THE EVOLUTION OF THE ORGANIC AGRICULTURE IN ROMANIA

G. V. Hoha[1], C. E. Nistor[1*], C. T. Cîrmaciu[1], O. Timofte[2], I. S. Brumă[3], B. Păsărin[1]

[1] "Ion Ionescu de la Brad" Iasi University of Life Sciences, Romania
[2] "Grigore T. Popa" University of Medicine and Pharmacy, Gastroenterology Department, Iași, Romania
[3] Academy of Romanian Scientists, Iași, Romania

Abstract

Organic farming promotes agricultural practices that meet societal demand for environmentally friendly activities as well as rising consumer demand for organic products. It is widely regarded as an agricultural alternative aimed at food production through the use of natural processes and substances, while simultaneously limiting environmental impact. Recently, a clear trend of increasing consumer preference for organic food products has been observed, prompting producers and agricultural systems to adapt to this demand by adopting organic farming practices. Against this backdrop, this paper aims to analyze the evolution of organic farming in Romania over a 15-year period (2010–2025)-specifically regarding the organically cultivated area and crop structure—while also considering the global context of the organic agricultural sector. The analysis highlights significant growth in the organically cultivated area during this period, driven primarily by permanent grasslands and industrial crops.

Key words: *organic agriculture, agri-food sector, sustainable development*

INTRODUCTION

Organic farming is most often promoted as a way to produce food with a lower environmental impact. Although it accounts for less than 1% of global agricultural land and less than 5% of retail sales in most high-income countries, it is one of the fastest-growing sectors of the food industry. In high-income countries, most people consume organic products, at least occasionally. Currently, "organic" is the most well-known food-related term, and most consumers understand the fundamental concept behind it. Furthermore, in most countries, organic farming is the only agricultural system for which management techniques are regulated by law. Thus, organic food offers people one of the few ways to exert some influence and gain information about how the food they consume is produced [1].

In academic literature, "organic farming" is often conflated with other terms-specifically "biological farming" and "ecological farming." This is because these terms are used interchangeably (in the United Kingdom and the USA, it is referred to as "organic farming"; in Greece, France, Italy, the Netherlands, and Portugal, as "biological farming"; and in Denmark, Spain, and Germany, as "ecological farming") [2].

According to Czarnezki (2011) [3], the terms "eco" (or "ecological"), "bio," and "organic" are, in reality, synonyms. All three refer to a product containing at least 95% organic material. The remaining 5% accounts for atmospheric pollutants-such as

* Corresponding author: catalin.nistor@iuls.ro
The manuscript was received: 18.10.2026
Accepted for publication: 18.11.2026

Article licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License (http://creativecommons.org/licenses/by-nc-sa/4.0/)

acid rain or pesticides carried by the wind from a nearby farm or field-as well as the use of other (non-"eco") substances, which are also explicitly specified. Because organic products do not contain artificial food additives-such as preservatives, colorings, flavorings, or thickening agents-they have a shorter shelf life than conventional products.

The most comprehensive definition of the term has been proposed by the Wageningen University of Agriculture in the Netherlands, which considers ecological agriculture to be an agricultural science that deals with the systematic research of the material and functional structures of agricultural systems and with the design of agro-ecosystems capable of meeting long-term human needs for food, clothing, and housing, by relying on their own material, energy, and information resources, without harming the environment [4].

The consumption of ecological products has been increasing year after year, particularly since the 2000s. According to Winter et al. [5], this growth in the consumption of ecological products can be attributed both to increasing consumer confidence in such products and to concerns regarding the potential health risks and environmental impacts associated with conventional food production techniques.

Aceleanu [6] highlights that, starting in 1991-when the EU adopted two directives defining organic farming and providing support for it as an environmentally responsible production method-organic farming became an important component of the EU's common policy. In the years that followed, member states implemented legal and financial measures that fostered the development of sustainable agriculture, with financial support proving essential for the establishment of such agricultural holdings. The support provided by the EU to organic farming has been, and largely remains, dependent on the Common Agricultural Policy (CAP). Thanks to the financial assistance received by farmers, CAP reform has had a positive economic impact, particularly for organic farms.

Under rural development programs for the period leading up to 2020, farmers have benefited from direct funding for a duration of five to seven years, while the relevant legislation is currently undergoing review and updating.

Organic farming currently covers approximately 11% of the total agricultural land in the European Union (about 17 million hectares). Initiatives such as "Organic Targets 4EU" estimate that a realistic share of organic land by 2030 would be 16–18%, although the initial ambitious target was 25%. The Common Agricultural Policy (CAP 2023–2027) allocates at least 25% of the direct payments budget to "eco-schemes," supporting the transition toward agroecology, carbon farming, and organic practices [7]. In Romania, a growing consumer preference for organic food products has been observed recently, yet the number of producers entering the organic farming sector is increasing only slowly.

This paper aims to analyze the development of organic farming in Romania over a 15-year period (2010–2025)-focusing specifically on the area under organic cultivation and the structure of crops-while also considering the global context of the organic agricultural sector.

MATERIAL AND METHOD

The study was conducted using a descriptive approach, illustrating the dynamics of organic farming in Romania over the last 15 years. The methods employed include the analysis and processing of data published by relevant public institutions. The paper utilizes data from the Romanian Ministry of Agriculture and Rural Development, as well as specific EU reports; these data were processed and analyzed to highlight the evolutionary trend of the transition toward organic farming.

Article licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License (http://creativecommons.org/licenses/by-nc-sa/4.0/)

RESULTS AND DISCUSSIONS

Organic farming represents a complex, multifaceted approach geared toward long-term sustainability. Unlike conventional agriculture, it does not focus on isolated measures with major impacts. Instead, it effectively reduces environmental risks by avoiding potentially hazardous intensive agricultural practices-such as the use of pesticides, herbicides, synthetic nitrogen-based fertilizers, genetically modified organisms (GMOs), or veterinary antibiotics and anthelmintics.

Table 1 Dynamics of land area in organic farming, 2010–2025
(adapted from MADR statistics [15])

Indicator	Year			
	2010	2015	2020	2025
Total cereals (ha)	72297.80	81439.50	134170.21	164957.89
Legumes for grain production (ha)	5560.22	1834.35	5709.97	8084.99
Industrial crops (ha)	47815.10	52583.11	91638.97	116133.70
Crops harvested green (ha)	10325.40	13636.48	53718.20	106511.18
Total root and tuber crops (ha)	504.36	667.55	387.30	705
Fresh vegetables (including melons) and strawberries (ha)	734.32	1210.08	847.79	2750.02
Permanent crops: orchards, vineyards, fruit shrubs, nut trees, etc. (ha)	3093.04	11117.26	22219.42	20066.67
Permanent crops: pastures and meadows (ha)	31579.10	75853.57	155038.18	371771.09
Uncultivated land (ha)	10216.80	7225.85	5157.18	6702.58

According to the data presented in Table 1, all crop categories have shown growth over the last 15 years. Currently, the largest areas under organic farming are pastures and hayfields (371,771.09 ha), followed by cereals (164,957.89 ha) and industrial crops (116,133.70 ha).

Figure 1.1 illustrates the total area under organic farming, the total number of producers, and the average size of organic farms between 2010 and 2023. The data shows that the number of farmers engaged in organic farming grew from 2,983 in 2010 to 13,250 in 2023. The average size of an organic farm shifted from 61.25 ha in 2010 to 52.30 ha in 2023.

Organic farming is an essential component of sustainable agriculture in Romania; however, despite a recent upward trend, it accounts for only 2% of total agricultural production. The government is showing an increased interest in developing the organic sector through various incentives, as well as by providing training, marketing support, and coordination for local farmers to help them sell their products on both domestic and international markets. Furthermore, Romania possesses favorable natural conditions-such as soil and climate-suitable for organic farming across approximately 15% of its agricultural land [7].

According to European Commission data, the main reasons why farmers do not adopt organic farming are as follows:

- Insufficient financial incentives for producers to switch to organic production (76%);
- Competition from other production methods and/or other systems (74%);
- Low levels of consumer awareness regarding the benefits of organic production for the climate and the environment (73%);
- 63% of respondents believe that organic food products are too expensive for consumers;

Article licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License (http://creativecommons.org/licenses/by-nc-sa/4.0/)

- Lack of consumer familiarity with the EU organic label (63%);

- The existence of too many certification schemes for organic food products, which can be confused with authentic organic products (59%) [9];

Regarding the outlook for organic farming toward 2030, the majority of respondents-who support the provision of financial aid via the CAP (Common Agricultural Policy) to encourage the transition from conventional to organic farming-highlight the following points:

- The importance of providing adequate training and advisory services to facilitate the transition to organic farming (91%);

- The need to strengthen local, small-scale processing and to promote short supply chains (90%);

- The recognition that organic producers require support to improve their bargaining power within the supply chain (88%);

- The need to improve information and data regarding developments in the organic products market, in order to facilitate decision-making by producers (87%) [10];

Romania's National Rural Development Programme for the 2014–2020 period funded a series of measures, such as investments in agricultural holdings and in the processing/marketing of agricultural products, while also aiming to register farms in an IT system dedicated to organic farming. The national action plan for the development of organic production also includes measures designed to encourage the processing of products obtained within the local organic farming system, while simultaneously incentivizing consumers to purchase organic products in a sustainable manner [11]. For 2030, the target for the area dedicated to organic production in Romania is 800,000 hectares, representing 6% of the utilized agricultural area. This will be achieved through the creation of product value chains, the alignment of production with consumption needs, the integration of production into supply chains, the development of local and regional networks, support for farmers' associations, the adaptation of research to the needs of the organic farming sector, and the strengthening of consumer trust [12].

Table 2 presents information regarding the total number of certified farmers, broken down by their region of origin.

Based on the data presented, we observe that the highest number of certified organic farmers is found in the northwestern region of the country, with 5,087 farmers, while the lowest number is in the southern region, with 802 farmers.

Data regarding the trends in livestock numbers recorded in organic farming are presented in Table 3.

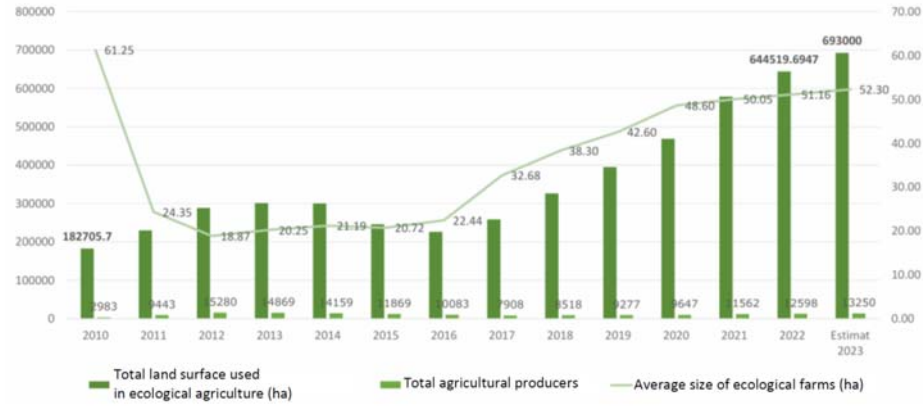


Fig. 1 Average size of an organic farm (ha), 2010–2023
(adapted from MADR statistics [15])

Article licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License (http://creativecommons.org/licenses/by-nc-sa/4.0/)

Table 2 Total number of agricultural producers certified for organic farming, by region, 2025 (adapted from MADR statistics [15])

No. Region	Region	Total number of agricultural producers
6	North-West Region	5087
7	Center Region	2949
2	South-East Region	2240
5	West Region	1959
1	North-East Region	1265
4	South-West Region	1035
3	South Region	802
8	Ilfov Region	
	Total	15.337

Table 3 Trends in certified organic livestock numbers, 2010–2025 (adapted from MADR statistics [15])

Indicator	U.M	Year			
		2010	2015	2020	2025
Cattle (total)	capita	5358	29313	19870	30142
Pigs (total)	capita	320	86	14	469
Sheep (total)	capita	18883	85419	13189	27797
Goats (total)	capita	1093	5816	830	4731
Poultry (total)	capita	21580	107639	171391	422916

Although the numbers are not particularly high, all the species analyzed have shown an increase. The largest populations are those of poultry, cattle, and goats. Regarding honeybee colonies, the data presented in Table 4 indicate that the highest number of colonies is found in the Central region (35,045 colonies), followed by the South-East region (30,477 colonies) and the North-West region (25,023 colonies).

Table 4 The Organic Beekeeping Sector in Romania 2025 (adapted from MADR statistics [15])

No. Region	Region	Honeybee colonies
6	North-West Region	25023
7	Center Region	35045
2	South-East Region	30477
5	West Region	9200
1	North-East Region	23523
4	South-West Region	15147
3	South Region	14147
8	Ilfov Region	585
	Total	153147

Article licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License (http://creativecommons.org/licenses/by-nc-sa/4.0/)

CONCLUSIONS

The analysis conducted highlights a significant expansion in the area under organic cultivation during this period, driven primarily by permanent grasslands and industrial crops. Discussions with agricultural producers reveal that participation-in terms of both the number of farmers and the total area-remains limited, due to a combination of several factors. The most common include:

Economic factors

High production costs: driven by labor expenses, costly organic inputs, and certification fees.

Lower yields: output per hectare is often 20–40% lower than in conventional farming.

Insufficiently high prices: the prices obtained do not always compensate for lower yields and additional costs.

Lack of a stable market: in many countries, including Romania, a large share of organic produce is exported as raw material, while the domestic market and short supply chains remain underdeveloped.

Lack of specialized advisory services and practical experience-particularly among farmers who joined the system solely to access subsidies.

Opportunistic entry (seeking compensatory payments) without genuine commitment or a business plan, often followed by abandonment once the financial incentive disappears.

Lack of cooperation (e.g., through cooperatives), which could otherwise help reduce costs and facilitate sales.

Administrative and bureaucratic factors

Bureaucracy and oversight: extensive documentation, detailed record-keeping, annual inspections, and the risk of sanctions in the event of non-compliance.

Delays or complications in the disbursement of subsidies-specifically agri-environmental and organic farming payments-upon which many farmers depend. The obligation to maintain the commitment for a period of 5 years (within the framework of support schemes)-which entails penalties for early withdrawal-is coupled with support that no longer covers costs once this period expires.

We believe that the future of organic farming in Romania depends on addressing the pricing issue (the high cost of organic products for consumers), ensuring fair incomes for farmers, and supporting generational renewal (attracting young people to agriculture).

ACKNOWLEDGMENTS

The authors thank the management of the Dancu and Polena dairy farms for granting access to the milk recording data used in this study

REFERENCES

[1] Seufert Verena, Ramankutty Navin, Mayerhofer Tabea, 2017 - What is this thing called organic? – How organic farming is codified in regulations, Food Policy, Volume 68, 2017, Pages 10-20, ISSN 0306-9192, https://doi.org/10.1016/j.foodpol.2016.12.009

[2] Brumă Ioan Sebastian, 2011 Economic studies and research on ecological agricultural production; Lucrări ştiinţifice - vol. 54, Nr. 2/2011, seria Agronomie

[3] Czarnezki, J.J., 2011 - The Future of Food Eco-Labeling: Organic, Carbon Footprint, and Environmental Life-Cycle Analysis. Agricultural & Natural Resource Economics eJournal.

[4] Dobay, Krisztina-Melinda, 2005 – Managementul ecofermelor şi marketingul produselor ecologice, Editura Terra Nostra, Iaşi.

[5] Winter, C.K. and Davis, S.F. (2006), Organic Foods. Journal of Food Science, 71: R117-R124. https://doi.org/10.1111/j.1750-3841.2006.00196.x

[6] Aceleanu, M.I., 2016 - Sustainability and competitiveness of romanian farms through organic agriculture, Sustainability;

[7] Jităreanu, A.F.; Mihăilă, M.; Robu, A.-D.; Lipșa, F.-D.; Costuleanu, C.L., 2022 - Dynamic of Ecological Agriculture Certification in Romania Facing the EU

Article licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License (http://creativecommons.org/licenses/by-nc-sa/4.0/)

Organic Action Plan. Sustainability, 14, 11105. https://doi.org/10.3390/su141711105

[8] ZAPUCIOIU, L.-F. (2023). Ecological Agriculture-An Overview on Romania and Europe in Terms of Sustainability. https://doi.org/10.24818/CAFEE/2022/11/04

[9] EU- Communication from the Commission to the European Parliament, the Council, the European economic and social committee and the committee of the regions on an action plan for the development of organic production - https://eur-lex.europa.eu/legal-content/en/ALL/?uri=CELEX:52021DC0141

[10] EU - Organic farming - Policy, rules, organic certifications, support and criteria for organic farming.

https://ec.europa.eu/info/food-farming-fisheries/farming/organic-farming_en

[11] MADR RO - Planul național de acțiune pentru dezvoltarea producției ecologice din România https://www.madr.ro/docs/agricultura/agricultura-ecologica/2023/plan-nat-actiune-agri-eco-10.05.2023.pdf

[12] EU- Area under organic farming - https://www.eea.europa.eu/en/europe-environment-2025/countries/romania/area-under-organic-farming

[13] APIA RO - Măsura 11 – agricultură ecologică din Programul Național de Dezvoltare Rurală (PNDR) 2014 – 2020

https://apia.org.ro/directia-masuri-de-sprijin-i-iasc/masuri-delegate-din-pndr/masuri-de-mediu-si-clima-finantate-prin-pndr-2014-2020/masura-11-agricultura-ecologica/

[14] RRN RO - Rețeaua Rurală Națională a organizat Conferința Națională „Prezent și perspective în agricultura ecologică în contextul Planului Strategic”

https://www.rrn-pac.eu/media/2045-reteaua-rurala-nationala-rrn-a-organizat-astazi-conferinta-nationala-prezent-si-perspective-in-agricultura-ecologica-in-contextul-planului-strategic.html

[15] Statistici MADR RO – Agricultura Ecologica https://madr.gov.ro/agricultura-ecologica.html

Article licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License (http://creativecommons.org/licenses/by-nc-sa/4.0/)