ORGANIC FARMING IN THE CONTEXT OF THE ROMANIAN AGRICULTURAL SECTOR

FOGHIS GIORGIANA MARIA*[1], IANOSEL PETRICA[1], FEHER ANDREA[1]
[1]***University of Life Sciences „King Mihai I" from Timisoara, Faculty of Management and Rural Tourism, Romania***
*Corresponding author's e-mail: giorgys@yahoo.com

Abstract: *Organic agriculture is a branch of interest in the context of the global economy oriented towards reducing pollution, increasing food quality and reducing the impact on the environment. The objective of this research is to identify the main components of organic agriculture in Romania and their dynamics during the period 2010–2023 in order to identify changes in agricultural policy elements with an impact on the medium-term development strategy of Romanian agriculture. Organic agriculture is the production system that is based on certain strict principles of obtaining products, in accordance with guidelines and standards (national and international standards), which are intended to reduce the human impact on the environment, while maintaining the normal functioning of the agricultural system. In Romania, the total area converted to organic agriculture is 694 thousand hectares, representing 5.47% of the country's agricultural area. The trend is upward, but the proportion of organic agriculture is very small compared to other European countries. Taking into account the unpredictability of factors that can influence organic agriculture, as well as the fluctuations in the number of operators, estimates show that the area used in the organic farming system in 2030 could reach at least 800,000 ha, respectively 6% of Romania's utilized agricultural area.*

Key words*: organic farming, agricultural area, biodiversity.*

INTRODUCTION

Agriculture, both globally and in Romania, is a very important economic sector, the proper functioning of which significantly impacts the quantity and quality of the population's food. For this reason, many programs dedicated to agriculture, including the European Union's Green Deal program, advocate for the sustainable development of this sector [2,3].

With an increasing share, organic agriculture contributes, on one hand, to the conservation of natural resources [4,10], and on the other hand, promotes fair and high-quality relationships between all the involved actors [7]. In Romania, organic agriculture is experiencing steady growth, both in the agricultural and livestock sectors [15]. The first organic crops were established in 1992 at the Bacău Vegetable Research Station. In 1997, the first organic products were obtained in Romania, in Sibiu, as a result of a Romanian-Swiss cooperation

Statistical data from Romania regarding organic agriculture show a general trend of increasing land area used. Considering the unpredictability of factors that can influence organic agriculture, as well as fluctuations in the number of operators, it can be deduced that the area used for organic agriculture in 2030 could reach at least 800,000 hectares, or 6% of the utilized agricultural area (UAA). Of this target, 3.53% of the UAA, or 488,325 hectares, represents the objective set by the National Strategic Plan for the CAP 2023–2027 to support commitments to organic agriculture [10,14].

In recent years, Romania has seen an increase in agricultural areas and the number of operators who have adopted organic farming. However, we are still far from the European average. The main reasons cited are: the bureaucratic procedure of annual pre-registration with the county agricultural directorates, the cost of conversion, the cost-to-price ratio, the lack of a consolidated marketing system for organic products, difficult access to organic seeds, and the immature market for organic products in Romania [15].

The relatively low level of pollution in Romanian agriculture continues to provide good opportunities for conversion to ecological practices [7,8]. In 2023, the organically certified areas reached 5.47% of the country's utilized agricultural area, 3.5 times more than in 2010, when the percentage was 1.29%. However, this proportion is still very small compared to other countries [11,13].

Organic agriculture protects biodiversity and does not use prohibited chemical substances for the growth, development and protection of crops, which have harmful effects on the environment [9,12]. Humans, animals, plants, and soil are all equally safeguarded through organic farming [1].

The transition from conventional agriculture to organic agriculture requires in-depth studies obtained through research, focusing on improved cultivation technologies and the use of ecological nutrients with maximum effect on the growth and development of crops [5,6].

The present paper aims to provide a thorough analysis of the organic agriculture sector in Romania and its evolution over the past decade.

MATERIALS AND METHODS

The present paper aims to provide a thorough analysis of the organic agriculture sector in Romania and its evolution from 2010 to the present.

The databases used for the analysis of the information are FAOSTAT, EUROSTAT, and reports from the Romanian Ministry of Agriculture and Rural Development.

RESEARCH RESULTS

Organic agriculture is a dynamic sector in Romania that has experienced an upward trend in recent years, both in the plant production sector and in the animal production sector.

In 2023, organic agriculture was practiced on an area of 693,998 hectares, representing 5.47% of the country's agricultural land, marking a significant increase compared to the baseline year 2010 (Table 1).

Table 1.

Agriculture area under organic agriculture and share of organic agriculture in total agricultural area in Romania (2010-2023)

	Agric. area under organic agriculture (ha)	share of total agricultural area (%)
2010	182,705	1.29
2011	229,945	1.64
2012	288,261	2.09
2013	300,884	2.16
2014	289,251	2.09
2015	245,923	1.77
2016	226,308	1.67
2017	258,470	1.93
2018	326,259	2.43
2019	395,227	2.85
2020	468,887	3.59
2021	578,727	4.42
2022	644,519	5.08
2023	693,998	5.47

Source: Developed by authors based on FAO, 2024 and MARD, 2024

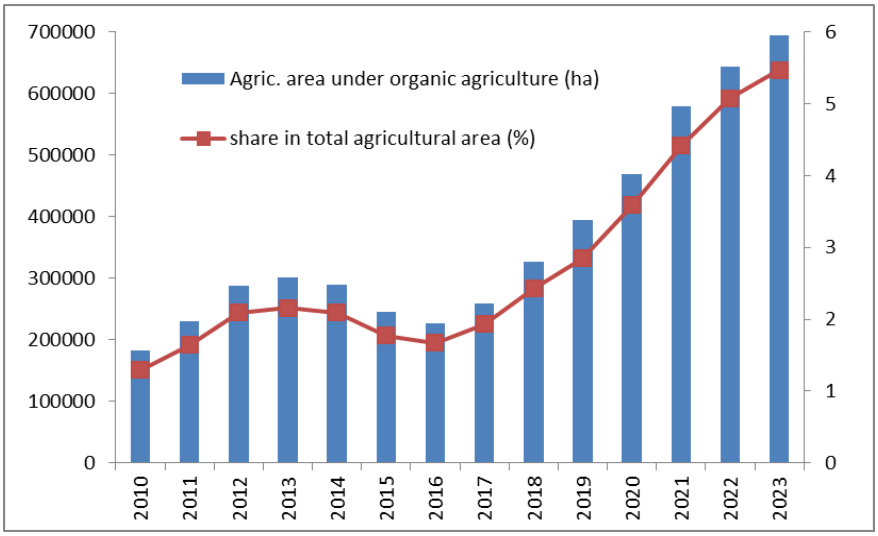

Figure 1. Agriculture area under organic agriculture and share of organic agriculture in total agricultural area in Romania (2010-2023)

The most widespread organic crops in Romania are permanent pastures and meadows, accounting for 40.97% of the total certified crops, followed by cereals with 24.82% and industrial crops with 13.20% (Table 2).

Table 2.

The dynamics of the areas cultivated with organic agriculture in Romania (ha, 2010-2023)

	2010	2012	2014	2016	2018	2020	2021	2022	2023
The total area in organic agriculture, of which:	**182,705**	**288,261**	**289,251**	**226,308**	**326,259**	**468,887**	**578,727**	**644,519**	**693,998**
Cereale	72,297	105,149	102,531	75,198	114,427	134,170	139,378	160,154	172,283
Dry legumes and protein crops for grain production	5,560	2,764	2,314	1,834	8,751	5,709	5,852	6,365	8,671
Tuberous and root plants	504	1,124	626	707	505	387	269	272	1,024
Industrial crops	47,815	44,788	54,145	53,396	80,193	53,718	74,703	78,241	91,545
Permanent crops: orchards and vineyards	3,093	7,781	9,438	12,019	18,569	22,219	21,233	21,563	22,001
Permanent crops: pastures and meadows	31,579	10,583	95,684	57,611	66,890	155,038	214,657	257,062	284,331

Source: MARD, 2024

To obtain organic crops, organic seeds or planting material are required, which can be purchased or produced on one's own farm. In Romania, the seeds and planting material used in organic agriculture have been obtained through organic production methods since 2004. The seeds must not be treated at sowing, except with products approved for organic production, and they must come from a producer who has followed organic production techniques. When it is not possible to use organic seeds and planting material, conventional seeds and planting material can be used, but they must be untreated with pesticide products. The seeds or planting material must meet the standards regarding physiological properties (germination), physical properties (physical purity, botanical

composition), and health status (infestation with pests and infection with pathogens). The propagation material must not come from genetically modified organisms or any products derived from such organisms.

In Romania, certified organic livestock production is still in its early stages. In 2023, the certified organic livestock population was 333,508 heads, of which nearly 80% were laying hens (265,255 heads), 9.12% were sheep (30,433 heads), and 8.21% were cattle (Table 3).

Table 3.

The dynamics of certified organic livestock in Romania (2010-2023, heads)

	2010	**2012**	**2014**	**2016**	**2018**	**2020**	**2021**	**2022**	**2023**
Bovine	5,358	7,044	20,113	20,093	16,890	19,870	23,339	26,415	27,391
Pigs	320	344	126	20	9	14	9	12	55
Sheep	18,883	51,722	114,843	66,401	32,579	13,189	13,837	24,789	30,433
Goats	1,093	1,212	6,440	2,618	1,360	830	1,080	4,158	4,941
Laying hen	21,580	60,064	57,797	60,220	0	143,198	186,699	213,365	265,255
Other birds	0	0	0	3,034	0	1,460	27,405	0	5,433
Total livestock	**47,234**	**120,386**	**199,319**	**152,386**	**50,838**	**178,561**	**252,369**	**268,739**	**333,508**
Bees (number of hives)	64,836	85,225	81,583	86,195	138,557	170,789	171,564	175,131	170,070

Source: MARD, 2024

The evolution of the organic beekeeping sector in Romania followed an upward trend until 2020, with an increasing number of certified organic beekeepers, driven by the growing demand for organic bee products on the European Union market, as a result of increased consumer trust in certified organic products. The number of organically certified beehives in Romania remained approximately constant between 2020 and 2023, around 170,000 hives, with the exact data found in Table 3.

The number of organic operators in Romania has increased dramatically, by 4.5 times from 2010 to 2023, reaching a total of 14,061 organic operators. Starting in 2013, there has been a gradual annual decline in the number of operators, at about 9% per year. As a result, the number of organic operators decreased by approximately 45% between 2012 and 2017, reaching a minimum of 8,434 operators in 2017. After 2017, the number of organic operators has been increasing year by year, along with the growth in organic-certified areas and animal populations (Figure2).

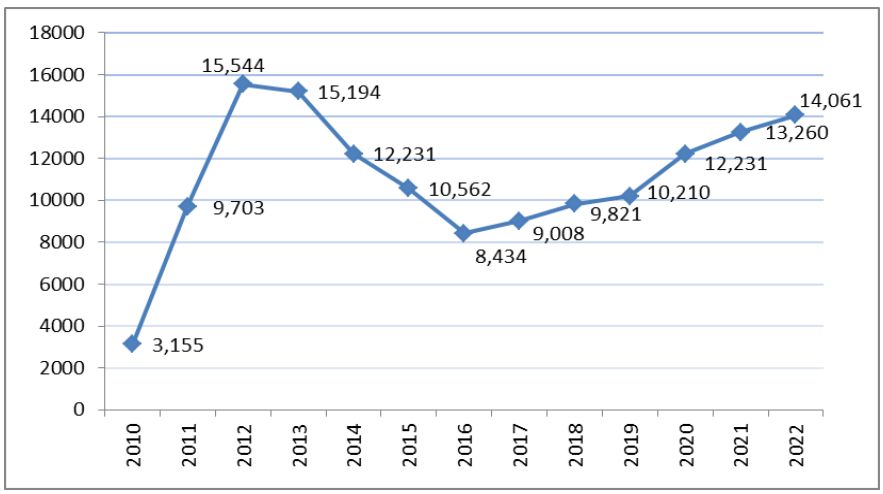

Figure 2. Evolution of the number of organic operators in Romania (2010-2023)

In Romania, the control and certification of organic products are ensured by private control bodies. These bodies are approved by the Ministry of Agriculture and Rural Development, in accordance with the provisions of **Order 312/2021** *regarding the organization of the control and certification system, the approval of control bodies, and the supervision of their activities in organic agriculture, with subsequent amendments and completions.*

Operators/groups of operators engaged in agricultural production activities, preparation/processing, distribution/market introduction, storage, import, and export of organic or converting products are required to notify their activities annually to the county agricultural directorates or the Municipality of Bucharest, in accordance with the provisions of Order no. 45/2022 *for the approval of the rules regarding the registration of operators/groups of operators in organic agriculture*, with subsequent amendments and additions. They must also provide proof of this registration during any control conducted by the control body.

Throughout the entire chain of obtaining an organic product, operators/groups of operators must comply with the rules established in European and national legislation.

CONCLUSIONS

In Romania, certified organic plant and animal production is still in its early stages, but a trend of growth can be observed year by year. Additionally, the number of organic operators in Romania has significantly increased in recent years.

Organic production aims to achieve the following general objectives:

- contributing to environmental and climate protection;
- maintaining soil fertility in the long term;
- contributing to a high level of biodiversity;
- making a significant contribution to a healthy environment;
- raising animals to high welfare standards and, in particular, meeting the behavioral needs specific to the species;
- encouraging short production, distribution, and supply chains;
- encouraging the conservation of rare animal breeds and/or local populations at risk of extinction;
- developing the supply of plant genetic material adapted to the needs and specific objectives of organic agriculture;
- increasing biodiversity, particularly through the use of diverse plant genetic material, such as heterogeneous organic materials and organic varieties suitable for organic production;
- promoting the development of organic plant breeding activities to contribute to the favorable economic prospects of the organic sector.

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