

## Editorial

*Sergaki, P., Ass. Professor, Aristotle University of Thessaloniki*

*Karanikolas, P., Ass. Professor, Agricultural University of Athens*

*Kontogeorgos, A., Ass. Professor, International Hellenic University*

*Ragkos, A. Ass. Researcher, Hellenic Agricultural Organization ELGO-DIMITRA*

*Rezitis, A. Professor, Agricultural University of Athens*

The Agricultural sector is both causing and being affected by radical transformations in agri-food systems stretching from the producers of necessary inputs (e.g., seeds, fertilizers) to millions of final consumers. Firstly, growing food and demographic and disposable income changes drive industrial demand. Therefore, sustainably increasing agricultural productivity is essential to meet the challenges of higher demand in a resource-constrained and climate-uncertain world. Secondly, on the supply side, there is growing competition for the same production factors (land, labor, capital) and growing pressure on using natural resources (with an impact on the environment and climate). Thirdly, innovative dynamics emerge in the supply chain, not only restricted to product and process but also organizational aspects along the agri-food chain, triggered by new technologies and evolving consumer demand. These dynamics strengthen the role of retailers, complicate the social conditions of different stakeholders and potentially reduce farmers' bargaining power within the value chain.

Moreover, the acute climate change-related risks move away the sustainability target in the agri-food supply chain and challenge the resilience of agri-food production systems. Extreme and unpredictable adverse climatic events already affect agriculture, exacerbating the long-standing problems of resource depletion and environmental degradation. Simultaneously, they pose additional pressure on traditional production systems and push farmers to (re)discover new crops and activities to safeguard their incomes. The complex dynamics dictated by various health issues caused by globalized diets, combined with excessive food waste – especially in developed economies – as well as the persisting problems of hunger and malnutrition in developing countries, bring food and nutrition security to the forefront of scientific and political discourse. Therefore, profound economic, social, and environmental impacts are expected, thus rendering the quest for sustainability even more complicated and demanding. Bio-economy, circular economy solutions, and sustainable intensification patterns (Garnett et al., 2013) can have a decisive contribution in tackling contradicting issues such as climate change or terrestrial and aquatic ecosystem degradation on the one hand, and the growing demand for agricultural products and food, on the other. There are also growing concerns about the systemic causes of the current crisis, stressing the need to rethink the fundamentals of our food and farming systems (Tendall et al., 2015).

Thus, there is an urgent need to address the above challenges and reconcile diverse concerns such as food security, environmental and livelihood resilience, nutritional sufficiency, and social equity (IPES-Food, 2016). All these pose a heightened pressure at the policy level, asking for policy cohesiveness and integration of various policy tools. The European Union has introduced multiple tools – including measures of the Common Agricultural Policy (CAP) – to strengthen farmers' position in value chains by promoting the role of Cooperatives, enhancing synergies among actors, supporting the development of market-driven production models (including contractualization), fostering research and innovation, increasing market transparency and ensuring effective mechanisms against Unfair Trading Practices (UTPs) (Taskforce on Agricultural Markets, 2016).

Dealing with these global dynamics, the Hellenic Association of Agricultural Economists (ETAGRO) organized the 16th Panhellenic Conference (7-8 October 2021) entitled “**Sustainable Agriculture, Food Security, and Climate Change: Challenges and Opportunities in Bio-economy**”. The conference had a Greek and international section for the first time, strengthening its extroversion. The specific objective of this conference was to become the bridge between science, industry, and other actors in the agri-food ecosystem, in terms of communication and collaboration. Thus, it aimed at facilitating the transfer of research outputs and expertise in various subjects related (but not restricted)

to the bio-economy, such as sustainable agri-food systems, sustainable food security, climate change mitigation, and new technologies.

The conference was held during a transitional period for Greek Agriculture due to the changes brought about by the 2023-2027 Strategic Plan of the Common Agricultural Policy for more resilient, green, and digital agriculture, in line with the respective priorities of the 'European Green Deal'. The alignment of Greece with these changes presupposes the shift of Greek Agriculture, as well as the agri-food sector in general, in the direction of redefining the mix of policies and measures to ensure its medium-long-term economic, environmental, and social sustainability. This new model emphasizes: a) improving competitiveness by encouraging innovation and new technologies while ensuring a fair agricultural income, b) the requirements- challenges posed by climate change by reducing the environmental footprint of agriculture while providing the consumer with safe and healthy food, and c) the sustainable development of rural areas, with an emphasis on generational renewal and more equitable rural economies and societies, with active roles for women, youth and marginal actors and diversified rural entrepreneurship.

This issue of AER includes a series of peer-reviewed papers which touch on some of the critical issues mentioned above. These articles had been accepted for presentation at the 16<sup>th</sup> ETAGRO conference. They then were extensively elaborated upon.

When confronted with the radical transformations in agri-food systems and the resulting uncertainty, a series of alternative institutional arrangements are available to farmers. Among these arrangements, a cooperative firm is considered a hybrid form of organization, situated between the market and the hierarchy (Ménard 1996). On the other hand, interpersonal trust questions the neo-classical model of rationality and has clear implications for social functioning and economic behavior (Dijk et al., 2019; Evans and Grueger, 2009). Its critical role in cooperative membership and essential functions of co-ops has been extensively researched in scholarship. For example, as argued by Hansen et al. (2002), significant predictors of group cohesion are trust among co-op members and between members and co-op management, while Jensen-Auermann et al. (2018) examine how to improve structures that foster trust within a cooperative. Also, Barraud-Didier et al. (2012) have found that affective commitment mediated the relationship between trust and participation in cooperative governance, regardless of trust's cognitive or affective nature. In addition, Ayari and Zaibet (2019) examine the effect of trust on contracting decisions and cooperative membership. Thus, in **the first article** of this issue, entitled "*Exploring Trust and Trustworthiness among Cooperative Organizations Members in Greece*", it conducted an empirical and experimental study of the trust and trustworthiness of the members of cooperative organizations in Greece. By using experimental economics methods and applying the Trust Game, one of the most well-known games of Game Theory, the analysis: (i) revealed the general belief of trust and trustworthiness among the participating members and (ii) rejected the existence of statistically significant differences in both trustor's and trustee's responses.

Agricultural activity is conducted in various physical environments and ecosystems, including wetlands, characterized by heightened productivity, due to the presence of fertile soils and plenty of water for irrigation. The use of wetlands has recently intensified due to the increasing demand for arable land due to population increase, the lack of recognition of wetland values, the weak wetland governance systems, etc. (Xiaofei et al., 2018). Wetland agriculture supports the livelihood of farmers in many countries, providing a series of socioeconomic benefits (Mulatu et al., 2015). However, there are increasing concerns about the negative impacts of wetland agriculture on the ecological integrity and ecosystem services provided by wetlands (Dixon and Wood, 2003; Nonga et al., 2011). Hence, there is an urgent need for appropriate interventions to balance livelihoods and maintenance of wetland functions, especially for developing appropriate technologies, effective wetland management guidelines, and supportive institutional frameworks to address the challenges (Wood and van Halsema 2008, Maua, 2022). In **the second article** of this issue, entitled "*The impact of agricultural activities on the livelihood of riparian communities of Nalwekomba wetland ecosystem along River Nile, Namasagali, Kamuli District Uganda*", the authors examine the socioeconomic impacts of agricultural land use on a degraded wetland ecosystem in Uganda. Results showed that wetlands are threatened by over-exploitation due to agricultural land uses, and almost three-quarters of this study's respondents are willing to leave the wetland. Therefore, the need to design strategies for alternative livelihood options for wetland-dependent communities to achieve Sustainable Development Goals emerged.

Moving to the consumer side, there is a growing concern and demand of consumers for more qualitative, healthier, and safer products produced with environmentally friendly methods. Fish is a food product that has gained

popularity in recent years, considered part of a healthy diet by both scientific studies and consumers' perceptions (Ergonul, 2013). Nevertheless, consumers increasingly demand high-quality assurance standards and demand guarantees that the fish they buy is sustainably produced and quality certified. This demand and the specific requirements of markets and retailers motivate producers to obtain multiple food safety certifications (Rafeeque and Sekharan, 2018). Thus, various certification schemes have been devised, with diverse objectives, spanning from food safety, quality, and traceability to environmental and social impact (FAO, 2001). However, although the safety and sustainability of seafood and certification and traceability of seafood products are emerging areas of study (Batzios et al., 2004; Cardoso et al., 2013), the available literature on these issues is scant (Rahmaniya and Sekharan, 2018). On the other hand, developing successful marketing strategies requires a clear understanding of the diversity of consumer needs (Onwezen et al., 2012). The identification of consumers' behavior towards certified fish products and the related marketing strategies is the object of **the third paper** in this issue entitled "*Investigation of Greek consumers' preferences towards certified fish products: A market segmentation analysis*". The authors identified two distinct segments of Greek consumers with different perceptions of certified fish products, i.e., the 'traditional' and the 'modernist' ones. They also suggest a differentiated marketing strategy for each consumer segment to reinforce the overall demand for certified fish products.

The vital role of various forms of tourism in the sustainable development of rural areas is widely recognized. Many studies confirm that understanding tourists' perceptions of tourism products and destinations is vital to planning, managing, and promoting a destination (Agapito et al., 2017; Cardoso et al., 2019). Recent research findings stress the need to involve local communities in the destination planning process to align the outcomes of tourism development with their expectations (Lima Santos et al., 2020). Within the broader tourism research, sustainability is a highly debated issue. Creating and promoting new tourism products that are not only genuinely sustainable but are also perceived as sustainable by tourists is crucial, especially in the current post-Covid-19 context (Melo and Farias, 2018). Also, agrotourism and ecotourism are two prominent kinds of 'alternative' and 'niche' market types of tourism, with a substantial contribution to sustainability (Pérez-Olmos and Aguilar-Rivera, 2021; Vysochan et al., 2022). **The fourth paper**, entitled "*I endorse it, as long as it is sustainable: Involvement with agrotourism and ecotourism through the eyes of Gen Z*" offers an original contribution to some aspects of the above issues in this special issue. The authors have studied the relationship between young peoples' sustainability perceptions and involvement with two kinds of alternative tourism, i.e., agrotourism and ecotourism. By focusing on visitors belonging to the age cohort of 'Generation Z', the results revealed that their environmental and economic sustainability perceptions are associated with the development of involvement with both agrotourism and ecotourism.

As guest editors of this issue, we are grateful to all those people who contributed to this effort. Mostly, we would like to thank the authors for responding to our invitation and respecting the deadlines.

## References

- Agapito, D., Pinto, P., Mendes, J. (2017). Tourists' memories, sensory impressions and loyalty: In loco and post-visit study in Southwest Portugal. *Tourism Management*, 58, 108–118.
- Ayari, D and Zaibet, L. (2019). Modelling trust and contractual arrangements in a local economy, *Development in Practice*, 29:4, 525-533, DOI: [10.1080/09614524.2019.1574715](https://doi.org/10.1080/09614524.2019.1574715)
- Barraud-Didier, V., Henninger, M.C., El Akremi, A. (2012). The Relationship Between Members' Trust and Participation in Governance of Cooperatives: The Role of Organizational Commitment. *International Food and Agribusiness Management Review*, 15 (1), 1-24.
- Batzios, C., Angelidis, P., Papapanagiotou, E. P., Moutopoulos, D. K., Anastasiadou, C., and Chrisopolitou, V. (2004). Greek Consumer's Image of the Cultured Mussel Market. *Aquaculture International*, 12(3), 239-257.
- Cardoso, C., Lourenço, H., Costa, S., Gonçalves, S., and Nunes, M. L. (2013). Survey into the seafood consumption preferences and patterns in the portuguese population. Gender and regional variability. *Appetite*, 64, 20–31.
- Cardoso, L., Dias, F., de Araújo, A., Marques, I. (2019). A destination imagery processing model: Structural differences between dream and favourite destinations. *Annals of Tourism Research*, 74, 81–94.
- Dijk van G., Sergaki, P. and Baourakis, G. (2019), «Cooperative Entrepreneurship: Governance and Developments», Cooperative Management Series, Springer.
- Dixon, A. B. and Wood, A. P. (2003). Wetland cultivation and hydrological management in eastern Africa. Matching community and hydrological needs through sustainable wetland use. *Natural Resources Forum* 27: 117–129.
- Ergonul, B. (2013). Consumer awareness and perception to food safety: A consumer analysis. *Food Control*, 32(2), 461–471.
- Evans, A. and Krueger, J. (2009). The Psychology (and Economics) of Trust, FAO (2001). *Product certification and ecolabeling for fisheries sustainable*. Food and Agriculture Organization of the United Nations, 422. Rome.
- Garnett T, Appleby MC, Balmford A, Bateman IJ, Benton TG, Bloomer P, Burlingame B, Dawkins M, Dolan L, Fraser D, Herrero M, Hoffmann I, Smith P, Thornton PK, Toulmin C, Vermeulen SJ, Godfray HCJ (2013). Sustainable intensification in agriculture: pre- mises and policies. *Science* 341(6141):33–34. <https://doi.org/10.1126/science.1234485>
- Hansen, M., Morrow, J.L, Batista Juan C (2002). The impact of trust on cooperative membership retention, performance, and satisfaction: an exploratory study, *The International Food and Agribusiness Management Review*, 5(1), 41-59, [https://doi.org/10.1016/S1096-7508\(02\)00069-1](https://doi.org/10.1016/S1096-7508(02)00069-1).
- IPES-Food (2016). *From uniformity to diversity: a paradigm shift from industrial agriculture to diversified agroecological systems*, International Panel of Experts on Sustainable Food systems, [www.ipes-food.org](http://www.ipes-food.org).
- Jensen-Auvermann, T., Adams, I., and Doluschitz, R. (2018). Trust-Factors that have an impact on the interrelations between members and employees in rural cooperatives. *Journal of Co-operative Organization and Management*, 6(2), 100-110.
- Maua, J.O., Mbuvi, M.T., Matiku, P., Munguti, S., Mateche, E., Owili, M. (2022). The difficult choice - to conserve the living filters or utilizing the full potential of wetlands: Insights from the Yala swamp, Kenya, *Environmental Challenges*, 6, 2022, 100427, <https://doi.org/10.1016/j.envc.2021.100427>.

Melo, F.V.S., Farias, S.A. (2018). Sustainability communication and its effect in consumer intention to visit a tourist destination. *Tourism and Management Studies*, 2018, 14, 36–44.

Ménard, Cl. (2004). The Economics of Hybrid Organizations, *Journal of Institutional and Theoretical Economics (JITE) / Zeitschrift für die gesamte Staatswissenschaft*, 160(3), 345-376.

Mulatu, K., Hunde, D., & Kissi, E. (2015). Socio-economic impacts of wetland cultivation in South-Bench, Southwest Ethiopia. *African Journal of Agricultural Research*, 10(8), 840-848.

Nonga, H., Mdegela, R., Lie, E., Sandvik, M., & Skaare, J. (2011). Socio-economic values of wetland resources around Lake Manyara, Tanzania: assessment of environmental threats and local community awareness on environmental degradation and their effects. *Journal of Wetlands Ecology*, 4, 83–101.

<https://doi.org/10.3126/jowe.v4i0.4153>

Onwezen, M. C., Reinders, M. J., van der Lans, I. A., Sijtsema, S. J., Jasiulewicz, A., Dolores Guardia, M., & Guerrero, L. (2012). A cross-national consumer segmentation based on food benefits: The link with consumption situations and food perceptions. *Food Quality and Preference*, 24(2), 276-286.

Pérez-Mesa, H.C., Piedra-Muñoz, L., García-Barranco, C. and Giagnocavo, C. (2019). Article Response of Fresh Food Suppliers to Sustainable Supply Chain Management of Large European Retailers, *Sustainability*, 11, 3885.

<https://doi.org/10.3390/su11143885>

Pérez-Olmos, K. N., & Aguilar-Rivera, N. (2021). Agritourism and sustainable local development in Mexico: a systematic review. *Environment, Development and Sustainability*, 23(12), 17180-17200.

<https://doi.org/10.1007/s10668-021-01413-0>

Rafeeqe, K.T.M., & Sekharan, N.M. (2018). Multiple Food Safety Management Systems in food industry: A case study. *International Journal of Food Science and Nutrition*, 3(1), 37-44.

Rahmaniya, N. and Sekharan, M. (2018). Consumer behaviour towards seafood and seafood safety - a review paper, *International Journal of Current Advanced Research*, 7 (1A), 8727-8736 DOI:

<http://dx.doi.org/10.24327/ijcar.2018.8736.1417>

*Social and Personality Psychology Compass*, 3/6 (2009): 1003–1017, 10.1111/j.1751-9004.2009.00232.x

Taskforce on Agricultural Markets (2016). *Improving market outcomes: Enhancing the position of farmers in the supply chain*. Brussels, November 2016

Tendall, D.M., Joerin, J., Kopainsky, B., Edwards, P., Shreck, A., Le, Q.B., Kruetli, P., Grant, M. Six, J. (2015). Food system resilience: Defining the concept, *Global Food Security*, Vol. 6, pp. 17-23,

<https://doi.org/10.1016/j.gfs.2015.08.001>.

Vysochan, O., Stanasiul, N., Honchar, M., Hyk, V., Lytvynenko, N., Vysochan, O. (2022). Comparative Bibliometric Analysis of the Concepts of “Ecotourism” and “Agrotourism” in the Context of Sustainable Development Economy. *Journal of Environmental Management and Tourism*, (Volume XIII, Spring), 2(58): 561-571. DOI:10.14505/jemt.v13.2(58).24

Wood, A. and van Halsema, G. E. (2008). *Scoping agriculture–wetland interactions. Towards a sustainable multiple-response strategy*. Report No 33. Food and Agriculture Organisation, Rome.

Xiaofei Yu, Mingju E, Mingyang Sun, Zhenshan Xue, Xianguo Lu, Ming Jiang, Yuanchun Zou (2018). Wetland recreational agriculture: Balancing wetland conservation and agro-development, *Environmental Science & Policy*, 87, September 2018, 11-17, <https://doi.org/10.1016/j.envsci.2018.05.015>.