive qualitative framework, synthesizing performance data from EU programs with a review of relevant academic literature. To ground findings in practice, the analysis integrates case studies of agri-focused hubs across the examined regions, revealing a notable dichotomy. Results show that while EDIHs reduce adoption risks and strengthen digital capabilities through training and "test-before-invest" services, agricultural participation remains low due to connectivity gaps, limited digital literacy, and financial constraints. Yet emerging low-cost and open-source tools validated by these hubs offer promise for improved decision-making and reduced production costs. The study concludes that targeted support measures aligned with rural needs are essential to ensure long-term EDIH viability and promote resilient, inclusive agri-food systems.

Key words**:** *agriculture, digitalization, EDIHs, return on investment, sustainability.*

SMART AGRICULTURE AND TECHNOLOGICAL INNOVATION AS FACTORS OF TRADE COMPETITIVENESS IN THE AGRICULTURAL SECTOR OF THE REPUBLIC OF MOLDOVA

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Abstract

The article examines the role of smart agriculture and technological innovation in enhancing the trade competitiveness of the agricultural sector of the Republic of Moldova. The research is based on the analysis of statistical data for period 2015-2024, including agricultural output value, export structure and investment dynamics. According to statistical data for the period 2021–2024, primary agricultural activities accounted for 7-8% of GDP, while the agri-food sector, including food processing, accounted for over 18% of GDP, reflecting its economic significance. Agri-food exports represented 45% of merchandise exports, with a shift toward higher value-added products. Quantitative methods include descriptive statistics, growth rate analysis and comparative indicators, complemented by qualitative document analysis of national and European policy frameworks. Results indicate that technological innovation contributes positively to productivity and export orientation, although impact remains uneven across subsectors due to structural constraints. Smart agriculture emerges as a strategic factor for improving efficiency, resilience and commercial performance.

Key words: *smart agriculture, technological innovation, agricultural competitiveness, trade, Republic of Moldova.*

AN INTEGRATED APPROACH FOR PROMOTING SUSTAINABLE GRAINS: THE ECONOMIC IMPACT OF RAIL FREIGHT TRANSPORT

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Abstract

In the context of the article the grain logistics topic is approached, as cereals movement from production to processing/consumption locations directly influences sustainability, food safety and security. Particularly, research is focused on cereals rail freight mode, as it is a solution with low carbon footprint and for its cost-effective; despite these advantages, rail transport mode remains underutilized, with road transport being preferred, but more polluting and contributing to grain quality degradation, too. Previous studies have explored the sustainability benefits of the rail freight mode, but there is a research gap related to economic aspects of green grain supply chains. The proposed approach addresses this gap by critically assess the economic viability of rail freight transport in grain logistics, adopting an integrated, holistic-multidisciplinary perspective. Thus, the research methodology combines economic analysis, transport process modelling and sustainability indicators. The research results are useful for agricultural policymakers and stakeholders, and for logistics service providers, too. Conclusions of the research support the development of sustainable and more resilient food transport systems.

Key words**:** *Sustainability, grain logistics, supply chain, rail freight transport, risk management, digital technology.*

DESIGNING FUTURE-PROOF DIGITAL DECISION SUPPORT SYSTEMS FOR AGRIBUSINESS THROUGH SCENARIO PLANNING

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Abstract

Within the German research project Digital Agricultural Knowledge and Information System (DAKIS), Fraunhofer ISI applied a scenario-based approach to explore how future developments in agriculture may shape farmers' needs for management support tools. Four contrasting future scenarios for agri-business of the future were developed in collaboration with project partners and core stakeholders. These scenarios provided structured future contexts in which the specification of key digital decision support system's (DSS) functions could be derived from a stakeholder perspective. A joint visioning process complemented the scenarios and enabled the identification of different development pathways, research questions, and concrete requirements for the design of DAKIS®. Overall, this contribution demonstrates how future scenarios can serve as a "future-proofing" instrument to identify both scenario-specific and cross-cutting requirements for digital management tools. The approach highlights how DSS development can be aligned with diverse possible agricultural futures, increasing resilience, flexibility, and relevance for farmers and other stakeholders

Key words**:** *Decision Support System, Scenarios, Foresight, Multi-stakeholder Co-creation, Ecosystem Services.*

APPLICATION OF DIGITAL MARKETING IN BULGARIAN SMALL AND MEDIUM-SIZED WINERIES

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Abstract

The aim of the study was to evaluate the applicability of digital marketing for Bulgarian small and medium-sized wineries, with emphasis on online visibility, competencies, and sustainable growth. In 2024, a survey was conducted among 13 wineries from Northwestern and Central Northern Bulgaria. The results showed that the most frequently used channels were social media platforms Facebook and Instagram, while video marketing was only marginally represented. The data clearly identified a need for training in digital marketing and for regionally targeted strategies for the national market. Accordingly, it was necessary to develop training programs and practically oriented tools for digital channels that could enhance return on investment.

Key words**:** *digital marketing, winemakers, social networks, training, wine tourism.*

FARM MANAGEMENT INFORMATION SYSTEMS IN ROMANIA: A COMPARATIVE ANALYSIS OF MARKET CHARACTERISTICS, CAPACITIES AND GAPS

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Abstract

Farm Management Information Systems have become important tools for the modernization of agriculture, contributing to the optimization of resources, increasing productivity and improving the decision-making process. The study comparatively analyzes the FMIS solutions available on the Romanian market, highlighting the functionalities, technical characteristics and the degree of adaptation to the specifics of Romanian agriculture.
The research was based on the analysis of public documentation related to a number of eleven FMIS solutions. The results show that most applications are oriented towards the planning of agricultural activities, resource management and monitoring of farm operations, while advanced functions, such as IoT integration, satellite monitoring or sustainability indicators, are poorly represented. The study highlights the need to develop more accessible digital solutions better adapted to the needs of Romanian agriculture, especially for small and medium-sized farms.

Key words: *agricultural information systems, farm management, digitalization of agriculture, smart agriculture, agricultural software solutions, precision agriculture.*

THE EVOLUTION OF INTERNET OF THINGS (IoT) TECHNOLOGIES IN PRECISION AGRICULTURE IN THE EU

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Abstract

The rapid evolution of Internet of Things (IoT) technologies has significantly transformed precision agriculture across the European Union (EU). Driven by the need for sustainable food production, efficient resource management, and climate resilience, IoT-based solutions enable real-time monitoring, data-driven decision-making, and automated agricultural processes. This paper examines the development and adoption of IoT technologies in EU precision agriculture, focusing on key applications such as soil and crop monitoring, smart irrigation, livestock management, and farm automation. Furthermore, the study highlights the role of EU digital and agricultural policies in accelerating IoT deployment, as well as the challenges related to interoperability, data security, infrastructure, and investment costs. The findings indicate that IoT technologies contribute to increased productivity, reduced environmental impact, and improved sustainability of agricultural systems in the EU.

Key words*: Internet of Things (IoT), Precision Agriculture, Smart Farming, Digital Agriculture, Sensors, Data-Driven Farming, Sustainability.*

DIGITAL FARM INDEX (DFI): REGIONAL DISPARITIES IN THE DIGITALISATION OF AGRICULTURE IN ROMANIA

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Abstract

The paper analyzes the state of digitalization in Romanian agriculture, aiming to assess regional gaps in farms' digital maturity. The study pursues two objectives: to develop and validate the Digital Farm Index (DFI) based on Eurostat data for 2023, and identify regional profiles of technology adoption in commercial farms (Standard Output > €100,000). The research is guided by two hypotheses: technology distribution is uneven across regions, and agricultural specialization influences the type of digitalization. Calculated using asymmetric weights, the indicator aggregates four dimensions: connectivity (20%), precision agriculture (35%), robotics (25%), and management systems (20%). The results confirm the hypotheses and indicate distinct regional profiles. The North-West region records the highest DFI score (25.50), while the Center region leads in automation (38.04%), mainly due to the livestock sector. The North -East region stands out at the managerial level (9.27%), whereas South-West Oltenia faces severe connectivity gaps (22.54%). Comparatively, the national DFI reaches 20.89 when calculated based on the number of farms and 25.83 when calculated based on hectares, demonstrating the concentration of digital technologies in large-scale holdings. The study concludes that agricultural policies should be tailored to specific regional realities rather than based on uniform approaches.

Key words**:** *Agriculture 4.0, Digital Farm Index (DFI), regional disparities.*

A DATA-DRIVEN AND NETWORK-BASED SYSTEMIC APPROACH TO ASSESSING ANXIETY-RELATED CONSUMER BEHAVIOR AND ASSOCIATED FOOD WASTE, AND THEIR INFLUENCE ON SUSTAINABILITY IN THE AGRI-FOOD CHAIN

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Abstract

Food waste is a critical sustainability challenge in agri-food systems, and anxiety-related consumer behavior may represent an important factor contributing to food waste generation. This study assesses whether, and to what extent, anxiety-related consumer behavior contributes to food waste generation and influences sustainability outcomes at both household and system levels. A data-driven and network-based systemic approach is employed, combining empirical consumer survey data with a system-level representation of the agri-food chain. Data-driven analysis is used to characterize consumer behavior patterns and demand variability, while network-based simulations examine their transmission across supply chain stages. The findings show that anxiety-related consumer behavior can be associated with increased food waste at the household level, whereas its effects at the system level are partially attenuated and depend on operational conditions within the chain. Overall, the results highlight the importance of integrated behavioral and systemic perspectives for understanding food waste and designing effective sustainability-oriented interventions.

***Key words**: anxiety, consumer, food waste, agrifood chain.*

FINANCING DIGITAL INNOVATION IN AGRICULTURE: A STUDY OF BULGARIAN SMES

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Abstract

Digitalization is identified as a key factor for enhancing efficiency and competitiveness in the agricultural sector. The aim of the paper is to analyze and evaluate the financial aspects of digital transformation in the context of financing digital solutions through European/national programmes, and to assess the attitudes of SMEs toward the adoption of Industry 4.0 technologies. A survey was conducted between December 2025 and February 2026 using a structured interview and an online questionnaire. The research focuses on agricultural SMEs in Bulgaria. We evaluated the dependencies among the awareness of available funding opportunities, access to financial resources, the level of digitalization, attitudes toward the adoption of advanced technologies, among others. The direction and strength of the association are evaluated using Somers' d (Y|X), as a complement to Pearson's χ^2 and Spearman's ρ. The findings reveal that policies fostering digitalization should prioritize enterprises with limited capital, while simultaneously addressing the development of their internal capacity, the transfer of knowledge, the sharing of risk associated with slower investment returns, and the creation of targeted incentives.

Key words**:** *Industry 4.0 technologies, financial instruments, digitalization of agriculture, investment behavior.*

SUBSECTION MISCELLANEOUS

COMPARATIVE ECONOMIC ANALYSIS BETWEEN THE NORTH-WEST AND NORTH-EAST REGIONS OF ROMANIA USING GIS TECHNIQUES

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Abstract

In Romania there are four development regions, between these regions over the years a series of economic and social differences have emerged. In order to make the most efficient decisions at the national and territorial level, it is necessary to know where these economic and social differences have arisen. The purpose of this work is to make an socio-economic analysis between the two regions using GIS techniques and spatial modeling. The use of GIS and mapping to compare and visualize the main economic factors and indicators makes it easier to identify in this analysis the factors that influence or do not influence the development of a region.

Key words*: regional development, economic analysis, socio-economic indicators, geospatial representation, spatial visualization, thematic maps, GIS techniques.*

SOIL HEALTH IN RURAL ENVIRONMENTS: DRIVERS OF DEGRADATION AND CONSERVATION STRATEGIES FOR SUSTAINABLE AGRICULTURE

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Abstract

Soil health refers to the capacity of soil to function as a living system, sustaining the organisms and ecosystems that depend on it. This paper synthesizes current scientific literature on the main drivers of soil degradation in rural environments, with a particular focus on Romania and Eastern Europe. Major degradation processes include erosion, compaction, organic matter depletion, salinization, acidification, pollution, and biological degradation resulting from inappropriate agricultural practices. These processes adversely affect soil structure, nutrient cycling, water regulation, and microbial activity. Furthermore, the study highlights conservation strategies aimed at improving soil health and promoting sustainable agroecosystems, such as conservation agriculture, crop rotation, organic amendments, and efficient water use. The reviewed case studies illustrate both soil vulnerability and the beneficial effects of regenerative agricultural practices. Integrated soil management and coordinated actions are essential to ensure long-term agricultural sustainability.

Key words**:** *pesticides, soil quality, soil health, ecosystem services, sustainable agriculture.*

IMPACT OF CLIMATE CHANGE ON THE ECONOMIC EFFICIENCY OF FODDER PRODUCTION FROM GRASS MIXTURES

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Abstract

Based on empirical data regarding yield, temperature, precipitation and economic indicators from a research experiment involving the following mixed grasslands: 1. Bird's-foot trefoil (Lotus corniculatus L.); 2. Red clover (Trifolium pratense L.); 3. Bird's-foot trefoil (Lotus corniculatus L.) + Red fescue (Festuca rubra L.); 4. Bird's-foot trefoil (Lotus corniculatus L.) + Timothy-grass (Phleum pratense L.); 5. Red clover (Trifolium pratense L.) + Red fescue (Festuca rubra L.); and 6. Red clover (Trifolium pratense L.) + Timothy-grass (Phleum pratense L.), the impact of climatic features on productivity and economic efficiency in forage production has been established. During the 2024–2025 period, the research experiment identified a high correlation between temperature and both production costs and gross revenue, as well as a strong relationship between precipitation and the gross profit generated from the resulting forage. Based on an analysis of variance (ANOVA), a very significant impact of the year's conditions on yield was proven, presented through the strength of factor influence. Climate changes are presented as decisive factors in determining yield and economic efficiency under different scenarios for cultivating forage grasslands.

Key words**:** *analysis of variance (ANOVA), climatic characteristics, correlations, economic indicators, forage grasslands.*

STATISTICAL ANALYSIS OF ECONOMIC INDICATORS AND THE NUTRITIONAL VALUE OF FORAGE FROM BIRD'S-FOOT TREFOIL FERTILIZED WITH BLAGO 5 AND FERTILEADER AXIS

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Abstract

During the period 2021-2023, a scientific research experiment with bird's-foot trefoil (Lotus corniculatus L.) was conducted at the experimental field of the RIMSA-Troyan with the following fertilization options: Blago 5-300 ml/da; Blago 5-600 ml/da; Fertileader Axis - 500 ml/da and Fertileader Axis - 1000 ml/da. Through statistical analysis of economic indicators and the energy nutritional value of the forage, correlation dependencies were presented and regression equations were derived. The proposed agrotechnical practice of fertilizing with biofertilizers proved a high positive correlation between gross revenue and gross profit (r=0.99743), as well as between feed units for milk and exchangeable energy (r=0.99008); feed units for growth and exchangeable energy (r=0.98580); feed units for growth and feed units for milk (r=0.99366). In this context, graphical regression models between indicators with the highest coefficient of determination, expressed through regression equations, were presented and analyzed. The established positive correlation between gross energy and production costs and cost price proves the practical importance of organic fertilization and emphasizes the role of these indicators in determining productivity, quality and economic efficiency in the production of legume fodder.

Key words: *Lotus corniculatus L., correlation and regression relationships, economic indicators, nutritional value.*

WINE TOURISM DEVELOPMENT MODELS: BEST PRACTICES FROM LEADING INTERNATIONAL DESTINATIONS

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Abstract

Wine tourism has become an important component of regional development strategies in wine-producing areas worldwide. This paper consists in a comparative examination of wine tourism development models by analyzing best practices from leading international destinations: Napa Valley (USA), Bordeaux (France), and Tuscany (Italy), while assessing their structural relevance for the Romanian wine region of Dealu Mare. A qualitative comparative approach is applied, structured around four key dimensions: governance, regional branding, tourism infrastructure, and visitor experience. The analysis combines secondary data from international case studies and institutional sources with field observation conducted in Dealu Mare. The findings highlight that mature wine tourism destinations operate as integrated territorial ecosystems characterized by coordinated governance, coherent regional branding, and diversified experiential offers. In contrast, Dealu Mare remains in an early development stage marked by fragmented coordination and limited integration. The study identifies strategic directions that may support the development of wine tourism in the near future.

Key words**:** *wine tourism, destination governance, regional branding, tourism infrastructure, visitor experience.*

INTEGRATION OF THE MOLDOVAN AGRI-FOOD SECTOR INTO THE EU MARKET IN THE CONTEXT OF THE DCFTA AGREEMENT: FROM NATURAL ADVANTAGES TO COMPETITIVENESS

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Abstract

Together with the DCFTA agreement in 2014, the Moldovan foreign trade pattern with agri-food products has shifted its directions from CIS market to the EU. Thus, the paper aims to analyse how the Moldovan agri-food trade has integrated into the EU market since 2015 and how its competitiveness has enhanced over the analysed years. The paper is based on the analysis of secondary data on foreign trade and calculation of the Revealed Comparative Advantage indicator for competitiveness with respect to EU countries, Revealed Comparative Advantage indicator for specialization, Agri-food trade intensity index, and the Grubel–Lloyd Index. The empirical analysis reflected a consolidation of the Moldova's position on the EU market, observed through the increase of trade intensity with EU. The RCA presents highly competitive advantages for raw agri-food products, while for processed ones it still remains limited. The findings point on the need of diversification of the range of products exported to EU, continuous modernization of the value chains, and increase in processing. Thus, natural advantages will be transformed into sustainable competitive advantages on the EU market.

Key words**:** *foreign trade, RCA, agri-food trade intensity, Grubel-Lloyd index, Republic of Moldova, EU, DCFTA.*

DOES FINANCIAL CRIME UNDERMINE ECONOMIC FREEDOM? GLOBAL EVIDENCE ACROSS AGRICULTURE AND INDUSTRIAL ECONOMIES

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Abstract

This study examines the impact of financial crime on economic freedom using panel data for 46 countries over the period 2015-2024, focusing on key dimensions of financial crime: corruption, money laundering, shadow economy activity, and cybersecurity governance. The empirical results confirm a statistically significant negative effect of corruption, money laundering risk, and shadow economy size on economic freedom, while stronger cybersecurity governance is positively associated with economic freedom. The adverse association is more visible in countries where agriculture plays a larger role in the economic structure. These findings suggest that structural characteristics condition the transmission of institutional weaknesses into broader economic outcomes. This study contributes to the comparative institutional economics literature by providing large-scale cross-country evidence on the systemic channels through which financial crime constrains economic freedom, and by demonstrating that sectoral structure conditions the transmission of institutional weaknesses into market outcomes.

Key words**:** *corruption, cybersecurity, economic freedom, financial crime, shadow economy.*

ORGANIC WINE PRODUCERS BETWEEN PERCEPTIONS, MOTIVATIONS AND CHALLENGES: AN EXPLORATORY ANALYSIS

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Abstract

The aim of this study is to explore the perceptions, motivations and obstacles of these producers, providing an updated perspective on the transition process towards sustainable viticulture. The research is exploratory in nature and is based on an online questionnaire applied to a sample of 51 producers from the main wine-growing regions of Romania. Descriptive analysis of the responses highlights that the main motivation for adopting organic practices is environmental protection (82.4%), followed by access to funds and increased demand for sustainable products. The major barriers identified are the poorly structured internal market (60.8%), bureaucracy (33.3%) and certification costs (29.4%). The results show a sector in a process of consolidation, dominated by small farms and ethically motivated producers, but limited by economic constraints.

Key words**:** *organic viticulture, sustainability, producers' perception, certification, institutional barriers.*

TRENDS IN RISK MANAGEMENT IN THE AGRICULTURAL SECTOR IN BULGARIA

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Abstract

The present study aims to analyze trends in risk management in the agricultural sector in the Republic of Bulgaria, to identify the main prevention factors and challenges and to formulate conclusions for increasing the sustainability of the sector. The relevance of the topic is determined by the need for a changed awareness and attitude towards the problems of risk management related to environmental protection, which are capable of guaranteeing stability and competitiveness of Bulgarian agriculture in conditions of high uncertainty. We make the clarification that we consider only certain types of risk from the point of view of the human factor and conscious behavior and responsibility related to the management of agricultural holdings in terms of biodiversity protection. The aim of the study is to present the main trends in risk management, specifically external environmental risks, in the agricultural sector of the Republic of Bulgaria, focusing on prevention measures through eco-effective strategies and the change in the behavioral approaches of entrepreneurs based on environmental ethics. In the study, we draw attention to the factors necessary for successful prevention, assessment and adequate solutions in risk management in the agricultural sector, namely - the implementation of eco-effective strategies and the priority of environmental ethics. The trend related to the need for ecological-ethical thinking and care on the part of agricultural entrepreneurs to deal with the unpredictability and consequences of external risks in the agricultural sector in the Republic of Bulgaria stands out as a problem. The research methods used in the study include: general scientific research methods, summary and synthesis, logical method, questionnaire survey, tabular and graphical presentation of characteristics and trends. The results of the study formulate guidelines and conclusions related to the awareness of the need for change in the direction of environmentally friendly thinking and behavior of the human factor in the agricultural sector and can be systematized in the following areas: assessment of the impact of using eco-efficient strategies in agricultural activities and the influence of environmental ethics on the managerial approach of agricultural producers. In conclusion, the summarized studies create an idea of the trends in the changed consciousness and attitude of the human factor towards the environment and outline future directions for research in the field of human resources in modern agriculture, related to the prevention of environmental risks.

Key words**:** *agricultural sector, environmental risk, eco-effective strategies, environmental ethics*

AN ANALYSIS OF CONSUMER PREFERENCES AND PERCEPTIONS OF BARREL-AGED WINES

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Abstract

This study investigates consumer preferences and perceptions of wine, with a focus on barrel-aged wine, based on a questionnaire that identifies the main factors influencing purchasing decisions. It considers several aspects such as taste, aroma profile, appearance, label, type of oak, and aging duration. Responses were collected from a diverse group of consumers, and demographic factors were also take into account when analysing preferences. Most respondents were familiar with barrel-aged wine, even if they were not aware of the specific term, and they usually consume it occasionally at home. The most important factors for them were taste complexity and aroma profile. Preferred wines were mainly fruity, made from a single grape variety without blending, with an emphasis on clarity and aroma purity.

Key words**:** *barrel-aged wine, consumers, preferences, aroma, taste complexity.*

ENERGY CONSUMPTION OF A SOLAR GREENHOUSE WITH NOCTURNAL THERMAL PROTECTION USING DOUBLE LAYERS COMPARED TO A CONVENTIONAL POLYCARBONATE SOLAR - CASE STUDY: FEBRUARY 2025

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Abstract

This study investigates and compares the thermal performance and net energy efficiency of two types of greenhouse structures during winter conditions: a double-layer greenhouse with nocturnal insulation and active heating, and a conventional polycarbonate greenhouse. Based on hourly measurements collected in February 2025, net energy balance was calculated daily using both internal-external temperature gradients and solar radiation input. Results show that although the double-layer system requires higher energy input, it maintains a more stable interior climate and demonstrates superior energy retention. Correlation analysis highlights the impact of wind and humidity on thermal losses. The study proposes a practical efficiency indicator, expressed in MJ/day, to support future design and optimization decisions for protected cultivation systems.

Key words**:** *consumption, organic products, Romania.*

CIRCULAR ECONOMY MODELS IMPLEMENTABLE ON THE FOOD COMMERCE CHAINS: A MULTIPLIER EFFECTS PERSPECTIVE

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Abstract

The expansion of food commerce is a reality of the socio-economic space, and food consumption is growing at the same pace, becoming a main generator of waste. This expansive dynamic was also facilitated by the huge involvement of commercial strategies. Given the growing concerns about widespread pollution, this expansion occurred in parallel with initiatives to launch green policies. And those aimed at the transition from the linear economy to the circular one have become a priority, so food commerce chains are forced to adapt to these requirements. This paper is focused on the usefulness of circular economic models appropriate to the functioning of food commerce. A new value model of the circular economy is proposed, and the indicators for quantifying the multiplier effects of food commerce are highlighted. The research started from the two models of the circular economy: Pearce & Turner Model (1990) and MacArthur Model (2013). These laid the foundations of the circular economy, considering the already controversial connection between economies focused on consumption and requests to protect the environment. The value concept, complex and multidimensional, in this model is approached for the three categories of values: planned, created and obtained. This paper presents the value model for the food commerce, taking into account its multiple effects, not just to sell food. Methodologically, the analysis is empirical and qualitative with focus on highlighting the need to move from the linear economy to a circular one. The results indicate that the circular economy strengthens commercial chains, along the entire producer-consumer path, and produces beneficial and sustainable multiplier effects.

Key words**:** *circular economy, equilibrium, consumption, food, commerce.*

ISSN 2457-3256
ISSN-L 2457-3256