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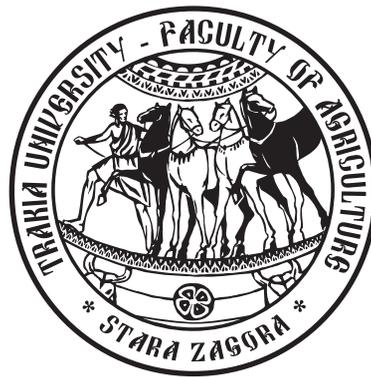
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Agriculture and Environment

The evolution and current state of agricultural land and livestock exploited in organic farming system in Romania

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Abstract. Organic agriculture can successfully contribute to a sustainable development of the Romania's rural areas because in our country there are extremely favorable conditions for practicing of large-scale organic farming, and particularly in the hill and mountain areas. The purpose of this study was to analyze the evolution and current state of organic agriculture in Romania, with special reference to the organic land, the number of organic producers, the use of organic agricultural land and the organic livestock. To achieve these objectives we have studied the official statistical data, we calculated the percentage difference between the reference years and we interpreted data obtained. The results showed that the total area of organic land in Romania in 2010 it was 260,000 ha, from which 70.3% are organic agricultural land and 29.7% are organic non-agricultural land. The area of organic agricultural land in 2010 was 182,706 ha, being with 1.9 times higher as compared with the existing area in 2006, representing 1.37% of the total agricultural land. As regards the use of organic agricultural land, it was found that in 2010 the largest part of them, namely 81.0% were occupied with arable land, 17.3% with pastures and meadows and 1.7% with permanent crops (vineyards and orchards). Also this study shows that in 2010 there were 3,078 organic producers. The production of organic crops and the rearing of organic animals are the main activities in the organic sector at farm level. Livestock farmed organically in 2010 were as follows: 12,761 heads of cattle, 57,678 heads of sheep and goats, 537 heads of pigs and 23,740 heads of birds. The results showed also that cattle and sheep are the most popular species reared using organic production methods.

Keywords: organic agriculture, agricultural land, producers, livestock.

Introduction

Organic farming is a sector of agriculture which has registered a constant growth worldwide in recent years (Willer and Kilcher, 2011; Răducuță and Doroftei, 2012) and especially in European Union (Răducuță, 2011). Organic farming is a system of sustainable management for agriculture because use production methods without any harm for environment, humans, plant and animal. In our country there are great opportunities for practicing organic farming, due to favorable natural conditions, such as: a large area occupied by pastures and natural meadows, use of a quantity of fertilizers and pesticides significantly lower than in other countries and a reduced pollution of water and soil compared to other countries. The agricultural potential of Romania for practicing organic farming cannot be neglected, and the great chance of our country lies in the fact that in recent years were used small quantities of chemical fertilizers and pesticides, which providing an obvious advantage in converting the land to organic farming (Barbu and Băra, 2010). Thus organic agriculture can successfully contribute to a sustainable development of the Romania's rural areas because there are extremely favorable conditions for practicing of large-scale organic farming, and particularly in the hill and mountain areas. The purpose of this study was to analyze the evolution and current status of organic farming in Romania to see the pace of development of this new sector of agriculture.

Material and methods

The analyze of organic farming evolution was made in 2006-2010 period with special reference to organic agricultural land, the share of organic agricultural land in total agricultural land, the number of organic producers, the use of organic agricultural land and the organic livestock. To achieve these objectives we have studied the official statistical data provided by different institutions (Eurostat, Ministry of Agriculture and Rural Development from Romania), we calculated the percentage difference between the reference years and we interpreted data obtained.

Results and discussion

The results showed that the total area of organic land in Romania in 2010 it was 260 000 ha, from which 70.3% are organic agricultural land and 29.7% are other types of organic land. From the analysis of the data presented in Table 1 it can ascertain that in 2006-2010 period the total organic area increased with 81.5% and in 2000-2010 period increased by 15 times (Figure 1). The area of organic agricultural land in 2010 was 182 706 ha from which 82 981 ha (45,4%) are fully converted to organic farming and 99 724 ha (54,6%) are under conversion. Also the area of organic agricultural

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Table 1. Surface dynamics and number of operators in organic farming (Ministry of Agriculture and Rural Development, 2012)

Specification	2006	2007	2008	2009	2010	% changes 2006-2010
Total organic area (ha)	143 194	190 129	221 411	240 000	260 000	81.5
Share of total agricultural area (%)	1	1	1.5	1.7	1.86	-
Number of organic operators	3 409	3 834	4 191	3 228	3 155	-7.5
Organic arable land crops (ha)	45 605	65 112	86 454	110 014.4	148 033.5	224.6
Organic pastures and meadowland (ha)	51 200	57 600	46 006.5	39 232.8	31 579.11	-38.3
Organic permanent crops (ha)	294	954	1 518	1 869.4	3 093.04	952.0
Collection of spontaneous flora (ha)	38 700	58 728	81 279	88 883.4	77 294.35	99.7

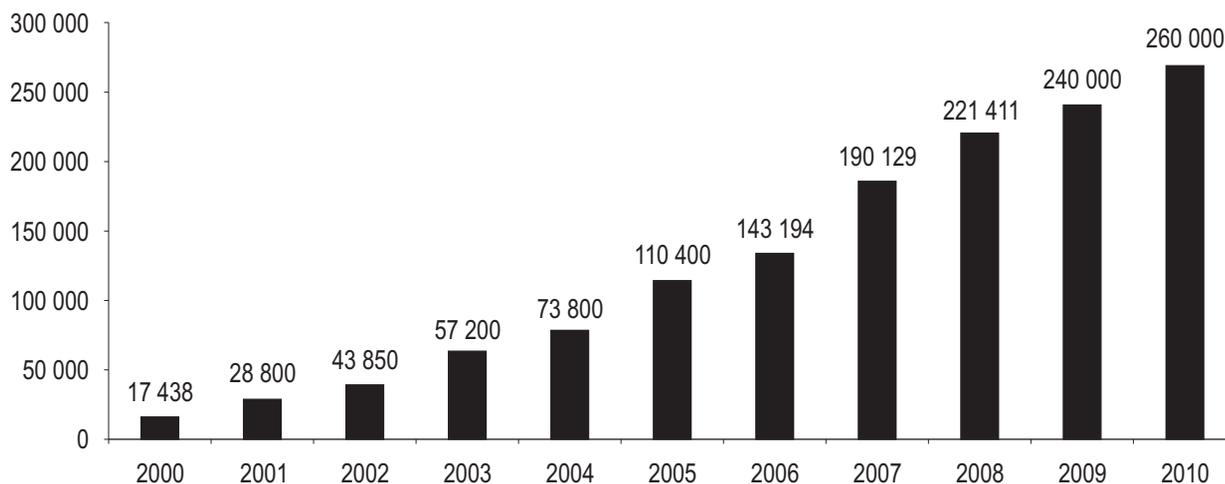


Figure 1. Development of organic land in Romania in 2000-2010 period (Ministry of Agriculture and Rural Development, 2012)

land in 2010 is with about 1.9 times higher as compared with the existing area in 2006 and represents 1.37% of the total agricultural land from our country. The area under conversion as a percentage of the total organic area can give an indication of the potential growth in the organic sector in the years to come (Rohner-Thielen, 2010) and from this point of view, our country has great potential. As regards the evolution of organic non-agricultural land surface in 2006–2010 period, we can ascertain that although in the year 2010 it is higher by 99.7% compared with the area existing in 2006, however it is observed a decrease with about 13% if we refer to changes from 2009–2010 period.

The three main crop types grown organically are arable land crops (mainly cereals, fresh vegetables, green fodder and industrial crops), permanent crops (mainly orchards and vineyards) and pastures and meadowland. Among the arable crops, cereals and industrial crops occupied the biggest area. As regards the use of organic agricultural land (Figure 2), it was found that in 2010 the largest part of these, namely 81.0% were occupied with arable land, 17.3% with pastures and meadowland and 1.7% with permanent crops (vineyards and orchards).

Also this study shows that in 2010 there were 3 155 organic operators from which 3 078 were organic producers and remainder were traders and processors. Activities within the organic sector include the food chain from production at farm level right through to industrial processing. Imports, exports and other activities, such as wholesale and retail trade, are also included. The production of organic crops and the rearing of organic animals are the main

activities in the organic sector at farm level, but the processing of goods is also important.

Organic livestock farming has grown in Romania in recent years. It is focused on producing animals from a predominantly forage-based system, with an emphasis on maintaining animal health through improved welfare and a reduction in the use of routine, conventional veterinary treatments. Breeding and feeding are important factors of the health and welfare of farm animals in organic systems. On organic farms, more native breeds seem to be used than on conventional farms (like Tsurcana breed in the case of sheep farmed organically).

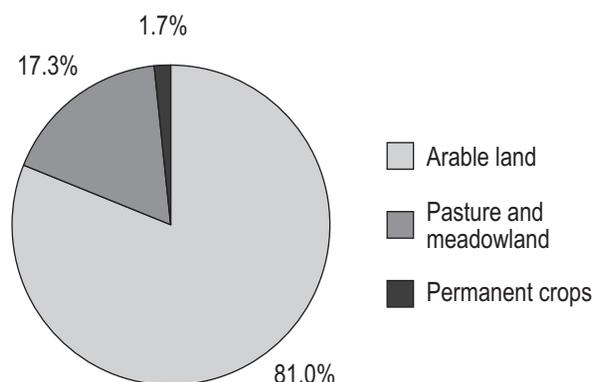


Figure 2. The use of organic agricultural land in Romania

Livestock farmed organically in 2010 were as follows: 12 761 heads of cattle, 57 678 heads of sheep and goats, 537 heads of pigs, 23 740 heads of birds and 119 304 of hives. The certified organic livestock is presented in Table 2. The results showed that cattle and sheep are the most popular species reared using organic production methods.

Table 2. Dynamics of certified organic livestock (Eurostat, 2012)

Specification	2006	2007	2008	2009	2010	% changes 2006-2010
Bovine animals (number of heads)	11 365	6 985	7 567	8,145	5 358	-52.8
Sheep (number of heads)	86 180	59 680	121 175	51,470	18 883	-78.1
Goats (number of heads)	117	215	4 296	4,738	1093	834.2
Pigs (number of heads)	1 652	1 174	416	603	320	-80.6
Poultry (number of heads)	4 300	4 320	6 080	9,400	21 580	401.9
Bees (number of hives)	30 ,796	37 260	52 599	59,414	64 836	110.5

convert to organic production (well identified products, feed based mainly on grass and hay). Romania recorded a large increase in the number of organically farmed sheep, especially in 2008, respectively after the integration of our country in the EU, but after this year their number decreased and mainly the number of organic certified livestock.

Out of the certified organic products produced in Romania the most important are: cereal and industrial crops (wheat, maize, barley, soybean, sunflower), honey and other bee products, berries, herbs, mushrooms, processed products (sunflower oil, dairy products - cheese and butter, apple juice, processed products from soybeans - soybeans milk and tofu, processed products from hemp seeds, flour, tea, bakery products - bread and pasta cookies, meat products and wine from organic grapes). In 2010, there were exported around 150 000 tones of organic products (cereals, oilseeds and protean seeds, forest fruits, processed milk products, honey, sunflower oil), with a value of almost 150 million Euros. Romanian organic products were sold mainly in EU countries, notably Germany, Italy, Austria, Holland, Switzerland and Denmark.

Domestic consumption of organic products is extremely low (1% from the total foodstuff and mainly in urban area), due to lack of information on the benefit of consumption of organic products, but also because of high prices charged for these products, low incomes of people and lack of indigenous markets for organic products. The market channels are specialized stores, marketing at the farm level, supermarkets and seasonal sales markets. In 2010, Romania imported organic products (brown sugar cane, coffee, dairy products, chocolate, fruit juices, etc.) of around 35 million Euros, with about 17.5 times more than in 2006 and with 25% more compared with 2009.

The development strategy of organic farming in Romania refers to the following objectives: increasing the area cultivated in organic farming, increasing the competitiveness and the range of organic processed products, extending the national market of organic products and increasing the consumption per capita and achievement of an available production for trade in the EU and export to the third countries.

Conclusion

Organic farming is a dynamic sector in Romania, with a progressive development in analyzed period, which is reflected by

The share of organic production within total production varies according to the different animal sectors. Not surprisingly it is for the pork sector that the sector has the lowest weight. This stems partly from the difficulties posed by the provision of organic animal feed (compound feed). Conversely it is not surprising that the highest share are found in the sheep sector due to lower difficulties to

the increasing of land surfaces and livestock exploited in organic farming system and of the number of organic agricultural holdings. The efficiency of organic agriculture is low, compared to western countries, but the sector has a strong growing tendency in the future because our country has extremely favorable conditions for practicing of large-scale organic farming. Organic farming is a possible solution for two problems: meeting the demand for natural products, obtained by methods which do not use chemicals, and secondly the diversification of the agricultural sector in the overall context of environmental protection.

Acknowledgements

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Todorov N and Mitev J, 1995. Effect of level of feeding during dry period, and body condition score on reproductive performance in dairy cows, IXth International Conference on Production Diseases in Farm Animals, Sept. 11 – 14, Berlin, Germany, p. 302 (Abstr.).

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