



# 18th International Conference of the Hellenic Association of Agricultural Economists

## > ETAGRO 2025 <

Strengthening the sustainability and resilience of rural economies:  
Green transition, digitalization and competitiveness

## Conference Programme



<https://etagro.gr/2025/>



OCTOBER  
10-11, 2025

Day 1. Friday

Florina Municipal Multipurpose  
Hall  
*Mayor Anastasios Soulas str., Florina*



Day 2. Saturday

School of Agricultural Sciences,  
University of Western Macedonia  
*Terma Kontopoulou str., Florina*



Περιφέρεια  
Δυτικής  
Μακεδονίας



ΔΗΜΟΣ  
ΦΛΩΡΙΝΑΣ



ΛΙΓΝΙΤΩΡΥΧΕΙΑ ΑΧΛΑΔΑΣ Α.Ε.  
ΑΝΩΝΥΜΟΣ ΜΕΤΑΛΛΕΥΤΙΚΗ - ΒΙΟΜΗΧΑΝΙΚΗ & ΕΜΠΟΡΙΚΗ ΕΠΙΧΕΙΡΗΣΗ



Κοινοπραξία  
Συνεταιρισμών  
Ομ. Παραγωγών  
Ν. Ημαθίας



ΓΕΩΠΟΝΙΚΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΑΘΗΝΩΝ  
AGRICULTURAL UNIVERSITY OF ATHENS

# Friday, 10 October 2025

*Florina Municipal Multipurpose Hall*

9:00

Registration / Check-in

9:30

Opening

10:00 Keynotes

**From Fork to Farm to save the Planet**

*Prof. Konstadinos Mattas, Aristotle University of Thessaloniki, Greece, School of Agriculture. Visiting Professor at CIHEAM/MAICH*

**From survival to prosperity: A family testimony to the achievements of the CAP**

*Mr. Nico Kalinis, Programme Manager, Greece CAP2023-2027, DG-Agri, European Commission*

11:00

Coffee break

11:30 Session EN1 [in English]: Rural Development and Sustainability Pathways

**Chairs:**

*Katerina Melfou, University of Western Macedonia, Greece*

*Anastasios Michailidis, Aristotle University of Thessaloniki, Greece*

**The Intricacies of Greece's Energy Transition: Balancing Sustainability, Resilience, and Socio-Economic Equity**

*Konstantinos Pappas, Jafaru Egieya, Alejandra Franco, Katherine Sotolongo and Wilmar Pastrana Vargas*

Presenter: Alejandra Franco

**Policy Pathways for the Integration of Crop Wild Relatives (CWRs) in Sustainable Agriculture**

*Christos Staboulis, Konstadinos Mattas, Efthimia Tsakiridou and Kata Fodor*

Presenter: Christos Staboulis

**Assessing the influence of internal structure in agricultural systems: A European case study**

*Leonidas Sotirios Kyrgiakos, Siwei Xiao, Marios Dominikos Kremantzis, Christina Kleisiari, Marios Vasileiou, Georgios Kleftodimos and George Vlontzos*

Presenter: Leonidas S. Kyrgiakos

**Labour Dynamics in East Crete: Structural Characteristics and the Adoption of Sustainable Agricultural Practices**

*Penelope Gouta, Vasilika Konstantidelli and Irene Tzouramani*

Presenter: Penelope Gouta

**Adoption of Sustainable Olive Farming Practices: A Gendered Perspective from Greece**

*Hadil Rbib, Ioannis Livieratos and Maria Partalidou*

Presenter: Maria Partalidou

**Mapping the Nexus between Social Sustainability and Sustainable Food Consumption: Research Trends and Insights from a Bibliometric Study**

*Maria Karavida, Georgios Vasios and Ioannis Antoniadis*

Presenter: Maria Karavida

**Subsidized yes, but how Satisfied? Evaluating the Impact of Rural Development Measures on Young Farmers in North Aegean**

*Stratis Sentas, Giorgos Stavrianakis, Sofia Zafeirelli and Thanasis Kizos*

Presenter: Thanasis Kizos

13:00 Session EN2 [in English]: Agrotourism for Rural Resilience and Local Development

**Chairs:**

*Christos Karelakis, Democritus University of Thrace, Greece*

*Stavriani Koutsou, International Hellenic University, Greece*

**Non-formal, experiential learning & agritourism: The case of “The Chilli Factor Organic Farm”**

*Georgios Karanagnostis, Maria Partalidou, George Malandrakis and Konstantinos Papaspyropoulos*

Presenter: Maria Partalidou

**Multifunctional Farms in Greece: Opportunities, Challenges, and Prospects for Sustainability**

*Dimitra Skoufa and Evangelos Pavlis*

Presenter: Dimitra Skoufa

**Agritourism’s Multidimensional Impact on Local Development Incorporating Innovation and Resilience Factors: Evidence from Corfu Island, Greece**

*Sofia Karampela, Giannis Papathanasiou and Thanasis Kizos*

Presenter: Sofia Karampela

**Sustainable Wine Tourism in Greece: Preserving Tradition, Building the Future**

*Anastasia Kyriakidou, Despoina Kouti and Sofia Karampela*

Presenter: Despoina Kouti

**Gastronomic tourism and festivals: Perceptions of Corfu Residents**

*Aggeliki Kalabaliki and Sofia Karampela*

Presenter: Sofia Karampela

**Alternative tourism, a means to agricultural and rural areas’ sustainability, Municipality of Pella case**

*Christos Poulkas and Sofia Karampela*

Presenter: Christos Poulkas

14:20

**Lunch break**

15:30 Session EN3 [in English]: Environmental Transitions in Agriculture and Aquaculture

**Chairs:**

*Athanasios Ragkos, Hellenic Agricultural Organization – DEMETER, Greece*

*Jennifer L.M. Gee, Fishery Officer and Gender Team Lead at the Food and Agriculture Organization of the United Nations (FAO), Italy*

**Farmers’ attitudes towards innovative waste management**

*Alexandros Koutsouris and Vasiliki Kanaki*

Presenter: Vasiliki Kanaki

**Farmers’ opinions on European Green Deal: A focus group approach**

*Apostolos Goulas, Ilias Tsotsas, Zacharias Papanikolaou and Christos Karelakis*

Presenter: Apostolos Goulas

**Fostering Agrobiodiversity in the Mediterranean: Legumes Market Dynamics and Policy Trajectories**

*Konstadinos Mattas, Nikolaos Syndoukas, Efthimia Tsakiridou and Christos Staboulis*

Presenter: Nikolaos Syndoukas

**Satisfaction Level of Dairy Farmers with Dairy Industries and Cooperatives: An empirical research**

*Athina Charalampidou, Panagiota Sergaki, Anastasios Semos, Anastasios Michailidis, Thomas Bournaris, Dimitrios Natos, Fotios Chatzitheodoridis and Eustratios Loizou*

Presenter: Athina Charalampidou

**Environmental analysis of freshwater crayfish production in Greece**

*Emmanouil Mastoras, Maria Ravani, Georgios Ntinis, Ioannis Giantsis and Maria Alvanou*

Presenter: Maria Alvanou

**Willingness to use and pay for biobased construction materials: Citizen-survey results from nine European countries**

*Spyridon Karytsas, Theoni I. Oikonomou and Constantine Karytsas*

Presenter: Spyros Karytsas

# Saturday, 11 October 2025

School of Agricultural Sciences, University of Western Macedonia

8:30

Registration / Check-in

9:00

Parallel Sessions EN4 – GR1

Amphitheatre

Room B

## Session EN4 [in English]: Economic Perspectives on Agriculture and the Bioeconomy

### Chairs:

Konstantinos Pappas, Texas A&M Energy Institute, USA  
Njazi Bytyqi, University of Prishtina, Kosovo

### On the Topology of Intraday Realized Volatilities across Commodity Sectors, FOREX, and Stock Markets: An Unrestricted Multivariate HAR-VAR Approach

Leonidas Zangelidis and Anthony N. Rezitis

Presenter: Leonidas Zangelidis

### Global Employment and Labour Productivity Trends in Fisheries and Aquaculture

Jennifer L.M. Gee, Dario Pinello, Pierre Maudoux, Thorolfur Matthiasson and Konstantinos Polymeros

Presenter: Jennifer L.M. Gee

### Efficiency analysis of sheep farms in Cyprus

Sokratis Sokratous, Athanasios Ragkos, Georgios Arsenos and Alexandros Theodoridis

Presenter: Sokratis Sokratous

### Regional Disparities in Public Perceptions of Decarbonization and Bioeconomy Acceptance: Evidence from a Structurally Transitioning Rural Area

Christina Ioanna Papadopoulou, Efstratios Loizou and Fotios Chatzitheodoridis

Presenter: Efstratios Loizou

### Gender dimensions of bioeconomic change: insights from Western Macedonia

Aikaterini Paltaki, Maria Partalidou, Stefanos Nastis, Dimitrios Natos, Panagiota Sergaki, Fotios Chatzitheodoridis, Efstratios Loizou and Anastasios Michailidis

Presenter: Aikaterini Paltaki

### The Impact of CAP Investment Subsidies on Agricultural Productivity in Greece: A Time-Series Analysis

Zisis Mandanas, Dimitrios Petropoulos and Nikolaos Apostolopoulos

Presenter: Zisis Mandanas

## Session GR1 [in Greek]: Smart Farming, Sustainability and Human Resources

### Chairs:

Elias Giannakis, Agricultural University of Athens, Greece  
Elpida Samara, University of Western Macedonia, Greece

### Developing and validating an instrument for evaluating quality-oriented human resource practices

Nansy Bouranta, Evangelos Psomas and Eleni Matsioulas

Presenter: Evangelos Psomas

### Networking tools to facilitate AKIS- actors' interactions in Greece

Eleni Zarokosta

Presenter: Eleni Zarokosta

### The impact of smart farming technologies on intensive potato farming: Evidence from Cyprus

Andreas Stylianou, Damianos Neocleous, George Adamides and Vassilis Vassiliou

Presenter: Andreas Stylianou

### Sustainable Flour Innovation: Enhancing Product Safety and Market Position through Low-Asparagine Wheat

Elpida Samara, Panagiotis Kafetzopoulos, Dimitrios Kafetzopoulos and Pavlos Kilintzis

Presenter: Elpida Samara

### FIWARE-Powered Smart Farming: Integrating Sensor Networks for Sustainable Soil Management

Christos Hitiris, Cleopatra Gkola, Vasiliki Karamerou, Dimitrios J. Vergados and Angelos Michalas

Presenter: Christos Hitiris

**The More Vegetable Auctions, the Merrier? The Unique Case of Ierapetra**

Angelos Lontakis, Alexandra Sintori, Foivos Anastasiadis, Antonios Proestakis, Antonios Karantininis and Konstantinos Karantininis

Presenter: Angelos Lontakis

**Is Greek Agriculture a Key Sector? An Input–Output Analysis Based on Output Multipliers**

Christos Tsirimokos and Angelos Lontakis

Presenter: Angelos Lontakis

10:40

Coffee break

11:00

Parallel Sessions EN5 – GR2

*Amphitheatre*

**Session EN5 (in English): Food Systems and Circular Economy**

**Chairs:**

Efstratios Loizou, University of Western Macedonia, Greece

Thorolfur Matthiasson, University of Iceland, Iceland

**New EU legislation against Greenwashing: Impacts on the Food Sector**

Eleni Tzoulia

Presenter: Eleni Tzoulia

**Evolution of Mediterranean farmers' competitive positioning in the food supply chain and policy implications**

Prodromos Kalaitzis

Presenter: Prodromos Kalaitzis

**Understanding the impact of Agroecological products: the Algerian case study**

Christina Kleisiari, Aissa Belhadi, Karima Boudedja, Aissa Bekkouche, Vasileios Angelopoulos, Leonidas-Sotirios Kyrgiakos, Marios Vasileiou, Georgios Kleftodimos, Kyriaki Kechri, Dimitra Despoina Tosiliani, Asimina Oikonomou and George Vlontzos

Presenter: Christina Kleisiari

**Consumer Typologies in Household Food Waste: Evidence from Urban and Rural households in Greece**

Vasiliki Aitsidou, Katerina Melfou and Anastasios Michailidis

Presenter: Vasiliki Aitsidou

**The effect of the “Belt and Road” initiative on Greek vegetable exports**

Constantinos Oreopoulos

Presenter: Constantinos Oreopoulos

*Room B*

**Session GR2 (in Greek): Innovations in AgriFood Systems and Rural Tourism**

**Chairs:**

Maria Partalidou, Aristotle University of Thessaloniki, Greece

Achilleas Kontogeorgos, International Hellenic University, Greece

**Cheese tourism, a connecting link for entrepreneurship development between agri-food and tourism?**

**Capturing cheese-makers views**

Maria Spilioti and Konstantinos Marinakos

Presenter: Maria Spilioti

**The Effectiveness of Renewable Energy Sources in Reducing Energy Costs in an Agrotourism Unit**

Petros Tigkas, Thomas Kotsopoulos and Maria Partalidou

Presenter: Petros Tigkas

**Techno-economic analysis of vegetative propagation methods for Greek mountain Tea (*Sideritis* spp.)**

Konstantinos Tousis, Maria Spilioti, Artemis Konstantinou and Garyfalia Economou

Presenter: Konstantinos Tousis

**Sustainability assessment of farms managed by young farmers in Cyprus**

Andreas Stylianou and Stavroula Ioannou

Presenter: Stavroula Ioannou

**Cow-Calf Contact Systems: Is This an Economically Sustainable Option for the Greek Dairy Industry?**

Andreas Frantzis, Evangelia Sossidou, Konstantinos Tsimpoukas and George Vlachos

Presenter: Andreas Frantzis

**Integrating News Sentiment into Corn Price Forecasting**

*Asterios Theofilou, Stefanos Nastis and Konstadinos Mattas*

Presenter: Asterios Theofilou

**Economic aspects of the circular food economy: the case of olive oil**

*Aristea Kounani, Alexandra Pavloudi and Maria Tsiouni*

Presenter: Aristea Kounani

**Socio-economic and demographic factors influencing consumer preferences for selected vegetables in Kosovo: A survey-based statistical analysis**

*Njazi Bytyqi, Mentor Thaqi and Salih Salihu*

Presenter: Njazi Bytyqi

**Modelling the economic sustainability of broiler farming sector in the Region of Epirus-Greece:**

**Preliminary results**

*Maria-Zoi Kritsa, Evangelia N. Sossidou, George F. Banias, Dimitrios Foukas and Michael Goliomytis*

Presenter: Maria-Zoi Kritsa

**12:40 Round Table [in Greek]: Resilient Agriculture and Rural Societies under the New CAP**

**Chair:**

*Katerina Melfou, University of Western Macedonia, Greece*

**Participants:**

*Antonis Filippis, Secretary General of Rural Policy and International Affairs, Ministry of Rural Development and Food, Greece*

*Nico Kalinis, Programme Manager, Greece CAP2023-2027, DG-Agri, European Commission*

*Panagiota Sergaki, Aristotle University of Thessaloniki, Greece*

*Spyridon Mamalis, Democritus University of Thrace, Greece*

*Moschos Korasidis, Director General, National Union of Agricultural Cooperatives (ETHEAS), Greece*

*Dimitrios Natos, Aristotle University of Thessaloniki, Greece*

**13:40**

**Lunch break**

**15:00**

**Parallel Sessions EN6 – GR3**

*Amphitheatre*

**Session EN6 [in English]: Innovations for Sustainable Rural Systems**

**Chairs:**

*George Vrontzos, University of Thessaly, Greece*

*Georgía Koutouzidou, University of Western Macedonia, Greece*

**The DIONYSUS Project – Enhancing Participatory Approaches and Integrated Solutions in the Water-Energy-Food-Ecosystem Nexus**

*Dimitra Despoina Tosiliani, Leonidas Sotirios Kyrgiakos,*

*Marios Vasileiou, Christina Kleisiari, Vasileios*

*Angelopoulos, Kyriaki Kechri, Asimina Oikonomou,*

*Georgios Kleftodimos and George Vrontzos*

Presenter: Dimitra D. Tosiliani

*Room B*

**Session GR3 [in Greek]: Environmental & Socio-Economic Dimensions of Food Systems**

**Chairs:**

*Alexandra Pavloudi, International Hellenic University, Greece*

*Antonis Reztis, Agricultural University of Athens, Greece*

**Transforming Agri-Food Systems in Greece: Emission Reductions through the Mediterranean Diet**

*Phoebe Koundouri, Konstantinos Dellis, Christopher*

*Deranian and Theofanis Zacharatos*

Presenter: Theofanis Zacharatos

**Environmental & Economic Challenges for the development of fishing tourism in rural-coastal areas**

*Konstantinia Tsobanaki and Maria Partalidou*

Presenter: Konstantinia Tsobanaki

**Supporting twin transitions: Developing an overarching competency framework for actors operating in the agrifood system**

*Chrysanthi Charatsari, Evangelos Lioutas, Panagiota Sergaki, Stefanos Nastis and Anastasios Michailidis*  
Presenter: Chrysanthi Charatsari

**Bibliometric Insights into Forest Bioeconomy and Business Models in Forest Management**

*Aggelos Simeonidis, Garyfallos Arabatzis, Spyridon Galatsidas, Valantis Malesios and Eleni Zafeiriou*  
Presenter: Eleni Zafeiriou

**Developing students' competences through alternative learning methods: Results of experimental online classes addressing AUA students**

*Ioanna Skaltsa, Yannis Perifanos and Alex Koutsouris*  
Presenter: Ioanna Skaltsa

**Empowering Sustainable Precision Viticulture: the Vtskills e-learning platform**

*Aikaterini Paltaki, Dimitra Lazaridou, Efstratios Loizou, Manuel Pérez-Ruiz, Stefanos Nastis, Thomas Bournaris, Tilde Scali and Anastasios Michailidis*  
Presenter: Aikaterini Paltaki

**Rethinking Rural Resilience: Bridging Ecology and Technology for Low-Carbon, Biodiverse Rural Economies within the Context of European Green Deal**

*Aphrodite Lioliou and Stavroula Kyritsi*  
Presenter: Aphrodite Lioliou

**Intelligent supply chain technologies for agri-food supply chain resilience in the Chinese fruit sector**

*Styliani Despoudi, Evaggelia Nedelkou and Xiaofu Hu*  
Presenter: Evaggelia Nedelkou

**Economic Dimension of Digitisation in Olive Cultivation: The Case of Addressing Verticillium Wilt Using New Technologies**

*Angelos Lontakis and Konstantinos Vasilatos*  
Presenter: Angelos Lontakis

**Consumer attitudes and behavior towards international food standards related to viability and sustainability**

*Nikolaos Charitos and Georgia Koutouzidou*  
Presenter: Nikolaos Charitos

**The socio-economic and environmental determinants of organic farming expansion in EU: A panel data analysis**

*Styliani Kostami and Dimitrios Natos*  
Presenter: Styliani Kostami

**Factors Influencing Farmers' Participation in Environmentally Friendly Measures: The Case of the First Implementation of Eco-schemes**

*Georgia Ouzounidou and George Vlahos*  
Presenter: Georgia Ouzounidou

**Price Gap Analysis in the Cypriot Food Supply Chain: The Case of Fresh Fruits and Vegetables**

*Andreas Stylianou and Marianthi Giannakopoulou*  
Presenter: Marianthi Giannakopoulou

**Parental and peer influences on food neophobia among young adults: A quantitative analysis of consumption trends**

*Panagiota Thanasoula, Elena Raptou, Konstantinos Galanopoulos and Konstantinos Polymeros*  
Presenter: Panagiota Thanasoula

16:40

Conclusions / Closing

17:00

ETAGRO General Assembly

# Posters

## **Strengthening AKIS Governance: Strategic Insights from a SWOT and SPACE Analysis in Greece**

*Epistimi Amerani, Alexandra Kriari and Anastasios Michailidis*

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## **Enhancing AKIS in Greece: Pathways to Innovation and Collaboration**

*Epistimi Amerani, Nikoleta Kriari and Anastasios Michailidis*

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## **Assessing Consumer Awareness and Willingness to Pay for Agroecologically Produced Food in Tunisia**

*Kyriaki Kechri, Christina Kleisiari, Wafa Koussani, Khawla Hanachi, Haifa Benmoussa, Mehdi Ben Mimoun, Georgios Kleftodimos, Leonidas Sotirios Kyrgiakos, Marios Vasileiou, Vasileios Angelopoulos, Dimitra Despoina Tosiliani, Asimina Oikonomou and George Vlontzos*

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## **Food Waste Behavior among Greece Consumers: A Cluster Analysis**

*Zacharias Papanikolaou, Christos Karelakis, Apostolos Goulas and Ilias Tsotsas*

[View poster](#)

## **Consumer trends and opinions on high-nutritional-value superfoods**

*Aggeliki Maggou and Georgia Koutouzidou*

[View poster](#)

## **Evaluating the performance of intercropping different cultivars of bread wheat and field pea using economic indices**

*Efstratios Deligiannis, Fotios Alexandrou, Paschalis Papakaloudis, Andreas Michalitsis and Christos Dordas*

[View poster](#)

## **Global Research Trends and Thematic Evolution of Sustainable Agricultural Management: A Bibliometric Analysis**

*Ilias Tsotsas, Zacharias Papanikolaou, Apostolos Goulas and Christos Karelakis*

[View poster](#)

## **Total Quality Management, Cost of Quality & Lean tools in the Greek food industry**

*Evangelos Bouras*

[View poster](#)

## **Comparing the Economic Value of Pollination Services in the Nestos Region: Insights from Bio-Economic Modeling, Choice Experiments, and Policy Incentives**

*Faidra Kanonarchi, Tristan Berchoux, Zehra Başaran, Stavriani Koutsou, Nicola Gallai, Mattis Cherdon, Jean-Pierre Del Corso, Christina Kleisiari, Leonidas Sotirios Kyrgiakos, Marios Vasileiou, Vasileios Angelopoulos, George Vlontzos and Georgios Kleftodimos*

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## **No food waste policy: Smart Applications in Green Deal Policy**

*Sotiria Tsoukarella and Zacharoula Andreopoulou*

[View poster](#)

## **Consumers' willingness to purchase pollinator-friendly products: The case of Greece**

*Vasileios Angelopoulos, Korina Kechri, Christina Kleisiari, Leonidas Sotirios Kyrgiakos, Marios Vasileiou, Dimitra Despoina Tosiliani, Asimina Oikonomou, Faidra Kanonarchi, Georgios Kleftodimos and George Vlontzos*

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## **Strengthening the sustainability of the countryside through multifunctionality**

*Alexandra Pliakoura, Athanasia Mavrommati and Achilleas Kontogeorgos*

[View poster](#)

## **Evaluating the performance of intercropping cereals and legumes to reduce weed pressure**

*Christos Dordas, Efstratios Deligiannis, Fotios Alexandrou, Paschalis Papakaloudis, Andreas Michalitsis, George Manesis, Zoi Basdagiani and Ioannis Bossis*

[View poster](#)

## **Sustainable Rice: Carbon Footprint and Eco- Efficiency Analysis in Thessaloniki Plain**

*Eleni Adam, Athanasia Mavrommati and Angelos Patakas*

[View poster](#)

## **Exploring inter-industrial linkages across Greek regions**

*Elias Giannakis*

[View poster](#)

**Detecting agricultural policy priorities in political speeches: the case of EU State of Union**

*Ioannis Masouras and Dimitrios Natos*

[View poster](#)

**The Role of Private Institutions in Preserving Cultural Heritage and Promoting Cultural Landscapes in Rural Greece: A Case Study of the Piraeus Bank Group Cultural Foundation**

*Christina Megariti and Evangelos Pavlis*

[View poster](#)

**Comparative Evaluation of Sensory Attributes of Coffee Using Best-Worst scaling and Pairwise Comparison Methods**

*Nikolaos Garyfallou and Achilleas Kontogeorgos*

[View poster](#)

**Impact of ISO 22000 Implementation on Organizational and Financial Performance: Evidence from Certified and non-Certified Food Businesses**

*Maria Tsiouni, Zissis Tzikas, Eftychia Karageorgou and Antonios Papadopoulos*

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**Innovative pest control: Motives and barriers for Greek farmers**

*Giorgos Diakoulakis and Irene Tzouramani*

[View poster](#)

**The role of Computable General Equilibrium in Agricultural Systems through the lens of sustainability and climate change: Insights from a Systematic Literature Review**

*Dimitra Despoina Tosiliani, Leonidas Sotirios Kyrgiakos, Marios Vasileiou, Christina Kleisiari, Vasileios Angelopoulos, Kyriaki Kechri, Asimina Oikonomou, Georgios Kleftodimos and George Vlontzos*

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**Assessing consumer behavior for agroecological products in North Africa- insights from NATAE project**

*Christina Kleisiari, Nadeen Wael, Ghizlane Echchgadda, Karima Boudedja, Wafa Koussani, Khawla Hanachi, Haifa Benmoussa, Mehdi Ben Mimoun, Kyriaki Kechri, Vasileios Angelopoulos, Leonidas Sotirios Kyrgiakos, Georgios Kleftodimos, Marios Vasileiou, Dimitra Despoina Tosiliani, Asimina Oikonomou and George Vlontzos*

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**Farmers' Readiness for Climate Adaptation: Development of the FRCA Index**

*Georgios Omouridis, Stavriani Koutsou and Georgios Kountios*

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**Impacts of agricultural practices on mountain biodiversity**

*Charisios Achillas, Thomas Varveris, Triantafyllos Bouchounas, Konstantinos Zapounidis and Dimitrios Aidonis*

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**Rural Community Development: A Meta-analysis and expert's perceptions**

*Ioannis Sotiriadis and Maria Partalidou*

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**A systematic literature review on examining the role of consumers in participatory approaches in the agri-food systems**

*Vasileios Angelopoulos, George Vlontzos, Christina Kleisiari, Leonidas Sotirios Kyrgiakos, Marios Vasileiou, Dimitra Despoina Tosiliani, Kyriaki Kechri, Asimina Oikonomou and Georgios Kleftodimos*

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**Wild boar population monitoring, hybridization with domestic pig, and use of antigenic periodic sterility as a promising control strategy**

*Ioannis Giantsis, Danai Antonopoulou and Melpomeni Avdi*

[View poster](#)

**Detection of *Trichodina* spp. in environmental DNA from the Black Sea basin: Implications for sturgeon population health and monitoring**

*Dimitrios K Papadopoulos, Maria Alvanou, Ivelina Suleva, Ina Agafonova, Bianca Pavel, Raluca Radulescu, Ovidiu Dragan, Zeynep Demirel, Elif Damla Arisan, Crina Patrichi, Artur Nebunu, Olha Karpenko, Alexandros Theodoridis and Ioannis Giantsis*

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**Sophisticated heat shock response of laboratory-hardened Mediterranean mussels when acclimated to complex field conditions and elevated ambient temperatures**

*Ioannis Georgoulis, Ioannis Giantsis, Basile Michaelidis, George Katselis and Konstantinos Feidantsis*

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**Evaluation of Vocational Agricultural Education programs in high schools**

*Vasileios Kosidis, Anastasios Michailidis and Chrysanthi Charatsari*

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**Assessing farm profitability and resilience through Scenario Analysis: Evidence from a farmer group in Western Macedonia**

*Angelos Prentzas, Christina Moulogianni, Anna Tafidou, Evgenia Lialia, Asimina Kouriati, Eleni Dimitriadou and Thomas Bournaris*

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**Tracing the Evolution of ESG Discourse in Agri-Business: A Bibliometric Analysis of Sustainability-Oriented Research and Innovation Pathways**

*Konstantina Ragazou, Georgia Zournatzidou, George Sklavos, Konstantinos Spinthiropoulos and Nikolaos Sariannidis*

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**Seasonal Variation in Nutritional and Molecular Profiles of Commercially Important Mulletts in Greece**

*Maria Alvanou, Ioannis Georgoulis, Ioannis Giantsis, Xanthippi Douvi and Konstantinos Feidantsis*

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**Adoption of Innovations and Advisory Services in the Context of Climate Change: Evidence from Imathia**

*Evangelia Gianneli and Georgios Kountios*

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**Policy, Regulation, and Financing in the Transition to Renewable Energy: A Case Study from Western Macedonia**

*Theofano Kollatou, Athina Krestou, Dimitrios Tsiamitros, Dimitrios Stimoniaris, Stergios Maropoulos and Konstantinos Kyriakopoulos*

[View poster](#)

**Digital mapping of pruning weight in vineyards in the framework of precision viticulture**

*Aristotelis C. Tagarakis, Katerina Biniari, Ioannis Daskalakis, Dimitrios Kateris, Athanasios Balafoutis and Dionysis Bochtis*

[View poster](#)

**Experimental Assessment of Autonomous Fleet Operations for Precision Viticulture under Real Vineyard Conditions**

*Gabriela Asiminari, Vasileios Moysiadis, Dimitrios Kateris, Aristotelis C. Tagarakis, Athanasios Balafoutis and Dionysis Bochtis*

[View poster](#)

**Efficiency of *Weizmannia faecalis* in improving boiler performance and gut health in challenged birds**

*George Symeon, Ilias Giannenas, Panagiotis Sakkas, Ioanna Stylianaki, Despoina Karatosidi, Lydia Zeibich, Alexandra Schlagheck, Dimitrios Verros, Nikolaos Lykos, Dimitrios Koutsianos, Marina Gaitanidou and Vasileios Dotas*

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## Cow-Calf Contact Systems: Is This an Economically Sustainable Option for the Greek Dairy Industry?

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**Abstract:** The rising demand for ethically produced dairy products has increased interest in animal welfare-oriented practices, such as Cow-Calf Contact (CCC) systems. The aim of this study was to estimate the economic viability of CCC systems and to compare this to conventional Early Separation (ES) methods. Data was collected by indirect sources such as case studies, statistical yearbooks and available literature. Cost-benefit analysis (CBA) and Break-Even Point Analysis (BEPA) were applied under a moderate scenario, reflecting typical Greek dairy farming conditions. The results indicate that CCC systems can be economically viable, yielding a positive Net Present Value (NPV) of €115,949. Despite producing about 12–15% less marketable milk, the profitability was supported by a welfare-based price premium of around 5%, calves reaching 15–20 kg higher weaning weights with 30% fewer disease treatments, and a 10–12% reduction in replacement costs. The findings suggest that CCC systems can be a competitive and sustainable alternative in Greek dairy production.

**Keywords:** dairy farming, cow-calf contact, animal welfare, economic sustainability, cost-benefit analysis

### Introduction

Dairy farming in Europe produces around 155 million tonnes of milk annually, with Greece contributing about 800,000 tonnes (European Commission, 2020; Eurostat, 2025). This productivity has largely been achieved through intensification, including the widespread practice of early calf separation (ES). While economically efficient, ES raises significant welfare concerns and is increasingly questioned by consumers, who demand products that meet higher ethical standards (Agenäs, 2017-Busch et al., 2017- Placzek et al., 2021- Sirovica et al., 2022). In this context, Cow-Calf Contact (CCC) systems have gained attention as an alternative that allows calves to remain with their mothers for an extended period. However, despite their potential welfare advantages, the economic viability of CCC remains unclear, particularly under Mediterranean and small-scale farming conditions such as those in Greece. This paper assesses whether CCC can be proposed as an economically sustainable system under average conditions in Greece, addressing a critical knowledge gap in the national dairy sector. The literature highlights both the welfare benefits and potential economic trade-offs of CCC systems, but context-specific analysis is necessary to inform practical decisions by farmers.

### Methods

The study applies to a comparative economic evaluation between ES and CCC systems using secondary data from case studies, statistical yearbooks and scientific literature. The framework of Knierim et al. (2020) was used to include both monetary (milk revenue, feed cost, labor) and non-monetary factors (animal welfare, consumer preferences). Cost–Benefit Analysis (CBA) was applied to compare total costs and revenues over a 10-year period. Furthermore, Break–Even Point Analysis (BEPA) was applied to identify the minimum conditions for profitability. Additionally, the Cow-Calf Calculation Model (<https://cowcalfeconomictool.github.io>) was used to simulate and quantify costs, revenues, and net outcomes of the CCC system under Greek conditions. The model allowed for scenario-based sensitivity analysis and estimation of the Net Present Value (NPV). All estimations were adapted to Greek economic conditions using data from the Milk Market Observatory (Milk Market Observatory, 2023; Eurostat, 2025).), national labor and feed prices, and veterinary costs.

**Table 1. Input parameters applied in the CCC Calculator.**

Parameter	Value	Unit in the tool	Notes / Justification
Renovation cost (for 50 cows)	750	€ (total)	Calculated as +15 €/cow × 50 cows.
Predicted time-span of investment	10	Years	default setting CCC CALLCULATOR
Additional milk price for cow-calf contact	0.05	EUR / l	Based on +10% premium on baseline price of 0.50 €/l
Extra revenue from heavier calf due to cow-calf contact	50	EUR / calf	Reflecting higher weaning weigh
Average loss of saleable milk for cow-calf contact cows	7.5	l / day / cow	Estimated loss from calf suckling
Expected effect on calf mortality rate	-0.5	Percentage points	Negative sign indicates reduction in mortality
Expected effect on veterinary expenses	-5	EUR / calf	Reduction in treatment costs per calf under CCC
Expected impact on labour for feeding	-1	minutes / calf	Approx. –3 min/day overall: –1 feeding, –2 other care
Expected impact on other labour for animal care	-2	minutes / calf	
Expected impact on milk yield for cows in their 1st lactation	1	% change	Slight improvement due to calf suckling

## Results and Discussion

Under moderate scenario, the CCC system demonstrated a positive Net Present Value (NPV) of €115,949, indicating long-term profitability. The results showed that the reduction in marketable milk volume (12–15%) due to calf suckling represents an opportunity cost. However, the increased value of calves—thanks to higher weaning weights (15–20 kg) and improved health

outcomes—strengthened the overall economic outcome. In addition, a slight reduction in veterinary costs was observed due to lower disease incidence, while labor expenses moderately increased, mainly because of the need for closer animal monitoring and the more complex milking process. An important factor was the potential for achieving a milk price premium, estimated at around +5% for welfare-certified products.

The Break-Even Point Analysis (BEPA) indicated that CCC systems remain competitive without the need for subsidies or major structural investments, provided that modest improvements in milk pricing or market access are achieved. These findings are consistent with studies from Northern Europe (Knierim et al., 2020), while also highlighting the specific conditions under which CCC can be adapted to small-scale Greek dairy farms.

## Conclusions

The analysis supports that CCC systems can be economically sustainable in Greece under moderate conditions. While initial concerns about reduced milk yield and labor costs are valid, the system's benefits in animal health, product differentiation, and market positioning may outweigh these drawbacks. Practical implementation requires careful management and potentially coordinated market support to promote welfare-friendly products. Policymakers and advisors should consider targeted incentives and extension services to facilitate adoption.

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This is to certify that the paper titled **Cow-Calf Contact Systems: Is This an Economically Sustainable Option for the Greek Dairy Industry?** co-authored by **Andreas Frantzis, Evangelia Sossidou, Konstantinos Tsimpoukas and George Vlachos** was presented in the 18<sup>th</sup> International Conference of the Hellenic Association of Agricultural Economists, held in Florina, Greece, with main topic *“Strengthening the sustainability and resilience of rural economies: Green transition, digitalization and competitiveness”*.

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