

"Dunărea de Jos" University of Galați

# Scientific Conference of Doctoral Schools

Perspectives and challenges in doctoral Research  
14<sup>th</sup> Edition of SCDS-UDJG  
11<sup>th</sup> and 12<sup>th</sup> of June 2026

**BOOK OF ABSTRACTS**



**Dunărea de Jos” University of Galați**  
**DOCTORAL SCHOOL OF MECHANICAL AND INDUSTRIAL ENGINEERING**  
**DOCTORAL SCHOOL OF FUNDAMENTAL SCIENCES AND ENGINEERING**  
**DOCTORAL SCHOOL OF HUMANITIES AND SOCIAL SCIENCES**  
**DOCTORAL SCHOOL OF BIOMEDICAL SCIENCES**

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EDITED BY  
Prof. dr. Silviu Stanciu

# CONFERENCE PROGRAMME

## THURSDAY – June 11, 2026

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08:00-10:00	Invited plenary lectures
09:00-11:00	Participants registration
10:00-13:00	Invited lectures Oral presentations in concurrent sections
13:00-14:00	Lunch (building D - 1 <sup>st</sup> floor)
14:00-16:00	Oral presentations in concurrent sections
16:00-16:30	Coffee break (building D - 1 <sup>st</sup> floor)
16:00-19:30	Oral presentations in concurrent sections

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## FRIDAY – June 12, 2026

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09:00-10:30	Oral presentations in concurrent sections
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# 1. INVITED LECTURES

## SECTION IV: ADVANCES IN ENGINEERING AND MANAGEMENT IN AGRICULTURE AND RURAL DEVELOPMENT

### IL4.1

#### The Role of Emerging Academic Journals in Supporting Rural Development Research: The Case of the Journal of Agriculture and Rural Development Studies (JARDS)

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#### ABSTRACT

The Journal of Agriculture and Rural Development Studies (JARDS) is an open-access scientific journal dedicated to the dissemination of research in agriculture, rural development, food systems, sustainability, and related fields. This paper presents the journal's mission, editorial framework, and efforts to increase the visibility of scientific results through digital publishing, DOI assignment, and compliance with international publishing standards. As a newly established journal, JARDS aims to support knowledge transfer between researchers, practitioners, and policymakers while providing a platform for interdisciplinary dialogue. The paper discusses the opportunities and challenges associated with developing a new scientific journal and highlights its contribution to strengthening regional and international research networks.

**Keywords:** agriculture, rural development, scientific publishing, open access, knowledge transfer, JARDS

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## IL4.2

# Developing Rural Areas in Romania's South-East Region Through Workforce Qualification Measures

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### ABSTRACT

The rural area of Reg. 2 South East is characterized by a high agricultural potential but also a significant tourist one. But there are also significant disparities between it and the urban environment, especially in terms of education, infrastructure and employment. The labor force can be characterized by continuous migration and stagnation of the professional level. For the sustainable development of the rural area in this 2SE Region, from the point of view of the workforce, the following must be ensured: identifying its occupancy trends, estimating future occupations requested by employers and evaluating the level of training of the rural population and the local vocational training system. The professions that will be in demand in the future will be identified, as well as the priority areas for professional training in rural communes.

Directions to follow for diagnosing labor supply and demand:

- Understanding the gap between the skills of the local workforce and the needs of employers
- Analysis of systemic obstacles in vocational training activity
- Formulating recommendations on public policies and sustainable financing mechanisms.

**Keywords:** development of rural zones, local workforce, occupancy trends, education and training

## IL4.3

# Developing Circularity in Projects Financed through the National Recovery and Resilience Plan (NRRP) in Romania

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## ABSTRACT

The National Recovery and Resilience Plan (NRRP) represents one of the most important financial and strategic instruments supporting Romania's development in the context of the European Union's Recovery and Resilience Mechanism. Its general objective is to increase national resilience, improve preparedness for crisis situations, strengthen adaptation capacity and support sustainable growth through major reforms and key investments.

The specific objective of the NRRP is to attract and effectively use the funds made available by the European Union through NextGenerationEU to achieve the milestones and targets established in relation to reforms and investments. Romania's development priorities are structured around six main pillars: green transition, digital transformation, smart, sustainable and inclusive growth, social and territorial cohesion, health and economic, social and institutional resilience, and policies for the next generation.

This paper focuses on the relevance of circularity principles in projects financed through the NRRP, particularly in relation to rural development and local communities.

In rural areas, two components should be highlighted for their important achievements: Component C10 – Local Fund, through which 3,678 financing contracts were signed at commune level, and Component C15 – Education, which provided funding for 110 nurseries and kindergartens.

These investments contribute to improving local infrastructure, increasing access to essential public services and supporting the sustainable development of rural communities.

The analysis suggests that circularity should be integrated more explicitly into NRRP-financed projects, not only as an environmental objective, but also as a framework for improving resource efficiency, reducing waste and increasing the long-term value of public investments.

Overall, the NRRP has provided funding of over 1.5 billion lei for rural communes, supporting their transition towards more resilient, inclusive and sustainable development models.

**Keywords: National Recovery and Resilience Plan; rural development; specific objectives; NRRP structure; circularity; sustainable communities.**

## IL4.4

# Agriculture in the Republic of Moldova: Challenges and Opportunities in the European Integration Process

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## ABSTRACT

Agriculture is one of the most important sectors of the Republic of Moldova's economy, contributing significantly to employment, exports, and rural development.

The country benefits from fertile soils and favourable climatic conditions that support horticulture, field crops, and livestock production. Despite challenges such as farm fragmentation, labor shortages, and climate risks, the sector is undergoing modernization through the adoption of new technologies, investments in agricultural infrastructure, and the expansion of organic farming.

The European integration process offers additional opportunities for improving competitiveness, sustainability, and access to international markets.

**Keywords:** Republic of Moldova, agriculture, rural development, modernization, organic farming, European integration.

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## IL4.5

# Public Procurement of Agricultural Products: Challenges and Opportunities for Sustainable Development

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## ABSTRACT

Public procurement represents an important policy instrument for supporting agricultural producers, ensuring food security, and promoting sustainable development. In the agricultural sector, procurement procedures are increasingly used to encourage the acquisition of quality food products, support local supply chains, and integrate environmental and social criteria into purchasing decisions. This paper examines the role of public procurement in the agricultural sector, highlighting the opportunities created for local producers, rural communities, and public institutions. Attention is given to the challenges associated with procurement procedures, including administrative complexity, market access barriers for small-scale producers, and compliance with quality and food safety requirements. The analysis emphasizes the importance of transparent and sustainable procurement practices in strengthening the resilience and competitiveness of the agri-food sector. The findings suggest that the effective use of public procurement policies can contribute significantly to rural development, local economic growth, and the achievement of sustainability objectives.

**Keywords:** public procurement, agriculture, sustainable development, food security, local producers, rural development.

## IL4.6

# Optimization of Technological Flows and Food Safety Systems in HoReCa: A Management and Engineering Perspective for Sustainable Rural Food Chains

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## ABSTRACT

This paper examines how optimizing technological flows and food safety systems in HoReCa units can contribute to more efficient and sustainable rural food chains. It focuses on organizing key processes—such as reception, storage, preparation, and serving—using clear procedures that ensure food safety, consistency, and operational efficiency.

The implementation of HACCP principles is highlighted as essential for preventing risks and maintaining product quality. By linking food service activities with local agricultural producers, the paper shows that HoReCa can support rural development by using local ingredients responsibly and reducing waste.

Overall, the approach combines engineering solutions with management strategies to create safer, more sustainable, and competitive food service systems.

**Keywords:** HACCP, HORECA, Food safety, Romania

## IL4.7

# The Impact of Economic Changes on Livestock Production

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### ABSTRACT

The paper examines the evolution and restructuring of Romania's livestock sector over the period 2014–2024, in the context of recent economic transformations and global disruptive factors. The analysis is based on official statistical data extracted and processed from the database of the National Institute of Statistics (INS), covering animal production expressed in live weight, milk production, and secondary products (eggs, wool, honey), by forms of ownership and farm categories. The research adopts a quantitative approach, using statistical analyses performed in SPSS, including descriptive indicators (means, variations, growth rates), comparative analyses across sub-periods (2014–2019 vs. 2020–2024), and structural assessments of species distribution and ownership forms. The dynamics and variability of the data series were also examined to identify trends and structural changes. The results highlight significant structural changes in the livestock sector, reflected in divergent trends across major species. Cattle production declined from approximately 183,562 tons in 2014 to 162,268 tons in 2024, while pig production decreased from 534,724 tons to 419,655 tons. In contrast, poultry production recorded sustained growth, rising from 488,361 tons to 785,184 tons, indicating a shift toward more intensive and economically efficient production systems. The analysis by forms of ownership points to a decline in traditional agriculture, reflected in the reduced contribution of individual agricultural holdings. Pig production in individual farms fell from 268,990 tons to 180,534 tons, and cattle from 161,566 tons to 123,273 tons, highlighting a transition toward more organized and commercial farming structures. At the same time, the results confirm the ongoing industrialization of the sector, particularly in poultry, where growth is primarily driven by the organized private sector. The analysis of secondary products reveals vulnerability to external factors, as illustrated by fluctuations in honey production (from 18,040 tons in 2014 to over 31,000 tons in 2023–2024) and instability in the pig sector. The comparison of sub-periods emphasizes post-2020 trends characterized by instability and structural reconfiguration, with declines or stagnation in some segments (milk, pigs) and growth in others (poultry). For example, total milk production decreased from 50,535 thousand hL in 2014 to 46,305 thousand hL in 2024, with a more pronounced decline in individual farms.

In conclusion, the research demonstrates that the economic changes of the last decade have led to a profound restructuring of livestock production in Romania, characterized by the decline of traditional species, the consolidation of intensive production systems, and the reduced role of individual farms. These transformations highlight the need to adapt agricultural policies to support sustainability, balance different production types, and increase the resilience of the livestock sector to external shocks.

**Keywords:** livestock production, economic changes, agricultural restructuring.

## IL4.8

# Analysis of the Efficiency of Agricultural Land Use through Amelioration and Drainage Works

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### ABSTRACT

The paper entitled "Analysis of the Efficiency of Agricultural Land Use through Amelioration and Drainage Works" investigates the dynamics and efficiency of land improvement interventions in Romania over the period 2014–2024, in the context of the need to adapt agriculture to the requirements of sustainable development and climate change. The analysis is based on official statistical data extracted and processed from the database of the National Institute of Statistics (INS), covering land areas treated through erosion control, amelioration, drainage, and land reclamation works, by land-use category. The research methodology is quantitative, based on statistical analyses using data modelling, including descriptive indicators (means, relative variations, growth rates), comparative analyses across sub-periods (2014–2019 vs. 2020–2024), and structural evaluations of the distribution of areas by agricultural land-use type. The results highlight structural stagnation in land improvement works, with the variation in the total area arranged for erosion control and amelioration at approximately -0.36% over the period 2014–2024, indicating no significant expansion. Similarly, the total area associated with drainage works shows an insignificant variation of approximately +0.05%, confirming the almost rigid stability of these interventions. The structural analysis reveals the dominance of arable land, which accounts for over 53% of the total areas arranged for erosion control, remaining relatively constant throughout the analysed period. In contrast, natural pastures and hayfields register lower shares (below 25%), while vineyards and orchards remain marginal (below 5%), highlighting significant imbalances in investment allocation across land-use categories. At the same time, the results indicate limited efficiency of land improvement policies, reflected in the absence of significant percentage increases in the arranged areas. The sub-period analysis shows that variations were nearly negligible during 2014–2019, while in 2020–2024, only minor changes were recorded, without a clear upward trend, suggesting a lack of investment dynamics. In the context of climate change, the data indicate a reduced capacity for adaptation, as amelioration and drainage works do not exhibit significant increases that would reflect intensified efforts to prevent soil degradation. The percentage stability of the indicators suggests an inert intervention pattern rather than a proactive development strategy.

In conclusion, the research highlights structural stagnation in land improvement works in Romania, characterized by small percentage variations, a concentration of interventions on arable land, imbalances in land use, and limited policy efficiency. These findings emphasize the need to reconfigure agricultural land management strategies to increase coverage and enhance adaptation to climate-related challenges.

**Keywords:** land improvement works, drainage, agricultural land use, statistical analysis, sustainability

## IL4.9

# Analysis of Forest Regeneration Dynamics and Logging Activities in Romania (2014–2024)

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## ABSTRACT

The paper "Analysis of Forest Regeneration Dynamics and Logging Activities in Romania (2014–2024)" examines the relationship between the intensity of forestry interventions and the regenerative capacity of forest resources using a quantitative approach based on official statistical data.

The datasets, sourced from the National Institute of Statistics, include artificially regenerated areas (by species and regions) and forest areas subjected to logging (by silvicultural intervention type) for the period 2014–2024. The methodology involves SPSS-based descriptive statistics, Pearson correlation analysis, and comparative assessment of two sub-periods (2014–2019 vs. 2020–2024). Derived indicators, such as the regeneration-to-exploitation ratio and the distribution of logging types, were used to evaluate forest management sustainability.

The results indicate a decline in artificial regeneration in the early years, followed by partial stabilization after 2020, but not to initial levels. In contrast, logging activities remained relatively high and stable, generating a persistent imbalance between exploitation and regeneration, reflected in predominantly sub unitary ratios. Correlation analysis reveals a weak-to-moderate relationship, suggesting limited responsiveness of regeneration to logging intensity. Significant regional disparities are observed, with higher regeneration levels in the North-East, Center, and North-West regions, and lower levels in the South-East and West. Structural changes in species composition and the continued presence of clear-cutting and incidental logging point to ongoing pressures on forest ecosystems. Post-2020 trends indicate increased volatility and shifts in forestry practices.

In conclusion, the study highlights structural imbalances between forest exploitation and regeneration in Romania, as well as regional inequalities and changes in forest composition, emphasizing the need for improved, better-coordinated forest management policies.

**Keywords:** forest regeneration, forest exploitation, statistical analysis, sustainability, Romania

## OP4.1

# Harmonization of the Food Security and Food Safety System of the Republic of Moldova with European Union Standards

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## ABSTRACT

The process of harmonizing the food security and food safety system of the Republic of Moldova with the requirements of the European Union represents a strategic priority in the context of European integration. This process involves aligning the national legislative framework with the EU acquis, strengthening the institutions responsible for food control, and implementing modern food safety standards, such as the HACCP system.

In recent years, significant progress has been achieved in the areas of food traceability, sanitary-veterinary control, and consumer protection. However, certain challenges persist, including limited institutional capacity, the need for continuous training of economic operators, and financial constraints. Full harmonization requires sustained efforts, international cooperation, and investments in control infrastructure to ensure a high level of food safety and to facilitate the access of Moldovan products to the European market.

**Keywords:** food safety, food security, harmonization, European integration

## OP4.2

# Challenges and Perspectives in Ensuring Food Security and Food Safety in the Republic of Moldova in the Context of European Integration

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## ABSTRACT

Ensuring food security and food safety in the Republic of Moldova is a key element in protecting public health and supporting the sustainable development of the agri-food sector. In the context of closer integration with the European Union, this field faces both significant challenges and important opportunities.

Among the main challenges are underdeveloped infrastructure, fragmentation of the agricultural sector, a low level of compliance with international standards, and the need for continuous training of producers. At the same time, European integration offers important prospects, such as access to external markets, technological modernization, and the implementation of effective food quality control policies.

Strengthening the food safety system requires an integrated approach based on cooperation between authorities, producers, and consumers, to ensure safe and competitive products on the European market.

**Keywords:** food safety, food security, challenges, agri-food sector, market access

## OP4.3

# European Union-Funded Projects in Rural Communities of Galați County During the 2014–2020 Programming Period: Implementation Risks and Success Rates

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## ABSTRACT

The paper presents an analysis of projects financed by the European Union that targeted rural communities in Galați County. Emphasis is placed on projects aimed at developing infrastructure dedicated to essential public services for the rural population.

The analysis was conducted using data collected for the 2014–2020 programming period, which represents the most recently completed financial cycle. This period provides a comprehensive overview of the financial resources attracted for the development of public services in rural communities, classified by funding sources and project categories.

The results highlight two key findings. First, projects with a regional impact that benefited multiple rural communities and were implemented by county-level public authorities exhibited a lower implementation risk and a higher success rate. Second, projects financed through the 2014–2020 programming period whose preparation and implementation were the responsibility of rural municipalities in Galați County faced significant implementation risks and encountered considerable difficulties during execution.

The study also identifies the main endogenous and exogenous factors contributing to these outcomes. However, it does not provide a detailed examination of the specific mechanisms through which each factor influenced the manifestation of implementation risks.

**Keywords:** European Union funds, programming period, implementation risks, rural communities, essential public services

## OP4.4

# The Role of European Union Funding Programs in Supporting Rural Communities' Compliance with Waste Management Legislation: A Case Study of Galați County

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## ABSTRACT

The research will present an analysis of legislative changes in the field of waste management, at European and national level, as well as the impact of these changes on the obligations of administrative-territorial units in this field.

Also, the data collected and centralized information formed the basis of an analysis that shows a direct causal relationship between these developments and changes in the legislative framework and the number/scope of projects funded by the European Union, from 2018 to 2025.

The case study for Galați County will highlight the mechanisms that underpinned the preparation, coordination and implementation of projects with European funding and the way to integrate environmental legislative obligations as project indicators.

The research leads to the conclusion that for this specific field of activity, projects with European funding require a level of advanced and integrative inter-institutional collaboration, a capacity for continuous and real-time adaptation of the project to the legislative status quo. At the same time, the causes that led to the small number of projects contracted during the analysed period, at national level, were identified.

**Keywords:** European Union funds, waste management, legislative framework, rural communities

## OP4.5

# Influence of Irrigation Method on Autumn White Cabbage Yield and Profitability

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### ABSTRACT

In the current context of population growth, the need for food has increased; therefore, among other important foods, cabbage is also found, being a nutritious vegetable that can be consumed in different forms.

The study carried out on the autumn white cabbage crop was conducted in the Însurăței area, Brăila County, in 2024, on an area of 0.5 ha. This was divided into two equal plots of 0.25 ha and 0.25 ha, where two irrigation methods were compared: sprinkler irrigation and drip irrigation. The biological material was the autumn white cabbage variety "De Buzău", and the crop was monitored under similar conditions of soil, climate, water regime, as well as applied technology.

The analysed parameters were the average weight of the cabbage head, its diameter and circumference, the number of viable plants at harvest, the obtained production and the main economic indicators. The results showed that drip irrigation had the highest efficiency compared to sprinkler irrigation, both from an economic and productive point of view. In drip irrigation, an estimated production of 138.16 t/ha without losses and 124.34 t/ha in the case of 10% technological losses was obtained, while in sprinkler irrigation the production was 113.07 t/ha without losses and 101.76 t/ha at 10% losses.

From an economic point of view, drip irrigation recorded a higher gross profit and a superior benefit-cost ratio compared to sprinkler irrigation. Also, this system used a smaller amount of water, thus preventing the waste of water and fuel.

In conclusion, in the Însurăței Area, Brăila County, from an economic and production point of view, the drip irrigation system in cabbage cultivation brought an increase in crop profitability.

**Keywords:** autumn white cabbage; drip irrigation; sprinkler irrigation; yield; economic efficiency

## OP4.6

# Evaluation of White Cabbage Crop Performance Under the Pedoclimatic Conditions of Însurăței, Brăila County

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### ABSTRACT

The vegetable crop of white cabbage is important both economically and nutritionally, because it offers diversity in the forms in which it can be consumed, such as fresh, preserved, or even in specific dishes.

The study was carried out around the pedoclimatic conditions of Însurăței, Brăila County, in 2022, on an experimental surface of 1000 sqm, where two hybrids, Gloria F1 and Victoria F1, and one variety "De Buzău" were cultivated.

The crop was monitored in several stages of growth and development, such as the seedling stage, as well as leaf maturity and head formation. The main parameters were the height of the seedlings, stem diameter, number of leaves, head circumference and their diameter, as well as the most important one, the weight of the cabbage heads.

The results showed that the fastest development in the first stages of vegetation was recorded by the Victoria F1 hybrid, which had the greatest seedling height and the highest number of leaves at transplanting. This advantage was not maintained compared to the other two variants, because at maturity Gloria F1 presented larger heads and superior weight, estimating a production of 33.9 t/ha.

"De Buzău" white cabbage had intermediate results, because it had a good adaptation capacity to the local conditions, while Victoria F1 formed lighter and smaller heads.

In conclusion, Gloria F1 had the best results and the best adaptation to the pedoclimatic conditions of this area. Also, the study highlights the importance of irrigation, fertilization, maintenance works, as well as resistance to high summer temperatures and the water deficit produced by them.

**Keywords:** white cabbage; cabbage hybrids; yield, Brăila County

## OP4.7

# Contribution of Agri-Environmental Measures to Rural Development in Brăila County

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## ABSTRACT

This study analyzes the impact of agri-environmental measures implemented under the Common Agricultural Policy on the development of rural areas in Brăila County. The research employs both quantitative and qualitative approaches, based on official statistical data (APIA, INS, MADR) and the analysis of socio-economic and environmental indicators.

The results highlight the positive contribution of these measures to biodiversity conservation, sustainable land use, and the increase in farmers' incomes, while also identifying limitations related to accessibility and the level of beneficiaries' awareness.

The study provides recommendations for optimizing the implementation of agri-environmental policies in the context of sustainable rural development.

**Keywords:** Agri-environment; Rural development; CAP; Sustainability; Biodiversity; Brăila

## OP4.8

# Digitalization in Agriculture: Perspectives, Challenges, and Practical Applications for Sustainable Rural Development – A Case Study of the Agrodata Project

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### ABSTRACT

The digitalization of agriculture represents a key factor in improving the efficiency and sustainability of the agricultural sector.

This paper analyzes the impact of digital technologies on agricultural performance, with a focus on the use of drones, satellite imagery, and data analysis systems.

The research methodology is based on a review of the scientific literature and a case study of the Agrodata project, implemented in collaboration with the Agricultural Research and Development Station Brăila.

**Keywords:** Digital agriculture; smart farming; precision agriculture; rural development; digitalization; Agrodata

## OP4.9

# Sustainability and Safety in Rural Areas: An Analysis of Crime Dynamics and Socio-Economic Development

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## ABSTRACT

We are currently witnessing a period in which the issues of crime and safety in rural areas are gaining increasing relevance in the context of socio-economic transformations and pressures on agricultural systems and rural communities. Accordingly, the dynamics of this phenomenon are closely linked to factors such as the structure of the labour market, social capital, public policies, the level of economic development, and access to resources and infrastructure.

At the same time, the interaction between agriculture, sustainability and rural well-being highlights the need for integrated approaches in which community safety and rural development are interdependent. Rural crime has a pronounced socio-economic dimension, and research in this field reflects both geographical and temporal diversity.

The analysis of the literature highlights the predominance of studies from developed countries, especially from Europe (Sweden, Italy, Ireland and the United Kingdom), North America and Australia, but also relevant contributions from emerging economies such as Brazil, Mexico, Nigeria and Tanzania. From a temporal perspective, most research is concentrated in the period 2000-2024, with a visible intensification after 2015, against the background of growing interest in sustainability, food security and rural development.

The keyword analysis reveals a thematic structure around recurrent concepts such as rural crime, agricultural victimization, social capital, routine activities, situational prevention, as well as emerging terms such as social innovation, sustainability, food security and rural entrepreneurship, including illicit entrepreneurship. The analysis highlighted four main clusters: (i) quantitative econometric studies, (ii) qualitative exploratory research, (iii) systematic reviews and bibliometric analyses, and (iv) conceptual and public policy contributions. The results obtained contribute to a better understanding of the structure and evolution of the field and highlight the need to develop integrated approaches and more robust databases.

They also suggest that future research directions should focus on strengthening mixed methods, expanding the geographical scope of studies and increasing the relevance of research for informing public policies in rural areas.

## OP4.10

# Assessment of Land Suitability and Favorability of Agroecosystems in Brăila County in the Context of Sustainable Soil Resource Management

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## ABSTRACT

This paper analyses the dynamics of agroecosystems in Brăila County, evaluating their capacity to sustain high yields under conditions of heightened water stress and the risk of secondary salinization.

Brăila County possesses one of the largest irrigation infrastructures in Romania, a factor that significantly reconfigures the natural land suitability of the region.

By applying the pedological rating methodology across distinct geomorphological units (Brăila Plain, the Great Brăila Island, and the Brăila Terrace), this study highlights the agricultural capability for major crops while identifying severe constraints imposed by soil texture and deficient rainfall regimes.

The findings emphasize the imperative transition from intensive agriculture to precision farming, supported by digital capability mapping, to ensure the long-term sustainability of soil resources in the North-Eastern Romanian Plain.

**Keywords:** land suitability, favorability, pedological rating, agroecosystem, Brăila

# Innovation and Sustainable Entrepreneurship for a Green Future

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## ABSTRACT

In recent decades, concern for environmental protection and sustainability has increased significantly, while the green economy has become a global priority. Therefore, the study and promotion of sustainable businesses are essential for responding to environmental challenges and building a sustainable future. One of the most significant changes worldwide has been the transition towards a green economy, based on the principles of sustainable development, which involve reducing carbon emissions, ensuring the efficient use of natural resources, promoting renewable energy and adopting sustainable practices. Sustainable businesses represent a strategic approach that integrates responsible economic, social and environmental practices. They aim to create long-term value by considering their impact on the environment and on the communities in which they operate. In this context, eco-innovation plays a key role by introducing innovative and sustainable solutions into business processes. In recent years, the Republic of Moldova has taken important steps towards promoting sustainable development and the green economy by implementing policies and programmes aimed at stimulating sustainable growth and reducing environmental impact. By signing the Association Agreement with the European Union, the Republic of Moldova undertook to harmonize its national legislation in accordance with European standards and to integrate provisions related to environmental protection, rational resource use, energy efficiency, eco-labelling and eco-innovation across all sectors of the national economy and society. This transition, although well-founded, has generated certain uncertainties regarding the promotion of sustainable businesses and eco-innovation, as well as the development of the infrastructure needed to support the green economy. The promotion of sustainable businesses not only responds to environmental challenges, but also brings economic and social benefits, making this field highly relevant in the current context. Eco-innovation is becoming an important tool for supporting sustainable development and creating better prospects for future generations. Research and analysis in this field can make valuable contributions and inspire concrete actions aimed at promoting sustainable businesses in the era of the green economy. The aspects mentioned above underline the importance of conducting a detailed analysis of sustainable business development. The limited number of scientific and applied studies in this field suggests that the development of sustainable businesses through eco-innovation, in the context of the green economy, represents an emerging research area with significant potential for further studies, analyses and fundamental research.

**Keywords:** circular economy, economy, green energy, sustainable development, environmental policies, flooding, sustainable business

## OP4.12

### Financial Insurance and the Concentration of Agricultural Producers

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#### ABSTRACT

The autonomy of PO/cooperatives will not become reality unless they have the necessary economic independence and financial independence.

Growing competition put PO/cooperatives in a difficult situation in many a country. Today's economies are global, giving a competitive advantage to those who can easily access capital with which to participate to the production.

But even in less capital-intensive sectors PO/cooperatives find it difficult to constitute the necessary financing of their activities. Their capital varies with the number of members.

As a rule, PO/cooperative members have limited financial or other resources.

Organization	Support Program / Measure
MADRM/AIPA	National Fund for Agriculture and Rural Development   Sub-measure 1.8 – Encouraging the Establishment and Functioning of Agricultural Producer Groups (points 68–75)
World Bank / Government of Sweden (MAC-P)	Moldova Competitive Agriculture Project (MAC-P) – Investment Grant Program: “Facilitating Access to Markets”
European Union	Aids with the establishment of producer groups through the ENPARD Moldova Budget Support Programme (“Support for Agriculture and Rural Development”)
USAID	APM Project (High-Performance Agriculture in Moldova) – Objective: “Strengthening the Capacity of Agricultural Producer Groups and Associations to Provide Qualified Assistance to Their Members”

**Keywords:** economy, production activity, tax and duties, financial independence, tax burden

## OP4.13

# Food Consumption, Media Promotion, and Population Health in the Republic of Moldova

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## ABSTRACT

In recent years, food consumption patterns in the Republic of Moldova have undergone significant changes, largely influenced by media promotion strategies and the increasing penetration of digital platforms into everyday life. In many cases, it is necessary to analyse the relationship between media messages related to food and their direct impact on the dietary habits and overall health of the population, with particular attention to vulnerable groups such as children, adolescents, and rural communities. Although the Republic of Moldova has made notable efforts to align its public health policies with European standards, significant challenges remain regarding the promotion of unhealthy food products through television, social media, and online advertising. The aggressive marketing of ultra-processed foods, sugary beverages, and nutritionally poor products, combined with insufficient regulation of food advertising, contributes to the deterioration of dietary habits and to the rise of diet-related non-communicable diseases. Important progress has been recorded through national and international public health campaigns aimed at encouraging balanced nutrition and physical activity among the Moldovan population. Furthermore, the development of media literacy programs combined with nutritional education initiatives represents a promising direction, enabling citizens to critically evaluate food-related media messages and make informed dietary choices. This paper examines the current state of food consumption in the Republic of Moldova, the role of media in shaping nutritional behaviours, and the strategies needed to promote a healthier and more active lifestyle at the population level.

**Keywords:** food consumption, media promotion, population health, nutrition, Republic of Moldova, public health

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## OP4.14

# The Role of Public Television in Educating the Young Generation for a Healthy and Active Life: A Comparative Perspective – Romania and the Republic of Moldova

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## ABSTRACT

In recent years, public television channels in Romania and the Republic of Moldova have been analysed from the perspective of their role in promoting a healthy and active lifestyle among the younger generation. In many cases, it is necessary to develop programs dedicated to a specific audience, which involves identifying appropriate formats, relevant content, and transmission methods adapted to each age group and socio-cultural context. Although the two countries share a common language and numerous cultural values, there are significant differences regarding the resources allocated to public television, the degree of digitalization, and the level of institutional involvement in promoting health through media. Romania benefits from a more developed media infrastructure and better integration of digital platforms into communication strategies, while the Republic of Moldova faces challenges related to insufficient public funding and the influence of external media sources, which affects the consistency of educational messages conveyed to young people. Important progress has been made in both countries through the integration of new media technologies into educational content production, which enhances the impact of messages due to their interactive and engaging properties. Furthermore, the development of hybrid educational television formats, combining general informative content with specialized segments dedicated to nutrition, physical activity, and mental health, represents a common direction of development. This paper presents the new strategies of public television channels in both countries, with particular emphasis on collaborations with experts in nutrition, psychology, and sports, as well as the combination of traditional content with digital platforms and social media.

**Keywords:** public television, health education, young generation, healthy lifestyle, Romania, Republic of Moldova

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## OP4.15

# Management of Funds for Rural Development and Agriculture in the Republic of Moldova: Between Economic Necessity and Fraud Risks

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## ABSTRACT

The agricultural sector and rural areas in the Republic of Moldova continue to depend significantly on public financing mechanisms, which gives rural development funds a decisive role in supporting economic modernization. At the same time, the expansion of these financial resources generates not only opportunities but also increased risks related to the misuse of funds. This paper examines the relationship between the economic need for financing the agricultural sector and the vulnerabilities that arise in the process of managing these funds. The analysis begins with a conceptual delineation of the types of funds available and their intended purposes, and subsequently focuses on identifying the factors that facilitate the occurrence of fraud. In this regard, it highlights dysfunctions such as the fragmentation of institutional responsibilities, formalism in control mechanisms, and insufficient alignment between regulation and practice. The methodological approach is based on a normative and institutional analysis, supplemented by a critical interpretation of data relevant to the agricultural sector and the fund management system. The results reveal that fraud risks are not merely the consequence of legislative gaps, but also of systemic deficiencies in the application of regulations and in the organizational culture of the institutions involved. In this context, the paper argues for the need for an integrated approach to fraud prevention, focused not only on strengthening controls but also on increasing institutional accountability and the transparency of decision-making processes, as essential prerequisites for the effective use of funds allocated to rural development and agriculture.

**Keywords:** agricultural financing; fund management; fraud risks; institutional vulnerabilities; integrity; transparency.

## OP4.16

# Consumer Trust, Sustainability Labels and Purchase Intention in the Organic Wine Market: A Fuzzy Analysis Based on a Questionnaire Applied to Consumers in Vrancea County

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## ABSTRACT

The growing consumer interest in sustainable and healthy products has increased attention toward organic wines, which are increasingly perceived as environmentally friendly alternatives with higher added value and superior quality attributes. In this context, the present study examines the relationship between consumer trust, sustainability labels, and purchase intention for organic wine in the Romanian market, with a specific focus on consumers from Vrancea County.

The research is based on a structured questionnaire administered to a sample of consumers and designed to assess consumption behaviour, perceptions of organic certification, the importance of label information, willingness to pay, and perceived barriers to purchasing organic wine. The collected data are analysed using descriptive statistical methods and a fuzzy analysis model, considered particularly suitable for interpreting consumer decisions characterized by uncertainty, subjectivity, and imprecise preferences. The expected results indicate that trust in organic certification and the clarity of sustainability - related label information positively influence purchase intention, while higher prices, limited market availability, and scepticism toward ecological claims remain significant barriers.

Furthermore, consumers show growing interest in additional information regarding product origin, traceability, and environmental impact. The main contribution of this study lies in integrating perceptual and behavioural factors into a fuzzy decision-making framework applicable to the wine sector. The proposed approach provides a useful tool for wine producers, marketing specialists, and policymakers seeking to improve communication strategies and strengthen the market positioning of Romanian organic wines.

The findings may support the development of more effective promotional policies and consumer - oriented strategies for increasing the competitiveness of organic wines in both domestic and international markets.

**Keywords:** organic wine, consumer trust, sustainability labels, purchase intention, fuzzy analysis, Romanian wine market

## OP4.17

# Models and Best Practices for Reducing Food Waste in the Republic of Moldova: Sustainable Approaches and Implementation Strategies

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## ABSTRACT

Food waste constitutes one of the most challenging global problems of the 21st century and affects food security, the environment, as well as the economy. In the Republic of Moldova, an agro-based country, tremendous losses occur in the whole food chain. This article analyses the most important causes of food waste in the Republic of Moldova, the international models in decreasing food waste, and it establishes practical recommendations adapted for the country.

By studying the most adequate good practices which are suitable at agricultural, processing, commercialization, HoReCa and household level, this study can assist in creating coherent policies to contribute to the sustainable development of the Republic of Moldova's food chain.

The analysis indicates that an integrated approach including legislation, economy, technology and education can greatly contribute to the reduction of food waste, as well as in significant socio-economic gains.

**Keywords:** food waste, Republic of Moldova, best practices, sustainability, food security, circular economy.

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## OP4.18

### Examples of Good Practices in Institutional Management in Brăila County

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#### ABSTRACT

For community projects to be truly successful, the following are necessary: the development of a clear institutional strategy, effective interinstitutional communication, the involvement of employees in the decision-making process, transparent decision-making management, the professional development of employees, the digitalization of administrative processes, the promotion of a positive organizational culture, cooperation between institutions and the community, and a beneficiary-oriented approach.

The truly important projects within a community are those that involve schools, economic operators, and local authorities.

In Brăila County, there have been, and are still ongoing, several projects based on close cooperation between technological high schools and economic operators, which makes it much easier for future graduates to integrate into the labour market. The STEP project, carried out over a two-year period between 2021 and 2023, and the PROFESIONIST project, launched in 2024 and scheduled to end in November 2026, may be mentioned in this respect.

These two projects, implemented by several high schools, the County School Inspectorate, and economic operators, have involved and continue to involve joint practical activities, both in schools and, especially, within the institutions of the economic operators. Their purpose is to raise awareness among future graduates regarding easier integration into the labour market, while also increasing the visibility of future employers.

**Keywords:** communication, interinstitutional cooperation, school, economic operators, community

## OP4.19

# Digital Ecosystems for Agricultural Workforce Development: A Conceptual Model Based on the ROCEF Platform

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## ABSTRACT

The accelerated digital transformation of the agricultural sector has driven growing demand for innovative solutions to support the development of human resources, particularly in rural and underserved areas. This study aims to address these limitations by proposing a conceptual model for an integrated digital ecosystem dedicated to agricultural workforce development, grounded in the architecture and functionalities of the ROCEF platform. The research adopts a mixed-methods approach, combining a qualitative analysis of existing digital training frameworks with a case study of the ROCEF platform. Additionally, the study incorporates exploratory insights from a structured questionnaire that assesses the needs and challenges faced by training providers, evaluators, and institutional stakeholders in the agricultural sector. The analysis focuses on identifying gaps in current systems, particularly in access to expertise, the traceability of competencies, and the validation of professional qualifications. The findings highlight the potential of integrated digital ecosystems to significantly enhance the efficiency, accessibility, and transparency of professional training processes. The proposed ROCEF-based model introduces two key innovative components: (i) the ExpertLink module, which facilitates dynamic interaction and knowledge exchange between professionals and institutions, and (ii) the digital registry, which ensures traceability and credibility in the certification process. The results suggest that such an integrated approach can reduce informational asymmetries, support evidence-based decision-making, and improve the alignment between labor market needs and training outcomes. The study concludes that the development and implementation of comprehensive digital ecosystems represent a viable and scalable solution for strengthening agricultural human capital.

**Keywords:** digital ecosystems; agricultural workforce development; e-learning; human resource development

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## OP4.20

# Structural Transformations of the Agricultural Labor Market in Romania

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## ABSTRACT

This study investigates the structural transformations of the agricultural labour market in Romania over the period 2015–2025, with a particular focus on the interdependencies among labour force dynamics, the extent of salaried employment, and wage evolution. The analysis is grounded in official statistical data from the National Institute of Statistics (INS), including key indicators such as the labour force volume expressed in Annual Work Units (AWU), the average number of employees, and the average net monthly earnings in the agricultural sector. The primary objective of the research is to examine the relationship between the contraction of the agricultural labour force and the dynamics of wage growth, and to assess the ongoing transition from non-salaried to salaried forms of employment. To this end, several research hypotheses were formulated: (H1) the decline in the agricultural labour force is positively associated with wage increases; (H2) the reduction in non-salaried labour reflects underlying structural adjustments; (H3) a persistent wage disparity exists between agriculture and the overall economy; and (H4) an increase in the share of salaried labour is correlated with higher wage levels. The findings indicate a substantial reduction in the total agricultural labour force and a pronounced increase in net wages. The Pearson correlation coefficient reveals a strong inverse relationship between labour force volume and wage levels ( $r = -0.804$ ), suggesting that labor force contraction is a significant determinant of wage growth. Furthermore, a strong positive correlation ( $r = 0.863$ ) between the number of employees and wage levels provides empirical evidence of an ongoing process of labour formalization within the sector. The results support the validation of the proposed hypotheses and point to a gradual but consistent structural transformation of the Romanian agricultural labour market, characterized by a decline in non-salaried labour, increasing wage pressures, and partial sectoral modernization. In conclusion, the study contributes to the existing body of knowledge on agricultural labour market dynamics by offering an integrated, empirically grounded analysis of labour, employment, and income relationships, with implications for rural development strategies, labour market policies, and the long-term sustainability of the agricultural workforce.

**Keywords:** agricultural labour market; labour force dynamics; salary; wage dynamics

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## OP4.21

### Solutions and Strategies for Adaptation to Climate Change in Fish Farms

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#### ABSTRACT

Climate change directly affects fish farms by increasing water temperature and reducing dissolved oxygen, creating an imbalance between metabolic demand and resource availability. This process leads to physiological stress, decreased immunity, and reduced production performance, with significant economic impact.

The study highlights the need for systemic adaptation based on the integration of technological, biological, and managerial strategies. Modern tools play a key role, particularly IoT and AI technologies, which enable continuous monitoring, the definition of critical thresholds, and risk anticipation through predictive models.

The results show that the transition from reactive to proactive, data-driven management is essential for reducing vulnerability and ensuring the sustainability of aquaculture under conditions of climatic variability.

**Keywords: Adaptive management, Aquaculture, Physiological stress,**

## OP4.22

### Evolution of Fishery Resources in the Context of Climate Change in Romania

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#### ABSTRACT

Climate change influences fishery resources in the Romanian sector of the Danube by altering temperature and hydrological regimes.

This study analyses the evolution of fish catches over the period 2010–2024 and their relationship with climatic factors, using official data and available temperature and discharge series. The results indicate high variability in catches and a moderate negative relationship with temperature, suggesting less favourable conditions under warming scenarios.

The interpretation highlights the role of indirect mechanisms: temperature affects metabolism and dissolved oxygen, while hydrology controls access to spawning habitats.

The interaction of these factors generates nonlinear responses, amplified by extreme events. In conclusion, fishery resource dynamics are driven by the interaction between climate, hydrology, and anthropogenic pressure, requiring an integrated approach for their assessment and management.

**Keywords:** Danube River, Fishery resources, Ecological mechanisms

## OP4.23

# Cross2Map digital platform for the valorisation of agrotourism in the cross-border Romania–Republic of Moldova

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## ABSTRACT

Digitalization processes that advance the promotion of local resources, destination visibility, and territorial cooperation are also increasingly driving cross-border agrotourism development. Within the framework of this article is a study on the potential for cross-border integration of valorising agrotourism resources in Romania - Republic of Moldova with the Cross2Map digital platform, which would enhance the competitiveness and attractiveness of this growing area.

While providing an evaluation of the platform's mapping and promotional capabilities regarding agrotourism offers and recognizing the principal barriers to adoption by local stakeholders, this study also considers the platform's potential contribution to enhancing cross-border cooperation and proposes an integrated system that aggregates data on accommodation, thematic routes, cultural and natural heritage, local products and events, and incorporates GIS tools and digital promotion mechanisms.

The predicted results consist of recommendations on the improvement of the platform's functionalities and establishment of a digital governance model that can facilitate the sustainable valorisation of the agrotourism potential in the cross-border area in Romania – Republic of Moldova.

**Keywords:** agrotourism, digitalization, Cross2Map, cross-border cooperation, rural development

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## OP4.24

# Research on the Valorisation of Agrotourism in the Romania–Republic of Moldova Cross-Border Area

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## ABSTRACT

The sustainable valorisation of agrotourism resources has been recognised as an important subject of research in the context of rural development, territorial competitiveness, and cross-border cooperation. The shared cultural heritage, traditional rural landscapes, gastronomy, viticulture, and the identity of the local citizens also provide Romania - Republic of Moldova with significant agrotourism potential that crosses borders. However, these elements of strength, the literature focuses on the ongoing issue of inequality of infrastructures, limited digitalisation, siloed government units and uncoordinated tourism assets. This article is a presentation of the current phase of a doctoral research work with the title of Research on the Development and Valorisation of Agrotourism Potential in Romania - Moldova Cross-Border Area. The research is grounded in a thorough bibliographic review of international and European literature dealing with agrotourism development, sustainable rural tourism, cross-border cooperation, and digital transformation in tourism. A special focus is given to the specific Romanian and Moldovan settings and the influence and support from European policies and cooperation programmes for rural tourism development. This review identifies some of the main trends of research, the significant variables for development, as well as the existing gaps in knowledge. According to these results, there is a preliminary conceptual framework developed to investigate the connection between natural and cultural resources, infrastructure, digitalization, stakeholder participation, sustainability, and cross-border cooperation toward the valorisation of agrotourism potential.

The results lay the theoretical foundation of the empirical phase of the doctoral research phase and serve to highlight the mechanisms facilitating sustainable agrotourism in the Romania - Republic of Moldova cross-border area.

**Keywords:** agrotourism, cross-border cooperation, rural development, digitalization

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## OP4.25

# **Comparative Analysis of the Main Proteins from Sorghum, Corn and Wheat: Biotechnological Alternatives for Functional Materials in the Current Context of Sustainable Agriculture**

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## **ABSTRACT**

Kafirin, zein and gluten are plant proteins with distinct structures, functional properties and applications.

Kafirin, the main protein in sorghum, and zein, extracted from corn, are hydrophobic prolamins, while gluten is a protein complex formed by gliadin and glutenin, present in wheat. This work compares the three proteins in terms of composition, solubility, secondary and tertiary structure, functional properties and industrial applications.

The results indicate a clear differentiation of uses depending on the molecular structure: zein and kafirin are valuable in biomaterials and controlled drug release, while gluten remains essential in bakery due to its properties.

**Keywords: kafirin, zein and gluten, structural, functional characteristics and potential applications**

## OP4.26

# Virtual Power Plant as a Decision Support Framework for Rural Energy Communities: Sandbox Evidence from the Republic of Moldova and Regulatory Transfer to the Romanian Energy Community Model

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## ABSTRACT

This paper presents a dual-context analysis of Virtual Power Plant (VPP) architecture as a decision support instrument for rural energy communities in Eastern Europe.

Drawing on empirical data from the VPP Sandbox Moldova pilot — aggregating 25 prosumers with 2.7 MWh distributed storage under regulatory derogations granted by the Ministry of Energy and Ministry of Finance of the Republic of Moldova — a Decision Support System integrating AOLSTM solar forecasting and reinforcement learning dispatch optimization is proposed and calibrated on real operational data.

The Romanian dimension examines the legislative transposition of EU Directives 2018/2001 and 2019/944, identifying the structural gap between individually financed prosumers under Casa Verde Photovoltaic and the absence of collective aggregation mechanisms.

A strategic VPP-enabled community formation model bridging both regulatory contexts is analysed. Simulation results show an 18–27% reduction in average energy costs and an increase in community self-consumption from 34% to over 61%, demonstrating the replicability of the sandbox-validated model across distinct regulatory regimes within the Energy Community Treaty space.

**Keywords:** Virtual Power Plant; rural energy community; regulatory sandbox; prosumer aggregation; decision support system; dynamic pricing; distributed energy resources; solar forecasting; energy transition; Eastern Europe

## OP4.27

# Urban Green Space Dynamics in Romania: A Comparative Analysis of Selected Municipalities during 2019–2024

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## ABSTRACT

Urban green spaces represent a key component of sustainable urban development, contributing to climate regulation, biodiversity conservation, environmental quality improvement and population well-being. In the context of accelerated urbanisation, real estate pressure and climate change, the monitoring of urban green infrastructure has become increasingly important for local development strategies and public policy decisions. This study analyses the evolution of urban green spaces in Romania during the period 2019–2024, with a comparative focus on selected municipalities: Bucharest, Galați, Iași, Arad and Brașov. The research is based on official statistical data provided by the National Institute of Statistics through the TEMPO Online database. The methodological approach combines descriptive statistical analysis, temporal comparison and spatial interpretation of urban green space indicators, including total green space area and green space availability per inhabitant. The selected municipalities were chosen due to their different demographic, territorial and urban development characteristics, allowing the identification of differentiated patterns of green infrastructure evolution. The results indicate a general increase in the total area of urban green spaces at national level, from 26,958 hectares in 2019 to 33,419 hectares in 2024. However, the municipal-level analysis reveals significant territorial disparities. Bucharest and Galați show relatively stable dynamics, while Iași records moderate growth. In contrast, Arad and Brașov display substantial increases, especially after 2022, suggesting either real expansion of green infrastructure or administrative updates of local green space registers. The analysis also shows that green space availability per inhabitant remains uneven, with some municipalities still below the national legal target of approximately 26 m<sup>2</sup> per inhabitant. The study concludes that the development of urban green spaces in Romania follows an uneven territorial pattern, influenced by local planning policies, demographic pressure and administrative reporting practices.

**Keywords:** urban green spaces; green infrastructure; sustainable urban development; Romania; spatial disparities

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## OP4.28

# The Role of Caprirom in the Development and Sustainability of the Romanian Goat Sector

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## ABSTRACT

Producer associations play an essential role in the modernization of livestock sectors, especially in countries where agricultural holdings are highly fragmented and dominated by small and family farms. In Romania, the goat sector has significant potential due to the adaptability of goats to marginal areas, the growing demand for goat milk and dairy products, and the contribution of this activity to the preservation of rural livelihoods. Despite these advantages, the sector remains affected by limited technological development, uneven access to funding, weak market integration and insufficient institutional coordination.

This study analyses the role of the National Association of Goat Breeders in Romania – Caprirom in supporting the development and sustainability of the Romanian goat sector. The research is grounded in the doctoral study concerning the impact of European funds on goat farm sustainability and combines documentary analysis with empirical insights obtained from farmers affiliated with Caprirom. Attention is given to the association's role in managing the genealogical register, supporting genetic improvement, facilitating access to subsidies and strengthening the institutional representation of goat breeders.

The findings highlight that Caprirom contributes to the professionalisation of the goat sector by providing an organised framework for breeders, supporting the monitoring of genetic resources and improving access to information and support programmes. The association also plays an important role in connecting farmers with public institutions, research structures and funding opportunities. At the same time, the analysis reveals that the development of the sector depends on the capacity to expand association-based participation, improve advisory services and support investments in technology, animal welfare and sustainable farm management.

The study concludes that Caprirom can act as a strategic institutional platform for the modernization of goat farming in Romania. Strengthening its role may contribute to improved competitiveness, better access to European support measures and the sustainable development of small and medium-sized goat farms.

**Keywords:** Caprirom; goat sector; producer associations; sustainability; livestock farming; Romania

## OP4.29

# Impact of European Funds on the Sustainability of Goat Farms in Romania

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## ABSTRACT

The sustainability of small and medium-sized livestock farms has become an important research topic in the context of the Common Agricultural Policy, rural development strategies and the transition towards a more competitive and environmentally responsible agricultural sector. Goat farms represent a relevant segment of Romanian agriculture, contributing to rural employment, the valorisation of local resources and the production of niche agri-food products. However, this sector continues to face structural constraints related to farm fragmentation, limited technological development, reduced access to competitive markets and difficulties in accessing investment resources.

This study investigates the perceived impact of European funds on the sustainability of goat farms in Romania, focusing on three main dimensions: economic performance, technological development and social stability. The research is based on a quantitative approach, using data collected through a structured questionnaire applied to goat farmers affiliated with the National Association of Goat Breeders in Romania – Caprirom. The empirical analysis includes descriptive statistics, reliability testing, exploratory factor analysis, Spearman correlations and multiple linear regression models.

The results indicate that European funding contributes to the improvement of farm sustainability, particularly by supporting economic development, technological upgrading and better resource management. The findings suggest that farms with a positive perception of economic progress are more likely to adopt responsible practices concerning natural resource use, energy efficiency, waste management and animal welfare. Technological development also appears as a relevant driver of sustainability, especially in relation to energy efficiency and the optimisation of production processes.

The study concludes that European funds represent an important instrument for strengthening the sustainability of goat farms in Romania. Nevertheless, the limited adoption of renewable energy solutions and the persistence of administrative and financial barriers highlight the need for more targeted support measures, simplified access procedures and integrated advisory services for small livestock farmers.

Keywords: **goat farms; European funds; sustainability; rural development; Romania**

## OP4.30

# Urban Green Infrastructure and Territorial Disparities in Romania: Evidence from Selected Cities

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## ABSTRACT

Urban green infrastructure has become an essential element of contemporary urban planning, particularly in the context of climate change adaptation, environmental resilience and the improvement of quality of life in cities. Although Romanian legislation establishes reference targets for green space availability per inhabitant, the distribution, accessibility and effective management of urban green areas remain uneven across cities. This study examines territorial disparities in the evolution of urban green spaces in Romania, using selected municipalities as case studies.

The research focuses on Bucharest, Galați, Iași, Arad and Brașov and uses official statistical data for the period 2019–2024. The analysis is based on indicators provided by the National Institute of Statistics, including the total area of urban green spaces and green space per inhabitant. The study applies a comparative approach to assess differences between cities and to identify the main patterns of urban green infrastructure development. Attention is given to the methodological limitations of official statistical data, which may reflect cadastral or administrative records rather than the actual ecological condition of urban vegetation.

The findings reveal three main patterns of evolution. The first pattern is represented by municipalities with stable green space areas, such as Bucharest and Galați, where changes were minimal during the analysed period. The second pattern is represented by Iași, which recorded moderate growth and temporary fluctuations. The third pattern includes Arad and Brașov, where reported green space areas increased substantially, especially in the final part of the analysed period. These differences suggest that urban green space dynamics are shaped not only by environmental or planning factors, but also by administrative updates, demographic structure and local development strategies.

The study underlines that the simple increase in reported green space areas is not sufficient to assess the real quality and accessibility of urban green infrastructure. Future monitoring should integrate official statistics with GIS-based tools, satellite data and indicators of accessibility and ecological quality. The results may support local authorities in developing more balanced urban policies focused on climate resilience, environmental protection and equitable access to green spaces.

**Keywords:** urban green infrastructure; territorial disparities; green space per inhabitant; urban planning; Romania

## OP4.31

# The Impact of Digitalization on the Economic Security of Small and Medium-Sized Enterprises in Rural Areas

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## ABSTRACT

This paper examines the impact of digitalization on the economic security of small and medium-sized enterprises (SMEs) in rural areas, with reference to the Republic of Moldova.

The study highlights the dual role of digital transformation as both a catalyst for enhanced efficiency and competitiveness and a source of emerging risks. On the one hand, the adoption of digital technologies—such as artificial intelligence, process automation, and cloud computing—improves productivity, optimizes resource allocation, and supports evidence-based managerial decision-making. On the other hand, increased reliance on digital infrastructures exposes SMEs to cybersecurity threats, data breaches, and operational vulnerabilities, particularly in the context of limited technical expertise and financial resources.

The research emphasizes the transformation of economic security concept from a traditional resource-oriented perspective to a complex, integrated framework encompassing informational and cyber dimensions.

It further underlines the role of artificial intelligence and data analytics in risk identification, prevention, and strategic planning. In addition, the paper examines national digitalization trends, institutional support mechanisms, and the expanding role of SMEs in strengthening economic resilience.

The findings suggest that the implementation of effective digital risk management strategies, alongside enhanced collaboration between the public sector, academia, and the private sector, is essential for ensuring a secure and sustainable digital business environment.

**Keywords:** digitalization; economic security; SMEs; cybersecurity risks; rural development

## OP4.32

# Market Mechanisms and Food Safety Vulnerabilities in the Agri-Food Sector of Constanța County

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## ABSTRACT

The agri-food sector plays a strategic role in regional economic development, but its performance is strongly influenced by market mechanisms, regulatory pressures and the capacity of economic operators to ensure product quality and food safety. In Romania, the South-East Development Region presents specific structural features generated by agricultural production, maritime trade flows, logistics infrastructure and heterogeneous economic activities. Within this regional context, Constanța County represents a relevant case study for analysing the relationship between economic performance, structural vulnerabilities and food safety risks. This study aims to investigate the main market mechanisms and vulnerabilities affecting agri-food operators in Constanța County, with particular attention to the relationship between profitability, financial efficiency, product quality and compliance with food safety regulations.

The research is based on an integrated methodological approach combining descriptive statistical analysis, economic-financial indicators, documentary analysis and interpretation of institutional data. The analysis focuses on the distribution of economic operators by activity profile, the identification of efficient, fragile and vulnerable sectors, and the evaluation of potential systemic risks within the agri-food chain. The results highlight significant heterogeneity among agri-food operators, indicating that economic performance cannot be assessed only through general sectoral indicators. Some activities show stable profitability and higher financial efficiency, while others remain exposed to structural instability, weak operational resilience and increased vulnerability to non-compliance. The findings also suggest that food safety is closely linked to the economic capacity of operators to invest in quality management, traceability, monitoring and corrective mechanisms.

The study concludes that strengthening food safety in the agri-food sector requires an integrated approach that combines economic resilience, regulatory compliance and institutional coordination. The results may support public authorities and economic operators in developing more targeted strategies for reducing vulnerabilities and improving the sustainability of regional agri-food markets.

**Keywords:** agri-food sector; food safety; market mechanisms; economic performance; Constanța County; South-East Romania

## Product Withdrawal and Recall Management as a Tool for Strengthening Food Safety in the South-East Region of Romania

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### ABSTRACT

The withdrawal and recall of agri-food products from the market represent essential corrective mechanisms in modern food safety systems, ensuring consumer protection, institutional responsiveness and the credibility of quality management practices. In the context of increasingly complex agri-food chains, the capacity of economic operators to identify risks, communicate efficiently and implement rapid corrective actions has become a critical dimension of food safety governance.

This study analyses the managerial capacity and organisational practices related to the withdrawal and recall of agri-food products in the South-East Development Region of Romania. The research is grounded in a doctoral investigation focused on market mechanisms and food safety in the Romanian agri-food sector. The methodological framework combines documentary research, structured questionnaire-based investigation and quantitative analysis of operators' perceptions regarding procedures, communication mechanisms, institutional cooperation and operational barriers. Attention is given to the degree of formalisation of withdrawal and recall procedures, the factors triggering corrective actions and the organisational obstacles that limit rapid response capacity.

The findings indicate that the effectiveness of withdrawal and recall systems depends on three major dimensions: internal operational formalisation, procedural governance and financial and relational protection. These dimensions reflect the capacity of operators to document procedures, coordinate with authorities, communicate with consumers and protect business continuity in cases of non-compliance. The analysis also reveals important differences between categories of operators, suggesting that smaller or less formalised businesses may be more vulnerable to delays, communication failures and incomplete implementation of corrective measures.

The study concludes that product withdrawal and recall management should be treated not only as a legal obligation, but also as a strategic component of food safety and market resilience. Improving training, digital traceability, institutional coordination and preventive planning may significantly increase the efficiency of food safety governance in the South-East Region of Romania.

**Keywords:** product recall; product withdrawal; food safety management; agri-food governance; traceability; South-East Romania

## OP4.34

# Impact of European Funds on Rural Development in the South-East Region of Romania

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## ABSTRACT

European funds represent one of the most important financial instruments supporting rural development, agricultural modernization and the reduction of territorial disparities in Romania. In the South-East Development Region, where the agri-food sector plays a strategic economic role, access to European financing has contributed to the reconfiguration of rural activities, the improvement of farm competitiveness and the strengthening of local agri-food chains. However, the impact of these funds remains uneven, being influenced by the administrative capacity of beneficiaries, the level of economic development, access to information and the ability of rural actors to implement investment projects effectively.

This study analyses the impact of European funds on rural development, with particular attention to the relationship between financial support, agri-food market mechanisms and the capacity of economic operators to comply with quality and food safety requirements. The research is grounded in a broader doctoral investigation concerning market mechanisms and the safety of agri-food products in the South-East Development Region of Romania, with an applied focus on Constanța County. The methodological approach combines documentary analysis, descriptive statistics and interpretation of economic and institutional indicators related to the agri-food sector.

The results suggest that European funds have supported the modernization of rural infrastructure, the development of agri-food enterprises and the improvement of operational standards. At the same time, the findings highlight persistent vulnerabilities, including unequal access to financing, limited managerial capacity among some operators and structural differences between agri-food subsectors. These constraints may reduce the effectiveness of European funding and limit its contribution to balanced rural development.

The study concludes that European funds can generate significant positive effects on rural development when they are integrated into coherent regional strategies focused on competitiveness, quality, food safety and institutional coordination. Strengthening advisory services, simplifying access procedures and improving the managerial capacity of rural beneficiaries are essential conditions for increasing the long-term impact of European support.

**Keywords:** product recall; product withdrawal; food safety management; agri-food governance; traceability; South-East Romania

## Institutional Management of Food Fraud in the Republic of Moldova

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### ABSTRACT

Food fraud represents a growing challenge to food safety, consumer confidence, and fair market competition worldwide. In the Republic of Moldova, the prevention and control of food fraud rely on a complex institutional framework involving public authorities responsible for food safety, customs control, market surveillance, and consumer protection. This paper examines the institutional mechanisms employed to identify, prevent, and combat fraudulent practices within the agri-food sector. The analysis focuses on the role of the National Food Safety Agency (NFSA), customs authorities, accredited laboratories, and other governmental institutions involved in food control activities. Attention is given to legislative harmonization with European Union requirements, risk-based inspection systems, traceability measures, and interinstitutional cooperation. Moldova's efforts to strengthen food integrity have intensified in the context of expanding international trade and the country's commitment to aligning national regulations with EU food safety standards.

The study highlights the main forms of food fraud encountered in Moldova, including product adulteration, mislabelling, counterfeiting, and fraudulent declarations of origin. Challenges affecting institutional effectiveness include limited technical resources, insufficient laboratory capacity, fragmented information exchange, and the evolving sophistication of fraudulent schemes. Nevertheless, recent reforms have contributed to improved surveillance, enhanced analytical capabilities, and greater transparency throughout the food supply chain.

The findings suggest that effective management of food fraud requires continuous institutional development, investment in modern detection technologies, and strengthened cooperation among regulatory agencies, industry stakeholders, and international partners. A coordinated and risk-based approach is essential for protecting public health, ensuring market integrity, and increasing consumer trust in food products available on the Moldovan market.

**Keywords:** communication, interinstitutional cooperation, economic operators, community

## OP4.36

# Financing Opportunities for Small Farmers as a Driver of Sustainable Rural Development in the Republic of Moldova

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## ABSTRACT

Small farmers play an essential role in the economic and social stability of rural areas in the Republic of Moldova, contributing to food production, local employment, the preservation of traditional agricultural practices and the sustainable use of natural resources. However, their development is often limited by reduced access to capital, fragmented land ownership, insufficient technical equipment, weak market integration and limited managerial capacity. In this context, financing opportunities represent a strategic instrument for increasing the competitiveness, resilience and sustainability of small agricultural holdings. This study analyses the main financing opportunities available for small farmers in the Republic of Moldova and their potential contribution to sustainable rural development. The research focuses on public support measures, European and international funding programmes, grants for farm modernization, investment schemes for young farmers, support for producer associations, and financial instruments aimed at improving access to markets, technology and advisory services. Particular attention is given to the role of external assistance and cross-border cooperation programmes in supporting rural communities, strengthening local value chains and promoting sustainable agricultural practices. The findings suggest that access to financing can significantly contribute to the modernization of small farms by supporting investments in equipment, irrigation, storage facilities, processing capacities, digital tools and environmentally friendly technologies. At the same time, financial support may encourage diversification of rural activities, including agrotourism, short supply chains, local product valorisation and organic farming. Nevertheless, the effective use of these opportunities depends on the administrative capacity of beneficiaries, access to information, project-writing skills and the existence of functional advisory services.

The study concludes that financing opportunities can become a key driver of sustainable rural development in the Republic of Moldova only if they are integrated into coherent policies focused on competitiveness, environmental protection, social inclusion and institutional support for small farmers. Simplifying access procedures, strengthening agricultural consultancy, supporting associations and improving financial literacy are essential conditions for increasing the impact of funding mechanisms on rural resilience and long-term sustainability.

**Keywords:** small farmers; financing opportunities; sustainable rural development; Republic of Moldova; agricultural modernization; rural resilience

## OP4.37

# The Role of Sustainable Tourism for Local Economy of Rural Area along Danube, between Fetești and Giurgeni

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## ABSTRACT

The rural environment of Eastern part of Ialomița County has a diverse natural landscape and cultural heritage. The aim of this study is to define the specific activity of rural tourism along Danube River, between Fetești and Giurgeni, as a solution for sustainable development of local communities from this area.

Research methodology consisted in bibliographic documentation and field research to discover local resources and traditional activities, and to identify capitalizing opportunities for those in tourism.

By associating local socio-economic factors with natural resources and cultural heritage opportunities, the study proposes a polyvalent tourist trail along the Danube, between Fetești and Giurgeni.

Management efficiency of tourism in this region is an important factor to socio-economic sustainability of local communities.

**Keywords:** Danube, environment, rural, sustainability, tourism.

## OP4.38

# Prevalence of Fascioliasis and Associated Direct Economic Losses in Cattle Slaughtered at Municipal Abattoirs in Fako Division, South-West Region of Cameroon

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## ABSTRACT

**Background:** Fascioliasis is known globally to be an important helminthic disease of ruminants caused by liver fluke species of the genus *Fasciola*, and it is one of the most neglected tropical zoonotic diseases that can lead to human infection. It has the widest geographic spread of any emerging zoonotic disease, and it occurs in many countries of the world.

**Objectives:** To determine the prevalence of *Fasciola hepatica* through faecal examination and associated risk factors of fascioliasis infection. Secondly, to estimate financial losses due to liver condemnation in three municipal abattoirs in three Subdivisions in Fako Division.

**Materials and Methods:** From September 2024 to February 2025, 565 cattle were brought for slaughter at municipal abattoirs. Postmortem examinations were employed. Faecal samples were collected post-slaughter and analysed using the sedimentation technique. Livers were inspected for liver flukes through visual observations, palpation, and incisions. The weight of condemned livers was recorded to estimate financial losses based on the average market price for liver. Analyses for the comparisons of proportions were made to animals affected by *F. hepatica*, whereas the economic losses due to liver condemnation were analysed by chi-square to determine the existence of differences among the proportions. Analysis of means (ANOM) was made to determine the differences in proportions within the general average.

**Results:** Out of 565 cattle examined, 342 (60.5%) were positive for *Fasciola hepatica*. The prevalence of infection was not significantly different in Buea (62.4%) compared to Tiko (59.8%) and Limbe 1 (56.5%) ( $P > 0.024$ ). Additionally, the findings indicated that the prevalence of *Fasciola hepatica* was significantly higher ( $P < 0.05$ ) during the dry season (62.1%) compared to 46.4% in the rainy season. The total weight of condemned livers was 983.25 kg, which was equivalent to financial loss estimates of 2,949,790 FCFA.

**Conclusion:** *Fasciola hepatica* was prevalent in the three localities of Fako Division. It resulted in great economic losses to the meat sellers. Most farmers were not aware of this infection and its zoonotic nature.

**Keywords:** *Fasciola hepatica*, Prevalence, Financial losses, Fako Division, Cameroon

# 2.POSTER PRESENTATIONS

## SECTION IV: ADVANCES IN ENGINEERING AND MANAGEMENT IN AGRICULTURE AND RURAL DEVELOPMENT

### PP4.1

#### **Digitalization, Smart Labelling and Consumer Decision-Making in the Wine Sector: Developing a Fuzzy Quality Assessment Model for Wines from Vrancea County**

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### **ABSTRACT**

Digital transformation is reshaping the wine sector by creating new opportunities for communication, transparency, and consumer interaction. Technologies such as QR codes, smart labels, digital traceability systems, and interactive packaging are increasingly influencing the way consumers evaluate wine quality and make purchasing decisions. In this context, the present study aims to develop a fuzzy model for assessing the quality of wines from Vrancea County by integrating factors associated with digital labelling and consumer perceptions. The research is based on a questionnaire administered to consumers, through which consumption habits, the importance of label information, the level of trust in certifications, interest in additional information regarding product origin, and the willingness to use digital tools to verify the authenticity and traceability of wine are investigated. The collected data are analysed using descriptive statistical methods and a fuzzy inference system, suitable for decision - making processes characterized by uncertainty, subjectivity, and imprecise preferences. The estimated results indicate that clear and informative labels, rapid access to additional information, and a high level of trust in digital traceability systems positively influence quality perception and purchase intention. At the same time, a lack of familiarity with new technologies and a low level of consumer awareness may limit the impact of digitalization on consumer behaviour. The main contribution of the study lies in proposing a modern evaluation tool applicable to wineries and local producers, useful for developing digital marketing strategies and strengthening the competitiveness of wines from Vrancea County on both domestic and international markets.

**Key words:** organic wine, consumer trust, sustainability labels, purchase intention, fuzzy analysis, Romanian wine market

## PP4.2

# The Activity of the Food Bank of the Republic of Moldova (January 2025–April 2026): An Institutional Analysis in the Context of Food Waste Reduction Policies.

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## ABSTRACT

This paper analyses the operation of the Food Bank of the Republic of Moldova during the period from 01 January 2025 to 30 April 2026 and it focuses on the institutional position it holds regarding public policies about food waste.

An analysis of Food Bank's role in rescuing food surplus and redistributing it among the vulnerable people and its conformity with national and international policies of preventing food waste and sustainable food management is performed. It gives emphasis to institutional practices, to partnerships established with producers, retailers and NGOs and to legislative and policy framework for the donation and redistribution of food products in the Republic of Moldova.

This paper highlights the limitations and difficulties encountered in terms of institutional practices such as logistics, legislation and stakeholders' collaboration.

Taking the analysis of the relationship between the institutional practice and the public policy, the role of Food Bank of the Republic of Moldova on reducing food waste and ensuring food security is assessed.

**Keywords:** food Bank, Republic of Moldova, food waste, food redistribution, food security, public policy, institutional analysis

## PP4.3

# NEXOPACK: Smart Biodegradable Food Packaging from Agricultural Waste for Sustainable Agri-Food Systems

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## ABSTRACT

The growing dependence on conventional plastic packaging has become a major environmental challenge, particularly in agri-food systems that generate increasing amounts of non-biodegradable waste. At the same time, agricultural residues such as fruit peels, cereal husks, and plant fibers remain largely underutilized despite being rich sources of valuable biopolymers including cellulose, pectin, and lignin. This project aims to address these challenges by developing smart biodegradable food packaging materials derived from agricultural waste within a circular bioeconomy framework, transforming low-value biomass into innovative and environmentally sustainable packaging solutions.

The project focuses on designing advanced bio-based films with enhanced mechanical and barrier properties, while integrating natural active compounds and intelligent sensing elements that provide antimicrobial and antioxidant functionality as well as real-time freshness monitoring. The research will include material extraction and characterization, film development and optimization, validation through real-food applications, and environmental and economic performance assessment. The expected outcomes include agricultural waste valorization, reduced food loss and plastic pollution, and strengthened resilience and sustainability of European agri-food systems. Furthermore, the project seeks to enrich scientific knowledge at the intersection of biomaterials science, food technology, and circular innovation.

**Keywords: Smart Biodegradable Packaging, Agricultural Waste Valorization, Circular Bioeconomy, Bio-based Materials, Food Preservation.**