

RESEARCH ON THE EVOLUTION OF ECOLOGICAL AGRICULTURE IN ROMANIA

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RESEARCH ARTICLE

Abstract

The purpose of this work is to analyze the evolution of ecological agriculture in Romania, from the cultivated areas point of view. The market for organic food and agricultural products in Romania is situated in an industry that is constantly expanding due to customer demand and the rate at which these items are being supplied. Romania offers a large potential market for organic agricultural products when considering the quantity of consumers as well as the ideal pedoclimatic conditions. Following the research that was carried out, it turns out that Romania has significant development potential in ecological agriculture, the proof is the fact that both the ecologically cultivated area and the total number of operators certified in ecological agriculture are continuously increasing.

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INTRODUCTION

Ecological agriculture (term like organic farming or biological) is a modern method of growing plants, fattening animals, and producing food by using those processes and technologies that very close to the laws of nature does not use fertilizers and pesticides of synthesis, stimulators and growth regulators, hormones, antibiotics, and intensive animal breeding systems (Krishaprabu, 2020). A global system of agricultural management and food production, ecological agriculture combines the best environmental practices, high biodiversity, resource conservation, application of strict animal welfare standards, and a method of production that honors some consumers' preferences for products made using natural materials and processes. The principles of traditional agriculture are implied to be returned in ecological agriculture, but not the practices (Asseray, 2017). The EU has set production standards for organic agriculture; nations without legislation that complies with these standards are only permitted to export organic agricultural products to the EU with import authorizations, which are given based on a case-by-case review of each application (Soffe, 2021). There are major differences between conventional and organic agriculture. Rules and

rigid production standards govern the steps involved in getting ecological products, starting with the land's required quality, and continuing through to the actual acquisition of the final product. This farming system's goal is to generate a lot cleaner food that is better suited to the human body's metabolism while yet being completely in line with environmental development and conservation (Spears, 2023). Adoption of this agricultural method can be motivated by conviction, the desire for a healthier lifestyle, or even just financial gain considering the expanding demands for food security insurance. Whatever the motivations behind the shift to ecological agriculture, peri urban production and resource conservation are critical to minimizing the negative effects of agricultural practices on the environment and consumer health, and the urban environment represents a sizable market niche for products with certification and ecological labels. In Romania, organic agriculture is a growing industry that has been recognized for its positive developments in recent years. It is a prerequisite for the growth of ecological agricultural initiatives that support this idea and raise awareness of the significance of these products' production and consumption. Organic farming aims to produce food that is both safe and nutritious while also protecting the environment and using natural resources

wisely. This ensures that Romania has a healthy food system and that certified organic food with high added value is readily available (Bonciu & Soare, 2013).

Organic agriculture in the European Union is regulated by specific rules, being an important sector, with clear objectives, established in the interest of both consumers and farmers. As a member state, Romania either directly applies or transposes EU regulations into national legislation, as part of its commitment to limit negative effects on the environment and ensure the well-being of citizens. Both sustainable development and ecological agriculture are fundamental pillars in building a better, more balanced future, both for society and for the environment. This idea outlines an agricultural system built on values including preserving soil health, encouraging biodiversity, and using less pesticides and artificial fertilizers. It is a type of farming that is governed by a rigid set of rules and regulations (Simionescu & Toncea, 2016). Organic certification is awarded upon meeting these requirements, and the resulting organic products are identified by a unique logo that looks like a leaf with stars on a light green background. Subsequently, more regulations—known as "delegated regulations"—were created with the intention of finalizing and amending the original ones. These regulations deal with commerce, environmental restrictions, and other related topics. Organic farming has been more and more popular in Romania, particularly among farmers and customers in the last few years. The nation's biodiversity and varied climate present enormous opportunities for the growth of organic agriculture. Farmers must, however, abide by stringent guidelines pertaining to natural resource management and agricultural practices that are relevant throughout the EU to receive the certification. Concerning Romania and organic agriculture, the environmental audit is crucial in encouraging and overseeing sustainable practices in organic farming, helping to ensure that European standards are met and assessing how agricultural operations affect the environment. An environmental officer is essential to the monitoring of agricultural operations since they can recognize possible environmental problems and offer management suggestions. Customers can be certain that items are cultivated and processed sustainably by verifying organic processes. Additionally, the environmental audit is a

required step to obtain and maintain the environmental authorization and ecological certification, which are crucial for adhering to industry standards and legally allowing items to be sold (Beleniuc & Miron, 2013).

Organic farming generally benefits from environmental auditing, which assures farmers and customers that agricultural operations are acceptable and safe. There are many benefits to organic farming, not just for customers but also for farmers themselves. The significance of organic farming assumes even more significance considering contemporary environmental, health, and sustainable development problems. These include environmental protection reducing soil, water, and air pollution through the avoidance of pesticides and artificial chemical fertilizers, promotes biodiversity conservation, supports thriving ecosystems, and safeguards natural areas; decrease in the emissions of greenhouse gases (Atthove, 2017). Organic farming can contribute to the reduction of greenhouse gas emissions from soil and the fight against climate change by promoting carbon sequestering soil management techniques. A population with a healthier diet and fewer nutritional deficiencies—which are the root cause of many diseases—is achieved through the production of food from healthy soils that is higher in nutrients, antioxidants, and phytonutrients. Furthermore, eating organic food is safer and lowers the chance of contracting a disease linked to pesticide exposure (Hamilton & co., 2015).

Ecological agriculture and sustainable development are advocated because they offer the best means of ensuring that the environment and natural resources are preserved for a better future. Organic farming can yield less than conventional farming. This is due to the possibility that employing chemical fertilizers and pesticides will be more successful than utilizing natural approaches to improve soil fertility and control pests. For farmers, switching from conventional to organic farming may initially come at a considerable financial penalty. Natural pesticides, organic fertilizers, and seeds can cost more than conventional alternatives. Furthermore, getting and keeping a green certification can be a difficult and costly procedure. To demonstrate that their operations are ecologically friendly, farmers are required to adhere to stringent standards and undergo frequent audits.

Compared to large monocultures in conventional agriculture, lower yield per unit area can be obtained with organic farming since it is founded on the principles of soil protection and crop diversification. Organic farming may be more susceptible to harvest changes in the setting of natural fluctuations, which could result in low stock levels or higher costs for such items (Ram, 2019).

Finally, but just as importantly, farmers need to be well-versed in ecosystems. While organic farming has long-term benefits for the environment, human health, and sustainability, its drawbacks are frequently tied to initial difficulties and immediate threats.

MATERIAL AND METHOD

The data provided by Eurostat and the Ministry of Agriculture and Rural Development of Romania were processed.

RESULTS AND DISCUSSIONS

The ecological agricultural industry in Romania is expanding steadily and seeing notable growth. Romanian agriculture has long been a significant economic sector. In Romania, organic agriculture is a thriving industry that has seen a rise in the vegetable market in recent years.

From the data resembled in Table 1, there is an annual growth in the amount of farmed land. In 2019, the area of land intended for ecological agriculture occupies 395227.97 hectares, in 2020 this area reaches the value of 468887.22 hectares, 578718.45 hectares in 2021, and in 2022 reaching a size of 644519.69 hectares. The surface cultivated with cereals for organic production registers a value of 126842.95 hectares in 2019 and in 2020 it reaches a value of 134170.21 hectares, in 2021 the surface reaches 139378.17 hectares, in 2022 the cultivated surface is 160154.70 hectares. The area cultivated with dry leguminous and proteinaceous plants for

the production of grains, including seeds and mixtures of cereals and legumes occupies an area of 7411.05 hectares in 2019, in 2020 this area reaches 5709.97 hectares, 5852.99 hectares in 2021, respectively 6365.45 in 2022. The area cultivated with tuber and root crops is 515.63 hectares in 2019, in 2020 the area occupied with such crops reaches 387.30 hectares, in 2021 269.17 hectares are cultivated, in 2022 these crops occupy an area of 272.86 hectares. The area occupied by industrial crops is 78350.29 hectares in 2019 and 91638.97 hectares in 2020, in 2021 the surface reaches the value of 114407.78 hectares, and in 2022 industrial crops will occupy an area of 116506.35. The area cultivated with green harvested plants in 2019 is 37660.85 hectares, and in 2020 this reaches the value of 53718.20 hectares, in 2021 74703.17 hectares are cultivated, and in 2022 the area occupied with such crops reaches to be 78241.68 hectares. The area occupied by other crops on arable land is 2.07 hectares in 2019, respectively 0.00 hectares in 2020, in 2021 this area reaches a value of 190.18 hectares, and will decrease to 157.86 hectares in 2022. The area cultivated with vegetables is 804.29 hectares in 2019, and in 2020 a cultivated area of 847.79 hectares is recorded, in 2021 the cultivated area reaches the value of 1227.27 hectares, in 2022 the area cultivated with vegetables reaches occupies 1861.22 hectares. Permanent crops, namely vineyards and orchards occupy 22143.43 hectares in 2019, in 2020 they occupy 22219.42 hectares. in 2021 they have a value of 21233.35 hectares, in 2022 they reach a size of 21563.44 hectares. The area occupied by pastures and hayfields is 115,420.14 hectares in 2019, 155,038.18 hectares in 2020, respectively 214,657.22 hectares in 2021, and in 2022 it reaches the value of 257062.19 hectares. This expansion is supported by European integration, which not only provides farmers with improved sales options on the local market but also opens several other opportunities and financial assistance from the EU.

Table 1

Surfaces in ecological agriculture				
	2019	2020	2021	2022
Entire number of operators certified in ecological agriculture	9821	10210	12231	13260
The total area of ecological agriculture (ha)	395227.97	468887.22	578718.45	644519.69
Cereal (ha)	126842.95	134170.21	139378.17	160154.70
Dry vegetables and proteins for the production of grains (ha)	7411.05	5709.97	5852.99	6365.45
Tuber root plants (ha)	515.63	387.30	269.17	272.86
Industrial crops (ha)	78350.29	91638.97	11440.78	116506.35
Green harvested plants (ha)	37660.85	53718.20	74703.17	78241.68
Other crops	2.07	0.00	190.18	157.86
Fresh vegetables (ha)	804.29	847.79	1227.27	1861.22
Permanent crops, orchards, fruit trees, nuts, vines (ha)	22143.43	22219.42	21233.35	21563.44
Pastures and meadows (ha)	115420.14	155038.18	214657.22	257062.19

A percentage of 3.2% of all agricultural areas in Romania are used for ecological cultivation, compared to 9.1% in the European Union. Malta, Ireland, Bulgaria, and Romania have the lowest percentage of cultivated land in this system. In the European Union, 9.1% of all agricultural areas are used for ecological cultivation; in Romania, this percentage is 3.2%. Less than 5% of all agricultural areas are utilized for ecological cultivation in eight member states, including Romania. In contrast, 25% of areas are farmed organically in Austria, 22% in Estonia, and 20% in Sweden. A greater portion of agricultural land was cultivated organically in all EU member states except Poland between 2019 and 2022. In the same era, however, organically cultivated agricultural areas rose by over 100% in Croatia, Bulgaria, France, and Hungary. Romania has one of the lowest percentages of ecologically certified agricultural fields (58.9%), which suggests that there is a good chance that the percentage of certified areas will rise in the years to come.

CONCLUSIONS

Though underutilized, Romania has significant development potential in ecological agriculture. On the other hand, the industry for organic food and agriculture offers promising opportunities for growth and development. Due to the profitability, sustainability, and environmental friendliness of organic agriculture, grants and financial programs are provided by both Romania and the European Union in various ways.

After using the mobile media strategy, it was discovered that, for the most part, the number of crops grown organically is growing steadily, though not very quickly. Farmers will switch to organic farming, increasing the area planted with these crops and so reducing the amount of uncultivated land suited for these crops that remains. Comparing 2022 with 2021, in 2022 the cultivated area is 644519.69

hectares larger and the number of operators also increases from 12231 in 2021 to 13260 in 2022. Although mathematical predictions are not 100% correct, they help us form an opinion overall, which indicates that organic agriculture is in continuous development and shows no signs of stopping extinction, both at the level of our country and at the global level. Although organic farming will not take the place of conventional farming soon, people give signs that they want an improvement in the quality of life, a fact that also includes nutrition, as a result a solution to this desire represented by the adoption of ecological agriculture.

In addition to producing public goods, organic farming has the potential to make a substantial contribution to the preservation of biodiversity, water and soil resources, and the fight against climate change. This is good news for the expanding European market.

Development in Romania requires the use of ecological agriculture (the data supplied demonstrate this).

If organic farming adheres to legal requirements and the ecological quality of the agricultural goods and methods employed can be demonstrated, it can yield substantial financial rewards.

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