AIEAA
ASSOCIAZIONE ITALIANA DI ECONOMIA AGRARIA E APPLICATA

14th AIEAA Conference

18 - 20 June 2025 | Pisa, Italy

Conference Agenda

Session Overview

Date: Wednesday, 18/June/2025

4:00pm - 4:30pm	**Registration** Location: **Stazione Leopolda**
4:30pm - 7:30pm	**Pre-conference: Dalla partecipazione alla Trasformazione: Co-creare politiche per ambienti alimentari sani e sostenibili** Location: **Stazione Leopolda** Session Chair: **Alessio Cavicchi**
8:00pm - 11:59pm	**Social Dinner** Location: **Stazione Leopolda**

Date: Thursday, 19/June/2025

9:00am - 9:30am	**Opening Ceremony** Location: **Aula Magna Polo Piagge**
9:30am - 10:30am	**1st Plenary Session: Fostering Agrifood Systems Towards Sustainability and Competitiveness** Location: **Aula Magna Polo Piagge** Erik Mathijs (KU Leuven) Discussant: Stefanella Stranieri (UNIMI)
10:30am - 11:00am	**Coffee break**
11:00am - 12:00pm	**OS-1A: Future Perspectives on No-Alcohol and Low-Alcohol (NoLo) Wine Products** Location: **Aula L2 Polo Piagge** Session Chair: **Maurizio Prosperi** Speakers: Caterina Fucile Franceschini, Elisa Giampietri, Eugenio Pomarici, Antonio Seccia, Giuliana Di Maria, Rosaria Viscecchia, Biagia De Devitiis, Maria Antonietta Colangelo, Antonella Tassinari, Adele Coppola, Giuliana Di Maria, Maurizio Prosperi, Barbara La Gatta. The Organized Session focuses on no-alcohol and low-alcohol (NoLo) wines, an emerging category in the global beverage industry. These innovative products are designed for consumers seeking healthier lifestyles, moderation, and alternatives to traditional alcoholic wines. NoLo wines undergo specialized dealcoholization processes, such as vacuum distillation or membrane filtration, to reduce or remove alcohol while preserving flavors and aromas. Their popularity is growing due to shifting consumption trends, regulatory developments, and increasing demand for functional beverages. Despite this growth, the sector faces challenges such as regulatory inconsistencies, consumer perceptions, and technological constraints. The NoLo wine industry presents both opportunities and obstacles for producers, policymakers, and retailers navigating this evolving landscape. The Organized Session addresses several key scientific challenges. The first contribution examines fragmented legal frameworks and unclear terminology, which hinder competitiveness and market expansion. The second contribution investigates the pricing determinants of dealcoholized wines, a complex issue influenced by production methods, branding, and distribution channels. The third contribution explores the willingness of Italian wineries to produce NoLo wines, highlighting concerns over product quality and investment costs. The final contribution focuses on the environmental and economic sustainability of NoLo wine production, particularly the challenges associated with energy-intensive dealcoholization techniques. Addressing these challenges is crucial for industry growth, consumer acceptance, and regulatory clarity, ensuring a balance between innovation, market viability, and sustainability. The scientific value of the proposed Organized Session at the AIEAA Conference lies in its advancement of knowledge on NoLo wines by addressing critical market, regulatory, economic, and sustainability challenges. By integrating market data, econometric modeling, and life cycle analysis, this session supports evidence-based policymaking and industry strategies, fostering a more transparent and competitive NoLo wine sector. This proposal will facilitate a comprehensive debate on NoLo wines, engaging experts in agricultural economics, market dynamics, and sustainability. It will provide empirical insights into pricing strategies, consumer trends, and policy frameworks, benefiting both academia and industry stakeholders. The session will enhance knowledge transfer between researchers and practitioners, guiding future research and innovation in the NoLo wine sector. Additionally, it will contribute to the broader debate on competitiveness and sustainability in agrifood systems, aligning with the AIEAA Conference's focus on knowledge and innovation in shaping the future of agricultural markets. **Future Perspectives on No-Alcohol and Low-Alcohol (NoLo) Wine Products** **Maurizio PROSPERI[1], Caterina Fucile Franceschini[2], Giuliana Di Maria[1], Maria Antonietta Colangelo[3]** [1]University of Foggia, Italy; [2]University of Padova, Italy; [3]University of Basilicata, Italy; maurizio.prosperi@unifg.it 1004-Future Perspectives on No-Alcohol and Low-Alcohol-PROSPERI.docx
11:00am - 12:00pm	**OS-1B: Bridging Agriculture and Biodiversity: Designing Effective Incentives and Managing Risk in Agri-Environmental Schemes** Location: **Aula D2 Polo Piagge** Session Chair: **Monserrath Ximena Lascano Galarza** Speakers: Faure J.,Gaba S., Niedermayr A, .Schaak H., Kantelhardt J., Schaller L., Bretagnolle V., Zavalloni M., Targetti S., Viaggi D., Ungaro F., Velado-Alonso E., Bartomeus I., Lascano M., Borgia R., Raggi M. The agricultural sector is at a critical crossroads as it seeks to reconcile food production with biodiversity conservation. Agricultural intensification, increased agrochemical use, and landscape homogenization have significantly contributed to biodiversity loss, threatening ecosystem resilience, rural livelihoods, and long-term food security. In response, the European Union has implemented agri-environmental schemes (AES) under the Common Agricultural Policy (CAP) to incentivize biodiversity-friendly farming. However, despite financial incentives, farmer participation remains limited, and the effectiveness of these schemes is debatable. This session aims to explore innovative incentive structures, risk management strategies, and technological advancements that can enhance AES effectiveness. Moving beyond standard practice-based approaches, the session focuses on understanding the behavioral and economic barriers to AES adoption, assessing the role of biodiversity monitoring technologies, and analyzing the spatial and economic trade-offs in AES design. By integrating ecological research, economic modeling, and policy analysis, the session provides a holistic view of how AES can be refined to align conservation goals with farm-level economics. We build on the latest findings from the Horizon 2020 SHOWCASE project (H2020-SFS-2018-2020/H2020-SFS-2019-2, GA No. 862480), which assesses biodiversity effects linked to management changes and evaluated incentive mechanisms from multiple perspectives, integrating ecological, economic and policy analysis. The transition to biodiversity-supporting farming requires addressing key barriers such as risk perception, policy design, and the role of technology in improving cost-effectiveness. The first contribution in this session explores why agrochemical reduction schemes remain unattractive despite minimal income loss. Through experimental economic methods, it highlights how perceived risks and opportunity costs discourage farmers, particularly in high-yielding areas, offering insights for redesigning AES to mitigate these concerns. Beyond risk perception, effective AES implementation requires accurate biodiversity monitoring. The second contribution examines how biodiversity monitoring technologies can facilitate the transition to result-based AES. By reducing uncertainty through improved measurement accuracy and lower compliance costs, tools such as remote sensing and automated data collection can increase farmer participation. A Bayesian modeling approach demonstrates the impact of monitoring efficiency on policy costs and enrollment rates, emphasizing the need for reliable and cost-effective tools in AES implementation. Effective biodiversity incentives also require understanding conservation impacts at landscape scales. The third contribution presents a spatial modeling approach to assess biodiversity responses. Using remote sensing and machine learning, it evaluates how different agroecological conditions and management practices influence biodiversity at the landscape scale. The findings highlight the importance of designing AES that extend beyond individual farms to achieve broader conservation goals. Building on this, the fourth contribution integrates biodiversity assessments with economic cost modeling to analyze trade-offs between ecological effectiveness and financial feasibility. It compares targeted versus flat-rate AES payments and explores how opportunity costs shape farmer behavior. Identifying cost-effective payment structures is essential for making AES scalable and attractive to policymakers while benefiting biodiversity and farm profitability. The empirical, theoretical, and modeling perspectives of this session contribute to the ongoing development of evidence-based AES policy. The discussion will offer actionable recommendations for policymakers, researchers, and practitioners seeking to refine AES frameworks, making them more effective at fostering biodiversity while ensuring economic resilience in agricultural landscapes. **Bridging Agriculture and Biodiversity: Designing Effective Incentives and Managing Risk in Agri-Environmental Schemes** **Monserrath Ximena Lascano Galarza[1], Lena Schaller[2], Stefano Targetti[1], Jerome Faure[3,2], Matteo Zavalloni[4], Fabrizio Ungaro[5]** [1]Department of Agricultural and Food Sciences, Bologna, Italy; [2]University of Natural Resources and Life Sciences, Department of Economics and Social Sciences, Institute of Agricultural and Forestry Economics, Vienna, Austria; [3]Centre d'Études Biologiques de Chizé, UMR 7372 CNRS & Université de La Rochelle, 79360 Villiers-en-Bois, France; [4]University of Urbino Carlo Bo, Department of Economics, Society and Politics, Urbino, Italy; [5]Istituto per la BioEconomia (CNR IBE), Sesto F.no, Florence, Italy; monserrath.lascano2@unibo.it 1680-Bridging Agriculture and Biodiversity-Lascano Galarza.pdf
11:00am - 12:00pm	**PS-2C: Introduce (inter)active training in education and training programs to promote the skills and attitudes of future researchers and advisors to actively engage in multi-actor processes. Benefits and challenges** Location: **Aula Magna Polo Piagge** Session Chair: **Patrizia Proietti** Panelists: Patrizia Proietti, Simona Cristiano, Gianluca Brunori, Carmela Pecora, Cosimo Righini. Advisors play a key role in collecting farmers' needs and opportunities, thanks to their one-to-one interactions with farmers while giving advice. Due to this role, they are expected to act as innovation support providers, helping to prepare, participating in and sharing knowledge from interactive innovation processes, particularly EIP-AGRI operational groups. Hardly current education and training curricula include soft skills. In fact, despite few exceptions, the curricula of higher education and universities do not enable future advisors (and researchers, also) to gain transversal, interdisciplinary competences that are needed to 'handle' the production process softly. These competences, which entail communication, ability to listen and to value farmer's insights, combined with technical capacities and interactional expertise (Ingram, 2008), the ability to collaborate with different kinds of actors and develop adequate practices (Nettle et al., 2017), underpins the development of multi-actor project pathways. In i2connect, besides training courses targeted at advisors, summer school addressed to university students were successfully tested. The summer schools covered basic concepts and a variety of interactive exercises and methodological tools to sensitize trainees about the roles undertaken and the competencies needed to deal with challenges of interactive innovation processes/projects. They became aware of the importance and the difficulties of communication, particularly when interlocutors approach the examined issues from very different points of views and learned that "inclusiveness" is a demanding process that requires strenuous efforts by skilled actors, capable of

discussing with others and reflect on their own decisions and actions in a changing process. The trainees also understood the value of interactive learning and of being a reflective actor. However, not all the trainees felt confident using the methodological tools pertaining to interactive innovation, showing a certain resistance to non-traditional learning approaches based on knowledge transfer. Undoubtedly performing interactive learning is a more demanding process for trainees that have to think on their own, with knowledge deriving from social/peer interactions. In general, the i2connect summer schools show that even a short but intense training course can broaden the horizons of future advisors and researchers and enhance their awareness, understanding and capability of being actively engaged in and facilitating multi-actor processes. The findings highlight the need for changes in the traditional Higher Agronomic Education. They also indicate the potential benefits, when integrating communication and facilitation – networking exercises/practice as well as methodological knowledge about developing and facilitating interactive processes into university curricula. In this panel session we would like to give a short practical demonstration of the methods and tools used in i2connect summer schools and training courses, including through some testimonials. We will discuss the usefulness of introducing them into the curricula of future advisors and researchers and will evaluate the main challenges they present.

Introduce (inter)active training in education and training programs to promote the skills and attitudes of future researchers and advisors to actively engage in multi-actor processes. Benefits and challenges.

Patrizia Proietti[1], **Simona Cristiano**[1], **Gianluca Brunori**[2], **Carmela Pecora**[3]
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2085-Introduce (inter)active training in education and training programs-Proietti.doc

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11:00am - 12:30pm

P-1A: Agricultural Policy

Location: **Aula G2 Polo Piagge**
Session Chair: **Stefano Ciliberti**

Is the stabilization of farm income still a relevant issue in Europe?

Luigi Biagini[1], **Giuseppe Maiullari**[1], **Chiara Grazini**[2], **Simone Severini**[1]
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Agricultural activities are exposed to multiple risk factors, including climatic instability, market price fluctuations, and political uncertainty. These elements make farmers particularly vulnerable to unforeseen income variations, impacting the economic stability of their households and the rural communities. This study utilizes European Union Statistics on Income and Living Conditions (EU-SILC) from 2012 to 2021 to analyze income variability between agricultural and non-agricultural households across seven EU countries: Bulgaria, Spain, France, Italy, Portugal, Romania, and Slovakia. The analysis quantifies income variability and identifies key factors contributing to this phenomenon using linear and quadratic regression models. Results indicate that agricultural households in some countries exhibit greater income instability compared to non-agricultural households, with significant implications for EU policy formulation and the need for effective risk management tools. Notably, an increase in agricultural income initially reduces income variability but later exposes households to greater earnings fluctuations
This research highlights the vulnerability of the agricultural sector, where farrms play a crucial role in mantain vital the rural areas. Despite recent EU policies aimed at supporting rural development, farmers face challenges such as high energy costs, bureaucratic complexities, and inadequate access to community funds. The findings underscore the importance of tailored policies to address the diverse needs of agricultural households, ensuring economic stability and resilience in the face of ongoing global challenges. By shedding light on income disparities and their drivers, this study contributes to the development of more effective agricultural policies, aligning with broader EU objectives of rural sustainability and economic equity. The insights are relevant not only to policymakers but also to stakeholders seeking to enhance the economic resilience of rural communities across Europe.

1651-Is the stabilization of farm income still a relevant issue-Biagini.pdf

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The causal effects of interventions for youth agricultural start-ups

MARCO MARIANI, SARA TURCHETTI
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The study addresses the critical issue of generational renewal in the agricultural sector, which has experienced in many European and Italian regions a decline in utilised agricultural area (UAA) and, more critically, faces an aging workforce with limited participation from younger generations (among others, Licciardo et al., 2022; Coopmans et al., 2021). This trend poses a significant threat to the productive capacity of agriculture, potentially increasing dependence on foreign sources and related risks (Carbone e Corsi, 2014). Moreover, the aging agricultural workforce limits the sector's ability to address emerging environmental and economic challenges, including climate change, land degradation, and the growing demand for sustainable food production. In this context, promoting youth entrepreneurship emerges as a strategic solution to revitalize the sector, contribute to the national economy, enhance environmental sustainability, and foster social inclusion for young people in rural areas.

1677-The causal effects of interventions for youth agricultural start-ups-MARIANI.pdf

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Agri-Environmental Policies and Democracy

Paolo Nota[1], **Daniele Curzi**[1], **Alessandro Olper**[1,2]
[1]Department of Environmental Science and Policy, University of Milan, Italy; [2]LICOS, Centre for Institutions and Economic Performance, KU Leuven, Leuven, Belgium; alessandro.olper@unimi.it

Does democracy promote environmental goals in agricultural systems? We address this question by examining the transition to democratic institutions in a large sample of countries and their adoption of agri-environmental policies from 1965 to 2010. Using a study-event framework and a staggered difference-in-differences approach, we find that newly established democracies tend to adopt more policies aimed at improving the environmental performance of agricultural systems. After 10 years, a democratic transition leads to the adoption of 3 additional agri-environmental policies (+41%) with respect to a counterfactual autocratic regime. These new policies target, in particular, biodiversity, fertilizers, forests, and soil erosion. These findings suggest that institutional type plays a significant role in environmental policy adoption in the agricultural-related sectors and that achieving sustainability in agricultural systems is more likely to happen in countries with democratic governance.

1717-Agri-Environmental Policies and Democracy-Nota.pdf

New contractual terms for the transition of agri-food systems? A best-worst scaling experiment with farmers in Italy

Stefano Ciliberti, Angelo Frascarelli
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The transition scenario imposes economic agents in the agri-food systems to adapt their production choices to new environmental and quality requirements. Contractual arrangements represent a relevant solution to organize and coordinate decisions between farmers and buyers in socio-technical regimes, negotiating the adoption of quality standards and sustainable techniques to meet new consumers requests and form of public support.

Accordingly, the aim of the paper is twofold. First, it represents an original attempt to combine the Multi-Level Perspective on socio-technical transitions framework with the Neo-Institutional Economics approach to shed light on the role of contractual arrangements and their clauses in the transition towards greater sustainability. Second, the work investigates and provides empirical evidence of farmers' preferences towards the acceptance of specific contractual terms referred to consolidated and innovative practices and standards, with the aim to match private and goals into contractual arrangements governing activities and relationships in modern agri-food systems.

The combined use of a 2 best-worst scaling approach and latent-class conditional logit models applied to a sample of 472 Italian farmers allowed to analyse their preferences towards the incorporation of innovative contractual terms related to sustainable practices, quality thresholds, technical assistance and digitalised monitoring and control, considering also the role played by heterogenous individual characteristics.

Empirical evidence reveal that producers, even if interested in long-term contractual relationships, are still mainly attracted by traditional clauses related to fixed prices, contract duration and, only to a lesser extent, by high quality requirements and new environmental-friendly techniques. It follows that much more has to be done to make the adoption of innovative green practices and related knowledge and innovations more attractive among a wider arena of farmers, with endogenous institutions and actions playing a key role for reconfiguring the existing regime.

1730-New contractual terms for the transition of agri-food systems A best-worst scaling-Ciliberti.docx

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Agricultural Profitability and Regional Disparities: The Role of Common Agricultural Policy Subsidies and New Investments

Bleoussi Bernardin Monhoussou, Silvia Coderoni, Maria Angela Perito
Teramo University, Italy; bbmonhoussou@unite.it

This study investigates the impact of Common Agricultural Policy (CAP) subsidies and new investments in physical assets on farm profitability across inner and central areas in Italy. Using a dynamic panel dataset from the Italian FADN (2008–2022), matched with territorial classifications from the Italian Agency for Territorial Cohesion, we analyze 35,218 farms through a System Generalized Method of Moments (GMM) approach. Results confirm significant regional disparities in farm performance, with inner area farms exhibiting lower profitability due to structural constraints and limited access to markets and services. CAP First Pillar Payments (FPP) positively affect farm profitability in inner areas, suggesting their relevance in stabilizing incomes in disadvantaged regions. However, new investments in machinery and buildings significantly enhance profitability only in central areas, indicating that

structural disadvantages may limit their effectiveness in peripheral contexts. These findings highlight the need for context-sensitive rural development strategies, recognizing the heterogeneous impact of policy tools across regions. The study contributes to the debate on reconciling competitiveness and sustainability in agriculture, emphasizing the importance of targeted support to overcome regional inequalities and enhance the resilience of farms in marginal territories.

2054-Agricultural Profitability and Regional Disparities-Monhoussou.pdf

11:00am - 12:30pm

P-1B: Ecological transition and consumers' preferences

Location: **Aula H2 Polo Piagge**
Session Chair: **Maria Raimondo**

Are consumers interested in low carbon emission milk? A comparison between nature-based and lab solutions

Linda ARATA[1], Mirta Casati[1], Elena Castellari[1], Catharina Latka[2], Tereza Pilarova[3], Samuel Ahado[4], Miroslava Bavorova[3], Lukas Cechura[3], Paolo Sckokai[1]
[1]Universita´ Cattolica del Sacro Cuore, Italy; [2]University of Bonn, Germany; [3]Czech University of Life Sciences Prague, Czechia; [4]Technology Centre Prague; linda.arata@unicatt.it

The call for a more sustainable and efficient milk supply system has grown in recent decades due to the high demand for milk and dairy products. Meeting such demand, under current dairy production technology, can be a threat to the sustainability of the environment (Li et al., 2023).

In terms of food consumption, animal-based products, including dairy, are responsible for the highest carbon footprints. Dairy milk is the second most polluting beverage worldwide after coffee (Poore & Nemecek, 2018).

Consumers are becoming increasingly aware of the climate impact of their consumption choices. The growth of plant-based drink alternatives in the market is a response to this concern, while simultaneously addressing issues related to animal welfare and dietary restrictions (Boaitey and Minegishi, 2020). Still, most consumers do not want to give up on dairy products. Therefore, there is a need to explore innovative paths, through new sustainable dairy farming practices or product innovations, which will allow to reduce the carbon footprint of milk production without compromising its nutritional value or taste.

1036-Are consumers interested in low carbon emission milk A comparison between-ARATA.doc

Consumer Preferences and Policy Implications for Artificial and Natural Pollination in Apple Production

Sandra NOTARO, Gianluca GRILLI
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The conservation of wild pollinators is central to the biodiversity strategies of the EU. Actions to preserve pollinators are included in the latest releases of the Common Agricultural Policy (CAP) and in the wider environmental policy. Nonetheless, declining populations threaten agricultural production and food security. Technological substitutes exist to replace animal-mediated pollination. However, costs and public acceptance are highly uncertain. In this contribution, a discrete choice experiment was carried out to assess consumer preferences for honeybee pollination and some technological substitutes in apple orchards. A questionnaire survey was conducted on a sample of 506 Italian respondents, and data were analysed using
a random parameter logit model. Overall, results indicate that respondents are willing to maintain animal-mediated pollination in apple orchards as the main production system, even if this comes at the cost of a price premium of about € 0.52, i.e., approximately 25% more than the current average price nationally. Pollination using aerial drones was perceived negatively; respondents exhibited a price penalty of around € 0.13. Manual pollination was viewed positively by respondents, who showed a willingness to pay about € 0.19 per kg of apples. WTP results for manual pollination might reflect consumers' willingness to avoid replacing manual labour with technological alternatives. However, questions arise on the practical feasibility of manual pollination at a large scale and whether this might worsen the working conditions of the employees.

1049-Consumer Preferences and Policy Implications for Artificial and Natural Pollination-NOTARO.pdf

Carbon Policies in the Agrifood Sector: How Consumers Perceive Sustainability Measures

Sonia Morandi, Elena Claire Ricci
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Food production is a major contributor to global greenhouse gas emissions. To address this issue, carbon-related policies, such as carbon taxes and carbon labelling, have been introduced to encourage emission reductions. However, agrifood businesses must balance these environmental measures with market competitiveness, as such policies can affect their cost structures and positioning. Understanding consumer perception of these initiatives is crucial for developing effective and widely accepted sustainability strategies.

This study assesses Italian consumers' acceptance of carbon-related policies, focusing on carbon labelling and taxation. It compares perceptions between essential (milk) and non-essential (chocolate) food products, considering their potential influence on consumer purchasing decisions and market competitiveness. Data were collected through an online survey and analyzed using descriptive statistics, confirmatory factor analysis, and ordinary least squares regression.

Findings show greater acceptance of carbon labelling than carbon taxation, which is seen as burdensome and less trustworthy. Moreover, acceptance is slightly higher for indulgent foods than for staple products. The results underscore the need for clearer communication strategies to enhance consumer trust and policy effectiveness and to align sustainability efforts with consumer expectations while ensuring that agrifood businesses remain competitive in a shifting regulatory and market landscape.

1831-Carbon Policies in the Agrifood Sector-Morandi.pdf

Consumer's propensity to support conservative agricultural practices to increase soil health: a Discrete Choice Experiment

Maria Raimondo, Georges Assaker, Lucrezia Abruzzo, Riccardo Scarparo, Fabio Bartolini
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Soil health plays a crucial role in ensuring food security, maintaining biodiversity, and mitigating climate change. In Europe, about 60 to 70% of soils are in an unhealthy state, showing symptoms such as loss of organic matter, erosion, compaction, salinization, and contamination, causing lower agricultural productivity, and heightened risks to ecosystem services. The present study aims at capturing Italian consumers' propensity to economically support farmers to adopt agricultural practices related to "conservation agriculture", by employing a discrete choice experiment. Preliminary results suggest that consumers are willing to pay farmers for adopting conservative agricultural practices if the level of payment is not too high, the commitment is not too long as well as if the payment is completely linked to the highest increase of certified organic matter in the soil.

This research will contribute to the new and ongoing discourse on soil health. The study findings will offer practical recommendations for policymakers understanding factors driving consumers' financing of such sustainable agricultural practices.

1944-Consumer's propensity to support conservative agricultural practices-Raimondo.pdf

Consumers and Upcycled Food Products: The Green Gap and Potential Leverages for Boosting Consumption

Qamar U Zaman, Luca Rossetto, Mara Thiene, Leonardo Cei, Beatrice Bedin
university of padova, Italy; xxx.qamaruzaman@studenti.unipd.it

See the file attached

2081-Consumers and Upcycled Food Products-U Zaman.doc

11:00am - 12:30pm

P-1C: Food Consumption

Location: **Aula I2 Polo Piagge**
Session Chair: **Oluwatosin Abigail Fagbohun**

Segmenting Italian beef consumers: preferences analysis through a Human Values-Based Approach

Matteo Carletta, Emilio Chiodo, Maria Martuscelli
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Meat consumption is increasingly scrutinized due to environmental, health, and animal welfare concerns. Despite industry efforts to enhance beef quality and sustainability, consumers often fail to recognize the added value of premium products, leading to price homogenization and reduced market differentiation. This study segments Italian beef consumers based on Schwartz's human values theory to analyze their preferences for beef quality attributes.

A national online survey collected data on socio-demographics, consumption habits, and attitudes toward 20 beef quality attributes using the Best-Worst Scaling (BWS) method. Additionally, the 21-item Portrait Values Questionnaire (PVQ) assessed participants' personal values. Principal Component Analysis (PCA) was applied to identify meta-values, followed by Ordinary Least Squares (OLS) regression to examine their influence on beef attribute preferences. Cluster analysis was conducted to segment consumers into distinct groups.

Findings will provide actionable insights for policymakers, producers, and retailers to refine branding, communication, and marketing strategies, promoting sustainable and high-quality beef consumption. This study

bridges the gap between consumer behavior and market strategy, supporting a value-based approach to differentiation in the Italian beef sector.

2068-Segmenting Italian beef consumers-Carletta.docx

Fast GIs: When Geographical Indications Meet Fast-Food Branding

Leonardo Cei, Alice Stiletto
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Ingredient branding is a form of co-branding in which two or more brands collaborate for strategic purposes (Norris, 1992). The objectives pursued include i) allowing brands to broaden their consumer base by attracting new customers, ii) generating cost efficiencies by consolidating marketing efforts into a single communication strategy, and iii) expanding distribution networks (Desai and Keller, 2002; Norris, 1992). The literature emphasizes that the effectiveness of ingredient branding and co-branding strategies largely depends on the degree of similarity between the partnering brands. A higher alignment in attributes, values, or market positioning increases the probability of the partnership to be successful (Mitchell & Balabanis, 2021). However, when brands with contrasting characteristics engage in such collaborations, the outcome become less predictable. While some studies highlight that even a moderate level of brand fit can generate positive effects, such as enhanced brand appeal and novelty perception (Raufeisen et al., 2019), others point out potential risks, including brand dilution and consumer skepticism (Chiu et al., 2024). An example of a high-contrast ingredient-branding partnership is the collaboration between several Italian Geographical Indications (GIs) and McDonald's.

1340-Fast GIs-Cei.pdf

Evaluating Awareness and Consumption for Traditional Products in Veneto's Marginal Mountain Areas and the Impact of Quality Schemes

Alessandro Callegari[1], Xinran Shen[1], Gianluca Grilli[2], Paola Gatto[1], Francesco Pagliacci[1]
[1]Università degli Studi di Padova, Italia; [2]Università degli Studi di Trento, Italia; alessandro.callegari@unipd.it

The study investigates the economic feasibility of adopting quality schemes for traditional plant-based products in the mountain marginal areas of the Veneto Region, Italy. In particular, this paper explores consumer awareness and consumption of selected traditional agri-food products and quality schemes to develop innovative strategies for their valorization. The study focuses on three case study areas. In Valbelluna, the focus is on Mais Sponcio, an ancient maize variety cultivated in this area. The Asiago Plateau is recognized for its culinary tradition of using officinal plants, particularly Caraway, Dandelion, and Mountain Spinach. In the Cansiglio Plateau, Red Thistle is used as an ingredient in local recipes.

To assess awareness and consumption of the aforementioned agri-food products and quality schemes, a CAWI (Computer-Assisted Web Interviewing) questionnaire-based survey is conducted with a sample of 3,000 Italian consumers. Through logit models, the factors influencing consumer awareness of each product and their consumption are assessed. Then, also preferences for different quality schemes are modelled.

The study highlights significant variations in consumer awareness across products and quality schemes, with demographic factors such as age and education level playing a key role, with implications in terms of market segmentation.

2071-Evaluating Awareness and Consumption for Traditional Products-Callegari.pdf

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Circular Food Consumption and Policy Levers: A Q-Methodology Investigation

Gizem Yeter[1], Yari Vecchio[1], Margherita Masi[1], Ruggiero Sardaro[2], Antonio Urbano[2], Piermichele La Sala[2], Felice Adinolfi[1]
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In an era of increasing environmental challenges,the need to rethink how we use,consume,and manage resources has never been more pressing than now.The scarcity of resources pushes us to search for alternative consumption patterns,but as being dependent on what nature provides,it is not an easy problem to solve.Although the European Green Deal aims to promote sustainable consumption,it faces significant obstacles,particularly in translating policy goals into practical changes.In response to this,public institutions worldwide are actively seeking solutions and strategies.In this context,the Farm to Fork strategy has been introduced with the aim of making food systems fair,healthy,and environmentally friendly.However,is this strategy truly effective?Despite a strong policy foundation,its impact on consumer behavior remains controversial due to implementation gaps within member states (Mezzacapo, 2024),the dominance of linear production models (Omar & Thorsøe, 2024),and limited consumer participation(Schebesta et al.,2020).Given the urgency for transition,adopting circular food consumption practices and understanding how different actors engage with these new approaches is crucial.Before addressing consumer behavior,this study explores the primary perspectives of policy networks on adapting and implementing circular food consumption practices.We contend that this study will present a framework to understand and support the adaptation of circular food consumption among consumers as viewed through the perspectives of policy networks.

2062-Circular Food Consumption and Policy Levers-Yeter.doc

Local Multiplier Effect 3: A Simple Methodology for Evaluating the Economic Impact of Short Food Supply Chains (SFSCs) in the MercaTiAmo Project.

Oluwatosin Abigail Fagbohun, Davide D'ascoli, Rosalia Filippini, Filippo Arfini
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SFSCs' economic profitability is ambiguous. There is no doubt that higher spillover effects and local economic development have been recorded. Research has primarily focused on the dynamics between local producers and consumers in social innovations, often neglecting the role of input suppliers despite their importance. Moreover, there is a gap of insufficient study on the social relationship between input suppliers and producers in SFSCs and how these relationships impact the local multiplier effect. Therefore, this study focused first on analysing the economic impact of SFSC on the local economy via the LM3 metric. A case study methodology was utilized. Primary data were collected through semi-structured interviews with 14 producers. Questionnaires were adapted from a thorough literature review and content analysis of the LM3 software. The results show that the multiplier effect of the farms analysed ranges from 1.94 to 2.59, with an average LM3 value of 2.3 for the entire project. This suggests that for every €1 of gross income generated by the project for all participants, an additional €2.30 is produced within the local economy on average. The LM3 value is influenced by the type of inputs a farm allocates its greater spending leading to a higher LM3.

1923-Local Multiplier Effect 3-Fagbohun.pdf

11:00am - 12:30pm

P-1D: Sustainability strategies in the agri-food sector

Location: **Aula E2 Polo Piagge**
Session Chair: **Raffaele D'Annolfo**

The sustainability of agri-food systems: is organic production part of the solution?

Exequiel Romero Gomez, Maria Laura Ojeda, Luca Salvatici, Cristina Vaquero-Pineiro
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Satisfying the increasing food demand, while supporting the sustainability of agri-food systems is seen as a major global challenge in the future. This study investigates how environmental policies, in terms of higher organic production targets, might affect the whole sustainability of agrifood systems at the national and international levels.

By using simulations from the Simplified International Model of Agricultural Prices, Land Use, and Environment (SIMPLE) model, extended for the first time to distinguish organic from conventional production, we project socio-economic and emission outcomes in response to the 25% of organic farmland by 2030 fixed by the EU Farm to Fork strategy in Italy.

Overall, results indicate that even though the F2F strategy in Italy is projected to increase crop production and reduce GHG emissions by 2030, it will also raise crop prices, slightly increase land use, and intensify non-land input demands under conventional agriculture. The findings underscore the need for complementary policies and coordinated action plans across territorial and sectoral levels to balance economic, social, and environmental sustainability.

2130-The sustainability of agri-food systems-Romero Gomez.pdf

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Sustainability in the wine sector: does certification impact short-term economic performance?

Valentina Di Chiara[1,2], Leonardo Cei[1,2], Eugenio Pomarici[1,2]
[1]TESAF - Department of Land, Environment, Agriculture and Forestry - University of Padova, Italy; [2]CIRVE - Interdepartmental Centre for Research in Viticulture and Enology - University of Padova, Italy;
valentina.dichiara@unipd.it

The wine sector is increasingly adopting sustainable production models to mitigate environmental and social impacts, driven by climate change, regulatory pressures from the EU's Green Deal, and consumer demand for sustainability. However, the economic implications of sustainability certification remain uncertain, as consumer willingness to pay a premium is not guaranteed and producers think that the costs of implementing best practices may outweigh the benefits.

This study therefore aims to assess whether the decision of wine companies to embark on a sustainability path, through a certification process, has an impact on their economic performance and, consequently, on their profit and monetary balance. Using data on economic performance from the AIDA database (2018-2023) about certified and non-certified wineries, a Difference-in-Differences (DiD) analysis was conducted adopting the TWFE etimator of De

Chaisemartin and D'Haultfœuille (2020). Key financial indicators analyzed include EBITDA/Sales, ROA, Quick Ratio (QR), and Liquid Ratio (LR).

Preliminary results suggest that, although no immediate economic benefits are evident, the decision of a winery to pursue sustainability does not lead to a deterioration in profitability or monetary balance.

2023-Sustainability in the wine sector-Di Chiara.pdf

Tracing sustainability in the cocoa value chain: integrating a multi-approach economic assessment and regulatory compliance

Francesco Di Cosola[1], Alessandro Petrontino[1,2], Simona Giordano[1], Federica Calderoni[1], Loretta Moramarco[1], Francesco Bozzo[1,2]

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The TRACE-IT project, part of the FOODITY initiative under Horizon Europe, aims to enhance trasparency and sustainability in cocoa supply chain through a blockchain-based traceability platform. Cocoa production, mainly in West Africa and Latin America, faces significant environmental and social challenges, including deforestation, biodiversity loss, and economic inequalities. New EU regulations, such as the EUDR and CSDDD, require stricter compliance, while evolving consumer preferences demand greater transparency and sustainability in food sourcing. TRACE-IT integrates Life Cycle Assessment (LCA) to measure environmental impacts on agricultural phase. Additionally, an hedonic pricing analysis to quantify the premium price recognized on market sales for sustainability attributes, while a Discrete Choice Experiment (DCE), incorporating previous insights, could assess consumer behavior in European markets. The method can quantify the specific willingness to pay (WTP) for sustainability and traceability attributes, especially through blockchain technology. Preliminary results highlight blockchain's potential to improve transparency, strengthen sustainability communication, and create economic incentives for responsible cocoa production. TRACE-IT offers a scalable model for digital innovation in agri-food supply chains, fostering a more sustainable and equitable global cocoa market.

2075-Tracing sustainability in the cocoa value chain-Di Cosola.pdf

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From Bitter to Better: Can Voluntary Standards Foster a Sustainable Future for Cocoa? Evidence from the Eastern Region of Ghana

Sara Romano[1], Federica Demaria[2], Federica Morandi[2], Ralph Armah[3], Ilenia Manetti[2], Raffaele D'Annolfo[2], Roberto Henke[2], Felicetta Carillo[2], Maria Rosaria Pupo D'Andrea[2], Anna Carbone[1]

[1]Università degli Studi della Tuscia, Italy; [2]Council for Agricultural Research and Analysis of Agricultural Economics (CREA-PB); [3]University of Ghana; sara.romano@unitus.it

Cocoa farming is crucial to Ghana's agricultural sector, but it faces significant economic, social, and environmental sustainability challenges. Voluntary Sustainability Standards (VSSs), such as Organic and Fairtrade, have emerged as key tools to address these issues. However, their overall impact on sustainability remains underexplored. This study examines the effect of these VSSs on cocoa farming sustainability in Ghana, focusing on trade-offs among environmental, social, and economic dimensions. Using a comprehensive sustainability index that covers all three pillars, the research evaluates the sustainability of 321 farmers in the Eastern Region. Preliminary findings indicate that while certification improves social and environmental outcomes, it does not enhance economic sustainability. Certified farmers often experience lower yields, leading to reduced revenues despite price premiums. Moreover, a negative correlation between environmental and social sustainability is observed on Organic farms, although this trade-off is reduced with double certification (Organic and Fairtrade). The study underlines that while VSSs can improve specific aspects of sustainability, they are not a stand-alone solution and that a more holistic approach, combining VSSs with broader policy interventions such as improved access to resources, training, and infrastructure is crucial for ensuring long-term sustainability of the cocoa sector in Ghana.

1942-From Bitter to Better-Romano.pdf

Voluntary sustainability standards in the Vietnamese rice sector: opportunities and challenges under the EU-Vietnam Free Trade Agreement

Raffaele D'Annolfo[1], Federica Demaria[1], Viet Hoang[2], Roberto Henke[1], Maria Rosaria Pupo D'Andrea[1], Marco Vassallo[1], Felicetta Carillo[1], Ilenia Manetti[1], Sara Romano[3], Federica Morandi[1]

[1]CREA, Italy; [2]University of Economics Ho Chi Minh City (UEH), Vietnam; [3]University of Tuscia (UNITUS), Italy; raffaele.dannolfo@crea.gov.it

Voluntary Sustainability Standards (VSSs) have become key instruments for enhancing sustainability and competitiveness, particularly in developing countries integrating into global trade and new-generation agreements with the EU. This study examines VSS adoption (e.g., GlobalGAP) in Vietnam's rice sector under the EU-Vietnam Free Trade Agreement (EVFTA), focusing on how certification, farm size, cooperative membership, and other factors influence farmers' economic returns. A mixed-methods approach was used, combining qualitative interviews with key stakeholders and quantitative survey data from rice farmers to assess revenue determinants. Findings highlight that while VSSs offer economic benefits, adoption remains constrained by high costs, complex certification processes, and limited financial incentives. Farm size significantly influences revenue, with small and fragmented plots facing profitability challenges. Cooperative membership provides knowledge-sharing benefits but lacks the bargaining power to secure fair prices. Gender disparities persist, with women receiving lower wages and facing higher health risks from pesticide exposure. Main policy recommendations include strengthening market linkages for certified rice, improving cooperative governance, investing in climate adaptation strategies, and establishing a Sustainable Rice Taskforce to enhance sustainable production and ensure equitable benefits under the EVFTA.

1932-Voluntary sustainability standards in the Vietnamese rice sector-DAnnolfo.pdf

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12:00pm - 1:00pm

OS-1C: Agriculture and the environment: the role of policies in mitigating impacts and adapting to climate challenges

Location: **Aula Magna Polo Piagge**
Session Chair: **Fabio Gaetano Santeramo**
Speakers: Fabio Gaetano Santeramo, Irene Maccarone, Silvia Coderoni, Alberto Giannecchini, Michele Donati, Filippo Arfini, Lisa Baldi, Claudia Stefania Gondos, Elena Castellari, Alan Wall, Boris E. Bravo-Ureta.

This panel explores various policy approaches aimed at reducing the environmental impact of the agricultural sector while also addressing its need to adapt to climatic challenges. By analysing both market-based and non-market-based instruments, the studies provide insights into the effectiveness of different policy tools. Through the assessment of ex-post and ex-ante strategies, the research evaluates how agricultural policies can contribute to emission reductions, while also considering the influence of external environmental factors on productivity. A focus is placed on the role of policy choices—such as market-based payments, carbon pricing mechanisms, carbon trading systems, standards, and regulations—in shaping the effectiveness of emission reduction strategies. One approach examined involves the design of different agricultural emissions trading systems (Agri-ETS), considering key factors such as farm size, the types of emissions included, and the reduction targets imposed, to assess their potential impact on greenhouse gas (GHG) reductions and regulatory coverage. Another framework explores the role of quota policies in reducing agricultural GHG emissions. The analysis considers different quota scenarios, including the imposition of fines on surplus production and the possibility of exchanging production quotas beyond established thresholds. Additionally, the research investigates how structural and environmental factors influence agricultural efficiency. Understanding how these factors affect productivity is crucial for designing targeted policy measures that enhance resilience and promote long-term sustainability in the agricultural sector. By integrating economic, environmental, and regulatory perspectives, this panel contributes to the development of more effective strategies for balancing environmental goals with agricultural productivity.

Agriculture and the environment: the role of policies in mitigating impacts and adapting to climate challenges

Irene Maccarone[1], Fabio Gaetano Santeramo[1,2], Raffaele Cortignani[3], Francesco Vanni[4], Silvia Coderoni[5], Alberto Giannecchini[6], Michele Donati[6], Filippo Arfini[6], Lisa Baldi[6], Claudia Stefania Gondos[7], Elena Castellari[7], Alan Wall[8], Boris E. Bravo-Ureta[9]

[1]University of Foggia, Italy; [2]European University Institute, Italy; [3]University of Tuscia, Italy; [4]Organisation for Economic Co-operation and Development, OECD, France; [5]University of Teramo, Italy; [6]University of Parma, Italy; [7]Università Cattolica del Sacro Cuore, Italy; [8]University of Oviedo, Spain; [9]University of Connecticut-Storrs, United States of America; irene.maccarone@unifg.it

2092-Agriculture and the environment-Maccarone.pdf

12:00pm - 1:00pm

OS-2A: The role of water in the rural-urban linkages: insight from the RUEESnexus project

Location: **Aula L2 Polo Piagge**
Session Chair: **Mauro Viccaro**
Speakers: Giampiero Lombardini, Simone Lombardini, Barbara Cavalletti, Benedetto Rocchi, Gino Sturla, Leonardo Lanata, Majid Zadmirzaei, Mario Cozzi, Severino Romano, Mauro Viccaro.

The session invites the AIEAA congress-mates to discuss the results of the "A environmentally extended Rural-Urban model to study the Ecosystems-Economy-Society nexus (RUEESnexus)" project, aiming at generating new, relevant knowledge on the Ecosystems-EconomySociety (EES) nexus in and between rural and urban areas. The RUEESnexus core is the implementation of environmentally-extended rural-urban input-output tables (EE-RUIO) of three regional economies. The three RUIO tables are extended to include physical water exchanges between the economy and the environment and integrated with accounts for the value of water ecosystem services. The EE-RUIO

tables are used to implement a set of models for the analysis of the nexus between water ecosystems and the society. Rural-urban interdependencies are inquired beyond the economic sphere, providing a valuable tool to support analyses and decisions for a sustainable management of water resources at the regional level. The organised session aims at sharing with participants the intensive data collection and processing activity necessary to build EEIO models at the subregional level as well as the first results obtained from the implemented models. The members of the research team hope to spur the debate and receive valuable feedbacks on the following topics: - The structural economic dynamics continuously redefines the concept of rural-urban divide, while the extension to ecosystem service accounting adds further complexity to modelling. The empirical challenge is to build a partition of the territory that is able to capture the spatial mismatch between ecosystem services production and the generation of pressures related to human activities. - Adding monetary estimates of ecosystem flows to the IO representation of rural-urban interdependencies asks to carefully address conceptual and definitory issues in quantifying flows as well in adapting empirical tools available for the estimation of ES flows at the chosen geographical scale of analysis. - The hydrological structure of regions generates a complex topology of dependences among territories, while the implicit flows of water incorporated in trade, moves across territories the pressures generated by production activities following socio-economic drivers. Multisector – multiregion models can be used to capture the complexities of water scarcity management at the regional level. - The environmental extended input-output (EEIO) models can be used to identifying optimal strategies to implement regional and sub-regional sustainable water management initiatives, such as wastewater reuse in agriculture and potable water supplies, to face water scarcity challenges.

The role of water in the rural-urban linkages: insight from the RUEESnexus project

Mauro Viccaro[1], **Benedetto Rocchi**[2], **Barbara Cavalletti**[3]
[1]University of Basilicata, Italy; [2]University of Florence, Italy; [3]University of Genova, Italy; mauro.viccaro@unibas.it

1731-The role of water in the rural-urban linkages-Viccaro.pdf

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12:00pm - 1:00pm

OS-2B: Agriculture, Environment and Development.

Location: **Aula D2 Polo Piagge**
Session Chair: **Andrea Ponti**
Speakers: Borchi, Dibattista, Mazzarano, Pescatore, Tozzi, Pronti, Baldoni, Rey Vicario, Kremmydas, Tillie, Coletti, De Nigris, Pronti, Zecca, Coromaldi, D'Amato, Uzelac

The European Union's commitment to climate neutrality by 2050 underscores the need for effective carbon sequestration strategies, among which carbon farming is gaining prominence. This study investigates the potential of carbon farming to enhance soil organic carbon (SOC) sequestration in Italy, considering both biophysical and socioeconomic factors. The research aims at understanding how different carbon farming practices perform in terms of SOC sequestration potential in Italy, and what the policy implications for their implementation are. The methodology follows a three-step approach. First, a literature review identifies the sequestration potential of three key carbon farming practices - amendments, cover crops, and reduced or no tillage - within different Italian geographical contexts. Second, Italy is analyzed based on soil texture, climate zones, and soil carbon saturation, leading to the delineation of homogeneous zones through GIS data to assess vulnerability and sequestration potential. Finally, these results are integrated with socio-demographic and economic data, including population density, cultivated land area, and farm typologies, to evaluate the economic feasibility of carbon farming and its implications for carbon credit markets. The expected outcomes include an evidence-based framework for prioritizing investments in carbon farming, identifying regions where adoption is most beneficial, and providing policy recommendations to enhance the economic and environmental impact of carbon sequestration strategies in Italy.

Agriculture, Environment and Development.

Alessio D'Amato
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1734-Agriculture, Environment and Development-DAmato.docx

12:30pm - 1:00pm

Pit-1A: Pitches 1A - Driving sustainable progress in agriculture and rural areas

Location: **Aula G2 Polo Piagge**

Improving Soil Health through conservation agriculture: a Discrete Choice Experiment

Riccardo Scarparo, **Maria Raimondo, Fabio Bartolini, Lucrezia Abruzzo**
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Soil health is essential for food security, biodiversity conservation, and climate change mitigation (Uz et al., 2022). However, degradation due to unsustainable farming, urbanization, and climate change threatens European soils, with 60-70% affected (EC, 2020). The European Union (EU) addresses this issue through the Common Agricultural Policy (CAP) and the European Green Deal, promoting sustainable soil management. This study investigates farmers' willingness to adopt sustainable agricultural practices. Specifically, by employing a discrete choice experiment (DCE), the current study analyses farmers willingness to adopt (WTA) conservation agricultural practices.

2077-Improving Soil Health through conservation agriculture-Scarparo.doc

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Green innovation and environmental performance: the role of economic interactions and technological contaminations across agri-food industries

Federico Zilia, **Ivan De Noni, Luigi Orsi, Stefanella Stranieri**
University of Milan, Italy; federico.zilia@unimi.it

This paper investigates the role of economic interactions and technological contaminations across industries in fostering green innovation and improving environmental performance. By integrating the concepts of core supply-chain and general-purpose industries, the study examines how agri-food industries positioned as economic and technological hubs within global supply chains and innovation networks enhance their green technological progress.

The analysis relies on two primary data sources: the Global Resource Input Output Assessment (GLORIA) and the OECD RegPat Database. The dataset includes 39 agri-food and bio-based industries across 31 European countries, the US, China, and the Rest of the World from 1990 to 2020. Green innovation capacity is assessed through green patent identification, while environmental performance is measured via CO2 emissions relative to value-added.

Preliminary findings indicate that agri-food industries with strong economic interconnections and technological contamination generate more green patents and achieve significant CO2 reductions. Industries embedded in supply chains benefit from inter-industry knowledge spillovers, while general-purpose industries foster cross-sectoral innovation.

The study highlights the strategic role of production and innovation networks in driving circularity and sustainability in the agri-food system, offering policy insights to enhance environmental performance through value chain integration and technological advancement.

1812-Green innovation and environmental performance-Zilia.pdf

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Innovative Business Models for the valorization of agrobiodiversity: contributions from the DIVINFOOD project

Dalia Mattioni[1], **Francesca Galli**[2], **Yuna Chiffoleau**[3], **Laurane Desoutter**[4]
[1]Università di Pisa, Italy; [2]Università di Pisa, Italy; [3]INRAE; [4]INRAE; dalia.mattioni@agr.unipi.it

There is today ample evidence that agrobiodiversity, i.e. the domesticated and undomesticated plants, animals and microorganisms that contribute to food and agriculture, is severely at risk. Comprehensive and rapid agrobiodiversity loss, as is currently being experienced worldwide, has severe environmental and health-related implications. Numerous calls for action have been made in the past decades to increase efforts at agrobiodiversity conservation not only through conservation measures such as the use of germplasm banks, but also through its use, with research that spans the entire food value chain from farm to consumer. Within his body of evidence, less attention has been given to innovations introduced by various actors in business models of farms and small processing firms, and how these can create economic incentives for agrobiodiversity conservation and valorization. Among these actors, the role of public institutions in providing direct or indirect economic support for its maintenance and use has not been sufficiently studied. Specifically, there is limited information on how the development of local food policies can open up a new perspective for public action to help shape business models that sustain agrobiodiversity.

As part of the European DIVINFOOD project, this study examines how farmers, food system stakeholders, policies, and voluntary initiatives interact to develop viable economic strategies that support neglected and underutilized crops (NUCs), such as minor cereals and legumes. The study draws on scientific literature and data from Living Labs in France, Italy, Portugal, Denmark, and Hungary collected through an online database that captures data relative to the costs and benefits derived from cultivating NUCs throughout the value chain (i.e. from inputs to marketing). It uses a case study approach to illustrate barriers and enablers of models identified through a desk research. The selected case studies reflect the diversity of innovations introduced in the business models and the different strategies used to make them work.

We discuss three key business models that promote agrobiodiversity, each combining specific policy instruments and voluntary measures:

- Small-scale cooperative models, where farmers collaborate to share resources, mitigate risks, and improve market access.

- Publicly supported models, which rely on financial or regulatory support from (local) authorities.

- Direct market relationship models, which connect farmers, processors, and buyers to establish biodiversity-centered value chains.

The findings provide actionable recommendations to policy-makers to support new economic models for farms using agrobiodiversity.

2089-Innovative Business Models for the valorization of agrobiodiversity-Mattioni.doc

"Smart Villages and Citizen Science: Strategies for the Sustainable Development of Rural Areas"

Alice Carlotta Tani, Flavio Lupia, Maria Valentina Lasorella
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Introduction

Innovation in the agri-food sector and the involvement of communities through citizen science offer crucial opportunities for the development of rural areas. The concept of smart villages emerges as an integrated model, where the agri-food economy and participatory science combine to promote the resilience of local communities and the valorization of territorial resources. The theme of “smart villages” has been discussed in many national and international conferences, where strategies for the revitalization of rural areas were explored, with a focus on sustainability, innovation, and active participation, along with the creation of “smart community” models.

Data and Research Methodology

The innovations and approaches adopted during these events are based on multidisciplinary participatory methods that combine both qualitative and quantitative tools. Among the activities explored during the workshops, discussions focused on the use of mapping abandoned lands and creating databases to identify opportunities for agricultural and community development. An important outcome from the workshop "Research and Territory: Sharing Paths between Universities and CREA," held at the University of Fisciano (SA), was the adoption of digital platforms to gather data on local community perceptions and needs, enhancing participation and improving the interaction between citizens and stakeholders.

Discussion of Results

One of the most effective methodologies for encouraging participation in citizen science is gamification, which applies game dynamics to facilitate learning and engagement. In the context of rural areas, playful tools can help make agricultural management issues and territorial development policies more accessible and understandable. A significant example of gamification applied to citizen science is the PAC Game, a board game developed by CREA (Council for Agricultural Research and the Analysis of Agricultural Economics), centered around the Common Agricultural Policy (CAP). This tool allows participants to take on the roles of farmers and stakeholders, simulating decision-making dynamics and the challenges of agricultural management. During workshops, the PAC Game proved to be a valuable tool for engaging a broad, less specialized audience, helping them understand complex concepts through an interactive and participatory approach.

Main Conclusions

The adoption of the PAC Game and other citizen science strategies enables the collection of valuable data to identify challenges and opportunities in agricultural policies, contributing to the formulation of development strategies based on solid evidence. The integration of innovative tools for public participation, the use of digital technologies, and an inclusive approach to territorial management all enhance the resilience of rural communities, promoting sustainable and participatory agri-food development.

2051-Smart Villages and Citizen Science-Tani.doc

12:30pm - 1:00pm

Pit-1B: Pitches 1B - Digitize farms, optimize policy, reform models, and assess food systems

Location: **Aula H2 Polo Piagge**

Digitalization in small-medium farms: the case of Geographical Indication dairy products

Sofia Scarcella, Cristina Vaquero Pineiro
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Digital tools open new opportunities for development in the agri-food sector. Technological innovation is expected to play a crucial role in the next future, particularly in response to the challenges posed by the ecological transition and economic competitiveness. The digital transition in the agri-food sector is however highly complex, especially in traditional local production systems. It demands not only financial resources, new tools and data management, but also the collaboration of all the actors along the supply chain. The successful integration of digital strategies relies, in fact, on shared knowledge and collective effort, ensuring that innovation benefits the entire industry. By using qualitative analysis, this paper looks at the case of Geographical Indication dairy products and investigates the adoption of digital solutions by small farmers starting from the Parmigiano Reggiano PDO production. Preliminary results show that technology can enhance traceability, quality control, and sustainability. This case study may serve as a model for other agri-food sectors, demonstrating how digital strategies can drive innovation while preserving traditional production methods

2083-Digitalization in small-medium farms-Scarcella.doc

Advancements and Applications of Positive Mathematical Programming (PMP) in Agricultural and environmental policy: A Systematic Review

Elisa Belfiore, Davide Viaggi
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This systematic review examines the development and application of the Positive Mathematical Programming (PMP) approach in analyzing agricultural and environmental policies, particularly focusing on studies published between 2019 and 2025. PMP is widely used to model farmer behavior, ensuring reliable forecasting by minimizing discrepancies between observed and simulated data. However, the standard PMP approach has limitations, leading to various model modifications proposed by researchers. The review, conducted using the PRISMA method, analyzes 36 papers and categorizes them into three groups: standard PMP, PMP integrated with other mathematical models, and PMP with enhanced cost or production functions. Preliminary results show a growing trend of integrating PMP with other approaches and enhancements to the functional form of cost/production functions. The study aims to assess the recent advancements in PMP and explore how these developments could improve simulations of farmers' responses to environmental and socio-economic constraints, ultimately contributing to the design of more sustainable agricultural policies.

1883-Advancements and Applications of Positive Mathematical Programming-Belfiore.doc

REFORM project: Balancing Sustainability and Costs Through Innovative Agri-Business Models to Account for Environmental and Social Impacts

Henri Contor[1], Erika De Keyser[1], Molla Tigabu Kasaw[1,2], Erik Mathijs[1]
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The global agri-food system is at a critical juncture, needing to balance economic competitiveness with sustainability. Current agribusiness models often fail to account for the full spectrum of environmental economic, and social externalities, creating imbalances between short-term profitability and long-term societal welfare. The REFORM project addresses this challenge by developing innovative frameworks to internalise these externalities into the sustainability evaluation of agri-business models, aligning economic viability with environmental stewardship and social equity. This interdisciplinary consortium—comprising KU Leuven, UAntwerp, the University of Pisa (UNIPI), and the Flanders Research Institute for Agriculture, Fisheries and Food (ILVO)—aims to redefine sustainability pathways by reconciling sustainability with economic viability through innovative agribusiness models

REFORM focuses on enhancing the sustainability of agri-food systems by integrating environmental and social impacts into business models through the application of True Cost Accounting methodologies. The project seeks to fill gaps in existing frameworks by harmonising existing impact valuation methodologies for a better assessment and internalisation of externalities. It will evaluate current business models through a specific sector of study—Flemish dairy farming, identify areas of sustainability improvement, and propose avenues for improvement. Additionally, REFORM will assess the economic and social welfare impacts of implementing sustainability guidelines, exploring trade-offs between added costs and value creation. Empirical analyses and stakeholder engagement will guide the design of scalable, sustainable agri-business models. The project will also prioritise knowledge sharing to ensure research outcomes are disseminated and applicable across diverse contexts for widespread adoption of sustainable practices.

The REFORM project is structured into interconnected work packages (WPs), each targeting specific objectives. WP1 develops a methodological framework for evaluating sustainability in agribusiness models, including a systematic literature review of True Cost Accounting, and a detailed framework of application. WP2 applies this framework to analyse and improve current business models, with tasks like cataloguing existing dairy farming landscape, assessing the sustainability of the most common business structure within that landscape, and designing actionable guidelines by exploring transformative scenarios. WP3 evaluates the social welfare impact of reaching these hypothetical models, including feasibility and cost assessments, but also benefits for society. WP4 focuses on testing, up scaling and out scaling, with tasks like stakeholder preference assessments, and behaviour simulations.

A distinctive feature of REFORM is its dual focus on technical feasibility and social welfare implications. The project quantifies the costs of sustainability interventions and models their long-term socioeconomic impacts. Through case studies and behavioural simulations, the consortium evaluates how market mechanisms and policy instruments interact to enable or constrain sustainable practices. Ultimately, REFORM aims to demonstrate that reconciling profitability with planetary boundaries is not only possible but economically imperative for resilient food systems.

2078-REFORM project-Contor.pdf

12:30pm - 1:00pm

Pit-1C: Pitches 1C - Advancing bioeconomy, sustainable diets, and innovative products

Location: **Aula I2 Polo Piagge**

Towards designing a collaborative governance framework in the bioeconomy: Exploring stakeholders' views and priorities in relation to the governance of education and training

Yaprak Kurtsal, Monserrath Ximena Lascano Galarza, Ghelfi Rino, Galletti Paola, Viaggi Davide
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1. Introduction

The transition to a sustainable bioeconomy requires an education and training (ET) system that is dynamic, and aligned with the evolving skill needs; however, governance mechanisms that can drive this transition remain underexplored. The aim of this study, which is conducted in the scope of Horizon Europe Project BioGov.net, is to explore priorities and views of stakeholders key stakeholders regarding governance of bioeconomy ET.

2. Data collection and methodology

The data collection was conducted through an online survey, which was implemented to ET providers, civil society, policy-makers and bioeconomy professionals in eight member states. 188 responses were collected. The distribution of the sample is found in Table 1 under the Annex. The design of the questionnaire has been based on the governance model proposed below, which is based on extensive literature review, and consists of three pillars that explain the governance of ET (Figure 1).

First, the fitness of the proposed governance framework was analysed through several tests (Cronbach's alpha, polychoric correlation analysis, and a Kaiser-Meyer-Olkin). Then, we conducted a Principle Component Analysis (PCA) for dimensionality reduction, followed by a cluster analysis, to identify clusters among stakeholders with similar views on bioeconomy ET governance. A mixed-methods approach was employed, comprising quantitative and qualitative analyses to explore views of stakeholders on governance topics.

3. Preliminary Results

The results revealed clusters with distinct characteristics, highlighting variations in stakeholder types, countries, expertise in bioeconomy, age, gender, educational levels, and fields of expertise (Table 2 in Annex), and significant variation in how different topics within the three pillars of the governance framework are prioritised. Furthermore, the radar charts that we compiled (Figure 2-4 in Annex) based on the aggregation of PCA correlations (Table 3-5 in Annex), showed varying priorities placed by clusters on governance topics.

The findings revealed a strong interconnection between curriculum quality, stakeholder engagement and monitoring mechanisms, emphasizing the need for flexible and inclusive education pathways. While transparency, regulatory alignment, and administrative simplification emerged as key governance issues, multi-stakeholder collaborations, particularly between academia and industry, were highlighted as crucial. The results underline the importance of long-term strategic planning, regional and context-based policies, and careful balancing of needs and priorities of key actors. Besides, social inclusion and inclusion of marginalised groups into decision and curriculum-making processes were stressed as critical.

4. Conclusions

The research concludes that effective governance of bioeconomy ET requires a multi-dimensional approach that aligns educational systems with industry needs, promotes collaboration across various sectors, and ensures inclusivity in both educational content and decision-making processes. The findings provide valuable insights for policymakers, educators, and industry leaders working to strengthen the bioeconomy workforce and support its transition towards sustainability.

1716-Towards designing a collaborative governance framework-Kurtsal.docx

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Governance Solutions for Bioeconomy: A Systematic Review

Rose Aloyce Qamara, Davide Viaggi
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The concept of bioeconomy has been defined in various ways, depending on its scientific or policy-related applications (McCormick & Kautto, 2013). Over time, its definition has evolved, with multiple formalizations emerging (Frisvold et al., 2021; Brunori, 2013; Ramcilovic-Suominen & Pülzl, 2018). Despite these variations, common themes include a strong emphasis on economic aspects and its cross-sectoral nature (McCormick & Kautto, 2013). However, bioeconomy systems have often been framed through the lens of biofuel production or recycling (Wohlfahrt et al., 2019).

The European bioeconomy market has grown significantly, reaching over €2.4 billion across various sectors, including agriculture, food and beverages, agro-industrial products, fisheries, aquaculture, forestry, wood-based industries, biochemicals, enzymes, biopharmaceuticals, biofuels, and bioenergy (Scarlat et al., 2015).

In recent years, bioeconomy governance has become a key area of interest for researchers and policymakers (Pender et al., 2024). Governance encompasses institutions, laws, policies, and diverse stakeholders with varying interests. It requires an understanding of legal frameworks, economic principles, and political dynamics. Moreover, governance structures differ across regions and levels—ranging from state and ministerial bodies to private and public sectors—making it challenging to assess their full impact.

The dynamic nature of governance and evolving global challenges add further complexities to bioeconomy governance. This study conducts a systematic review of governance solutions across different regions, focusing on how scholars have conceptualized and analyzed bioeconomy governance since its inception. The review is finalized to build an analytical framework for bioeconomy governance solutions.

Data and research methodology

The review was carried out per the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines. Scopus, a widely recognized database for peer-reviewed research, was used for the search. The keyword "bioeconomy AND governance" generated 253 results. After initial exclusions based on subject areas, 148 papers were accessed. Following further exclusions based on language, 144 papers were included in the final review.

Discussion of results

A total of 102 articles, 18 reviews, 12 book chapters, 5 editorials, 2 books, 2 conference papers, 2 notes, and 1 conference review were examined. The subject areas reviewed included Social Sciences (93), Environmental Science (92), Agricultural and Biological Sciences (37), Economics, Econometrics, and Finance (32), Energy (29), Business, Management, and Accounting (17), Decision Sciences (3), and Multidisciplinary studies (3) documents. Research shows that bioeconomy governance is not uniform; it reflects diverse national contexts, priorities, and institutional frameworks. European countries emphasised sustainability, circular economic principles and stringent environmental regulations, they have adopted integrated multi-level governance frameworks, combining regional, national and EU-wide strategies. The United States approach is market-based, emphasizing on technological innovation, the private sector, and flexible regulations, while Asia is trying to balance rapid industrialization with emerging sustainability concerns.

Main conclusions

Effective Bioeconomy governance solutions need multidimensional approaches—integrating policy, economic, institutional, innovation, social, and international dimensions. The findings indicate that these solutions vary depending on implementation frameworks, stakeholder interests, and levels of involvement.

2087-Governance Solutions for Bioeconomy-Qamara.doc

Use of treated wastewater: A model for analysing economic and environmental effects

Antonella Tassinari[1], Marco Campenni[2], Stefano Pascucci[2], Adele Coppola[1]
[1]Università degli Studi della Basilicata, Italy; [2]University of Exeter Business School; antonella.tassinari@unibas.it

Introduction

The increasing demand for water resources in the agricultural sector, exacerbated by droughts and water scarcity, makes it necessary to identify alternative sustainable supply and management strategies. Using treated wastewater for irrigation would be a possible solution to optimise water resource management, reduce usage pressures on conventional sources and improve environmental sustainability (Tran et al., 2016). However, this practice may present challenges related to purification costs, impacts on soil quality, and market acceptance of wastewater-irrigated products. To address these challenges, a Decision Support System (DSS) that allows for the parallel comparison of two different irrigation scenarios, respectively characterised by (i) irrigation with conventional water and (ii) irrigation with treated wastewater, would allow for an assessment of the economic viability and environmental consequences of wastewater use at farm level (Oubelkacem et al., 2020), . This model would support strategic decisions to improve the sustainability of irrigation practices for the agricultural sector.

Data and research methodology

The reference study area is the Basilicata region, which is characterised by an increasing exposure to drought phenomena and problems related to managing irrigation resources.

The SSD developed is based on a linear programming model (Laskookalayeh et al., 2022) that compares the use of two alternative types of water resources at a single farm level to maximise the farm's net income. By referring to a typical irrigated farm, the model compares the baseline situation with that resulting from the utilisation of treated wastewater. In particular, treated wastewater can lead to changes in nutrients needed by the crop, salinity, soil contaminants, and biodiversity.

The model considers:

- Production inputs and technical coefficients related to fertilisers, labor, energy, water, etc.
- Water supply costs: water purification, transport, and distribution costs;
- Production yields and factor prices
- Effects of wastewater on soil fertility and biodiversity, groundwater

The input data implemented come from interviews with privileged witnesses, direct surveys on farms in Basilicata, and official technical handbooks. After calibration and validation of the model, the economic and environmental

impacts of using treated wastewater will be assessed in relation to the baseline scenario. In particular, regarding soil fertility, the model integrates the effects in terms of variation of technical coefficients related to fertilisation. The effects of salinity are estimated by referring to changes in terms of unit yields. Impacts on soil biodiversity and groundwater are estimated in an ancillary account.

Results and Main conclusions

The results show that irrigation with treated wastewater offers agronomic advantages over conventional irrigation, positively affecting soil fertility and crop yields. However, production costs are higher due to water treatment and distribution costs. Considering the evaluation of the effects on some environmental components, the practice presents potential critical issues related to soil and groundwater contamination, which could generate additional costs for pollution management and lost production.

Implementing the developed DSS allows quantifying the trade-off between production benefits, economic costs, and environmental impacts, providing farmers and policymakers with an effective tool to assess the feasibility of wastewater use in the agricultural sector.

2069-Use of treated wastewater-Tassinari.pdf

Analyzing special and non-alcoholic beers in Italy: insights from Search Engine Optimization techniques

Pietro Chinnici[1], Francesco Licciardo[2], Mario Cariello[2], Katya Carbone[3]

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pietro.chinnici01@unipa.it

Introduction

Recent data from AssoBirra (2024) indicates that beer consumption in Italy reached 21.2 million hectolitres in 2023, marking a 21% increase compared to 2013. This growth is partly driven by the craft beer phenomenon, which has expanded by 31.5% since 2013.

Lager beers accounted for 82.7% of total consumption in 2023, though this segment has declined by over ten percentage points since 2013. The rising popularity of low- and zero-alcohol beers (NABLABs) and gluten-free beers reflects evolving consumption patterns (Kokole et al., 2022; Donadini et al., 2021).

This study examines if consumer choices, reflected in online searches, align with market trends.

Data and research methodology

This research examines the sentiment of Italian web users towards Alcohol-Free Beer (AFB) and Gluten-Free Beer (GFB) based on Google Search Engine Results Page (SERP) trends. The methodology involved an in-depth examination of search behaviour and web positioning to assess sentiment towards AFB and GFB.

Google Trends identified relevant keywords (Nagpal & Petersen, 2021) by analyzing search volumes and trends over time. SEOZoom examined over 2 billion Italian web pages (Berman & Katona, 2011; Baye et al., 2016) from January to December 2024. The analysis included SERP trends, keyword seasonality, intent assessment, and semantic mapping, structured into three keyword graphs: Queries, Prepositions, and Actions.

Discussion of results

The analysis of AFB revealed an average search volume of 4.4k and 486k indexed pages. The keyword intent was predominantly transactional (64%), suggesting strong consumer interest in purchasing AFB online. A distinct seasonality was observed, with peak searches in June and sustained interest throughout summer. Semantic analysis indicated that searches primarily focused on health effects and the legality of selling AFB to minors.

For GFB, a similar seasonal pattern was identified, with over 8 million indexed pages and a search volume of 3.6k. The primary search focus was on technical aspects of production and purchasing, with 71% of searches exhibiting transactional intent. Notably, there was considerable interest in the type of yeast used in GFB, particularly among individuals with coeliac disease.

Main conclusions

This study confirms the growing interest in AFB and GFB, highlighting the seasonal nature of beer-related searches in Italy. The market is evolving and consumer behaviours shifting towards new consumption patterns and innovative beer types.

In this context, SEO plays a crucial role in enhancing organizations' online presence and user engagement. These findings may be useful in identifying targeted marketing strategies for the promotion and sale of AFB and GFB. Future research should consider the limitations of SEO-based analysis, including dependence on search engine algorithms and incomplete web page coverage. Expanding this analysis to other countries with similar beer consumption patterns could provide valuable insights into market similarities and differences.

2088-Analyzing special and non-alcoholic beers in Italy-Chinnici.pdf

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12:30pm - 1:00pm

Pit-1D: Pitches 1D - Innovazione e Sostenibilità Sociale nelle Filiere Agroalimentari: Inclusione e nuove competenze

Location: **Aula E2 Polo Piagge**

Supporting interactive innovation in Italy: enhancing capacities of services providers through experiential learning

Patrizia Proietti, Simona Cristiano

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The purpose of this paper is to present and discuss the results of two training courses carried out in Italy to strengthening skills, competencies and attitudes of advisors to support interactive innovation.

The courses drew on (inter-)active learning approach that involves active participation through collaboration, interaction with educators, peers, and technology, and hands-on activities followed by feedback. Collaborative learning and facilitation are central in this approach.

Results were promising leading to am increase in awareness and skills of the participants. The course has been introduced in the AKIS Academy promoted by Veneto Agricoltura, as an integral part of the training courses offered to advisors of the Veneto Region. Other regions are also interested to introduce it. The results achieved are promising in view of training the new ISS as envisaged by Regulation (EU) 2021/2115.

2085-Supporting interactive innovation in Italy-Proietti.doc

What's behind the Geographical Indications? An overview on the role of producers and collective actions

Francesco Fasano, Francesco Pagliacci

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Geographical Indications (GIs) are considered as a potential tool to foster rural and economic development of an area or region. GIs are aimed at emphasising the unique characteristics of agri-food and wine products and Italy is the European country with the highest number of registered GIs. GIs have been largely studied among the literature but only a tiny part of it dedicates to an overview of collective actions among producers. This work will investigate what happens "behind" a GI. In particular, which role does a network of producers play for their registration and maintaining all over the years? What are the motivations of success and failure of collective actions? The role of cooperatives, consortia and networks of producers is actually relevant for understanding the success of GIs and the economic development of the areas of production. Collective actions among producers could be fundamental both in order to apply for an eligible GI and to understand which are the actors around a high-quality agri-food product.

1679-What's behind the Geographical Indications An overview-Fasano.pdf

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Consumer Perception of New Genomic Techniques in the Wine-Food Sector

Sonia Morandi, Elena Claire Ricci

Università degli Studi di Verona, Italy; sonia.morandi@univr.it

The wine industry faces significant challenges due to climate change, requiring innovative solutions to enhance sustainability and resilience. New Genomic Techniques (NGTs), such as Genome Editing (GE) and Technologies of Assisted Evolution (TEA), offer opportunities to develop disease-resistant and climate-adapted grape varieties without introducing foreign genes.

This study investigates consumer perception of NGTs in the wine sector, focusing on how different terminologies influence acceptance.

A survey of Italian consumers (n=130) assessed familiarity, attitudes, and purchase intentions regarding wines produced with NGTs. Results indicate limited awareness of these techniques, with TEA perceived as a more natural and sustainable approach, whereas GE is more closely associated with genetic modification. Younger consumers and women exhibit greater openness to NGTs, while technological apprehension (technophobia) negatively affects purchase intentions. Trust in institutions and experts emerges as a key factor in consumer acceptance.

Findings suggest that effective communication strategies emphasizing sustainability and natural adaptation could improve consumer acceptance of NGTs. Differentiating TEA from GE in public discourse may reduce skepticism and enhance market adoption. This research provides insights for policymakers and industry stakeholders to promote informed decision-making in the wine sector.

1831-Consumer Perception of New Genomic Techniques in the Wine-Food Sector-Morandi.pdf

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Women's Entrepreneurship and Healthy Food: a WTP assessment of innovative artisanal couscous in Mena's countries

Eleonora Sofia Rossi[1], Dina Najjar[2], Dorsaf Oueslati[3], Andrea Visioni[4], Emanuele Blasi[1]

[1]Department for Innovation in Biological, Agro-Food and Forest Systems (DIBAF), University of Tuscia, Via San Camillo del Lellis snc, 01100 Viterbo, Italy; [2]Social, Economics and Policy Research Theme, Resilient Agricultural Livelihood Systems Program International Center for Agricultural Research in the Dry Areas (ICARDA), Avenue Mohammed, Bearabi Alaoui, Agdal Hay Ryad, Instituts Maroc, Rabat, Morocco; [3]Social, Economics and Policy Research Theme, Resilient Agricultural Livelihood Systems Program International Center for Agricultural Research in the Dry Areas (ICARDA), Rue Hedi Karray, Institut National de la Recherche Agronomique de Tunisie, 1004 Tunis, Tunisia; [4]International Center for Agricultural Research in the Dry Areas (ICARDA), Rabat 10112, Morocco; e.s.rossi@unitus.it

The agricultural sector in MENA countries faces significant gender inequalities, with women playing a crucial role but facing barriers such as limited access to resources, technology, credit, and markets. Socio-economic, cultural, and political factors, including patriarchal traditions, restrict women's economic opportunities and exclude them from decision-making. Despite these challenges, many women have shown resilience, successfully managing agricultural and food-related businesses. Women's cooperatives have been essential in improving economic independence, leadership skills, and visibility. These cooperatives help reduce costs, increase market access, and encourage innovation in agricultural practices. Innovation in traditional food production, such as introducing new raw materials, marketing strategies and business management can enhance women's entrepreneurship. This research examines whether market recognition of this integrated approach can support economic sustainability for cooperatives, improve women's social conditions, and promote agricultural innovation. Specifically, the study investigates whether consumers are willing to pay a premium for products combining innovation in raw materials, artisanal production, and female empowerment. The research focuses on couscous produced by women's cooperatives using a newly developed wheat variety that improves its nutritional profile, aiming to strengthen local economies and foster social progress.

1736-Womens Entrepreneurship and Healthy Food-Rossi.pdf

Bio-Based Technologies in Agriculture and Forestry: How Operational Groups Foster Innovation

Laura Mirra, Patrizia Borsotto, Francesca Giare', Roberto Cagliero, Francesco Basset

CREA-PB Council of Research for Agriculture- policies and bioeconomy centre; laura.mirra1@gmail.com

The agricultural and forestry sectors face increasing pressures due to climate change, soil degradation, and hydrological alterations. To address these challenges, the European Commission has promoted the bioeconomy as a strategic framework, first introduced in the 2012 Bioeconomy Strategy and later revised in 2018, emphasizing research and innovation. Within this framework, the European Innovation Partnership for Agricultural Productivity and Sustainability (EIP-AGRI) was established to foster collaboration among farmers, researchers, and policymakers through Operational Groups (OGs), leveraging the Agricultural Knowledge and Innovation System (AKIS) approach.

The Horizon Europe BBionets project builds on this initiative by strengthening knowledge transfer in bio-based technologies (BBTs) across six Forest and Agricultural Networks (FANs) in Ireland, Spain, Greece, Italy, Poland, and the Czech Republic. BBionets promotes circular economy principles and the valorization of agricultural and forestry biomass. This study analyzes the role of OGs in knowledge dissemination and innovation adoption for biomass valorization, drawing insights from the BBioNets inventory—a database compiling technical, economic, and agronomic information on implemented BBTs. While the findings are preliminary, they highlight the potential of OGs in fostering sustainability and innovation in European agriculture and forestry, though some challenges remain.

1687-Bio-Based Technologies in Agriculture and Forestry-Mirra.doc

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1:00pm - 2:15pm — **Light Lunch**

2:15pm - 3:15pm

OS-3A: Japan's unique initiatives and challenges for reconciling competitiveness and sustainability in the agrifood system

Location: **Aula L2 Polo Piagge**
Session Chair: **Atomu Nitta**
Speakers: Yukio Uchida, Juri Hori, Atomu Nitta, Shiho Tamaki

There are a wide range of issues that need to be addressed globally with regard to agriculture, forestry, fisheries and food sectors, including climate change and the associated increase in large-scale disasters. In additon, Japan's agriculture, forestry and fisheries industries are facing a shortage of labor due to the rapid aging of the population. In order to address these issues, the Ministry of Agriculture, Forestry and Fisheries of Japan launched the 'MIDORI Strategy' for sustainable food systems, on 12 May 2021. The MIDORI Strategy aims to enhance both productivity potential and sustainability in the agriculture, forestry, fisheries and food sectors through innovation. The strategy sets out the targets for the period up to 2050, such as: Zero CO2 emission from fossil fuel combustion in agriculture, forestry and fisheries; 50% reduction in risk-weighted use of chemical pesticides; 30% reduction in chemical fertilizer use; Increase in organic farming to 1Mha (equivalent to 25% of farmland). With regard to the agrifood system, specific initiatives to achieve the target include, for example, the circular use of local resources, the promotion of 'smart agriculture' using advanced technologies such as robots, AI, IoT and drones, the expansion of sustainable food consumption, and the promotion of a nutritionally balanced diet. Even before these policy targets were set, Japan had a long history of research on sustainable agriculture in the tradition of the TEIKEI movement, which is considered to be the origin of Community Supported Agriculture (CSA) as it is now known worldwide. There is also a wealth of accumulated research on rural development in Japan, as the country is experiencing rapid depopulation and aging especially in rural areas, which can reduce the competitiveness of agriculture and at the same time become an obstacle to improving its sustainability. In addition, there is an urgent need to rapidly advance innovative empirical research in the socio-economic field to implement the MIDORI Strategy. For example, at the Policy Research Institute, Ministry of Agriculture, Forestry and Fisheries (PRIMAFF), the leading research institute on agrifood systems in Japan, many relevant research such as research on the diffusion of smart agriculture, research on promoting sustainable food consumption based on large-scale microdata, research on the sustainability of community-based agrifood systems, research on the profitability of environmentally friendly agriculture, and research on improving people's health have been conducted. The session will provide participants with a fresh and stimulating perspective by presenting research, that has progressed rapidly in recent years, on Japan's unique initiatives to reconcile competitiveness and sustainability in agrifood systems. The first presentation provides an overview of the research that has been conducted at the PRIMAFF focusing on (1) high value-added agriculture, (2) smart agriculture for productivity and sustainability, (3) sustainability of agricultural management and corporate governance, and (4) innovation of traditional organic agriculture originating from TEIKEI. The remaining three presentations describe details of specific cutting-edge empirical studies that are currently underway. These presentations and discussions with participants will compare Japanese and European policies and help us learn from each other.

Japan's unique initiatives and challenges for reconciling competitiveness and sustainability in the agrifood system

Yukio Uchida, Juri Hori, Atomu Nitta, Shiho Tamaki

Policy Research Institute,Ministry of Agriculture, Forestry and Fisheries, Japan; atomu_nitta290@maff.go.jp

2090-Japans unique initiatives and challenges for reconciling competitiveness and-Uchida.doc

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2:15pm - 3:15pm

OS-3B: Towards a holistic approach to sustainable risk management in agriculture. Results from the SUS-RISK National Research Project (PRIN)

Location: **Aula D2 Polo Piagge**
Session Chair: **Simone Severini**
Speakers: Emilia Lamonaca, Fabio Santeramo, Alice Stiletto, Elisa Giampietri, Simone Cerroni, Samuele Trestini, Mirta Casati, Margherita Muzzillo, Paolo Skockai, Roberta Raffaelli, Thi Thanh Thuong Dang, Linda Arata, Luigi Biagini,

Agriculture is increasingly exposed to a variety of risks, including climate change, market volatility, and extreme weather events. To address these challenges, the Common Agricultural Policy (CAP) provides a bunch of measures and tools to support farmers in managing risks. This session explores the current state of risk management strategies and tools focusing on key issues that are central to advancing this field: (1) the interplay between different risk management tools when they are adopted jointly—such as the Italian AgriCAT fund and insurance schemes—and how their design shapes farmers' adoption decisions; (2) the extent to which available tools are equipped to address increasingly critical risks, such as catastrophic events linked to climate change; (3) the indirect and often neglected consequences farmers participation in insurance scheme can generate; ($) the preferences of farmers towards insurances with different caractheristics and the drivers of adoption of innovative risk management tools. Despite the availability of several risk management tools—some of which receive significant public support—their adoption remains limited. Programs like IST provide valuable insights into the challenges and opportunities associated with implementing such measures at the national level. This session will examine barriers to adoption, such as financial constraints, administrative complexity, and limited awareness among farmers. It will also explore innovative approaches to improve tool design and integration into broader agricultural policy frameworks. Furthermore, the adoption of risk management tools has far-reaching implications for farm-level decision-making. For instance, these tools can influence choices related to input use, production practices, and environmental sustainability. This is particularly important given that CAP's objectives extend beyond risk mitigation to include reducing environmental impacts, enhancing farm productivity, and ensuring income stability for farmers. Understanding how risk management strategies align with these broader policy goals is essential for designing effective measures that meet the diverse needs of European policy. The session showcases state-of-the-art research on risk management strategies and innovative tools in agriculture. These presentations will provide an updated and comprehensive overview of available tools, their effectiveness in mitigating risks, and their implications for farm behaviour. By addressing the complex nature of farmers' decision-making processes, this session aims to deepen our understanding of how risk management tools influence agricultural sustainability and resilience. This session offers actionable recommendations for improving risk management policies while supporting farmers in navigating an increasingly uncertain future. This is expected to contribute to developing more resilient agricultural systems. The insights will be particularly valuable for policymakers involved in designing and managing CAP measures at both EU and national

levels. Additionally, representatives from the insurance sector, agricultural organisations, and researchers will benefit from discussions on how to better align risk management strategies with CAP's broader goals of sustainability and productivity.

Towards a holistic approach to sustainable risk management in agriculture. Results from the SUS-RISK National Research Project (PRIN)

Simone Severini[1], Luigi Biagini[1], Emila Lamonaca[2], Fabio Gaetano Santeramo[2,3], Alice Stiletto[4], Elisa Giampietri[4], Roberta Raffaelli[5], Simone Cerroni[5], Samuele Trestini[4], Mirta Casati[6], Margherita Muzzillo[6], Linda Arata[6], Paolo Sckokai[6], Thi Thanh Thuong Dang[6]

[1]Università della Tuscia, Italy; [2]University of Foggia (Italy); [3]European University Institute (Italy); [4]University of Padova, Italy; [5]University of Trento, Italy; [6]Università Cattolica del Sacro Cuore, Piacenza; severini@unitus.it

1651-Towards a holistic approach to sustainable risk management-Severini.pdf

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2:15pm - 3:15pm

OS-3C: Agri-food Economics and Citizen-Science: Potential and Applications

Location: **Aula Magna Polo Piagge**
Session Chair: **Riccardo Borgia**
Speakers: Riccardo Borgia, Nidhi Raina, Stefano Targetti, Davide Viaggi, Alice C. Tani, Flavio Lupia, Maria V. Lasorella, Sonia Massari, Sabrina Tomasi, Annapia Ferrara, Daniele Vergamini, Mariagiulia Mariani, Francesca Galli,

Having the adequate quantity and quality of data to pursue appropriate decision-making objectives is becoming increasingly more complicated in ordinary contexts of limited resources, like money and time constraints (Bennett et al., 2018). Among the approaches that can contribute to this challenge, citizen science (CS) is emerging as one of the most promising, especially for its cost-effectiveness (Aceves-Bueno et al., 2017). The approach is based on the direct engagement of citizens for collecting needed information to be then employed, among the other uses, to support decision-making processes, but also, on a wider scale, to monitor programmes and evaluate policies (Vohland et al., 2021). CS offers another key opportunity: to raise citizens' awareness and literacy on societal problems for which a change of pace would be a matter of priority (Head et al., 2020). Within the agri-food domain, the role of CS has been debated by Ryan et al. (2018), recognising, among the other potentialities, the opportunity to strengthen extension services. The objective of this session is to expand the current status of knowledge, proposing, in particular, a focus on the potentiality of CS to support research in the field of agri-food economics and related disciplines. The present session, titled "Agri-food Economics and Citizen-Science: Potential and Applications" aims to shed light on the potentiality of this approach in terms of context, mode of application, and objective intervention. The first contribution will employ a value of information approach (Lawson et al., 2022; Runge et al., 2011) to study the added value of making decisions using information collected by citizens (citizen-generated data – CGD). Through an analytic hierarchy process (Saaty, 2013), this study will also propose an approach to prioritize the collection of CGD more prone to fill identified information gaps at the basis of specific decision-making objectives. Following that, the second contribution aims to investigate another key aspect regarding the use of CS initiatives in agri-food economics research: how the involvement of citizens in collecting scientific data influences their knowledge, attitudes, and behaviours. Employing a pre-, post-, and follow-up survey developed using item response theory, the study seeks to provide more accurate and reliable insights into the social impact of CS compared to traditional survey methods (Somerwill and Wehn, 2022). Data will be collected through an innovative digital App, allowing for scalable implementation across multiple contexts. The third contribution will present the potentiality of "smart villages", a way to promote resilience of local communities and valorisation of territories trough the employment of inclusive participatory approaches and digital technologies. Among the experiences presented it will be showcased the use of a digital platform to gather data on local community perceptions and needs. The study debates also the potentiality of the gamification approach in the agri-food economics domain. This approach applies game dynamics for engaging a less specialized audience, helping them understand complex concepts through an interactive and participatory approach (Miller et al., 2022; Speelman et al., 2023). The last contribution aims to show how the integration of CS and event-based education can offer an innovative framework for fostering active community participation in agri-food research and innovation. This approach seeks to go beyond the traditional expert/non-expert dichotomy, positioning farmers and local communities as key actors in sustainable innovation processes. This work will present how this approach can facilitate a joint pathway between research and education, providing scalable opportunities for the future of CS in agri-food systems. In conclusion, these studies presented in this organized session will collectively highlight the transformative potential of CS in agri-food economics, demonstrating its role in supporting decision-making and enhancing data collection, scientific literacy, and community engagement.

Agri-food Economics and Citizen Science: Potential and Applications

Riccardo Borgia[1], Olga Huerta-Salinas[2], Alice C. Tani[3], Sonia Massari[4], Nidhi Raina[1], Stefano Targetti[1]

[1]University of Bologna, Italy; [2]University of Hohenheim, Germany; [3]Council for Agricultural Research and the Analysis of Agricultural Economics, Italy; [4]University of Pisa, Italy; riccardo.borgia2@unibo.it

1691-Agri-food Economics and Citizen Science-Borgia.docx

2:15pm - 3:45pm

P-2A: Innovation and consumers' preferences

Location: **Aula G2 Polo Piagge**
Session Chair: **Emanuela Tria**

Process vs. Product : the influence of different labelling scenarios on consumer's purchase intention for NGTs

Mirta Casati[1], Alessandro Varacca[1], Stefanella Stranieri[2], Claudio Soregaroli[1]

[1]Università Cattolica del Sacro Cuore, Piacenza; [2]Università degli Studi di Milano; alessandro.varacca@unicatt.it

In the EU, new genomic techniques (NGTs) are currently regulated under the same framework as GMOs (Directive 2001/18/EC; Regulations No 1829/2003 and No 1830/2003). However, due to low GMO acceptance, there is ongoing debate over whether this framework is suitable for NGTs. Indeed, if NGTs will be legally framed under the same mandatory labeling legislation as GMOs, such labels could act as risk signals (Bearth et al., 2024). While consumers seem more receptive to NGTs than GMOs (e.g., Orivri et al., 2024; Ortega et al., 2022), the way these products are labeled will significantly influence consumer acceptance (Siegrist & Hartmann, 2020). However, there is a gap in understanding how consumer preferences for NGTs vary across different labeling scenarios.

This study addresses this gap by investigating how different labeling scenarios influence consumers' purchase intention for foods developed using NGTs. Using a between-subjects experiment with 8,808 consumers from Germany and Spain, we investigate which labeling alternative consumers prefer. The alternatives considered are a process-based labeling format (that simply describes the methods used to grow crops or raise animals) and a product-based labeling format that highlights the innovations and benefits of the final product by including factual claims directly on the product packaging.

The Effect of Nutrition Front-of-Pack Labels on Consumers' Sensory Evaluation of Traditional and Plant-Based Tuna

Giulia Andreani, Giovanni Sogari, Rungsaran Wongprawmas, Davide Menozzi, Cristina Mora
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As international interest in healthier and more sustainable food systems increases, front-of-pack (FOP) nutrition labels have been introduced to facilitate informed dietary decisions among consumers. However, the impact of FOP nutrition labels on sensory evaluations of plant-based alternatives remains underexplored. This study investigates how two European FOP nutrition labels, the Nutri-Score (NS) and NutrInform (NI), influence consumers' sensory expectations and evaluations of traditional and plant-based canned tuna. A controlled sensory lab experiment was conducted with 210 Italian young consumers using a between-subjects design. Participants were randomly assigned to one of three experimental conditions: Control (no label), NS, or NI. Sensory evaluations were conducted under two conditions: expected (product information only) and actual (product information, plus product tasting). Investigated measures included overall liking, willingness-to-buy, and sensory attributes assessed via Likert scales and Check-All-That-Apply (CATA) descriptors.

Analysis is currently ongoing, and we expect FOP labels to influence consumer s' evaluations, potentially influencing sensory attributes and product acceptance. Specifically, the NS label may enhance perceived healthiness, leading to more favorable evaluations of plant-based tuna. The findings will provide empirical insights into the role of FOP labels in guiding consumer choices and the potential "halo effect" of nutrition labeling on sensory perception. This research contributes to the broader discussion on food labeling policies and consumer behavior, offering implications for policymakers and food industry stakeholders aiming to promote plant-based diets and healthier food choices.

Consumer's attitude in driving choices towards wine products derived from New Genomic Techniques (NGTs)

Federica Morandi, Simona Romeo Lironcurti, Federica Demaria, Felicetta Carillo
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Introduction

Climate change and excessive pesticide use pose significant challenges to wine production, necessitating innovative solutions. New Genomic Techniques (NGTs) offer a way to enhance plant esistance and reduce chemical inputs; however, regulatory hurdles and public perception hinder their market adoption. This study analyses data from a sample of 1,045 respondents in Italy to explore how knowledge and perceptions of NGTs influence their purchasing decision.

Using a Multinomial Logit Model (MNL), we estimate how information sources, knowledge accuracy, and individual characteristics affect consumers' propensity to buy (PTB) NGT wine. Our findings indicate a decrease in distrust towards NGT food products among Italian consumers. Results highlight the critical role of information in purchasing decisions, showing that higher-quality information—defined by the reliability of the source and frequency of use—positively influences PTB. However, the multifaceted narrative of the debate may generate misinformation, leading

consumers to either underestimate or overestimate their actual knowledge, which may hinder their willingness to purchase NGT products.

These findings emphasise the need for reliable communication strategies and educational programs to bridge knowledge gaps. Future research should explore price sensitivity and winemakers' perspectives to provide a more comprehensive understanding of market opportunities for NGTs.

The impact of labels on consumers' willingness to pay for food products based on new genomic techniques

Mai Linh Nguyen[1,2], Roberta Raffaelli[1], Simone Cerroni[1], Vicenzina Caputo[3]

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The introduction of New Genomic Techniques (NGTs) has sparked considerable discussion across the European Union, highlighting the need to understand consumer acceptance and willingness to pay (WTP) for NGT-derived products, particularly under the current labeling regulation that classifies NGT-2 products as GMOs, which could potentially trigger strong consumer aversion. This study applies a discrete choice experiment with two sets of label treatments, combining attributes such as breeding techniques, climate-friendliness, and health benefits to investigate Italian consumers' WTP for NGT rice. The survey results reveal a significant positive WTP for products derived from NGT-1 technology, which involves fewer than 20-nucleotide modifications, while showing a negative willingness to purchase NGT-2 products, which exceed the 20-nucleotide threshold. WTP for climate-friendly attributes (particularly adaptation and mitigation) and a health-enhancing attribute (low glycemic index) are all positive and statistically significant. Regarding the label treatment in which the GMO label is substituted with the NGT-2 label, the study identifies a halo effect of the NGT-2 label on the adaptation attribute, suggesting the need for policy revisions to facilitate the market entry of NGT products in Europe. Furthermore, our well-informed survey underscores the importance of developing effective communication strategies to increase consumer interest in NGT products.

Consumer Preferences for Blockchain-Driven Quality and Sustainability in Italian Tomato Puree Production

Emanuela Tria, Francesco Di Cosola, Alessandro Petrontino, Vincenzo Fucilli, Francesco Bozzo

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This study explores consumer preferences for blockchain-tracked tomato puree by integrating the Technology Acceptance Model (TAM) with a Discrete Choice Experiment (DCE). By combining psychological constructs and economic evaluation, the research highlights that consumer choices are better explained through this integrated approach.Using a Latent Class Model (LCM), three consumer segments emerge: a small group (6.6%) with low interest in blockchain and credence attributes, a sustainability-focused segment (32.7%) that does not see blockchain as a key guarantee, and a majority (60.7%) that values blockchain for authenticity and transparency. Willingness to pay (WTP) estimates show that sustainability-conscious consumers prioritize water footprint reduction (+5.78 EUR) and origin labeling (+0.84 EUR), while blockchain adopters value organic certification (+3.40 EUR) and social sustainability (+2.74 EUR). A multinomial logistic regression (MLR) further profiles blockchain adopters, offering insights for marketers and policymakers. This study contributes to the literature on blockchain in agri-food and supports strategies to enhance transparency and sustainability in food supply chains.

2:15pm - 3:45pm

P-2B: Knowledge systems

Location: **Aula H2 Polo Piagge**
Session Chair: **Federico Modica**

Assessing the impact of EIP-AGRI operational groups on farmers' sustainability

Francesco Mazzulla[1], Andrea Bonfiglio[2], Mara Lai[2], Meri Raggi[1], Anna Vagnozzi[2]

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The aim of this paper is to assess the economic and environmental impacts of farmers' participation in OGs.

The main dataset is obtained by merging two different sources, the official data on OGs from the Italian website Innovarurale, managed by the National Rural Network, and the FADN database. A staggered Difference-In-Differences (DID) model is applied to provide an unbiased policy evaluation. We incorporate also a set of covariates related to farm characteristics in the DID model to control for differences between treated and non-treated farms that could affect impacts.

The results show positive and significant coefficients for output, variable costs, and expenditure on inputs such as fertilisers, pesticides, water, energy, and fuels. Coefficients are also positive and significant for the quantity of nitrogen present in the distributed fertilisers.

Preliminary results shows that productivity is positively impacted, while there is increased pressure on the environment. This suggests that OGs may not have contributed to achieving the EIP-AGRI objectives related to environmental sustainability.

Co-design in WEFE Nexus Living Labs: a methodological proposal for social learning outcomes evaluation

Veronica Bonomelli, Paolo Prosperi, Georgios Kleftodimos

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The implementation of agroecosystem Living Labs (LLs) has gained increasing attention as a means to achieve sustainability goals in agriculture by applying ecological principles and fostering the adoption of innovative solutions to address pressing agri-environmental challenges (Berberi et al. 2023). LLs are deployed in research and innovation actions to improve the sustainability of agroecosystems through various system framework such as the Water-Energy-Food-Ecosystem (WEFE) Nexus, Circular Economy, Climate-Smart Agriculture, Integrated Landscape Management, Planetary Boundaries Framework, etc. A defining characteristic of most LLs is the principle of co-creation, defined as "the enactment of creation through interactions" (Ramaswamy et Ozcan, 2018, p. 196). The primary object of co-creation is to facilitate the engagement of diverse actors – who usually have no connection with each other – by enabling knowledge exchange and resource integration to drive innovation. This collaborative process ensures that multiple perspectives contribute to innovation in complex systems, ultimately enhancing inclusivity and generating outcomes that benefit various stakeholders (Massari et al. 2023). Beyond fostering innovation, LLs function as temporally bounded spaces for experimentation, promoting social interaction and mutual learning (Matschoss et al. 2021).

Assessing the linkages and the information flows in the Italian Knowledge And Innovation System For Bioeconomy (KISB)

Giacomo Maria Rinaldi, Davide Viaggi

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The bioeconomy is crucial for the EU's green and digital transitions but faces challenges, particularly in sector integration. Studying information flows can help bridge gaps and foster shared knowledge. Given its complexity, a systemic approach like the Knowledge and Innovation System for the Bioeconomy (KISB) is perceived as suitable.

This study examines relationships and information flows within the Italian KISB using a questionnaire sent to key organizations. Data were analyzed through Graph-Theoretical Techniques (GTT) to identify dominant and subordinate categories, as well as key promoters and targets of information flows.

Results show that Public bodies are the sole drivers of innovation, while Higher or Secondary Education and Research Institutes are subordinate. Private for-profit and Other categories act as interactive components. Regarding information flows, Private for-profit, Other, and Public bodies serve as promoters, while Higher or Secondary Education and Research Institutes are targets. No intermediaries were found.

Respondents highlighted a lack of key reference actors, weak communication channels, and difficulties engaging primary producers in bioeconomy networks. Addressing these gaps is essential for strengthening collaboration and innovation within the sector.

Where do agricultural economists publish and how do they assess journal quality? Empirical evidence from a survey in Austria, Germany and Switzer-land

Fabian Thomas[1], Roland Herrmann[2], Jens-Peter Loy[3], Klaus Salhofer[4], Ramona Teuber[2], Ernst Berg[5], Martin Banse[6], Nadia El-Benni[7], Linde Götz[8], Sebastian Hess[9], Jochen Kantelhardt[4]

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Scientific publications are the currency of science. When selecting journals for publication, various trade-offs emerge, e.g. with respect to the quality and reputation of the journal, the target audience and accessibility or the time until publication. These trade-offs are aggravated by recent changes in the journal market, which has grown substantially in the past decades. A helpful tool for publication decisions are metrics such as the Journal Impact Factor (JIF) or the Journal Citation Indicator (JCI). However, since quality assessments of journals are often discipline- and region-specific, a commonly-used complementary tool are survey-based journal rankings. Here, we

present the results from a survey of 304 agricultural economists from Austria, Germany and Switzerland in 2023. The participants were asked to assess a selection of journals known to them according to their scientific quality, the quality of the review process and their reputation. From the data, we constructed a quality index (QI). It serves as an update of a similar ranking based on data from 2009 (Herrmann et al. 2011). We find a trend towards overall higher assessments and a stable group of leading journals in the field. We discuss reasons for disparities between JIF and QI and contradictions between observed publication patterns and QI.

Blockchain in agribusiness as a tool for managing business risk: the case of the EVO oil market.

Federico Modica[1], Filippo Sgroi[2], Giusi Giamporcaro[1], Caterina Sciortino[2]

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The olive oil industry is highly influenced by global market dynamics and increasing economic complexity, exposing businesses in the sector to significant risks. In particular, information asymmetry between producers and consumers can undermine transparency and trust in the extra virgin olive oil (EVO) market, increasing the risk of counterfeiting and price distortions. This study explores the role of blockchain technology as an innovative tool for business risk management, focusing on the olive oil sector. The research examines the economic implications of blockchain adoption by entrepreneurs in the sector through an analysis based on Akerlof's (1970) stochastic model on markets with information asymmetry. Empirical findings highlight the challenges in adopting this technology due to economic and cultural resistance, despite its potential to improve transparency and traceability along the supply chain. This paper contributes to the discussion on technological innovation in agriculture and its ability to mitigate market risks, offering insights for policymakers and industry stakeholders.

2:15pm - 3:45pm

P-2C: Agricultural and Rural Development

Location: **Aula I2 Polo Piagge**
Session Chair: **Barbara Pancino**

The effects of electoral cycle and climate change on urban expansion. A literature review analysis

Na Haby Stella Faye, Francesco Pagliacci

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The rural-urban interface can become the location of intense trade-offs among competing land uses. Urban development, indeed, often consumes agricultural land, with consequences for food security, rural livelihoods, and ecological balance. Despite the relevance of the issue, the comprehension of the drivers of urban expansion is still far from being exhausted. Besides traditional drivers of urbanisation, this study focuses on two additional pre-determinants: climate change and the electoral cycle. This study conducts a systematic literature review and a thematic analysis. Results suggest that these relations remain largely unexplored, as most studies look at factors influencing the demand for land, while fewer analyses address supply-side factors and their determinants (i.e., climate change and the electoral cycle). Despite the limited literature, some insightful results emerge. Before elections, local governments prioritise visible urban expansion projects to demonstrate progress and garner voter support. Electoral cycles can also result in fluctuating land-use regulations. Climate change can influence urban growth patterns, affecting agricultural productivity adaptation efforts, and urban planning. Climate risks, such as flooding and heatwaves, necessitate the redesign of urban spaces, including the introduction of green infrastructure and more resilient buildings. Future research should explore these effects quantitatively, as existing analyses employ local-level case studies.

Rethinking Agriculture: Pathways to Diversification in the Veneto Region

Tobia Minuzzo[1], Xinran Shen[1], Gianluca Grilli[2], Paola Gatto[1], Francesco Pagliacci[1]

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Conventional farming is increasingly affected by market and price volatility, climate change, and policy shifts. Thus, diversification might serve as a crucial risk management tool, enhancing farm resilience, economic sustainability and rural development. However, its adoption varies across farms and regions, influenced by multiple factors.

This study investigates the determinants of farm diversification, using the Veneto Region as a case study. Based on the data from an online survey administered to 1,000 farms, we apply a multinomial logit model to asses the impact of farm characteristics, farmer profile and territorial factors on the adoption of different diversification paths as a dependent variable, considering both 'deepening' (i.e., enhancing the value of farm products) and 'broadening' (i.e., expanding activities beyond the farm's main operations).

Findings indicate that larger farms and those managed by highly educated farmers are more likely to diversify. Farms in remote and mountainous areas are more likely to adopt broadening strategies (e.g., agritourism and provision of environmental services), while those in more accessible areas favour deepening activities (e.g., geographical indications and organic products). By identifying the key drivers of diversification, this study provides policy-relevant insights to better target and tailor interventions, particularly in remote areas, fostering sustainable rural development.

The territorial specialisation effects of production control mechanisms: where is the wine drifting to?

Roberta Sardone[1], Cristina Vaquero Pineiro[2]

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This paper examines the impact of the authorization scheme in force for EU wine sector on the size, quality, and geographical distribution of vineyards across Italian regions. Using a detailed and original dataset that provides information on the geography of Italian vineyards, we assess how the implementation of the new control regime, in force since 2016, has affected the dynamics at territorial level. The dataset is enriched with contextual regional data, allowing for a comprehensive analysis.
By applying fixed effects and Difference in Differences (DiD) models, we estimate how vineyard expansion and distribution have evolved across Italy in response to regulatory changes. The study focuses on the period from 2008 to 2021 and is conducted at the NUTS2 level, addressing both wine quality and territorial heterogeneity.
A preliminary examination of the data reveals that over the last two decades, the Italian wine sector has undergone significant structural transformations. These changes are particularly evident in the total vineyard area (size), in the quality and composition of production and in the geographical redistribution. This study aims to provide empirical evidence on the effects of a specific production control policy, contributing to the ongoing debate on the regulation of agrifood regarding a strategic sector such as wine.

The role of agriculture for the development of marginal areas: a reading according to the One Health approach

Barbara Pancino, Angelo Martella, Francesca Pietrangeli, Silvio Franco

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This study explores the role of the One Health approach in the development of marginal areas, recognising the interconnection between human, animal, plant and ecosystem health. The aim is to assess how this approach can promote sustainable food systems, ensuring food safety and environmental protection. The research, part of the PNRR Agritech project, analyses various actions undertaken in specific Italian marginal areas to overcome gaps in social development and improve the quality of life. These actions include enhancing environmental sustainability, farm diversification, adopting technological solutions for ecosystem management, land consolidation, quality of life analysis, and strengthening territorial cohesion and cooperation.

Weather Shocks and Sectoral Labour Reallocation: Evidence from the European Districts

Federico Zilia, Paolo Nota, Alessandro Olper

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Climate change poses significant challenges to the productivity of the European agricultural sector, particularly in low-latitude regions such as the Mediterranean. The extent to which sectoral labour reallocation—shifting labour from agriculture to non-agricultural sectors—serves as an adaptation strategy to climate shocks remains an underexplored research question.This paper examines how weather variability affects inter-sectoral labour reallocation among agriculture, construction, industry, and services across 1,149 European districts (NUTS3 level) from 1980 to 2022. In doing so, we also explore the extent to which weather-driven sectoral productivity shocks serve as a key mechanism. Leveraging this large and granular dataset, we employ flexible functional forms within a fixed-effects panel framework, where the impact of weather shocks is conditional on long-term climate. Unlike previous empirical research in climate economics, which primarily focused on inter-annual variations in average temperature, this study emphasizes the significant role of daily temperature variability. Temperature variability is particularly critical in warmer regions with low seasonal variability, which are more vulnerable to sudden temperature shifts or rainfall shocks. In hot regions with low seasonal variability—such as the Mediterranean—we find a robust adaptative response in the labour market, where workers shift from climate-sensitive agriculture to less affected sectors, such as industry and services. Interestingly, we also observe a labour reallocation effect in the opposite direction—from industry and services to agriculture—in the most cold and high-income districts. The heterogeneous impact of weather shocks on sectoral value-added growth across different climates appears to be a key mechanism driving this labour reallocation.

2:15pm - 3:45pm

P-2D: Assessment of Environmental Issues (I)

Location: **Aula E2 Polo Piagge**
Session Chair: **Cristian Soldati**

Order Effects In State Preferences With Inferred Valuation Methods

Gianluca Grilli, Sandra Notaro, Roberta Raffaelli
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State preferences (SP) constitute the benchmark method to assess non-market values of public goods, in particular when surrogate markets are not available. In an SP survey respondents are asked to state their Willingness to Pay (WTP) for some environmental good or environmental quality improvement, and the flexibility of the method allows applying SPs to a wide number of topics (Hanley, 2009). When implementing a stated preference study, however, the researcher must consider many sources of bias that may threaten the validity of welfare estimates. Hypothetical bias (HB) – the difference between real and stated answers - is a major source of estimate distortion. HB arises from the hypothetical nature of the WTP survey (Haghani et al., 2021).). In fact, an SP survey asks respondents to consider a hypothetical situation and to state their behaviour without actual consequences and real payments. For this reason, answers may be inaccurate. The issue of HB is extremely relevant in non-market valuation. In public good analysis, there is a general tendency to consistently state WTP values larger than the true values, which undermines the validity of the subsequent cost-benefit analysis on development projects.

An Economic Valuation of Ecosystem Services in the Po River Basin

Andrea Estefania Cordero Mera, Meri Raggi, Davide Viaggi
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In response to the rise of extreme water events due to climate change, the European Commission introduced the Water Framework Directive (WFD) which aims to improve water quality, quantity, and biodiversity to ensure "good ecological status" for EU water bodies. This study evaluates the economic value of ecosystem services in Italy's Po River Basin by examining residents' preferences and willingness to pay (WTP) for improvements in three key water attributes: water quality and quantity, biodiversity, as well as reduce the frequency of extreme water events. Based on a survey of over 6,000 respondents using Choice Experiment (CE) methodology and a Multinomial Logit Model, findings reveal a strong public preference for these enhancements. Residents expressed a WTP of €81 extra annually over the next five years on their water bills to mitigate the frequency of extreme water events, and around €51 and €102 for improvements in water quality and biodiversity, respectively. Additionally, a negative correlation with pricing indicates a preference for lower water bills. These results underscore community awareness of the importance of protecting water resources and suggest support for increased fiscal measures. The insights gained are crucial for formulating effective economic policies and sustainable water management strategies in the region.

From Hidden Costs to Sustainable Change: A Review of True Cost Accounting's Role and Goals in Food System Transformation

Henri Contor[1], Erika De Keyser[1], Molla Tigabu Kasaw[1,2], Erik Mathijs[1]
[1]KU Leuven; [2]ILVO & KU Leuven; henri.contor@kuleuven.be

True cost accounting (TCA) has emerged as a transformative tool to address the systemic crises embedded in contemporary food systems by revealing hidden environmental, social, and economic costs. Conventional accounting frameworks externalize these impacts, creating dangerous feedback loops that prioritize short-term productivity over long-term resilience. This paper presents a systematic literature review to examine TCA's roles and goals in food system transformation, employing a transdisciplinary methodology integrating peer-reviewed research and practitioner-led insights. The review identifies six key food system actors—consumer, business, investor, civil society, policymaker, and worker—and systematically maps the scope of TCA assessments to their decision-making processes. Findings highlight that while TCA has been widely discussed as a mechanism to internalize externalities and enhance sustainability, there remains a critical gap in aligning assessment levels with stakeholder needs. Additionally, the literature lacks a comprehensive Theory of Change (ToC) framework detailing how TCA can drive systemic transformation. Addressing these gaps, this paper proposes a novel framework that delineates TCA's role across actors and introduces an expanded ToC to guide future applications. By bridging conceptual and operational perspectives, this study advances the discourse on TCA's potential to reshape economic structures and promote equitable, resilient food systems.

The Economic Valuation of Post-Fire Restoration Techniques: A Choice Experiment Approach

Silvia Novelli, Vito Frontuto, Azzurra Orlando, Raffaella Marzano
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Wildfires have severe environmental, social, and economic impacts, worsening with climate change, particularly in mountain regions. In post-fire management, recent scientific literature seems to indicate that non-intervention scenarios are more effective than intervention scenarios, despite the latter being more preferred by local residents and the general public. The specific aim of the research was to estimate the benefits to the population of different post-fire restoration techniques in the Alpine region. The analysis was carried out using a repeated Choice Experiment to understand how individuals adjust their preferences as they gain more technical information and knowledge about the effects of different post-fire management approaches. Three post-fire restoration techniques have been considered: salvage logging, reforestation, and the installation of rockfall nets, involving a random sample of 1,210 residents of the Italian Alpine regions. Results show that respondents in general prefer the intervention scenario, even after receiving additional information. In particular, they are sensitive to information about the benefits of avoiding salvage logging, as once informed they develop an aversion to the practice and would actually pay to avoid it. Conversely, they continue to value reforestation and the use of rockfall nets, although they are willing to pay less for them with information.

Economic and Environmental Values of Ecosystem Services in Mediterranean Olive Growing Systems: A Life Cycle Perspective

Cristian Soldati, Giacomo Falcone, Emanuele Spada, Giovanni Gulisano, Anna Irene De Luca
Mediterranean University of Reggio Calabria, Italy; cristian.soldati@unirc.it

Ecosystem services (ESs) play a crucial role in environmental sustainability, economic stability, and agricultural resilience. However, their economic value is often underestimated in market systems. Financial mechanisms such as payments for ecosystem services (PES), agri-environmental subsidies under the Common Agricultural Policy (CAP), and the CALI Fund have been introduced to incentivize sustainable agricultural practices. This study evaluates the economic value of three key ESs—Mechanical Filtration (MF), Physicochemical Filtration (PCF), and Air Purification —using a Life Cycle Thinking (LCT) approach, integrating Geographic Information Systems (GIS) for spatial accuracy.

Analysis of olive farms across six Mediterranean countries reveals that farms adopting Sustainable Technological Solutions (STS) consistently outperform conventional systems in ES provision. Tunisian farms exhibited the highest MF and PCF values, while Spanish and Italian farms led in air purification. Economic valuation varied significantly, highlighting the need for region-specific financial incentives. The study underscores challenges in standardizing ES assessments due to spatial variability and methodological limitations. It advocates for improved economic valuation frameworks to refine policy mechanisms, including CAP eco-schemes, PES, and voluntary carbon markets. Strengthening ES integration into macroeconomic indicators could enhance financial incentives, ensuring a more sustainable agricultural future.

4:00pm - 5:00pm

OS-4A: Environmental trade policies: regulation, impact, and policy implications

Location: **Aula L2 Polo Piagge**
Session Chair: **Silvia Coderoni**
Fabio Santeramo, Emilia Lamonaca, Mahdi Ghodsi, Alfonso Carfora, Margherita Scoppola, Francesco Montagnani, Parisa Pakrooh,

Environmental protection has become a shared global objective, with governments worldwide implementing diverse policy measures to mitigate environmental risks and promote sustainability. Among these, technical measures, a category of non-tariff measures (NTMs) designed to support nontrade policy objectives, have increasingly gained prominence in advancing environmental standards. These measures, which set regulatory requirements on production processes, product characteristics, and labelling, shape how goods are traded while ensuring that environmental externalities are addressed. Since the early 2000s, World Trade Organisation (WTO) members have significantly expanded their use of environmental technical measures, notifying hundreds of regulations aimed at reducing pollution, limiting hazardous substances, and fostering sustainable production. Environmental NTMs are unique in that they regulate both territorial and extraterritorial environmental concerns. While some measures address localised environmental problems (e.g., air pollution from industrial production), others seek to mitigate global challenges, such as greenhouse gas (GHG) emissions and biodiversity loss. Despite their growing significance in trade policy, the impact of environmental NTMs remains underexplored, particularly regarding their effects on trade, regulatory alignment, and environmental outcomes. The four papers included in this Organised Session explore different dimensions of environmental technical measures. Paper 1, by Santeramo and Lamonaca, introduces the Global Environmental NonTariff Measures Database (END), providing foundational insights into environmental TBTs, their scope, and trade effects. It offers a conceptual and empirical basis for understanding how environmental TBTs are structured and measured globally. Paper 2, by Santeramo and Ghodsi, examines how regulatory divergence in NTMs affects trade flows along global value chains (GVCs), highlighting that while divergence weakens direct bilateral trade, it may facilitate GVC trade. Paper 3, by Carfora, Scoppola, and Montagnani, shifts the focus to regional and international regulatory alignment, assessing how Regional Trade Agreements (RTAs) influence domestic adoption of environmental TBTs. Paper 4, by Lamonaca, Pakrooh, and Santeramo, concludes the session by evaluating the real-world environmental impact of TBTs, specifically their role in reducing GHG emissions, demonstrating their potential to drive sustainable trade and industrial transformation. By discussing regulatory framework, impact, and policy implications, these papers contribute to a better understanding of how environmental technical measures shape global trade and sustainability efforts.

Environmental trade policies: regulation, impact, and policy implications

Emilia Lamonaca[1], **Fabio Santeramo**[1,2], **Silvia Coderoni**[3], **Alessandro Olper**[4], **Mahdi Ghodsi**[5,6], **Alfonso Carfora**[7], **Margherita Scoppola**[7], **Francesco Montagnani**[7], **Parisa Pakrooh**[8]
[1]University of Foggia, Italy; [2]European University Institute, Italy; [3]University of Teramo, Italy; [4]University of Milan, Italy; [5]Vienna Institute for International Economic Studies, Austria; [6]Center for Middle East and Global Order, Germany; [7]University of Macerata, Italy; [8]Fondazione Eni Enrico Mattei, Italy; emilia.lamonaca@unifg.it
1383-Environmental trade policies-Lamonaca.pdf

4:00pm - 5:00pm

OS-4B: Climate Change, Agrifood Systems, and Conflict: Pathways, Impacts, and Policy Implications

Location: **Aula D2 Polo Piagge**
Session Chair: **Donato Romano**
Donato Romano, Luca Tiberti, Tulia Gattone, Raul Caruso, Sara Balestri, Anna Balestra, Chiara Livorno, Giordana Sabella

Climate change-related shocks and violent conflicts are both on the rise worldwide. The Intergovernmental Panel on Climate Change (IPCC, 2022) underscores that climate extremes such as droughts, floods, and heatwaves are becoming more frequent and severe, with significant repercussions for ecosystems, human settlements, and livelihoods. Concurrently, global conflict trends show an increase in state-based and nonstate-based violence, with civil conflicts becoming more internationalized (Rustad, 2024). Deviations from normal precipitation and temperature patterns disrupt planting and harvesting cycles, lower agricultural yields, and threaten food security, exacerbating socio-economic vulnerabilities and increasing the risk of violence (Bedasa & Deksisa, 2024; Cappelli et al., 2023; Koubi, 2019; Harari & La Ferrara, 2018; Caruso et al., 2016). Moreover, competition over scarce resources, such as water and arable land, intensifies tensions and escalates disputes (Cappelli et al., 2024; McGuirk & Nunn, 2024; Burke et al., 2015). Conflicts, in turn, often worsen agricultural productivity, creating a vicious cycle of vulnerability and violence (Thalheimer, 2023; Buhaug & von Uexkull, 2021). While a growing body of literature provides valuable insights, much of the research remains fragmented (Burke et al., 2024). Studies often focus on reduced forms of the climate-conflict relationship—such as the direct effect of climatic shocks on conflict insurgence (Hsiang et al., 2013)—or examine specific mechanisms, such as competition over resources or migration (Pacillo et al., 2022; Helman et al., 2020). Comprehensive analyses integrating these pathways remain scarce despite their importance for addressing the interconnected challenges of climate change, agrifood system dynamics, and conflict. This session seeks to advance understanding of these complex relationships both at the conceptual and empirical level, emphasizing the agrifood system as a critical mediator and exploring actionable policy solutions for mitigating conflict in climate-sensitive regions. Central themes include the role of agricultural productivity reduction, the impacts of climate-induced resource competition, and the broader socio-economic disruptions resulting from climate variability. This session provides new evidence about the pathways linking climate change and conflict by combining high-resolution georeferenced datasets with advanced methodologies like machine learning techniques. Specifically, the proposed session addresses significant knowledge gaps, such as the underexplored role of market-related mechanisms, price volatility, and microlevel socio-economic responses in shaping the climate-conflict nexus. Major policy implications are the need for adaptive strategies that strengthen the resilience of agrifood systems, mitigate conflict risks, and support vulnerable populations. The findings also emphasize the need to foster interdisciplinary collaboration to critically grasp a detailed understanding of the mechanisms linking climate change and conflict via the mediation of the agrifood system.

Climate Change, Agrifood Systems, and Conflict: Pathways, Impacts, and Policy Implications

Donato Romano[1], **Luca Tiberti**[1], **Tulia Gattone**[1], **Raul Caruso**[2], **Sara Balestri**[3], **Anna Balestra**[2]
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1035-Climate Change, Agrifood Systems, and Conflict-Romano.pdf

4:00pm - 5:00pm

OS-4C: Advancing smart agriculture: economic, environmental, and policy evaluation of technology adoption

Location: **Aula Magna Polo Piagge**
Session Chair: **Giulia Maesano**
Davide Menozzi, Giulia Maesano, Elena Cozzi, Maurizio Canavari, Cristina Mora, Yogendra Katuwal, Davide Viaggi, Michele Donati, Fabio Orlandini

The agricultural sector is undergoing a profound transformation, driven by the need to improve sustainability, productivity and resilience in the face of climate change and scarcity of natural resources. Smart technologies play a crucial role in achieving these goals, offering solutions that optimise resource use, reduce environmental impact and improve economic profitability. However, the adoption and implementation of such technologies varies significantly across different regions and farming systems and is influenced by economic feasibility, policy incentives and behavioural drivers. The Agritech project takes a multidisciplinary approach to explore smart technological solutions and assess their technical feasibility as well as their economic and social applicability. The focus is on the assessment of new technological solutions for smart farming systems based on economic and social criteria using a multidisciplinary approach, stakeholder engagement and demonstration activities. Following last year's organised session where preliminary results were presented, the aim of this organised session is to provide new insights and results on the economic and policy evaluation of different technologies for the smart management of agricultural systems. This organised session brings together research papers that explore different dimensions of smart agriculture adoption. The selected papers cover a range of critical topics from economic factors influencing technology adoption to policy-based innovation frameworks and integrated sustainability assessments. Key complementary aspects of technology assessment and implementation are discussed, including adoption and acceptance, cost-benefit analysis, life cycle assessment and policy frameworks supporting governance. By integrating insights from economic assessment, environmental assessment and policy perspectives, this session provides a comprehensive understanding of the opportunities and challenges associated with the adoption of smart farming. The paper presented in this organised session is part of Work Package 3 of Spoke 3 of the Agritech project. In collaboration with other Work Packages (WP) and Spoke, this WP contributes to the achievement of the objectives of Spoke 3.

Advancing smart agriculture: economic, environmental, and policy evaluation of technology adoption

Giulia Maesano[1], **Cristina Mora**[2], **Davide Viaggi**[1]
[1]University of Bologna, Department of Agricultural and Food Sciences; [2]University of Parma, Department of Food and Drug; giulia.maesano2@unibo.it
2019-Advancing smart agriculture-Maesano.docx

4:00pm - 5:30pm

P-3A: Sustainability and Efficiency

Location: **Aula G2 Polo Piagge**
Session Chair: **Arnold Missiame**

The Distribution of Farms in Ireland along both Economic and Environmental Dimensions

Jason Loughrey
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In the context of a large recent increase in agricultural production and societal demands for improving the environmental sustainability of agricultural production, this study explores the recent changes in both the distribution of farm income and the distribution of greenhouse gas (GHG) emissions between farms in Ireland. The research is concerned with calculating the differences between the distribution of farm income and the distribution of GHG emissions for farms in Ireland. Furthermore, the research is undertaken to identify the potential changes in these two distributions between 2018 and 2023.

This potential relationship is important from a policy perspective. There is substantial societal pressure on the agricultural sector in Ireland to reduce emissions (Läpple et al 2022) and this research can be informative in assessing the scale of the challenge. Policymakers at EU level have introduced policies to reduce the environmental externalities associated with food production including the EU-level Green Deal and the farm to fork strategy. Under the Climate Action and Low Carbon Development (Amendment) Act 2021, Ireland has a legally binding target of achieving climate neutrality by 2050.

1833-The Distribution of Farms in Ireland along both Economic and Environmental-Loughrey.pdf

Multiscale scoring method for socioeconomic sustainability assessment of value chains

Letizia Forzoni[1], **Michele Moretti**[1], **Selene Righi**[1], **Sophie Van Schoubroeck**[2]
[1]University of Pisa, Italy; [2]University of Antwerp, Belgium; letizia.forzoni@phd.unipi.it

Several frameworks and tools measure societal and business progress toward sustainability. This work builds on the concept of planetary boundaries, emphasizing the need for changes in the livestock sector to stay within the "safe operating space for humanity." The livestock sector could transition through pathways like agroecology and organic farming, but performance evaluation must extend to socio-economic aspects and the entire livestock value chain (VC), including processing and distribution. This study aims to co-design a multiscale method to evaluate the socioeconomic sustainability of post-farm gate livestock VCs. We will observe three dimensions: techno-economic, socio-cultural, and governance sustainability. European sectorial experts identified and prioritized the most relevant themes using an online two-round Delphi Study. The final assessment method includes 22 themes, each with one or two indicators selected after reviewing available frameworks, primarily SAFA. An ordinal ranking of themes was obtained with a best-worst scaling experiment and converted into numerical weights for the assessment. The method will be refined and validated through empirical application to animal product VCs, collecting primary data from VC actors. Researchers and policymakers can compare livestock VCs phase by phase, identifying areas for improvement in socioeconomic sustainability.

1769-Multiscale scoring method for socioeconomic sustainability assessment-Forzoni.pdf

Exploring the competitiveness and sustainability of blueberry cultivation in marginal Italian areas

Federica Calderoni[1], Alessandro Petrontino[1], Michel Frem[2], Martina Padalini[1], Matteo Spagnuolo[1], Francesco Bozzo[1]

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Marginal agriculture presents both challenges and opportunities for sustainable agriculture, particularly in blueberry (Vaccinium myrtillus L.) cultivation. This study explores the potential of blueberry cultivation in Italy, where consumption has increased by 156.3% in volume and 206.6% in value since 2017. The area dedicated to blueberry cultivation has increased from 1,200 ha in 2020 to 1,500 ha in 2023, with production increasing from less than 7,000 tonnes to over 10,000 tonnes per year. Despite a competitive global market and increased production from countries such as Peru and Spain, Italian blueberry export values have grown, driven by growing global demand for functional foods and improved production techniques, including high-yielding cultivars and precision agriculture. Around 75% of Italian production is exported, generating over 100 million euros in revenue. However, growing imports highlight a gap in domestic supply. Blueberry cultivation supports ecosystem conservation, prevents soil erosion, and enhances biodiversity, making it suitable for marginal areas. This research compares the profitability of organic blueberry cultivation versus conventional cultivation and assesses socioeconomic sustainability in marginal versus non-marginal areas using data from the Italian Agricultural Accounting Network (RICA). The findings aim to inform strategies that balance competitiveness and sustainability in the Italian blueberry sector.

1945-Exploring the competitiveness and sustainability of blueberry cultivation-Calderoni.docx

Crop diversity and total factor productivity: A semiparametric estimation approach

Simon Pröll[2], Klaus Salhofer[1], Andreas Eder[1]

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Our study investigates the impact of crop diversity on total factor productivity. We suggest a method that allows us to control for unobserved and time varying shocks in production without requiring external instruments or making assumptions on costly input adjustment. In particular, we recover productivity from a production function utilizing semiparametric estimation techniques and relate it to various crop diversity indices in a regression framework. For a sample of crop farms in Austria between 2003 and 2019, we find that higher levels of crop diversity are, on average, associated with lower levels of productivity. This contrasts with most of the prevailing literature and stresses the complexity of the relation between crop diversity and farm performance. Our findings highlight the need to incentivize farmers to provide public benefits associated with high crop diversity.

1913-Crop diversity and total factor productivity-Pröll.pdf

Smallholder Farmers' Technical Efficiency in the Presence of Production Risks: The Impact of Farmers' Perception

Arnold Missiame, Patrick Irungu, Rose Adhiambo Nyikal

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Farmers' perception of production risks can influence their adoption and risk management strategies and, by extension, their efficiency. While several studies have examined farmers' perceptions and risk management strategies in the recent past, there has not been, to date, any on how farmers' perceptions of production risks affect their technical efficiency (TE), hence creating a significant knowledge gap. Furthermore, while the issue of the efficiency of farmers in the SSA is not new in the literature, most studies approach it with the assumption that there are no production risks. Such assumptions deviate from reality, especially when it comes to smallholder producers in developing countries, who are faced with many risks, including production risks. We employ a flexible risk stochastic frontier model that allows the incorporation of production risks in the estimation of the TE scores and the inverse probability weighted estimator (IPW) to measure the impact of farmers' perceptions on the estimated TEs. Our results show that the majority of our sample have a negative perception of production risks, and the factors responsible for the perception are the education level of the farmer, farming experience, membership in farmer organizations, and distance to the main market. Our results also reveal that having a positive perception of production risks can reduce TE by 2.3% percentage points on average. Practically, the findings of this study contribute to policymaking by providing crucial evidence necessary for designing effective risk management and efficiency-enhancing strategies.

2052-Smallholder Farmers' Technical Efficiency in the Presence-Missiame.docx

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4:00pm - 5:30pm

P-3B: Urban Agriculture and land use

Location: **Aula H2 Polo Piagge**
Session Chair: **Davide D'Ascoli**

Estimating The Impact Of Urban Agriculture on Italian's Household Expenditure And On Their Indirect GHG Emission By Propensity Score Matching

Jennifer Cavarra[1,2], Grilli Gianluca[1], Tomasi Silvia[2]

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Urban agriculture (UA), as Nature-based Solutions, can play an important role in terms of economic and environmental impacts. The first aim of this study is to investigate how food expenditure of households varies when practising UA compared to those that do not. The second aim is to capture the indirect impact of UA on GHG emissions. Both aims are addressed through the Propensity score-matching model (PSM) in which secondary data from the Italian Household Badget Survey datasets from 2020 to 2023 have been analysed. As opposed to most of the literature, quantitative methods are applied to a developed country as Italy. The main results suggest that those that practice UA are people over 35 years old, more educated and with a high-income level. Moreover, those households that practice UA spend more than those that do not regardless the type of diet followed, suggesting that UA is a luxury good.

2056-Estimating The Impact Of Urban Agriculture on Italian's Household Expenditure-Cavarra.pdf

Is land (over)consumed by the electoral cycle in Italy?

Martina Agosta[1], Riccardo D'Alberto[2], Na Haby Stella Faye[3], Francesco Pagliacci[3], Matteo Zavalloni[1]

[1]Università degli Studi di Urbino Carlo Bo, Italy; [2]Università degli Studi di Verona, Italy; [3]Università degli Studi di Padova, Italy; martina.agosta@uniurb.it

Most countries around the world are experiencing rapid urbanization. One of the major consequences of urban expansion is the phenomenon of land take, which irreversibly transforms agricultural and natural areas into urbanised surfaces, hence leading to the loss of valuable ecosystems and posing long-term challenges for sustainability.
The objective of our paper is to investigate the impact of the municipal electoral cycle on land take, using Italy as a case study.
We applied an econometric model with fixed effects to estimate the causal impact of elections on land take.
The results show that election years are associated with a significant increase in land consumption and that this effect persists in the year following the elections. The phenomenon appears to be more pronounced in northern regions. Following existing literature, the underlying idea is that local politicians promote urban expansion policies to secure electoral support.
The study highlights the importance of integrating political economy considerations into urban planning and land governance.

2059-Is land (over)consumed by the electoral cycle in Italy-Agosta.pdf

The Strategic Role of Agrifood Wholesale Markets in Urban F&V Supply: A Case Study of the Parma Agro-Food and Logistics Center (CAL)

Marianna Guareschi, Teresa Tugliani, Filippo Arfini

University of Parma, Italy; teresa.tugliani@unipr.it

Urban food distribution systems play a crucial role in ensuring food security and sustainability, particularly within the framework of Urban Food Policies (UFPs). Among these systems, Agrifood Wholesale Markets (WMs) are recognized as strategic actors in urban food supply chains. According to the Milan Urban Food Policy Pact (MUFPP, 2020), WMs contribute to UFPs by: ensuring food quality, traceability, and freshness, particularly for local products; supporting sustainable urban development through food waste prevention, promoting Short Food Supply Chains, and enhancing equitable food distribution. WMs act as intermediaries between producers and consumers, ensuring stable food flows, price control, and the economic viability of small producers and retailers (ISMEA, 2024). Beyond their economic and logistical functions, WMs also fulfill a social role by contributing to food accessibility and redistribution initiatives, reinforcing the urban food system (Lizzi, 2022; MUFPP, 2020). Moreover, some authors highlight the positive impact of WMs on socio-economic development by providing affordable, high-quality food, promoting tourism, preserving culinary traditions (Liliia et al., 2023), supporting employment, and enhancing urban and rural economic activities, particularly for small and medium-sized enterprises.

1655-The Strategic Role of Agrifood Wholesale Markets in Urban F&V Supply-Guareschi.docx

An exploratory analysis of economic and social drivers and limits affecting farmers participation in FMs.

Davide D'Ascoli, Teresa Tugliani, Filippo Arfini, Rosalia Filippini
University of Parma, Italy; davide.dascoli@unipr.it

Farmers' Markets (FMs) represent a key alternative to conventional food systems, fostering sustainability and local economic development. Short Food Supply Chains (SFSCs) enable producers to retain greater value while enhancing transparency and trust between farmers and consumers. Despite these benefits, participation in FMs is influenced by economic and social factors, which can either drive or hinder engagement.

This study explores the drivers and limitations affecting farmers' participation in FMs, focusing on governance models that shape market organization, promotional activities, and stakeholder engagement. The research is based on a case study in Parma, Italy, analyzing six out of seven FMs operating in the city. Three distinct FM initiatives were examined: “Campagna Amica,” promoted by Coldiretti; “MercaTiAmo,” supported by the non-profit association Parma Sostenibile; and “La Corte,” managed by a local farmers’ consortium with Confagricoltura.

Data were collected through semi-structured interviews with 52 farmers. Results highlight that economic viability, social embeddedness, and governance structures significantly impact participation. Market-oriented and socially driven governance models attract different types of farmers, influencing their motivations. The findings emphasize the role of governance in balancing economic efficiency with social values, shaping the long-term sustainability of FMs.

1763-An exploratory analysis of economic and social drivers and limits affecting farmers-DAscoli.pdf

4:00pm - 5:30pm

P-3C: Assessment of Environmental Issues (II)

Location: **Aula I2 Polo Piagge**
Session Chair: **Luciano Pagano**

Understanding plural values in soil management. A case study from the Montado agro-silvo-pastoral system in Portugal.

Greta Winkler[1], Teresa Pinto Correia[2]
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While contribution of soils to overall planetary and human health, and primary productivity is being increasingly recognized and advocated for, soils' conditions are threatened by several processes, including loss of organic matter and biodiversity, salinization, and pollution, and soils' multifunctionality is mostly lost under current agricultural systems (Kopittke et al., 2024; Romero et al., 2024). Degradation processes happen not only because of management practices but are also highly influenced by policy programs and governance options (Juerges & Hansjürgens, 2018). Soil health as defined by the recent EU Strategy is the capacity to provide a list of Ecosystem Services (ES), from primary production to climate regulation, yet soils as (mostly) privately owned asset lack a property rights definition that ensures a public goods interest (Bartkowski et al., 2018). Expecting farmers to both guarantee income and productivity and undertake public good oriented soil governance can be rather unrealistic (Martin and Lawson, 2022) but public policy is struggling to fill this gap.

1713-Understanding plural values in soil management A case study-Winkler.docx

Assessing ecosystem service provision through Natural Water Retention Measures: A case study approach

Parisa Almasi, Francesco Pagliacci, Francesco Bettella, Vincenzo D’Agostino
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As climate change accelerates, hydrogeological hazards like pluvial flooding are becoming more frequent, especially in Southern Europe. Natural Water Retention Measures (NWRMs) offer promising solutions by enhancing water storage and infiltration, thereby reducing flood risks and improving resilience. NWRMs are multi-functional measures that provide a wide range of benefits and co-benefits by covering many different types of ecosystem services. However, their implementation remains limited due to socio-economic, cultural, and awareness-related barriers. This study evaluates the benefits and co-benefits of NWRMs implemented in two municipalities in the Veneto Region, Italy, with a focus on economic aspects. The methodology involves four key steps: (1) Identifying the benefits and co-benefits (ecosystem services); (2) Prioritizing co-benefits based on their importance; (3) Selecting appropriate indicators and collecting data for assessment; (4) Conducting economic valuation, focusing on avoided damage costs. The study emphasizes the importance of framing NWRM benefits in economic terms to foster public acceptance and ensure long-term project sustainability. Despite challenges in measuring and quantifying all co-benefits, the findings provide valuable insights into the potential of NWRMs to enhance resilience to pluvial flooding while offering broader environmental and socio-economic advantages.

2046-Assessing ecosystem service provision through Natural Water Retention Measures-Almasi.doc

Cost-benefit analysis of non-chemical weed control practices: an analysis of 20 European case studies

Luciano Pagano, Daniele Antichi, Daniele Vergamini
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Selective herbicides, introduced in the 1940s, revolutionized weed control by simplifying management and reducing manual labour. Today, herbicides represent approximately 33% of total pesticide sales in the European Union and are widely used worldwide, emphasizing the urgency for sustainable alternatives. Despite the availability of non-chemical methods, their adoption remains limited due to high initial investments, management complexities, and perceived economic risks by farmers. This scenario necessitates a comprehensive analysis of the economic and environmental consequences associated with non-chemical weed management practices.

This study employs a cost-benefit analysis (CBA) across various European case studies to evaluate the sustainability of such practices. The methodological framework combines quantitative data on investment and operating costs with qualitative assessments of social and environmental impacts. The findings reveal considerable variability in economic performance and emission reductions, which depend on local conditions and the maturity of the innovations implemented. Consequently, the results support the formulation of flexible policy recommendations aimed at incentivizing advanced technology investments and promoting targeted training programs. A tailored approach is essential to enhance economic competitiveness while preserving environmental integrity, addressing the evolving challenges facing the European agri-food sector.

1878-Cost-benefit analysis of non-chemical weed control practices-Pagano.pdf

Assessing the competitiveness impact of strategies for the internalization of food systems externalities

Lucia Mancini, Valeria Musso, Valentina Guerrieri, Yu- Chia Chen, Arianna Dell'Olio, Matteo Vittuari
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Food systems generate significant environmental, social, and health externalities, posing challenges for sustainability and competitiveness. The European Union (EU) has introduced policy frameworks such as the Farm to Fork Strategy and the Competitiveness Compass to address these issues. Within this context, the Horizon Europe FOODCoST project aims to support the transition towards sustainable food systems by developing a harmonized methodology to assess externalities, proposing strategies for their internalization, and evaluating their impacts. This study presents a monitoring framework to assess the sustainability and competitiveness impacts of FOODCoST strategies (FC strategies).

The framework builds on the EU Food System Monitoring Framework (FSMF) and incorporates a participatory expert consultation to identify key impact categories and Key Performance Indicators (KPIs). To ensure alignment with EU competitiveness priorities, a content analysis of the Competitiveness Compass was conducted. Results highlight that FC strategies must consider productivity growth, innovation, energy costs, regulatory compliance, supply chain resilience, market performance, and social impacts.

This study underscores the importance of a well-structured monitoring framework to guide policy and business strategies, ensuring a balance between economic resilience and environmental responsibility.

2047-Assessing the competitiveness impact of strategies-Mancini.docx

THE POTENTIAL OF THE LIFE SATISFACTION APPROACH TO ECONOMICALLY VALUE BENEFITS OF FOREST AND GREEN SPACE VISITS IN ITALY

Aisling Sealy Phelan[1], Gianluca Grilli[2], Elena Pisani[1], Laura Secco[1]
[1]Università di Padova; [2]Università di Trento; aislingrachael.sealyphelan@phd.unipd.it

Forests, trees and green spaces provide a variety of important services that benefit human wellbeing. In recent years, evidence is growing on the potential of these spaces to contribute to physical health and mental wellbeing. Thus far, studies estimating economic values are scarce, and the majority of research focuses on the psychological and physiological effects. Understanding these benefits and having estimates in monetary terms is important to optimise the provision of ecosystem services and increase overall wellbeing. This paper, aims to estimate economic values for the health and wellbeing benefits of forest visits in Italy, through the application of the life satisfaction approach. We propose and test this as an alternative method for non-market valuation, and compare results with

estimates produced by the well-established contingent valuation method. Results are discussed in terms their contribution to methodological advancements, and second, their practical implications for both land management strategies and health policy formulation.

2084-THE POTENTIAL OF THE LIFE SATISFACTION APPROACH TO ECONOMICALLY VALUE BENEFITS-Sealy Phelan.docx

4:00pm - 5:30pm

P-3D: The adoption of innovation in the agri-food system

Location: **Aula E2 Polo Piagge**
Session Chair: **Luca Cacchiarelli**

Where digital amplifies sustainability: socio-environmental gains and economic challenges in the agri-food sector

Cristina Vaquero Pineiro, Eleonora Pierucci
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Looking at a digital immigrant sector, agrifood, the aim of this paper is two-fold. Firstly, by exploiting propensity score matching, it analyses the effects of adopting digital technologies along production processes on socio-economic and environmental sustainability outcomes. Secondly, by employing regression-adjusted models, it disentangles the firms' features shaping the most relevant impacts. The analysis was conducted at the firm level over the 2017-2022 period and used completely new data from the FADN database. The results show socio-environmental gains, while economic criticalities, from adopting digital techniques. At the same time, findings depict an optimal profile characterised by territorial location, physical and economic dimensions and business strategies. The paper leads to policy reflections on spurring digital transition to achieve environmental and social goals while creating a more incisive strategy to generate economic viability.

1000-Where digital amplifies sustainability-Vaquero Pineiro.docx

Fostering sustainable competitiveness: A systematic review of knowledge and innovation adoption in the agricultural sector

Adele Annarita Campobasso, Francesco Bozzo, Emanuela Tria, Alessandro Petrontino
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The transition towards ecological, digital, and sustainable food systems requires fostering innovation adoption within agricultural and agri-food enterprises. This ongoing systematic literature review, conducted using the PRISMA 2020 methodology, is examining the key factors influencing innovation adoption, the methodologies used to assess farmers' willingness to innovate, and the role of cooperation in facilitating this process. Data were extracted from Scopus and Web of Science databases, applying a rigorous selection process based on four eligibility criteria. From an initial pool of 775 records, 81 relevant publications were selected and will be the basis of the next planned analysis. The preliminary findings highlight the economic, social, and psychological determinants that significantly shape the willingness of farmers and managers to adopt innovative technologies and practices. Another crucial aspect considered will be the benefits associated with innovation adoption, while cooperative practices and knowledge-sharing mechanisms facilitate innovation dissemination. This study will provide a comprehensive analysis of innovation adoption underscoring the multidimensional nature of innovation adoption and emphasizes the need for a comprehensive and multidisciplinary approach to foster sustainable agricultural practices and support SMEs in the agri-food sector.

1950-Fostering sustainable competitiveness-Campobasso.pdf

A journey among the drivers and barriers that lead Italian food companies towards the adoption of a sustainable digital supply chain traceability system

Maria Bonaria Lai[1], Annapia Ferrara[2], Chiara Mignani[2], Daniele Vergamini[2], Gianluca Brunori[2]
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The present paper proposes an exploratory research study to highlight the potentials of digitalization to enhance the environmental sustainability of the Italian agri-food supply chain, through the knowledge of its barriers and drivers. Using multiple case studies (Yin, 2003), it explores, the presence of digital tools and the willingness of the relevant actors in the supply chains of Italian extra virgin olive oil and wine to adopt digital sustainable food traceability systems. The research results outlined different behavior among the actors of the extra virgin olive oil and wine supply chains. Moreover, the utilization of increasingly sophisticated and accessible sustainable traceability systems, which are recognized by consumers as efficient and effective, and capable of generating added value for all actors who work inside the food supply chains examined, is becoming an important element in the purchasing choice processes of wine and virgin olive oil and is ever more used as a differentiation strategy.

2086-A journey among the drivers and barriers that lead Italian food companies towards-Lai.docx

Does women involvement in farm decision-making processes influence the adoption of improved seeds? The case study in South - Eastern Africa

Chiara Perelli[1], Luigi Biagini[1], Giacomo Branca[2], Luca Cacchiarelli[2], Simone Severini[1]
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In Sub-Saharan Africa, the adoption of improved seeds is vital for enhancing agricultural productivity and food security. However, women face significant barriers to accessing and utilizing these technologies. This study investigates women's impact on improved seed adoption within South-Eastern Africa's cereal-legume systems, focusing on decision-making processes. Findings indicate that female land ownership is positively related with the adoption of improved seeds in both unitary and collective decision-making models. Conversely, male household headship negatively affects female-led unitary models, a result potentially linked to the "feminization of agriculture." An increasing number of family laborers, frequently associated with labor-intensive and complex agricultural contexts, might necessitate collaborative management and the division of responsibilities. Furthermore, considering the factors influencing the adoption of improved seeds among households with diverse decision-making models, results show that, in male-dominated households, off-farm income and extension services significantly predict improved seed use, while in female-dominated households, on-farm income, livestock ownership, and seed subsidies are crucial. Collective decision-making households benefit from higher education levels and resource availability. Adequate human resources further enhance adoption likelihood. Empowering women through targeted interventions, including financial resources, training, and information, is essential for improving seed adoption and bolstering regional agricultural productivity and food security.

1720-Does women involvement in farm decision-making processes influence the adoption-Perelli.pdf

Behavioral drivers to the adoption of sustainable agricultural practices: A best-worst scaling experiment among Italian winegrowers

Claudia Stefania Gondos[1], Mirta Casati[1], Elena Castellari[1], Vincenzina Caputo[2]
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Given the EU's increasing focus on incentives that promote the voluntary adoption of sustainable farming practices, recent studies highlight the need to understand the factors influencing farmers' decisions to transition to sustainable production systems (Dessart et al., 2019; Huber et al., 2024). These insights are crucial for refining the design of sustainability schemes and enhancing their uptake among farmers (Dessart et al., 2019).

Despite their relevance, behavioral determinants are often empirically overlooked (Thompson et al., 2023). To address this gap, our first research question (RQ1) investigates which behavioral factors farmers consider most and least relevant when deciding to adopt sustainable farming practices.

However, our study goes beyond merely identifying the relevant factors; it also seeks to understand the determinants that shape their relative importance. The literature has shown that behavioral factors do not act in isolation—their influence on decision-making and their relative importance are shaped by sociodemographic and contextual determinants. For example, age, experience, gender, and education all affect how behavioral aspects influence pro-environmental choices, alongside cultural context and regional affiliation, both of which significantly shape decision-making dynamics (Burton et al., 2014).

1705-Behavioral drivers to the adoption of sustainable agricultural practices-Gondos.pdf

5:30pm - 7:00pm

AIEAA Assembly and Tribute to Prof. Luca Salvatici

Location: **Aula Magna Polo Piagge**

7:00pm - 8:00pm

Aperitif

Date: Friday, 20/June/2025

9:00am - 10:00am

OS-5B: Towards the Development of a New Rural Policy: Challenges and Opportunities

Location: **Aula D2 Polo Piagge**
Session Chair: **Daniela Storti**
Speakers: Sabrina Iommi, Serena Tarangioli, Alessandra de Renzis, Leonardo Cei, Francesco Pagliacci, Gianluca Stefani

In February 2025, the European Commission published the Communication "The Road to the next Multiannual Financial Framework", launching a public consultation on the design of the EU budget and the policy framework it will support. Key challenges identified include demographic change, reducing regional disparities and the urban-rural divide, and strengthening the place-based approach to improve policy integration. Among the post-2027 Cohesion Policy reform discussions, there is ongoing debate about the potential creation of a Single Fund for territorial development as a way to enhance territorial interventions. In this context, the Commission's Communication "A Vision for Agriculture and Food. Shaping together an attractive farming and agri-food sector for future generations", also published in February 2025, highlights the impact of the Common Agricultural Policy (CAP) and Cohesion Policy on the attractiveness of rural areas and on economic, social, and territorial cohesion. It underscores the need to reinforce synergies and complementarities among various interventions to generate concrete territorial impacts. Only closer coordination between EU funds and sectoral policies, through an integrated programming and implementation effort, can contribute to the sustainable development of rural areas. This calls for a shared rural policy across different governance levels— a Rural Pact that, in line with the Long-Term Vision for Rural Areas, engages European, national, regional, and local stakeholders within a common framework. At the national level, Italy anticipated this need a decade ago by experimenting with a multi-level governance model involving the State, Regions, and Local Authorities through the National Strategy for Inner Areas (SNAI). This place-based policy aims to reduce territorial disparities in remote rural areas by supporting community welfare micro-projects and local development initiatives in cultural, tourism, and agricultural sectors. The National Strategic Plan for Inner Areas (PSNAI) 2021-2027 is expected to be launched by the Italian government sometime in 2025. Despite the increasing recognition—both at national and European levels—of the need to strengthen place-based policies tailored to rural areas, significant challenges remain in designing a new rural policy that effectively integrates the various funds and policies for essential services. This session will provide an opportunity to reflect on the future of rural policies, considering the upcoming launch of the PSNAI and the ongoing debate on Cohesion Policy reform post-2027. The session will include contributions from experts from national institutions, agricultural economists, and regional development economists, who will explore key questions for the future of rural policies: - What are the main challenges that rural policy must address in light of current trends? - Which model of agriculture can foster the initiation of territorial regeneration processes in rural contexts, and which policy instruments should be considered? - What instruments could enhance the effectiveness of the multi-level governance model tested through SNAI? - Could a Single Fund for Territorial Development provide a viable solution? - What conceptual frameworks should guide the design of effective policies for peripheral areas? - Which methodological approaches and policy evaluation strategies are most effective for assessing place-based policies? A moderated debate will follow, providing a platform for discussion between speakers and the audience, with the aim of formulating concrete policy recommendations for strengthening rural policies post-2027.

Towards the Development of a New Rural Policy: Challenges and Opportunities

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1424-Towards the Development of a New Rural Policy-Storti.pdf

9:00am - 10:00am

PS-5A: SMART agricultural policy for sustainable transformation: Integrating knowledge with innovation to promote competitiveness and sustainability

Location: **Aula Magna Polo Piagge**
Session Chair: **Paolo Sckokai**
Panelists: Silvia Coderoni, Paolo Sckokai, Francesco Vanni, Antonella Samoggia, Francesca Monticone, Franco Sotte

The proposed panel session aims to foster knowledge exchange and collaborative discussions and identify pathways that align agricultural policies with the broader challenges affecting the agri-food system. To stimulate the discussion, it will present the results of the coherence analysis and innovative modelling toolkit, which were implemented to 1) explore the discrepancies between policy efforts and sector needs (namely CAP and concurrent policies in the agricultural sector) and 2) to simulate the impact of several policy scenarios on the farm level. In this step, we aim to reflect on our findings and further evaluate them with a broader audience. The panel session is developed within the activities of the PRIN 2022 PNNR - SMART (SMART agricultural policy for sustainable transformation).

SMART agricultural policy for sustainable transformation: Integrating knowledge with innovation to promote competitiveness and sustainability

Fabio Bartolini[1], Barbara Nohlova[1], Silvia Coderoni[2], Paolo Sckokai[3]
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1016-SMART agricultural policy for sustainable transformation-Bartolini.doc

9:00am - 10:30am

P-4A: Assessment of Environmental Issues (III)

Location: **Aula G2 Polo Piagge**
Session Chair: **Emilia Pellegrini**

Evaluating the Economic and Land Use Consequences of Sustainability-Driven CAP Reforms: Insights from an Optimization Approach in Italian Cereal Farms

Maria Teresa Cappella[1], Luca Nerozzi[2], Mario Benini[2], Paolo Detti[2], Emanuele Blasi[1]
[1]Università degli studi della Tuscia, Italy; [2]Università degli studi di Siena; e.blasi@unitus.it

The Common Agricultural Policy (CAP) 2023–2027 introduces stringent sustainability requirements, reshaping land use, crop planning, and economic outcomes for European farmers. This study evaluates the last CAP reforms effects on farmland allocation and related implications on arable land farms profitability, focusing on Italian farms located in intensive agricultural regions. Using Integer Linear Programming models, we simulate farmers' decision-making under different CAP frameworks, considering 2014–2020, 2021–2023, and 2023–2027 environmental constraints changes. Results indicate significant shifts in crop distribution, with reductions in staple cereals like maize and wheat, and increases in legumes, soy, and industrial crops, aligning with biodiversity and soil health goals. However, these changes come with financial trade-offs, as farmers' profitability declines compared to the 2014–2020 period. Policymaker responses, including derogations and exemptions for small farms, reflect the attempt to balance sustainability with economic feasibility, though concerns persist over diluted environmental objectives. This study high- lights the tension between ecological goals and economic viability, offering insights into the broader impacts of agricultural policy reforms in Europe.

2082-Evaluating the Economic and Land Use Consequences-Cappella.pdf

Assessing Drought Impacts on Vegetation and Crop Productivity in the Po River Basin: A High-Resolution Approach

Vito Frontuto, Irene Boccia, Sara Castiglia, Silvana Dalmazzone
Department of Economics and Statistics, University of Torino, Italy; vito.frontuto@unito.it

This study examines the impact of drought on vegetation and crop productivity in the Po River Basin (PRBD), a key agricultural and economic region in Italy. By analyzing the correlation between the Standardized Precipitation-Evapotranspiration Index (SPEI) and the Normalized Difference Vegetation Index (NDVI), the research identifies patterns of vegetation loss and recovery across different crops and territories. Results indicate that vegetation decline is more sensitive to drought duration than severity, with significant spatial variability in recovery times. Using a high-resolution approach, we downscaled yield data from the NUTS 3 level to smaller geographic units, enhancing the accuracy of productivity assessments. This method enables precise resource management, improving agricultural resilience to water scarcity. The findings emphasize the need for region-specific policies and adaptive strategies to mitigate drought impacts. Integrating high-resolution environmental and economic data can support sustainable agricultural practices, optimize water management, and enhance food security. Future research should refine these methodologies and incorporate additional factors, such as soil characteristics and land management practices, to develop comprehensive drought adaptation strategies.

1934-Assessing Drought Impacts on Vegetation and Crop Productivity-Frontuto.pdf

Integrating Renewable Energy, Agriculture, and Forestry: Synergies and Challenges for Sustainable Global Food and Energy Systems

Lamiaa Chab
Università degli Studi della Tuscia, Italy; lamiaa.chab@unitus.it

The integration of renewable energy, agriculture, and forestry is crucial for addressing climate change, enhancing food security, and promoting economic resilience. The agricultural sector is both a major energy consumer and a significant contributor to greenhouse gas emissions, while forestry plays a dual role in providing biomass for energy and sequestering carbon. This study examines the synergies between these sectors, highlighting how renewable energy adoption can enhance agricultural productivity and sustainability.

Using a mixed-methods approach, the research employs econometric analysis and case studies to assess the impact of renewable energy on agricultural efficiency, CO2 emissions, and economic growth. Results indicate that bioenergy and other renewable sources can bridge food and energy systems, reducing emissions while supporting rural economies. However, challenges such as land-use competition, socio-economic disparities, and infrastructure limitations remain significant.

To address these issues, policy alignment, investment in next-generation biofuels, and global cooperation are essential. Sustainable agroforestry practices and decentralized energy systems can further enhance resilience. Integrating renewable energy into agriculture and forestry represents a pathway to a more sustainable and equitable future, supporting environmental goals while fostering economic development.

1955-Integrating Renewable Energy, Agriculture, and Forestry-Chab.docx

Cost-effective nutrient reduction and Disproportionate Costs assessment in the Po River Basin District

Emilia Pellegrini, Elisa Belfiore, Nunzia Gabriella Fasolino, Monserrath Ximena Lascano Galarza, Meri Raggi, Davide Viaggi
University of Bologna, Italy; emilia.pellegrini2@unibo.it

Eutrophication remains a critical challenge for European waters due to excessive nutrient presence. The Water Framework Directive mandates an ecosystem-based approach, requiring Member States to develop cost-effective Programmes of Measures at the River Basin District (RBD) level. However, challenges persist in cost-effectiveness evaluation, particularly in large and heterogeneous river basins. A relevant issue is whether total reduction targets for the whole RBD are preferable to more specific targets based on a lower spatial scale and proportional to the actual nutrient loads. This study addresses these challenges by assessing the cost of nutrient reduction policies that consider both the heterogeneity of marginal cost distribution and proportional targets at the sub-basin level. Focusing on the Po River Basin District, a Cost-Effectiveness Analysis (CEA) supported by Mathematical Programming was conducted incorporating three measures: livestock density reduction, integrated farming, and buffer strips. Results show a significant difference in total costs if the model is exclusively based on cost-effective criteria with an overall target at the RBD level, or whether it incorporates proportional targets per sub-basin. Moreover, results demonstrate that the budget allocated for Rural Development Programmes is not sufficient to support water quality improvements in river basins characterised by significant nutrient loads.

1693-Cost-effective nutrient reduction and Disproportionate Costs assessment-Pellegrini.doc

What is the Impact of Farms' Circularity on their Economic Performances? A Micro Level Assessment for Italian Agriculture

Diana Lucia Escobar Jaramillo[1], Paolo Sckokai[1], Silvia Coderoni[2]
[1]Università Cattolica del Sacro Cuore / Department of Agricultural and Food Economics, Piacenza, Italy; [2]Università degli Studi di Teramo / Department of Biosciences and Agro-Food and Environmental Technologies, Teramo, Italy; diana.escobar@unicatt.it

The circular economy has been promoted through EU policies as a pathway to sustainability, with agriculture being a key sector for implementing circular practices to address increasing resource demands that the planet cannot fully supply. Definitions of circular economy in agriculture highlight its potential benefits across environmental, economic, and social dimensions. What is more, environmentally beneficial practices must ensure economic advantages to be adopted by farmers. This paper aims to assess the effect of nutrient circularity on farm profitability using circularity indicators derived from the Italian FADN dataset. The analysis accounts for heterogeneity across farms and dynamic effects. The System Generalized Method of Moments (GMM-SYS) is employed to identify how circularity indicators, farm management practices, and structural changes over time affect profitability. The research uses data from 874 farms and 10,488 observations — then merged into 5,244 observations to obtain biannual averages — from the 2009-2020 Italian FADN dataset. Results show that while nitrogen (N) and phosphorus (P) surpluses positively impact net value added, the decreasing efficiency of additional chemical fertilizers may jeopardize environmental sustainability. For animal-specialized farms, losses have a negative impact on farm profitability. High-performing dairy cattle, which have lower environmental impacts from feed production, show higher profitability. Conversely, inefficient P management in granivore diets leads to both environmental pollution and suboptimal animal growth rates. Being self-sufficient in N fertilizers contributes to higher and more stable incomes. This paper provides a holistic assessment of nutrient circularity's economic implications at the farm level in Italy, filling a gap in the literature and offering insights for policymakers to create more effective circular economy policies that cater to farm diversity.

1774-What is the Impact of Farms' Circularity on their Economic Performances A Micro-Escobar Jaramillo.pdf

9:00am - 10:30am

P-4B: Climate change and agriculture

Location: **Aula H2 Polo Piagge**
Session Chair: **Francesco Pagliacci**

To what extent are the Italian regional food systems vulnerable to (climate) shocks? The case of wheat

SARA TURCHETTI, TOMMASO FERRARESI
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Wheat is the basis of many food staples worldwide thus being critical for the food security. In addition, wheat is an economically relevant intermediate input for food industries in many countries, e.g. Italy, highly contributing to GDP growth and exports. Given its specific characteristics in terms of gluten content and the appreciation of consumers for grain products, like bread, pasta and pastries, its degree of substitution is relatively low. Wheat is largely cultivated across the globe, and the wheat-based value chains are widespread globally and highly integrated: in 2022, based on FAOSTAT data, the gross value of production of wheat has been approximately 270 billion US$, with an average annual increase in the last 20 years of 5,6%. The main aims of this study are i) to reconstruct the structure and geography of the wheat-based value chains with respect to Italy and ii) to assess the degree of vulnerability of the Italian regional food systems (RFSs) to possible shocks affecting the availability and the provision of wheat. Indeed, geopolitical crises, e.g. the war in Ukraine, are likely to reduce the supply of wheat and increase prices (Devadoss, Ridley, 2024; Mottaleb et al., 2022).

1677-To what extent are the Italian regional food systems vulnerable to-TURCHETTI.pdf

Weather Impacts and Adaptation Effects on Corn and Wheat Yields: Farm-level Evidence from Italy

Giacomo Coughlan, Paolo Nota, Daniele Cavicchioli, Alessandro Olper
University of Milan, Italy; giacomo.coughlan@unimi.it

There is currently limited economic literature on the weather impacts on Italian farmers and their capacity to effectively adapt. The objective of this paper is to explore how weather outcomes affect Italian corn and wheat yields and to assess the in-season adaptation behaviour of farmers using a recently proposed structural model that incorporates fertilizer and pesticide use. In this way, we are able to distinguish between the "direct" weather effects (i.e., the agronomic impacts of weather changes on plant growth) and the "indirect" effects mediated through farmers' input choices (i.e., adaptation impacts). We use a large representative panel dataset of Italian corn and wheat producers covering the period from 2008 to 2022, matched with detailed weather data. Our results indicate that corn is more vulnerable to temperature increases and we find significant damages already at the sample median temperature, while we find no significant effects of temperature increases on wheat yields. We show that farmers do adapt their fertilizer and pesticide use to in-season temperatures, but with varying effects depending on the crop. At the sample median temperature, adaptation through input use halves the direct agronomic negative effects for corn, and provides a small positive effect for wheat.

2012-Weather Impacts and Adaptation Effects on Corn and Wheat Yields-Coughlan.pdf

Does climate change affect land use change? A territorial analysis of land take and urban sprawl in Italian municipalities

Francesco Pagliacci[1], Riccardo D'Alberto[2], Matteo Zavalloni[3]
[1]Università degli Studi di Padova, Italy; [2]Università degli Studi di Verona, Italy; [3]Università degli Studi di Urbino Carlo Bo, Italy; francesco.pagliacci@unipd.it

The relationship between urban and rural areas is increasingly relevant, with land take emerging as a critical global issue. While the impact of urbanisation on climate change is well studied, the reverse relationship remains largely unexplored. Climate change alters the profitability of urban and agricultural land use, leading to spatially heterogeneous effects. Agricultural land, particularly vulnerable to climate risks, often experiences reduced viability, potentially fueling urban sprawl. Extreme events such as floods and heatwaves further shape land take patterns, influencing both compact urbanization and suburban expansion. This study investigates the impact of climate change on land take across Italian municipalities. Using a municipality-level dataset, we merge information on net land take, urban morphology, climate variables (e.g., annual temperature), and socio-economic factors. Employing an econometric approach, we analyze the causal relationship between climate change and land take, as well as its morphological characteristics. The findings contribute to a deeper understanding of climate-induced urbanization patterns, emphasizing the need for climate-resilient urban planning. By highlighting the role of climate risks in shaping land-use transitions, this study provides valuable insights for policymakers aiming to balance urban growth with sustainability and environmental resilience.

1021-Does climate change affect land use change A territorial analysis-Pagliacci.pdf

Climate Change and Drought: Impacts on Italian Dairy Farms under different scenarios

Rebecca Buttinelli, Davide Dell'Unto, Raffaele Cortignani
Tuscia University, Italy; buttinelli@unitus.it

This study investigates the economic and land use impacts of increasing drought conditions on Italy's dairy sector, one of the most vulnerable to Climate Change. Using an agro-economic supply model and data from 930 dairy farms

provided by the Farm Accountancy Data Network for 2021, the analysis simulates two climate scenarios with escalating drought intensity. By integrating detailed climate data and estimating crop irrigation needs under these scenarios, the model evaluates how drought affects irrigation demands and, consequently, land use changes. The results highlight the sector's vulnerability, especially concerning forage availability. As drought conditions worsen, farms reduce irrigated land and shift to crops that require less water, while increasing water use intensity for the remaining irrigated crops. This shift leads to a heightened dependence on groundwater, raising concerns about the long-term sustainability of this resource. Additionally, the decline in irrigated crops affects internal feed production, prompting farms to rely more on purchased feed. Given the prominence of PDO cheeses like Parmigiano Reggiano and Grana Padano, which have strict production regulations, the impact of drought could vary across regions. Future analysis could explore how different areas might adopt distinct adaptation strategies based on their specific conditions.

1814-Climate Change and Drought-Buttinelli.pdf

Extreme weather events and agricultural productivity: do EU GI policies hinder Italian farms' adaptation?

Robert Brot[1], Daniele Curzi[1], Alessandro Palma[2], Simone Russo[2], Giacomo Pallante[3]
[1]University of Milan, Italy; [2]Gran Sasso Science Institute, Italy; [3]University of Trento, Italy; robert.brot@unimi.it

Climate change is one of the major challenges for agriculture that shifts crops' phenology away from their optimal conditions. This is particularly critical for wine production, where the quality of wine strongly depends on crops' life cycle. Such changes create significant difficulties for wine producers, especially those operating under Geographical Indication (GI), which, as a matter of fact, imposes restrictions on the farms' productivity. Against this background, the existing literature has overlooked to what extent the limits imposed by these policies affect farms' adaptation capacities to extreme weather events, and climate change in general. The objective of this study is to empirically analyse the effect of extreme weather events on farm-level productivity, focusing especially on PDO wine producers in Italy. To perform the impact assessment, a large farm-level dataset will be considered, covering the 2004-2022 period.

2048-Extreme weather events and agricultural productivity-Brot.pdf

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9:00am - 10:30am

P-4C: Labour and social sustainability

Location: **Aula I2 Polo Piagge**
Session Chair: **Giorgia Giordani**

Empowering the Female Entrepreneurial Role in Agritourism- A Systematic Literature Review

Katia Salameh, Rino Ghelfi, Alessandra Castellini, Francesca Gori
University of Bologna, Italy; katia.salameh2@unibo.it

The review investigates the importance of the multidisciplinary approach when studying the motivators and challenges that females face in leading an agritourism venture. These factors stress the importance of having a strong capital that is not only financial but also social and cultural in addition to acquiring the right skill set endorsed by policy interventions (Gil Arroyo et al., 2019; Martini et al., 2020). Therefore, community support augmented with institutional backing can go a long way in attaining a sustainable agritourism sector run by female entrepreneurs (Halim et al., 2020). Policymakers can foster an environment that is gender responsive in setting up microfinance schemes tailored for female long-term objectives. However, and more importantly, training these females on the sustainable usage of these schemes have the power to facilitate their success in this unique sector.

Future research should focus on a specific geographical area along with individual characteristics of females to be thoroughly investigated. Once bottlenecks of female performances are identified, scaling up the research results to cover other geographical regions would be of huge importance. Emilia Romagna, Italy is identified as a fertile ground to study these aspects.

2055-Empowering the Female Entrepreneurial Role in Agritourism- A Systematic Literature-Salameh.pdf

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Coffee, pests and climate: how international migration and remittances affect coping strategies among coffee farmers in El Salvador.

Laura Priscila Penate Lopez[1], Daniele Cavicchioli[1], Danilo Bertoni[1], Miroslava Bavorova[2]
[1]Università degli Studi di Milano, Italy; [2]Czech University of Life Sciences, Prague; laura.penate@unimi.it

Coffee cultivation represents a source of income for over 125 million households, nevertheless, Central America is threatened by the outbreak of coffee-leaf rust (Hemileia vastatrix), detrimental to farms' survival, and impacts domestic and international migration. The use of synthetic inputs and the adoption of resistant coffee varieties are employed to cope with pest outbreaks, and changing climate. Previous studies proved that the prediction power of farm-level decision analysis can be enhanced by introducing socioeconomic variables of the surrounding area of the farm. This study explores in El Salvador: a) the factors influencing the adoption of coping strategies at the farm level and in the context surrounding the farm; b) whether the adoption of the two coping strategies is interrelated; c) whether and how international migration and remittances in the area surrounding the farm influences the adoption of coping strategies.
The results obtained show that the implementation of contextual variables deepens the understanding of the farmers' decisions. The inclusion of migration and remittances, characteristic phenomena of El Salvador, was effective in the analysis. The results are in line with previous literature, reinforcing the need to consider the context of the farms when studying the decision-making process in the agricultural sector.

1839-Coffee, pests and climate-Penate Lopez.docx

Trade and sustainability: the case of dragon fruit in Vietnam

M. Rosaria PUPO D'ANDREA[1], Roberto HENKE[1], Felicetta CARILLO[1], Viet HOANG[2], Raffaele D'ANNOLFO[1], Ilenia MANETTI[1], Federica MORANDI[1], Marco VASSALLO[1], Sara ROMANO[3], Federica DEMARIA[1]
[1]Council for Agricultural Research and Analysis of Agricultural Economics (CREA-PB), Italy; [2]University of Economics Ho Chi Minh City (UEH), Vietnam; [3]University of Tuscia (UNITUS), Italy;
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Dragon fruit is a new and rapidly growing export-oriented value chain in Vietnam, with 80% of domestic production intended for export. China is the main destination market, accounting for over 90% of Vietnamese dragon fruit exports. This strong dependence on the Chinese market represents a critical challenge, highlighting the need for a market diversification strategy. Access to international markets, particularly higher-value global markets, such as the EU, requires compliance with increasingly stringent quality standards. Meeting these standards is crucial for the full implementation of EU-Vietnam Free Trade Agreement (EVFTA) but, at the same time, it is very challenging due to the high presence of smallholder farmers in dragon fruit production. Based on desk analysis and qualitative surveys, cooperatives emerge as a key factor in addressing sustainability issues within the value chain, particularly for small farms. Through a Probit model fed by the surveys designed and conducted with smallholder dragon fruit producers, the article aims to show whether cooperation among farmers can help to achieve higher levels of sustainability for their production from an economic, social, and environmental point of view. The results of the Probit model have been compared with the positions of the stakeholders emerged from the surveys.

1101-Trade and sustainability-PUPO DANDREA.pdf

Is information a bridge towards farmers' compliance with labor standards? An Italian case analysis following the implementation of "social conditionality".

Giorgia Giordani[1], Simone Severini[1], Jaap Sok[2], Francesca Giarè[3]
[1]University of Tuscia, Italy; [2]Wageningen University and Research, Netherlands; [3]Council for Agricultural Research and Analysis of Agricultural Economics, Italy; giorgia.giordani@studenti.unitus.it

The social sustainability of European agriculture is a key concern for policymakers and academics, particularly due to irregular labor in the sector. To address this, the EU introduced "social conditionality" (SC) in the Common Agricultural Policy (CAP) 2023-2027, linking CAP payments to farmers' compliance with labor regulations. While these regulations are not new, their integration into CAP marks a novel approach to social sustainability.

This study is part of broader research evaluating SC's effectiveness, focusing on farmers' informational level regarding labor regulations. Using Winter and May's (2001) motivational theory, the research examines three key questions: the extent of farmers' knowledge of labor laws, factors influencing their level of information, and whether knowledge impacts compliance.

A survey was conducted using the Italian FADN dataset, applying a direct methodology to assess farmers' actual knowledge of SC-related labor regulations. Data collection has been completed, and preliminary findings are presented in this paper.

1699-Is information a bridge towards farmers' compliance with labor standards An Italian-Giordani.docx

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9:00am - 10:30am

P-4D: Policies Evaluation

Location: **Aula E2 Polo Piagge**
Session Chair: **Federico Parmiggiani**

New administrative geospatial data for agricultural policy evaluation: an application to EU crop diversity obligations

Zelda Brutti[1], Marzia Freo[1], Laura Serlenga[2]
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This study showcases the potential of highly detailed administrative, geo-spatial data sourced from agricultural subsidy registers to perform agricultural policy evaluation. The key novel feature of GeoSpatial Aid Application (GSAA) data consists in the ability to group agricultural parcels that are managed by the same holding, enabling causal analysis at the holding level, rather than at any aggregate geographical level. Further key features include national coverage of agricultural subsidy applicants and remarkably accurate identification of size and specific use of land parcels. Based on Spanish GSAA data, we evaluate a major European Union-wide environmental regulation enacted in 2014, requiring farmers to diversify the crops cultivated on their land. An additional contribution of this article, enabled by the quality of GSAA data, lies in the novel identification and quantification of strategic behaviour among a subgroup of farm holdings, bunching below the relevant size thresholds in reaction to the policy. We provide estimates of policy impacts net of sorting effects, looking at intermediate outcomes measuring crop diversity, through discontinuity designs based on the threshold structure of the diversification obligation. We concisely discuss implications for future research endeavours in the agricultural policy domain.

2045-New administrative geospatial data for agricultural policy evaluation-Brutti.pdf

Tailoring Economic Equilibrium Models for CAP Impact Assessment: Insights from the Italian AGMEMOD model

Tommaso Pomponi[1], Roberto Henke[2], Alessandro Sorrentino[1], Verena Laquai[3]
[1]Università della Tuscia, Italy; [2]CREA - Research Centre for Agricultural Policies and Bioeconomy; [3]Thunen Institute - Institute of Market Analysis; tommaso.pomponi@unitus.it

Economic equilibrium models are key to making evidence-based public policies and have long been used in agricultural policy. However, the changing European situation poses a significant challenge for modellers. The New Delivery Model involves the devolution of responsibility to Member States to adapt EU policies to local requirements. This adds challenges to creating economic models reflecting different national specificities and adapting European agricultural policy modelling to diverse policy choices. The present study has been conceived with the aim of addressing the aforementioned issue by updating and calibrating the Italian agrifood model of AGMEMOD, which is one of the "core models" involved in the European impact assessments in the field of agriculture. AGMEMOD employs a bottom-up approach, integrating national partial equilibrium models for each member states. Therefore, the objective is to model and calibrate the main European agricultural policy instruments with respect to the specificities of the Italian national context. The process will enable the generation of a consistent baseline scenario that reflects national contexts. This, in turn, will assist in the identification of problem areas and inform planning for the CAP after 2027.

2076-Tailoring Economic Equilibrium Models for CAP Impact Assessment-Pomponi.doc

Agent-Based modelling for a comprehensive analysis of agricultural policies. The AGRISP model and the GI milk quotas policy case study

Alberto Giannecchini, Michele Donati, Filippo Arfini, Lisa Baldi
University of Parma, Italy; alberto.giannecchini@unipr.it

The construction of models for the analysis of agricultural policies is challenging due to the multifaceted nature of agricultural systems and the granularity of data. This paper proposes the development of an existing agent-based model, AGRISP, where all the phases of data input, elaboration, and results output are streamlined in a single workflow so that the model can be more efficiently updated and adapted to different contexts. With this new structure, the data is automatically extracted, calibrated, and transferred to the simulation modules; finally, it is processed into two output documents containing respectively the results associated to each sample farm and in an aggregated form. The model is applied to a case study constituted by the Parmigiano Reggiano PDO cheese supply chain, where production is regulated by a policy establishing milk quotas. The results highlight how the integration of data at the farms' level with a simulation module and subsequent statistical analyses allow an articulated and clear vision of complex problems. By integrating every phase in a unique workspace, thus linking together different software, the analysis of policy impacts is simplified and enables the simultaneous evaluation of economic, structural, and environmental dimensions, highlighting the different effects and trade-offs of policies.

2061-Agent-Based modelling for a comprehensive analysis-Giannecchini.pdf

Participation and Performance: A Double/Debiased Machine Learning of Producer Organisations in the Olive Sector

Camilla Tamborrino[1], Luca Cacchiarelli[1], Alessandro Sorrentino[1], Roberto Henke[2], Maria Rosaria Pupo D'Andirea[2], Simone Severini[1], Luigi Biagini[1]
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The Common Agricultural Policy (CAP) places significant emphasis on the role of Producer Organizations (POs) in enhancing farmers' resilience and competitiveness. However, the impact of these initiatives in developed countries remains under-explored. This study seeks to address this gap by examining the role of PO participation in the Italian olive sector, a sector particularly suited for analysis due to its productive importance and fragmented structure. Furthermore, the regulation of olivePOs has changed under the new CAP, making it crucial to understand their limits and potential.The study analyzes the role of POs in economic, environmental, and qualitative terms, aligned with the objectives set at the European level. The methodology employed is the Double/Debias Machine Learning. This model combines causal inference with Machine Learning algorithms, offering a versatile framework for analysis. The findings indicate that while POs have a substantial capacity to improve the performance of the olive sector, thereby justifying continued policy support, there is also a need to refine existing policies to fully achieve all the proposed goals.

1902-Participation and Performance-Tamborrino.pdf

Monitoring Sustainability of Agri-Food Systems in the EU: An Input-Output Approach

Federico Parmiggiani[1], Ema Lazorcakova[2], Claudio Soregaroli[1]
[1]Università Cattolica del Sacro Cuore, Piacenza, Italy; [2]Slovak University of Agriculture in Nitra, Nitra, Slovakia; federico.parmiggiani@unicatt.it

Sustainable agri-food systems are expected to meet the demand for food and nutrition while reducing pressure on the environment. This study assesses the sustainability of agri-food systems in EU countries from 2010 to 2021, using an input-output model to quantify a consistent set of indicators across countries, sectors, and products, covering all sustainability dimensions. The quantification of these indicators from 2010 to 2021 leads to the identification of the sustainability pathways of EU agri-food systems. We develop a multiple case study across EU founding countries—Italy and the Netherlands—and more recent Member States—Bulgaria and Slovakia—and discuss general trends in the EU.

The results show a general decline in economic sustainability and an improvement in environmental sustainability, with mixed trends in social sustainability. In Italy and the Netherlands, economic sustainability declined while environmental sustainability improved. Slovakia saw initial environmental gains followed by stagnation, while Bulgaria saw economic improvements but environmental and social declines. Across the EU, agri-food systems contribute less than 10% to socio-economic indicators but play a significant role in environmental sustainability, particularly in land and water use. The findings suggest a trade-off between economic and environmental performance, emphasizing the challenge of balancing sustainability dimensions.

1897-Monitoring Sustainability of Agri-Food Systems in the EU-Parmiggiani.pdf

9:00am - 10:30am

P-4E: Citizens and the CAP

Location: **Aula L2 Polo Piagge**
Session Chair: **Xinran Shen**

Italians' Perception of the Common Agricultural Policy

Giacomo Salvarani, Matteo Zavalloni, Elena Viganò
Università di Urbino Carlo Bo, Italy; giacomo.salvarani@uniurb.it

In this article, we analyze the knowledge and the acceptability of the Italian public on the CAP and their support for the farmers' protests that have been held in Italy and across Europe in 2024. Our results indicate that Italians are not truly familiar with the CAP, despite believing so. However, Italians strongly support the existence of the CAP, even more so if they are informed about the environmental conditionality of the CAP subsidies. Moreover, CAP knowledge is a major determinant of public support toward the farmers' protests. Our results suggest that individual views on the EU's agricultural policies are not correctly informed while contributing to fuel the support for anti-EU protest events. The EU should make a much greater effort to communicate the CAP's contents and its role in support of the agricultural sector.

1052-Italians' Perception of the Common Agricultural Policy-Salvarani.pdf

"When everything is important then nothing is" – EU Citizens' Preferences Towards Farm To Fork Policy Objectives

Mirta Casati[1], Claudia Stefania Gondos[1], Alessandro Varacca[1], Stefanella Stranieri[2], Claudio Soregaroli[1]
[1]Università Cattolica del Sacro Cuore, Piacenza; [2]Università degli Studi di Milano; stefanella.stranieri@unimi.it

Addressing climate change requires balancing short-term needs and long-term goals under resource constraints (OECD, 2023). While citizen engagement can enhance policy legitimacy and trust (Bozzini & Pascual Dapena, 2025), participation alone does not guarantee better decisions: individuals may lack the knowledge or motivation to differentiate among policy trade-offs.

This study uses the European Green Deal—specifically, the Farm to Fork (F2F) strategy (European Commission, 2020)—as a case to explore citizens' policy priorities. Building on El Benni et al. (2024), we surveyed 11,205 citizens in Germany and Spain to gauge the relative importance they assign to various policy goals. Beyond measuring these priorities, we also examine factors that lead people to differentiate among them—i.e., elements influencing which goals they find most important. Accordingly, our first research question identifies the policy goals citizens value most; the second investigates how effectively they distinguish among these goals and what shapes their capacity to do so. Understanding these dynamics is critical to designing resonant policies and engagement strategies that are attuned to different levels of knowledge, attention, and values (Fournier, 2000).

1705-"When everything is important then nothing is" – EU Citizens' Preferences Towards-Casati.pdf

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Cooperation and trust towards social and environmental objectives in agriculture

Olimpia Fontana[1], Linda Arata[1], Claudia Stefania Gondos[1], Claudio Soregaroli[1], Jens Rommel[2]
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This study investigates the cooperative behavior of agricultural science students towards collective agricultural projects with environmental and social objectives, using a laboratory experiment based on the linear public good game (PGG). The projects focus on environmental sustainability (carbon farming, biogas investment, precision agriculture) and social sustainability (improving farm workers' conditions). The research explores how trust, risk attitude, and reciprocity influence cooperation in these projects. Participants' trust is measured using a trust game, while risk attitudes are assessed using the bomb risk elicitation task (BRET). The study also examines whether knowing in advance that roles will be reversed in the trust game affects trust and trustworthiness. The findings are expected to show that students are more likely to support environmental sustainability projects due to stronger concern for the environment. Trust is anticipated to be a key factor in promoting cooperation, with higher trust leading to greater contributions, while risk aversion may negatively affect cooperation. The results will offer insights into how agricultural students, as proxies for farmers, engage in sustainability projects and inform policy design under the European Commission's Farm to Fork Strategy. This research will help optimize collaborative agricultural initiatives to enhance sustainability through effective cooperation among farmers.

1864-Cooperation and trust towards social and environmental objectives-Fontana.docx

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How Do Tourists Perceive Agri-Tourism Landscapes? Insights from Cultural, Natural, and Service Dimensions

Xinran Shen[1], Gianluca Grilli[2], Paola Gatto[1], Francesco Pagliacci[1]
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Agri-tourism is vital for farm diversification and rural development. Understanding how tourists perceive rural landscapes allows farmers and policymakers to design effective marketing strategies and enhance tourism experience. Despite its importance, there is limited empirical research quantifying how different dimensions of rural landscapes interact with each other and contribute to tourist satisfaction. Using Structural Equation Modeling, this study examines the relationship between tourists' perception of cultural (e.g., historic sites), natural (e.g., scenic views), and service dimensions of landscapes (e.g., activities provided) and their overall satisfaction with agri-tourism. Accessibility is also considered as an important mediator. A structured survey was carried out with 1,022 Italian tourists who visited rural areas in the past year. Preliminary results suggest that natural landscapes have the strongest direct impact on satisfaction, followed by cultural and service aspects. Accessibility likely plays a key mediating role, enhancing the effects of landscape perception. Findings offer practical policy implications, emphasizing the need for targeted improvements in landscape management and service provision. Enhancing accessibility and preserving cultural and natural assets can enhance agri-tourism appeal, supporting both local economies and sustainable development.

1758-How Do Tourists Perceive Agri-Tourism Landscapes Insights-Shen.docx

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10:30am - 11:00am — **Coffee break**

11:00am - 12:00pm — **2nd Plenary Session: From Words to Deeds: Harnessing Innovation for an EU Agrifood System Transition**
Location: **Aula Magna Polo Piagge**
Jeroen Candel (Wageningen University) Discussant: Linda Arata (UNICAT - Piacenza)

12:00pm - 1:00pm — **OS-6A: Unfair Trading Practices (UTPs) in agri-food value chains: perceptions, impacts and policies for efficiency and fairness**
Location: **Aula Magna Polo Piagge**
Session Chair: **Clara Cicatiello**
Speakers: Gabriele Mazzantini, Clara Cicatiello, Anna Carbone, Luca Cacchiarelli, Roberta Pietrangeli, Carlo Russo, Francesca Galli, Silvia Massa, Stefania Testa, Ilenia Bravo, Ilenia Colamatteo, Marialaura Meo, Tarek Allali, Irene Canfora

Unfair Trading Practices (UTPs) undermine the stability and fairness of the European Union's agricultural sector, disproportionately affecting farmers and small-scale suppliers. To address these issues, the EU introduced Directive 2019/633, designed to protect weaker actors in the food supply chain from exploitative practices, such as late payments, unilateral contract changes, and last-minute order cancellations (just to name a few). However, despite these regulatory efforts, concerns remain regarding the effectiveness of enforcement, as weak oversight, resource constraints, and fear of retaliation discourage suppliers from reporting violations. Lengthy legal procedures further deter small suppliers from seeking justice, leaving many to absorb financial losses rather than engaging in costly disputes. Additionally, a lack of contract transparency enables powerful buyers to impose unfavorable terms with minimal accountability. Building on this foundation, the EU's recent "Vision for Agriculture and Food", informed by the Strategic Dialogue for Agriculture and Food, reinforces the commitment to a more equitable and sustainable agri-food sector. One of the key takeaways from this dialogue has been the recognition that tackling UTPs is essential for rebalancing power within the food chain. Stakeholders have emphasized the need for greater market transparency, enhanced producer cooperation, and capacity-building measures to empower farmers. These discussions are shaping policy recommendations aimed at strengthening the resilience and fairness of the EU's agricultural system. The impacts of UTPs extend beyond economic concerns, affecting social and environmental sustainability as well. Economically, UTPs distort markets by reinforcing imbalances between large buyers and small suppliers, reducing competition, and suppressing farmgate prices. This forces farmers into financial instability, making it difficult for them to invest in innovation or improve productivity. The long-term consequences include reduced farm viability and a shrinking agricultural workforce, as financial insecurity discourages young people from entering the sector. Socially, UTPs indirectly contribute to precarious working conditions and labor exploitation. In response to squeezed margins, many farmers may resort to cost-cutting measures that affect wages and job security, disproportionately impacting vulnerable workers. Moreover, UTPs accelerate rural decline, as small farmers unable to compete are forced to abandon their businesses, leading to depopulation and loss of traditional agricultural knowledge. Environmentally, UTPs may exacerbate unsustainable farming practices. Practices such as last-minute order cancellations and strategic product returns contribute significantly to food loss and waste, forcing farmers to dispose of unsold products at their own cost. The pressure to supply low-cost food also discourages investment in sustainable agriculture, leading to overuse of fertilizers, soil degradation, and biodiversity loss. Given these far-reaching consequences, addressing UTPs is critical to ensuring a fair, resilient, and sustainable food system that benefits producers, consumers, and the environment. This organized session will explore UTPs from multiple perspectives and disciplines, fostering a critical discussion on their impacts and the policy measures needed to mitigate them. The session aims to advance the debate on UTPs and contribute to more effective solutions for the future of European agriculture.

Unfair Trading Practices (UTPs) in agri-food value chains: perceptions, impacts and policies for efficiency and fairness

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1219-Unfair Trading Practices-Cicatiello.docx

12:00pm - 1:00pm — **PS-6B: The role of scientific knowledge dissemination in fostering competitiveness and sustainability of the agri-food system.**
Location: **Aula D2 Polo Piagge**
Session Chair: **Emilio Chiodo**
Panelists: Franco Sotte, Valentina Carta, Simona Cristiano, Patrizia Proietti, Alessio Cavicchi, Valentina Cristiana Materia

The dissemination of scientific knowledge is recognized as playing a crucial role in the transition of the European agri-food sector towards more sustainable and competitive paths. The Strategic Dialogue on the Future of EU Agriculture (2024) highlighted that "There is already a great deal of knowledge available that can help transition to fair, sustainable, resilient agri-food systems, but dissemination remains too limited" and (…) "To fully leverage this potential, generation, access to and better sharing of knowledge and skills must be facilitated". In the same direction, the recent Communication of the European Commission on the Vision for Agriculture and Food (2025) affirms that research, innovation, knowledge and skills need to be placed at the heart of Europe's agri-food economy, as catalyst of change. Different factors need to be taken into consideration. It is not just an issue of disclosing innovative techniques and practices. An effective dissemination strategy is a challenge that requires a holistic and integrated vision across various disciplines and involves a vast plurality of actors, both public and private, at the European, national, regional, and local levels, as well as within supply chains and territories. For this reason, spaces for dialogue are needed to allow for advanced syntheses between options and interests that are often divergent. Aspects such as social innovation, the need for participatory approaches, and the speed of the diffusion of innovation take a crucial role in this situation. All aspects that call into question mainly the social sciences – including agricultural economics and policy among them. Here, it must be acknowledged that there is a huge gap. On one hand, scientific

journals are reserved and accessible only to a small academic elite, often not oriented to meet the needs of disseminating analysis and knowledge. The fact that the use of the English language has become widespread in research prevents the results from benefiting often even the very sectors, subjects, and territories studied. On the other hand, sector-specific magazines provide valuable information that, by its nature, only captures the aspects of research that have journalistic and timely relevance. Even the good policies supporting innovation (AKIS) and the experience of EIP AGRI operation groups supported by the CAP are often forced to look for solutions for promoting and disseminating knowledge from scratch, lacking an independent and authoritative scientific platform for validating results. Starting from the presentation of the multiannual experience of the dissemination initiative "Agriregionieuropa" (www.agriregionieuropa.it) and of other significant good practices of scientific knowledge dissemination, the Session focuses on the critical analysis and discussion of the strategies and tools currently in use and on the innovation that can be put in place to foster the capacity for knowledge dissemination in increasing the competitiveness and sustainability of the European agri-food system. Aspects such as the role of Universities, Research Institutions, and Networks in social innovation, territorial promotion, and technological transfer are considered, together with the strategies that could be put in place and the tools that could be used. To the Session participants a printed copy of the book "Agriregionieuropa. Comunicare la ricerca in economia e politica agraria" (2024) will be distributed.

The role of scientific knowledge dissemination in fostering competitiveness and sustainability of the agri-food system.

Emilio Chiodo[1], Franco Sotte[2], Alessio Cavicchi[3], Valentina Carta[4], Patrizia Proietti[4], Simona Cristiano[4], Valentina Cristiana Materia[5]

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1027-The role of scientific knowledge dissemination in fostering competitiveness and-Chiodo.doc

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12:00pm - 1:30pm

P-5A: Security and Health

Location: **Aula G2 Polo Piagge**
Session Chair: **Chiara Biggi**

Nudging Fragile Populations Towards Healthy Food Choices In A Real Purchase Context

Rungsaran Wongprawmas, Audrey Cavalieri, Chiara Biggi, Davide Menozzi, Cristina Mora
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Given the increasing prevalence of food insecurity and the rising rates of overweight children and adolescents in Italy, promoting a shift towards healthier diets is essential. To facilitate this transition, it is crucial that these essential foods are both available and affordable, particularly for low-income and fragile populations. This study aims to apply nudging interventions in a real purchasing context and to investigate their effectiveness in shaping consumer behavior. The study, which included both qualitative and quantitative phases, was carried out in a Parma social supermarket. In order to determine the appropriate nudging treatments and investigate the influence of social and cultural aspects on the decision-making process, 15 low-income clients participated in semi-structured interviews during the first phase. In the second phase, nudge interventions were applied to increase the percentage of sales of whole-grain spaghetti. The interventions were (1) increased availability of the targeted product and (2) the combination of increased availability and cognitive nudging (an evaluative label and an infographic). Preliminary results show an increase in the percentage of sales of whole-grain spaghetti following the nudging intervention, implying that changing the environment in which the choice is made may encourage low-income people to make healthier food choices.

2050-Nudging Fragile Populations Towards Healthy Food Choices-Wongprawmas.pdf

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Assessing the Healthiness of the School Food Environment and its association with Fruit, Vegetable, and Legume consumption: an IRT Approach in Italian Schools

Veronica Vitali[1], Giulia Tiboldo[1], Alessandro Varacca[2], Elena Castellari[1]

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This study examines the impact of School Food Environments (SFEs) on children's dietary habits in Italy. Many children consume excessive processed foods while failing to meet recommended intake levels of fruits, vegetables, and legumes (FVL). Given the role of SFEs in shaping children's nutrition and long-term health, this research assesses the healthiness of SFEs in kindergartens and primary schools and their association with children's consumption of healthy foods.

A survey of 1,249 teachers across Italy was conducted using an ad-hoc questionnaire. Since the healthiness of SFEs cannot be directly observed, three latent variables were developed using Item Response Theory models: Quality of the Offering, evaluating meal quality, Quality of Food and Nutrition-Related Activities, assessing participation in nutrition programs, and Role of Stakeholders in Nutrition Governance, analyzing key actors' involvement. These dimensions were integrated into an ordered logit model to examine associations with children's FVL consumption levels.

Findings indicate that a higher Quality of Offering is linked to increased FVL consumption. Kindergarten attendance is also positively associated with healthier dietary habits, emphasizing the importance of early interventions. The study highlights the need for meal quality improvements, infrastructure investments, and inclusive nutrition strategies to contrast childhood obesity and inequalities in SFEs.

1755-Assessing the Healthiness of the School Food Environment and its association with-Vitali.pdf

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Policies for Health and Sustainable Diets in Italy: The Stakeholders' view

Giampiero Mazzocchi, Annalisa Angeloni, Sabrina Giuca, Maria Luisa Scalvedi, Roberto Henke, Patrizia Borsotto
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The concept of food sustainability is inherently complex and multidimensional, which makes the understanding of the adoption of healthy and sustainable diets (HSDs) within contemporary societies rather challenging. The practical implementation of policies that support the adoption of HDs faces barriers, such as policy incoherence, lack of integration, resistance from various stakeholders, and the lack of proper institutional support. In Italy, despite its rich agricultural history and deep cultural ties to food, the challenge of adopting HSDs is particularly prominent. Moreover, the contemporary environmental, health, and economic challenges, call for an active role in the governance from public institutions at different territorial levels. This paper aims to analyse the current Policy Domains in Italy concerning HSDs, focusing on how these policies are framed, where gaps might exist, and how stakeholders perceive the potential integration of HSDs principles into existing regulations. By engaging with stakeholders - such as representatives of farmers, processing industry, policymakers, and consumers - this research seeks to deepen our understanding of the barriers, opportunities, and gaps that exist within Italy's food policies and provide recommendations for more effective integration of HSDs principles into the national policy framework.

1685-Policies for Health and Sustainable Diets in Italy-Mazzocchi.pdf

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Food Insecurity and Mediterranean Diet Adherence: A Comparative Study Across 5 Countries

Chiara Biggi, Davide Menozzi, Biasini Beatrice, Apergi Kyriaki
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In the last decades a slight shift away from the adoption of the Mediterranean Diet (MD) eating pattern was registered in several Mediterranean Countries (Biasini et al., 2021), despite the health advantages associated to it are largely documented in the literature (e.g.,Sofi et al., 2010; Galbete et al., 2018). When embedding the concept of healthy diets and food security, it should be considered the definition of the latter as the status that "exists when all people, at all times, have physical and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life" (Pérez-Escamilla, 2017). The main goal of the study is to determine the FI across 5 Mediterranean countries (Italy, Tunisia, Morocco, Greece, and Slovenia), and associating this Food Isecurity level to their relative adherence to the Mediterranean Diet (MD).

1938-Food Insecurity and Mediterranean Diet Adherence-Biggi.pdf

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A business perspective on the protein transition in Europe: companies' profiling and financial event history analysis

Francesca Monticone, Antonella Samoggia
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The agri-food sector, especially intensive livestock production, is a key contributor to climate change, prompting a shift to plant-based production and consumption. While previous academic research mainly focused on consumer behaviour, this study examines the production side, particularly the role of the food industry in the plant-based protein market. The study analysed 101 plant-based protein companies from four European regions. The publicly available database was enriched with additional economic performance data and financial events, sourced from three databases: Orbis, Orbis M&A and NexisUni. The analysis revealed a dynamic sector, characterised by geographical imbalance, and a range of products and ingredient variety. The most common plant-based protein ingredients were soy (37 companies), pea (34), and wheat (26). Financial metrics, such as EBITDA margin, ROA and ROE, highlighted poor industry health, despite a growing turnover going from €122 million to €305 million between 2018 and 2023. Cluster analysis grouped companies by shared traits, finding 4 clusters. Cluster 1 consists of stable small businesses (pre-2018) in Western and Southern Europe, while Cluster 2 features innovative, agile

micro-enterprises (post-2018) focused on the plant-based sector in France and Germany. Cluster 3 includes diverse micro-enterprises in Southern Europe, and Cluster 4 highlights tech-driven micro-enterprises in Scandinavia and Western Europe. The Orbis M&A and Nexis Uni search revealed 59 financial events between 2006 and 2025, with private investments dominating the discourse, especially after 2017. Investors were mainly European and American venture capital investments services companies, mostly focussed on innovation in the food sector. While private investments were mainly international, acquisitions were mostly of domestic nature. Overall, the findings show that the plant-based sector in Europe is experiencing a period of rapid revenue growth and investment-driven expansion, yet profitability challenges and structural fragmentation persist.

1726-A business perspective on the protein transition in Europe-Monticone.doc

12:00pm - 1:30pm

P-5B: Digital technologies in agriculture

Location: **Aula H2 Polo Piagge**
Session Chair: **Leonardo Cei**

4.0 technologies in agriculture: evidence from discrete choice experiments and the Bass diffusion model

Ruggiero Sardaro[1], Domenico Parente[1], Antonio Urbano[1], Leonardo Orsitto[1], Yari Vecchio[2], Margherita Masi[2], Ernesto Marrocco[2], Piermichele La Sala[1]

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Understanding the reasons why farmers adopt technological innovations is crucial to establishing successful strategies, especially considering the low rates of technological adoption, or even failure, found in several studies. The research aims to identify, through a stated preferences approach, drivers and barriers related to the adoption of 4.0 technologies in the Apulian farms for enhancing sustainability, efficiency, and resilience. The attitude towards technological innovations is analysed concerning structural characteristics of farms, socioeconomic aspects of entrepreneurs, managerial perception of the external environment, organizational capabilities, and managerial cognition. The results highlight: i) the determinants of technology adoption by farms in Apulia region; ii) the role that managerial perception of the external environment, organizational capacity and managerial cognition play in investment decision; iii) the potential market of 4.0 technologies in the regional agriculture sector; iv) the adoption speed of 4.0 technologies in the regional agriculture sector within the next years.

1963-40 technologies in agriculture-Sardaro.pdf

Integrating Multi-Sensor Ground-Based and Remote Sensing Technologies for Early Detection of Plant Diseases: Exploring the Socio-Economic and Ecological Impacts

Harika Meesala[1], Daniele Vergamini[1], Francesca Galli[1], Lorenzo Cotrozzi[1], Sergio Cogliati[2]

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Remote sensing technologies in agriculture have proven to be highly effective in the early detection of pests and diseases, preventing their spread in the early stages, which helps reduce yield loss and the need for excessive chemical treatments. However, the adoption of digital technologies in farming is often debated due to their unpredictable costs. Given that these technologies impact multiple socio-economic and ecological dimensions, this study explores how the newly developed multi-sensor ground-based and remote sensing technology facilitate early and accurate disease detection. It also examines the associated socio-technical impacts, considering the broader context of their use. While remote sensing technologies hold the potential to revolutionize disease management by providing real-time, precise, and detailed information to support decision-making, successful adoption requires strategies tailored to the specific agricultural context. These strategies should account for the socio-economic, ecological, and regulatory factors involved.

2080-Integrating Multi-Sensor Ground-Based and Remote Sensing Technologies-Meesala.pdf

Exploring the adoption of innovative microbial consortia for sustainable and competitive vineyard management: Insights from Veneto region grape growers

Elena Maggio, Leonardo Cei, Eugenio Pomarici

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The increasing emphasis on sustainability in agriculture, particularly in viticulture, necessitates a shift toward more sustainable wine production. The adoption of sustainable and innovative practices presents potential solutions by reducing pesticide use and mitigating the impacts of climate change. This study applies Davis's (1989) Technology Acceptance Model (TAM) and Ajzen's (1991) Theory of Planned Behavior (TPB) to explore winegrowers' intentions to adopt a specific sustainable innovation: the use of microbial consortia in combination with good agronomic practices. The model is expanded to include five additional factors: farmer's perceived risk of Esca disease, perceived risk of water stress, perceived cost of implementing the technique, farmer's risk attitude, and current technological level of vineyard management . A structural equation modeling (SEM) approach is employed to identify the key factors influencing the acceptance of innovative practices in viticulture. A survey of 300 winegrowers is currently being conducted through an online questionnaire. To refine the methodology, a pilot test involving 30 producers was carried out in July-August 2024, gathering valuable feedback. Preliminary results suggest that attitude plays a pivotal role in technology adoption, with factors that positively influence attitude being essential in shaping adoption intentions.

1959-Exploring the adoption of innovative microbial consortia-Maggio.pdf

The application of remote sensing to improve irrigation accounting systems: a review

Hakan Benli, Massimo Cassiano, Giacomo Giannoccaro

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Water resources are becoming increasingly scarce, and the effects of groundwater overexploitation are more evident than ever. Continuous overuse leads to a progressive decline in both the quality and quantity of water stored in aquifers, which poses a serious challenge for regions dependent on this resource. Traditional water accounting systems depend largely on in-situ measurements and statistical models, which tend to suffer from limited spatial coverage and delays in data collection. This inadequacy delays timely decision-making and efficient resource allocation. Remote sensing offers a promising alternative by enabling large-scale, real-time water assessments, yet uncertainties related to measurement precision, methodological consistency, and integration with existing water governance frameworks persist. In this review, these gaps will be addressed by evaluating the reliability of remote sensing for key water accounting parameters and identifying the primary challenges associated with its implementation at a basin scale. Specifically, this study seeks to answer: How effective and accurate are remote sensing technologies in measuring key water accounting parameters compared to traditional in-situ methods, and what are the main challenges in their implementation?

2022-The application of remote sensing to improve irrigation accounting systems-Benli.docx

Modelling the impacts of the adoption of a Precision Livestock Farming technology by Italian specialized dairy cattle farms.

Davide Dell'Unto[1], Roberta Selvaggi[2], Gioacchino Pappalardo[2], Raffaele Cortignani[1]

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Key EU policy objectives for livestock sector pertain improving animal welfare, while ensuring economic, social and environmental sustainability of farming activities. Investments in Precision Livestock Farming technologies are essential to the scope. This study reports the results of three simulations performed through an agroeconomic model, representing specialized Italian dairy cattle farms sampled in 2021 database of the Farm Accountancy Data Network. The simulations consider the choice of modelled farms to adopt, or not, market-available and prototypal Stand Alone (SA) pedometers. In the latter case, the possibility of equipping the totality of cows or only fresh cows after calving (30%) was considered. Results highlight that the share of adoption of market-available and prototypal SA pedometers, keeping equal the benefits in terms of productivity gains, greatly depends on the cost of investment. The latter is lower adopting prototypal SA pedometers, particularly when only fresh dairy cows after calving are equipped with. Large farms and farms operating in plain areas would be in any case more likely to adopt pedometers. Nevertheless, also part of small and disadvantaged farms would adopt these devices with a low cost of investment required. This suggests the need of targeted policy support to better achieve EU policy objectives.

1852-Modelling the impacts of the adoption of a Precision Livestock Farming technology-DellUnto.pdf

12:00pm - 1:30pm

P-5C: The sustainability dimensions

Location: **Aula I2 Polo Piagge**
Session Chair: **Ilenia Manetti**

Economic, social and environmental sustainability of farms in Poland. Does short food supply chains matter?

Sebastian Stępień, Aleksander Grzelak

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The impact of short food supply chains (SFSCs) on agricultural sustainability is not fully understood and the results of individual studies are ambiguous. Therefore, the aim of the research is to indicate how sustainable are farms participating in short sale systems compared to farms not participating. Three sustainability components were considered: economic, social and environmental, while simultaneously defining the significance of the individual variables differentiating farms of both types. The added value of the paper is the author's approach to the construction of sustainability indicators in three dimensions, which takes into account a wide set of variables. The

measures are based on primary data, originating from 199 in-depth interviews. The study shows that the surveyed farms in Poland participating in SFSCs are clearly more sustainable in the social dimension compared to non-SFCS farms. In the case of the economic dimension, the differences were less marked but still statistically significant, while no clear differences were noted for environmental sustainability. Further results demonstrate that among social variables better housing conditions and higher socialization significantly increase the likelihood of participation in SFSC. For the economic dimension, output per hectare and farmer's subjective assessment of the financial situation have the highest impact.

2066-Economic, social and environmental sustainability-Stępień.doc

Understanding key factors boosting organic tea production in Vietnam: evidence from the central highlands' region

Ilenia Manetti[1], Federica Demaria[1], Viet Hoang[2], Raffaele D'Annolfo[1], Federica Morandi[1], Felicetta Carillo[1], Roberto Henke[1], Maria Rosaria Pupo D'Andrea[1], Sara Romano[3], Marco Vassallo[1]

[1]CREA - Council for Agricultural Research and Economics, Italy; [2]University of Economics Ho Chi Minh City (UEH), Vietnam; [3]University of Tuscia (UNITUS), Italy; ilenia.manetti@crea.gov.it

Vietnam's tea sector plays a crucial role in local rural economy, with smallholder farmers dominating production. Despite steady growth in productivity and exports since the 1990s, the industry faces challenges, including reliance on chemical inputs, gender disparities, low value addition, and environmental concerns. Institutional efforts promote sustainable practices through certification schemes like VietGAP and GlobalGAP, yet adoption remains low. This study, part of the H2020-funded TRADE4SD project, examines the key drivers behind the adoption of sustainable practices in Vietnam's tea value chain. A mixed-methods approach, based on desk research and surveys with 105 farmers and key sector stakeholders, highlights economic constraints, knowledge gaps, certification barriers and limited price differentiation between organic and conventional tea. A logit regression model indicate that younger farmers, women, and those with larger farms are more likely to adopt sustainable practices, while high environmental standards generally required by international trade agreements act as disincentives due mainly to cost concerns. Recommendations on enhancing technical training, improving financial access, strengthening cooperation and addressing gender disparities come out in view of EVFTA trade agreement implementation, to integrate Vietnamese tea into global sustainable supply chains. Further research is needed to validate these initial findings and support policy development.

1700-Understanding key factors boosting organic tea production-Manetti.pdf

Crop insurance and pesticide use: evidence from the Italian apple sector

Thi Thanh Thuong Dang, Mirta Casati, Linda Arata, Paolo Sckokai

Università Cattolica del Sacro Cuore, Italy; thithanhthuong.dang@unicatt.it

The reduction of pesticide use and the promotion of crop insurance uptake represent two pivotal policy actions aimed at enhancing sustainable and resilient farming practices within the European Common Agricultural Policy (CAP) (Arata et al., 2023; European Commission, 2013, 2020; Di Falco et al., 2014; Finger, 2024; Möhring et al., 2020; Schneider et al., 2023; Spiegel et al., 2021). The European Commission is offering more subsidies to help farmers adopt passive risk management tools, such as crop insurance, to stabilise their income in the face of reduced crop yields due to extreme weather events (Bucheli et al., 2022; Di Falco et al., 2014; Meuwissen et al., 2013; Möhring et al., 2020; Santeramo, 2018; Santeramo et al., 2023; Vroege & Finger, 2020).

We address this research gap by investigating the impact of crop insurance uptake on pesticide use in apple production in Northern Italy. Apple production is highly dependent on the use of pesticides (Simon et al., 2011; Zaller et al., 2023) and it is increasingly affected by extreme weather events such as frost and hail (Fernandez et al., 2020; Pfleiderer et al., 2019).

1756-Crop insurance and pesticide use-Dang.pdf

Women's role in market orientation among small-scale milk producers in Kenya

Chiara Perelli[1], Luigi Biagini[1], Giacomo Branca[2], Luca Cacchiarelli[2], Simone Severini[1]

[1]Department of Agricultural and Forest Sciences (DAFNE). University of Tuscia; [2]Department of Economics. Engineering. Society and Business Organization (DEIM). University of Tuscia; chiara.perelli@unitus.it

Agriculture is pivotal for rural livelihoods in Sub-Saharan Africa, with enhanced market access being crucial for poverty reduction. Despite decades of market liberalization, smallhoder farmers struggle to participate in domestic and regional markets due to factors such as transaction costs, assets ownership, agricultural productivity, access to inputs, services, and output markets. These factors, under varying contexts, exhibit a significant gender dimension. Women play a key role in the dairy and livestock value chains, contributing across various stages. However, socio-cultural norms and gender biases restrict their decision-making authority and control over farm produce and output commercialization. This paper explores women's impact on livestock-dairy output commercialization in Kenya, focusing on milk production and commercialization. It examines the determinants of women's empowerment within household management, as well as the influence that women involvement in decision-making processes have on the proportion of agricultural output that is commercialised. Preliminary results suggest that market orientation in women-led households is influenced by agricultural assets and socio-demographic factors, highlighting their social vulnerability. However, these factors are not critical in households where women actively participate in decision-making and farm management. Policies promoting the transition from subsistence to market-oriented households should consider social contexts, particularly women's role in the households.

1720-Women's role in market orientation among small-scale milk producers-Perelli.pdf

Trade Openness and Agri-Environmental Policies

Daniele Curzi, Robert Brot, Paolo Nota, Alessandro Olper

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This study investigates the relationship between trade openness and the adoption of agri-environmental policies. While globalization has played a crucial role in reshaping international trade, its environmental consequences remain widely debated. Some scholars argue that trade liberalization can drive sustainable economic transitions, while others emphasize risks such as carbon leakage and environmental degradation. This debate is particularly relevant for the agricultural sector, which significantly contributes to greenhouse gas emissions, deforestation, water pollution, and soil erosion.

Using a novel dataset by Wuepper et al. (2024), covering agri-environmental policies from 1960 to 2022 across nearly 200 countries, we employ a staggered difference-in-differences approach as proposed by Callaway and Sant'Anna (2021). Our results suggest that trade liberalization is associated with a significant increase in agri-environmental policy adoption. Specifically, 10 years after a country opens to trade, it implements, on average, two additional policies compared to non-liberalized counterparts. However, the effects vary by policy category, with biodiversity and forestry policies showing the most substantial increases. These findings highlight the role of trade openness in shaping environmental policy frameworks and suggest that while trade liberalization fosters policy adoption, its impact is not uniform across different environmental dimensions.

1031-Trade Openness and Agri-Environmental Policies-Curzi.pdf

12:00pm - 1:30pm

P-5D: Transition of the agri-food system

Location: **Aula E2 Polo Piagge**

Session Chair: **Oybek Norboev**

Co-designing Shared Socioeconomic Pathways for Italian Agricultural systems: the IT-Agri-SSPs

Oybek Norboev[1,2], Hermine Mitter[3], Steven Van Passel[2], Michele Moretti[1]

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Agricultural systems face mounting challenges from climate change, environmental pressures, socio-economic shifts, and technological advancements. Scenario-based approaches, such as the Shared Socioeconomic Pathways for agriculture and food systems (Eur-Agri-SSPs), provide a structured framework for exploring future trajectories. However, their direct application to national contexts like Italy is limited due to regional heterogeneities, distinct agro-ecological zones, and diverse policy environments. This study develops downscaled Shared Socioeconomic Pathways for Italian agriculture (IT-Agri-SSPs) that align with Eur-Agri-SSPs and global SSPs while incorporating Italy-specific conditions. Using a five-step adaptation of Mitter et al. (2020)'s protocol, the research integrates systematic literature review, expert consultations, participatory scenario drafting, consistency checks, and synthesis into full narratives. A review of 177 publications identified 21 relevant sources and 65 scenario elements, of which 26 align with Eur-Agri-SSPs, while 39 capture Italy-specific aspects such as regional farming practices, policy constraints, and socio-economic shifts. The IT-Agri-SSPs offer policymakers, researchers, and stakeholders a robust framework for adaptive and sustainable agricultural planning in the face of climate and socio-economic uncertainties, ensuring a tailored approach to Italy's agricultural future.

1822-Co-designing Shared Socioeconomic Pathways for Italian Agricultural systems-Norboev.pdf

Expert Perspectives on Efficient Incentive Mechanisms for Carbon Farming

Nidhi Raina[1], Erik Mathijs[2], Kato Van Ruymbeke[2], Davide Viaggi[1]

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Carbon farming has found an increased global interest from an environmental and economic viewpoint. However, the carbon markets are riddled with challenges on both the demand and the supply side. This study aims to highlight efficient incentive mechanisms for a successful carbon farming scheme through the qualitative inquiry of global

experts. The study also reveals experts' preference for the contract design and the barriers to the adoption of the schemes, with possible solutions for future project design. We interviewed 36 global experts online who represent the important stakeholders in a carbon farming project using a semi-structured questionnaire (in Qualtrics) and a pre-set interview protocol. Our study results highlight experts' qualitative validation for the incentive mechanism we would like to term as '*hybrid-blend model*' to highlight the hybrid nature of the mode of payments and blended nature of finance. To elucidate, experts prefer a hybrid incentive scheme (action-oriented mixed with top-up based on results) funded by a mix of public funding upfront (for covering farmers' transaction cost, rewarding co-benefits, and reducing risk) and private funding, specifically supply chain-based incentives (like premium price for products) for outcomes that are measured through simple, low-cost MRV mechanisms and certified by public standards. Experts also pointed out that economic barriers, like high costs, financial viability, and market challenges, are central to carbon farming. So, experts recommend a combination of financing to support farmers. Experts also underline other environmental and social barriers, that can be solved through robust and low-cost MRV, valuation of co-benefits, and shift to sustainable food systems. In conclusion, the study finds that carbon farming does have the potential to contribute to long-term climate policy, provided it evolves beyond carbon-centric metrics and market-based tools and aligns with broader policy goals like soil health policies or nature restoration law.

1674-Expert Perspectives on Efficient Incentive Mechanisms-Raina.pdf

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Factors Influencing Farmers' WTA Innovative Carbon Farming Contracts For Environmental Improvements

Georges Assaker[1], Daniele Vergamini[2], Francesco Riccioli[2], Fabio Bartolini[1]

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Carbon Farming (CF) practices have emerged as a promising approach to enhance carbon storage services in vulnerable agricultural areas. By addressing the knowledge gap in the design and acceptability of agri-environmental and climatic schemes (AECS), this study examines how tailored CF contracts can effectively promote sustainable agricultural practices. Focusing on the Liguria region in Italy, the research explores farmers' preferences for hypothetical CF measures and examines the factors influencing their willingness to accept (WTA). Using a Conditional Logit Model (CLM) applied to a Discrete Choice Experiment (DCE) with 93 farmers, the study reveals that farmers prioritize individual participation over collaborative approaches with peers or actors in the supply chain. Payment preferences indicate a strong favor for action-based contracts, followed by hybrid and results-based models, with higher compensation demanded for the last two. Furthermore, a Latent Class Model (LCM) with two classes revealed distinct preferences among farmers. In the first class, farmers preferred individual engagement and higher compensation. Conversely, the second class placed significant importance on higher prescription levels, although compensation requirements remained high as well. These results suggest that integrating results-based contracts with collective action mechanisms could enhance acceptability. The findings underscore the importance of designing AECS that accommodate both incremental and transformative changes, aligning with farmers' preferences and ensuring adequate compensation levels to promote sustainable CF practices.

2053-Factors Influencing Farmers' WTA Innovative Carbon Farming Contracts-Assaker.docx

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Envisioning Plausible and Desirable Futures for the Livestock Sector

Selene Righi[1], Michele Moretti[1], Letizia Forzoni[1], Hermine Mitter[2]

[1]University of Pisa, Department of Agricultural, Food and Agri-environmental Sciences, Italy; [2]University of Graz, Department of Environmental Systems Sciences, Austria; selene.righi@agr.unipi.it

The livestock sector is facing profound transformations that require a new narrative to drive its future development. Ensuring sustainability requires addressing environmental, economic and social challenges through transformational policies that enable livestock systems to operate within planetary boundaries. However, current European agricultural policies must evolve to balance sustainability, economic competitiveness and social acceptance. This study, conducted as part of a Horizon project, presents an innovative approach that integrates explorative and normative scenarios through a participatory methodology involving key stakeholders. By combining these perspectives, we aim to provide insights into effective strategies for the transition to an equitable and resilient livestock system and preserve its important role in supporting the well-being of marginal/rural/mountain communities and territories. This approach also supports climate change adaptation and mitigation policies by defining goals and pathways towards a desirable future. Future policies should embrace innovative thinking that considers the interconnectedness of society, animals and the environment to ensure effective governance and institutional support. Scenarios are valuable tools for navigating future uncertainties, identifying key drivers and plausible development paths.

1789-Envisioning Plausible and Desirable Futures for the Livestock Sector-Righi.pdf

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All that glitters is not green: energy costs in the conversion to organic farms in Italy

Luigi Biagini[1], Simone Severini[1], Federico Antonioli[2]

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The European Green Deal aims for a sustainable food system, particularly through the organic action plan, targeting 25% of agricultural land under organic farming by 2030. Altogether, improving energy efficiency and security is a key political target, particularly in agriculture, as a heavy consumer of non-renewable energy. This study examines how converting farms to organic practices impacts energy expenses, focusing on the economics of energy use. The empirical analysis focuses on the economics of energy use. It evaluates total farm energy costs, including direct and indirect inputs, expressed per hectare, per total farm revenue, and per revenue adjusted to conventional prices (i.e., simulating revenues if organic farms operated at conventional market prices). Using the Italian Farm Accountancy Data Network for 2015–2022, the Difference-in-Differences estimator proposed by de Chaisemartin and D'Haultfœuille (2024) is applied. This method allows farms to transition in and out of organic certification (non-absorbing treatment). Our findings indicate that organic farming does not entail a significant reduction in energy costs per hectare or enhance energy security. Energy costs per euro of revenue are comparable to conventional farming, leaving both systems equally vulnerable to energy price fluctuations. Interestingly, when measured in conventional prices, the increase in energy costs is positive and significant, signalling either that organic producers pay a higher price for energy inputs, or that the amount of energy per unit of production is higher, or both. Results highlight a need for a more targeted policy approach supporting organic farmers in such a transition. These could include measures to improve energy efficiency, promote renewable energy adoption, and implement tax incentives or exemptions to mitigate the impact of energy market volatility. Such policies are essential to ensure that organic farming aligns with broader sustainability goals while addressing its economic challenges.

1651-All that glitters is not green-Biagini.pdf

1:30pm - 2:30pm	**Light Lunch**
2:30pm - 4:00pm	**Plenary Panel: Complying and competing for a sustainable agrifood transition: farmers' protests and policy actions** Location: **Aula Magna Polo Piagge** Fabio Bartolini (University of Ferrara) Diego Canga Fano (DG AGRI - EU) Francesca Giarè (CREA-PB)
4:00pm - 4:30pm	**Concluding ceremony** Location: **Aula Magna Polo Piagge**