

TRENDS IN ORGANIC FARMING IN ROMANIA

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Abstract

The aim of the paper is to present the evolution and future trend of organic farming, the forecast made for the next period, until 2025. The data provided by the international database Eurostat have been used to set up the forecast for the next period until 2025 regarding the areas occupied with oilseeds plants, using SPSS software, Forecasting working method. Organic farming 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 designed to reduce the human impact on the environment while maintaining the normal functioning of the agricultural system. Comparing Romania to the EU member countries in terms of total area converted to organic farming, it ranks 8th with a total area of 291,629 ha, and first among European countries with 90,124 ha in terms of area grown with oilseeds in an ecological system. As a result of the application of measures to support and stimulate organic production, it is claimed that the area under organic farming at national level will increase by about 67% in 2022 compared to 2012. The results showed that in 2025 it is expected as Romania to cultivate up to 21,884 hectares of rapeseed, 71,274 hectares of sunflower and 26,963 hectares of soybeans in an ecological system.

Key words: consumption, organic products, Romania

INTRODUCTION

Organic production is the global system of agricultural management and food production that combines best environmental and climate action practices, a high level of biodiversity, the conservation of natural resources and the application of high animal welfare standards and high production standards. which meet the requirements of more and more consumers, who want products obtained with the help of natural substances and processes [7].

Organic agriculture is a dynamic sector in Romania that has recently seen an upward trend for all branches. The organization of product marketing is an important element in the organic farming sector [13].

In the paper "Prospects for organic farming in Romania", the authors mention that organic farming is in fact that production system that contributes to supporting the well-being of the entire ecosystem. Organic farming is based on a multitude of ecological systems,

biodiversity systems but also cycles that are adapted to certain living conditions, without using prohibited substances (chemicals) with harmful effects on the environment [5], [12]. Also, in the work "Organic farming: from definitions and concepts to agricultural business and even politics", the authors Indira Deniz ALIM and Aurel LUP address the problems of organic farming from all perspectives, starting from its origin to the definition of organic farming, principles and specific characteristics. In this paper, it is mentioned that the philosopher R. Seiner, is considered the "forerunner" of organic farming, because in 1924 he laid the foundations of the concept of biodynamics, because he proposed the development of agriculture easily adapted to all living organisms by integrating four components namely man, animals, plants and soil [1]. In the same paper it is mentioned that in 1975, Fukuoka suggested the development of a less mechanical agricultural system, in which no phytopharmaceutical fertilizers and products

should be used [1]. The role of organic farming refers to the production of healthier and safer foods, more suitable for the human body in close connection with the conservation of the environment [14], [2].

Romania is a country that has a competitive advantage, compared to other countries, in terms of natural resources, environment and climate conducive to the development of organic farming. Pest control and the use of environmentally friendly substances to control diseases as well as the use of natural fertilizers such as manure or compost are elements that contribute to maintaining the natural balance of the environment [3], [4].

MATERIALS AND METHODS

The paper is based on statistical data provided by the Eurostat international database on organically cultivated area with the main oilseeds, rapeseed, sunflower and soybeans, for the period 2006-2020.

The research method used consisted of a quantitative and qualitative analysis of statistical data to highlight the ecological area in Romania. Also, through the SPSS software, the cultivated area with oilseeds, rapeseed, sunflower and soybeans was forecast for the next period, until 2025, using the Forecasting method.

The optimistic variant is actually the upper limit of control, and the pessimistic variant is the lower limit of control. The control diagram, the graphical sector that actually displays the image of what happens in the production process in relation to time, thus, the two variants indicate whether the variations of the analyzed process are caused by certain specific events, abnormal events, or events that may affect process quality. These values are calculated on the basis of a confidence interval, being considered as the absence of any deviation from the evolution trend [11].

RESULTS AND DISCUSSIONS

The practice of organic farming in Romania is supported and encouraged, although at present there is no internal market for this category of organic products.

The conversion from conventional to organic farming is gradual, so that economic structures do not feel the effects of declining productivity, and producers gain confidence in organic systems.

Figure 1 shows the total area converted to organic farming in 2006 and the total area converted to organic farming in 2020.

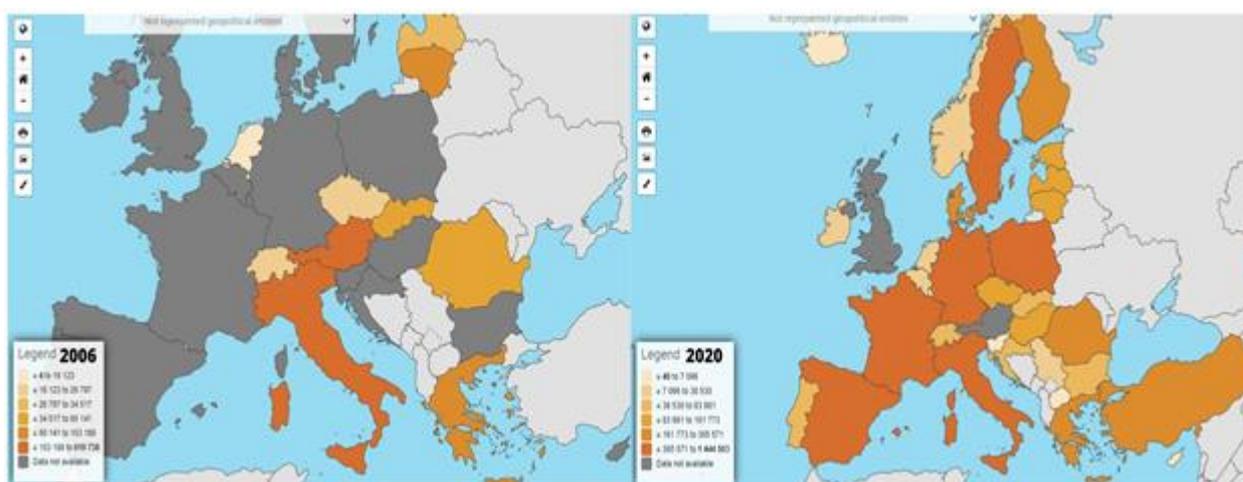


Fig. 1. Total area converted to organic farming in 2006 compared to 2020 in Europe

Source: EUROSTAT, Organic crop area by agricultural production methods and crops (from 2012 onwards), http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=org_cropar, Accessed on 23.06.2022 [8].

According to Figure 1, in 2020, the largest organic agricultural area was in France

(1,444,503 ha), followed by being from Italy with a total area of 1,016,289 ha. Romania

ranks 8th out of a total of 34 countries, with a total area of 291,629 ha. Compared to 2006, the area increased considerably, as Romania in 2006 had only 45,605 ha of total arable land converted to organic farming.

Figure 2 shows the total area converted to organic farming occupied by oilseeds. According to the representation, in 2020, Romania ranks first among European countries with 90,124 ha, followed by Italy and Germany with areas occupied by oil plants of 34,788 ha and 14,802 ha,

respectively. Compared to 2006 surface. In 2006, Romania owned only 16,058 ha, which is a 5-fold increase in 2020 compared to 2006. At the heart of the European Ecological Pact initiative set is agriculture, which has a key role to play in the transition to a sustainable and sustainable system. Organic farming has the role of producing food without the use of chemicals, which means that it encourages the use of natural resources in the most responsible way possible.

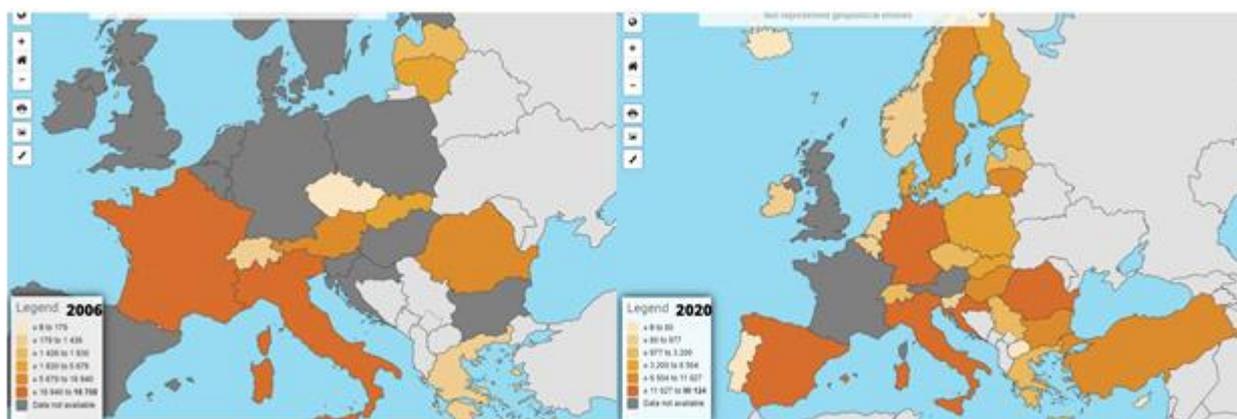


Fig. 2. Total area converted to organic farming in oilseeds in 2006 compared to 2020 in Europe
 Source: EUROSTAT, Organic crop area by agricultural production methods and crops (from 2012 onwards); Crops: oilseeds, https://ec.europa.eu/eurostat/databrowser/view/ORG_CROPAR__custom_3031586/default/map?lang=en
 Accessed on 23.06.2022 [9].

In Romania, organic farming is on an upward trend, growing by around 67% in 2022 compared to 2012, as a result of the implementation of structures to stimulate the production of organic products. Most Member States have already defined the objectives for

stimulating organically cultivated areas as a share of the utilized agricultural area. In addition, organic farming is also supported through the CAP, proving to be fundamental in stimulating farmers.



Fig. 3. The total area converted to organic farming in Romania
 Source: EUROSTAT, Organic crop area by agricultural production methods and crops (from 2012 onwards), country: Romania, https://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=org_cropar&lang=en, Accessed on 23.06.2022 [10].

Observing the upward trend of organically grown area and the presence of factors that have a positive impact on the stimulation of organic areas, such as CAP measures, implementation of the set of decisions on the European Ecological Pact, etc., a forecast was made of areas cultivated with oilseeds. until 2025. The forecast was made using the SPSS application, based on data provided by Eurostat.

According to the model made (Fig.4, Table 1), by 2025 in Romania could be cultivated approximately 21 884 hectares in ecological system, which would represent an increase 6

times higher compared to 2006. The area cultivated with organic rapeseed in Romania, in the period 2006-2020 had an upward trend, thus, in 2020 the area cultivated with organic rapeseed reached the value of 13,583 hectares, 4 times more compared to 2006. the action plan for the development of organic production, starting with 2023, will assess the circumstances and needs of each state regarding the increase of organically cultivated areas, as well as the implementation of support measures for the organic agricultural sector (Fig. 4, Table 1).

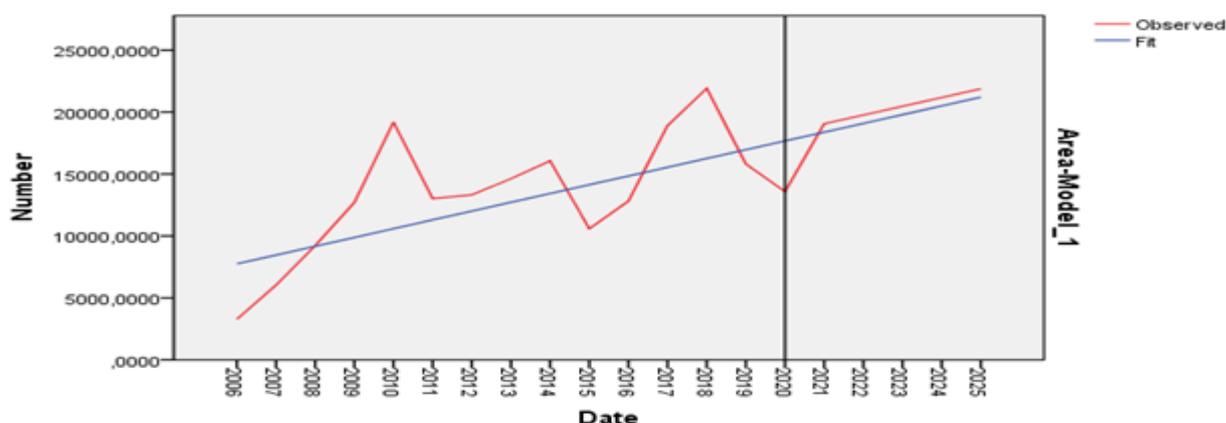


Fig. 4. Forecast of the area under rapeseed, horizon 2025 (ha)
 Source: Own representation in SPSS.

Following the application of the model, two possibilities were obtained. The optimistic variant indicates that, until 2025, in Romania maximum of 28.2 thousand hectares could be cultivated with rapeseed in an ecological system (Table 1). The pessimistic variant, in which it is presented that Romania could cultivate rapeseed in the ecological system maximum 14.1 thousand hectares (Table 1). Regarding the forecast of the area cultivated with sunflower, if the upward trend representative of the period 2006-2020 were maintained, by 2025 in Romania it could be cultivated up to 71 274 hectares, which would mean an increase of 4.5 times compared to the first year analyzed. And in this case, there are two possibilities, resulting from the application of the SPSS model. From an optimistic point of view, by 2025 a maximum of 110,726 hectares could be cultivated with ecological sunflower.

Table 1. Forecast of rapeseed area, horizon 2025 (ha) - forecast value, optimistic value, pessimistic value

Year	Predicted	Pesimist	Optimist
2006	3,273*	-	14,829
2007	6,030*	-	15,531
2008	9,218*	2,102	16,236
2009	12,699*	2,809	16,942
2010	19,179*	3,519	17,652
2011	13,020*	4,234	18,368
2012	13,321*	4,943	19,076
2013	14,621*	5,651	19,784
2014	16,065*	6,360	20,493
2015	10,589*	7,069	21,203
2016	12,811*	7,772	21,906
2017	18,909*	8,477	22,610
2018	21,917*	9,187	23,321
2019	15,799*	9,900	24,033
2020	13,583*	10,605	24,739
2021	19,056	11,308	25,441
2022	19,763	12,015	26,149
2023	20,470	12,723	26,856
2024	21,177	13,430	27,564
2025	21,884	14,138	28,271

Source:* Data provided by Eurostat; Own representation in SPSS.

Also, from a pessimistic point of view, only 31,821 hectares could be produced in an ecological system (Fig. 5, Table 2).

Table 2. Forecast of the area cultivated with sunflower, horizon 2025 (ha) - predicted value, optimistic value, pessimistic value

Year	Predicted	Pesimist	Optimist
2006	-	-	-
2007	15,799*	-1,845	33,443
2008	13,786*	-3,858	31,430
2009	13,782*	-3,862	31,426
2010	14,796*	-2,848	32,440
2011	21,244*	3,600	38,888
2012	28,573*	10,929	46,217
2013	47,005*	29,361	64,649
2014	33,336*	15,692	50,980
2015	25,998*	8,354	43,642
2016	25,992*	8,348	43,636
2017	25,454*	7,810	43,098
2018	36,794*	19,150	54,438
2019	39,952*	22,308	57,596
2020	49,543*	31,899	67,187
2021	58,946	41,302	76,590
2022	62,028	37,076	86,980
2023	65,110	34,550	95,669
2024	68,192	32,905	103,479
2025	71,274	31,821	110,726

Source:* Data provided by Eurostat; Own representation in SPSS.

From 2022 onwards, the exchange of good practices will be promoted by offering educational programs, both nationally and internationally, on organic farming, which aim to present innovative solutions for the organic sector (European Commission, 2021, An action plan for the development of organic production, Brussels) [6].

Regarding, the forecast of the cultivated area with soybeans, by maintaining the upward trend representative for the period 2006-2020, until 2025 in Romania could be cultivated up to 26,963 hectares, which would mean an increase of 3.7 times compared with the first year analyzed. And in this case, there are two possibilities, resulting from the application of the SPSS model. From an optimistic point of view, by 2025 a maximum of 40,018 hectares of soybeans could be cultivated in an ecological system. Also, from a pessimistic point of view, only 13,097 hectares could be produced in an ecological system (Fig. 6, Table 3).

A general reason why organic farming is becoming more and more practiced is that although it does not have the same yield as conventional agriculture, organically obtained products do not have the same aesthetic appearance, it reaps its own rewards.

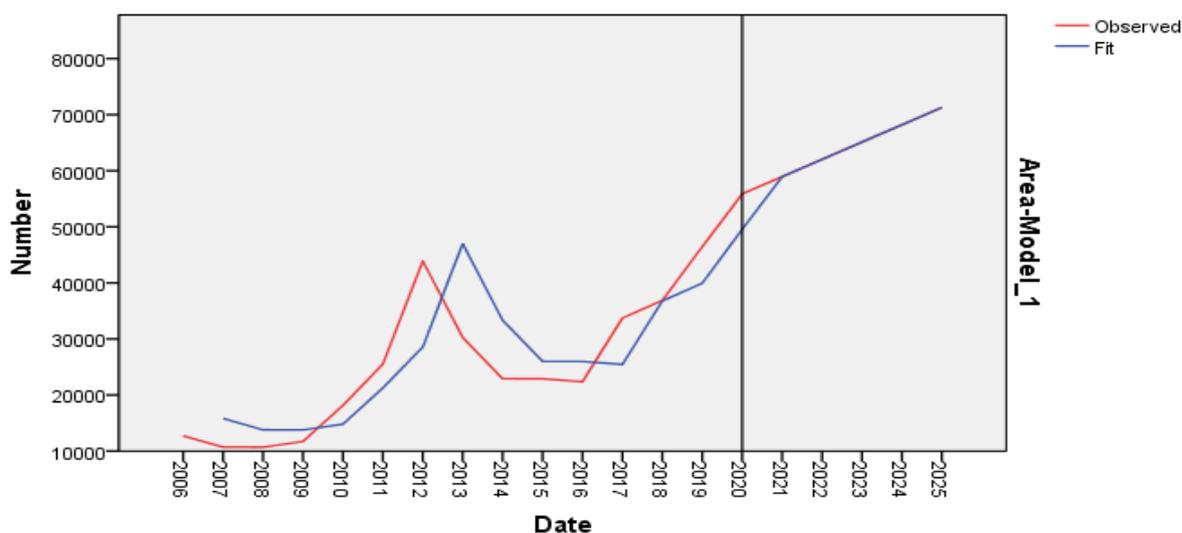


Fig. 5. Forecast of the area cultivated with sunflower, horizon 2025 (ha)

Source: Own representation in SPSS.

Although organic farming focuses mainly on sustainability, it also looks at how the actions

people take today affect the future. The use of organic substances and fertilizers, as well as

compliance with ecological guidelines, contributes to increasing production and at the

same time contributes to the restoration of nutrients in the soil.

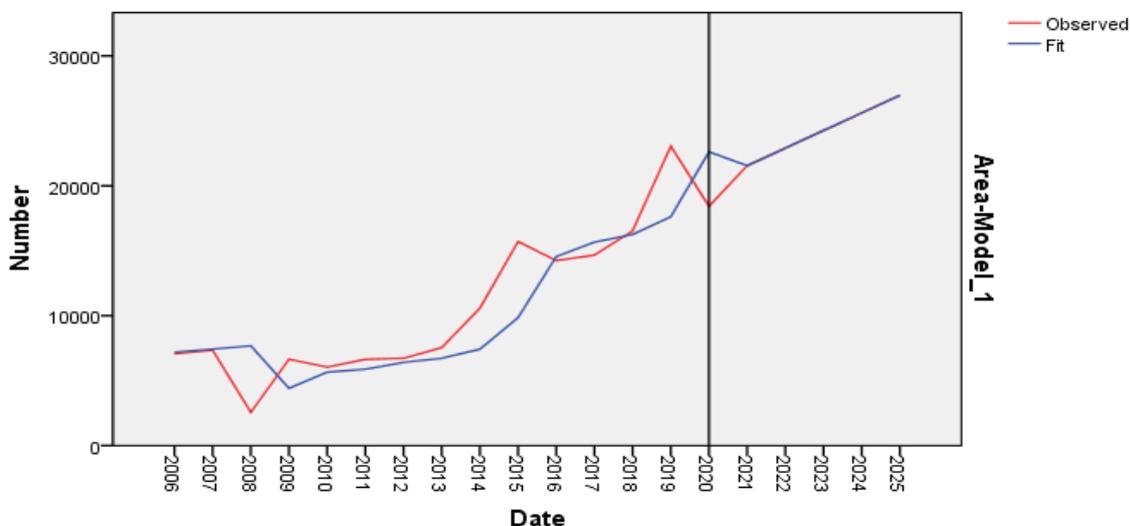


Fig. 6. Forecast of soybean area, horizon 2025 (ha)
 Source: Own representation in SPSS.

Table 3. Forecast of soybean area, horizon 2025 (ha) - forecast value, optimistic value, pessimistic value

Year	Predicted	Pesimist	Optimist
2006	7,159*	745	13,573
2007	7,405*	991	13,819
2008	7,662*	1,248	14,077
2009	4,409*	-2,005	10,823
2010	5,644*	-770	12,058
2011	5,868*	-546	12,283
2012	6,400*	-14	12,814
2013	6,715*	301	13,130
2014	7,418*	1,003	13,832
2015	9,837*	3,423	16,252
2016	14,525*	8,111	20,940
2017	15,645*	9,231	22,060
2018	16,251*	9,836	22,665
2019	17,607*	11,193	24,021
2020	22,592*	16,178	29,007
2021	21,551	15,136	27,965
2022	22,904	15,093	30,715
2023	24,257	14,855	33,658
2024	25,610	14,453	36,766
2025	26,963	13,907	40,018

Source:* Data provided by Eurostat; Own representation in SPSS.

CONCLUSIONS

At the moment, Romania is at a time when it must adopt a strategic position in the face of new opportunities and challenges. Thus, our

country must make the most of them and take advantage of the opportunities offered by the Common Agricultural Policy and by participating in the EU and third country markets.

The development of sustainable agriculture presents a framework in which, once each person has mastered it will contribute to creating a more equitable environment, defined by balance and solidarity, thus being able to cope with the changes of current global, regional and national issues.

In Romania, organic farming is a dynamic system, registering an overall upward trend. In 2020, the total arable area of the ecological system was 291,629 ha, ranking 8th among EU member states. At the same time in terms of the area occupied by organically grown oil plants, Romania ranked first among European countries with 90,124 ha, followed by Italy and Germany with areas occupied by oil plants of 34,788 ha respectively 14,802 ha.

The discovery of new technologies, research and the use of environmentally friendly nutrients and treatments can change the way agricultural products are obtained today, for the transition to an ecological and sustainable agriculture. Observing the upward trend of all crops analyzed, in the ecological system, and observing the forecast made through the SPSS

program, it can be argued that further efforts must be made, maintained and sustained to promote sustainable agriculture that focuses on environmental protection, ensuring alternative incomes and a high level of farmers as well as maintaining an active agricultural sector involved in organic activities and analyzing the quality of agricultural products obtained.

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