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Statistical coordinates of organic farming in Romania during the period 2000-2014

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Abstract: *The paper emphasizes the importance of developing organic farming in Romania. This sector was not affected by the economic crisis, at the end of 2008, neither in Romania, nor in European Union. The sustainable character of its evolution was doubled by the benefits and the consequences for a better and healthier life of consumers, in the spirit of respecting the principles of environmental and life sustainability. The evolutions of organic areas in Romania in comparison with the level of the European Union, and also of its proportion in the agricultural land, are presented for the period 2000-2014. Some important structural characteristics of organic farming in Romania are analysed for 2011 and 2012, the years when the expansion of organic areas was the highest. These emphasized changes could be the future factors of organic farming development.*

Key-words: *organic farming, proportion of organic areas, livestock, crops*

1. Introduction

People became more careful about their health now, in the Internet era, when they can access a large amount of information. The principles of sustainability consider the food security, food safety, and life in a healthy environment. Organic farming ensures these requirements of modern life.

Almost all countries have developed organic agriculture. Organic agriculture does not use pesticides and other synthetic fertilizers and forbids any use of hormones and antibiotics for livestock growth. The standards of organic agriculture are ruled by the International Federation of Organic Agriculture Movements (IFOAM), which was established in 1972 in Germany, as a NGO.

The definition of organic agriculture given by IFOAM refers to its methods and to its benefits.

> "Organic agriculture is a production system that sustains the health of *soils, ecosystems* and *people*. It *relies on ecological processes, biodiversity and cycles adapted to local conditions*, rather than the use of inputs with adverse

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effects. Organic agriculture combines *tradition, innovation* and *science* to benefit the shared environment and promote *fair relationships* and a good *quality of life* for all involved." (http://www.ifoam.bio/en/organic-landmarks/definition-organic-agriculture)

Within agricultural economics it has been developed the branch of economics of organic farming, which operates with social and opportunity costs, asymmetry of information, and economies of scale, having the purpose of maximizing yields and efficiency at the farm level.

The European Union created financing tools of organic farming, considering that the benefits of this agricultural system are very important for the life and environmental sustainability. The most important of these externalities are: size of water consumption and the quality of the water used, alleviation of soil erosion, reducing carbon emissions as well as respecting and increasing the biodiversity.

2. Objectives and methodology

The paper aims to present some statistical coordinates of organic farming development in Romania, after 1990.

Because the land is the main physical support of agriculture of any kind, some data about the organic areas in Romania, is important to be presented. Romania is a Member-state of the European Union and also a beneficiary of the European financing programs for agriculture and rural development. For this reason the development of organic areas in Romania is presented in a comparative manner with the pace of organic areas' development at the level of the European Union. The analysed period for these comparisons is 2000-2014.

After establishing Romania's place as compared to the level of the European Union concerning organic agricultural surfaces, the way in which the proportions of different agricultural destinations in Romania have developed are analysed.

The development of agricultural areas in Romania, after 1990, refers to the proportions of the agricultural area of Romanian territory and to the proportions of arable land as percentage in agricultural land for the period 1990-2011. The presentation continues with the development of areas for organic agriculture and its proportions in the Romanian agricultural land, for the period 2000-2014, which came close to 2% in 2014.

After establishing the size of organic areas, some characteristics of bio agriculture are presented, considering the three aspects: the structure of organic agricultural land for crops, the structure of permanent crops and the structure of organic livestock, for the years 2011 and 2012.

3. Results and discussions

3.1. Development of organic agriculture area in Romania and European Union, during the period 2000-2014

The chart from Figure 1 compares the size evolution of organic areas, during the period 2000-2014, in Romania and in the European Union. The chart has two OY axes: the principal OY axis for the EU organic area and the secondary OY axis for the Romanian organic surface.

In Romania, in 2014, around 300,000 ha of agricultural land were designed for organic farming. Looking at the chart from Figure 1, on the secondary Oy axis, we can see that the economic crisis in 2009, determined an increasing evolution, which starting with 2010 was quite very optimistic until 2012. The organic surface in Romania constantly increased between 2000-2014. This tendency was higher in 2010-2012, and slowed in 2013, even decreased in 2014 to around 290,000ha.

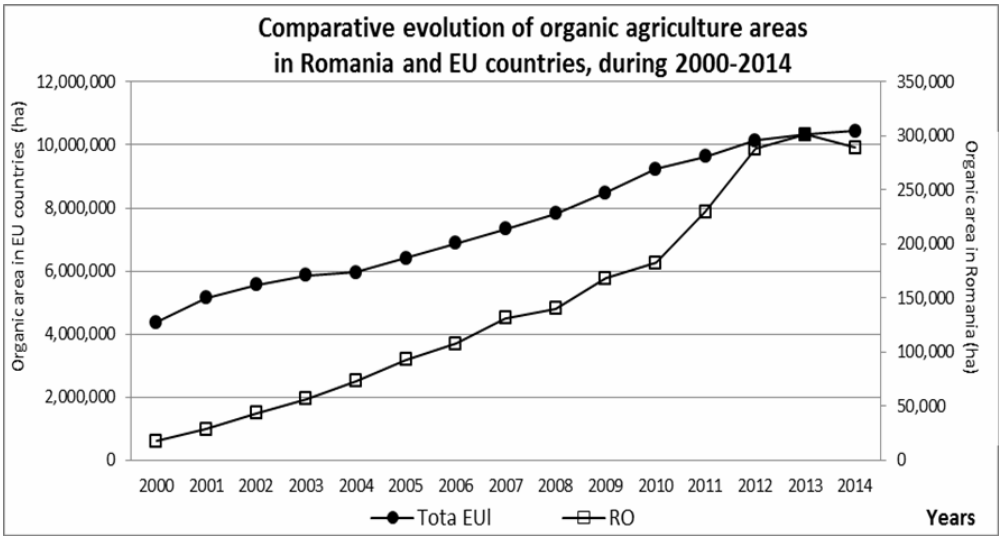

Fig. 1. *Evolution of organic areas in Romania and the EU, during the period 2000-2014*

Source: http://www.organic-world.net/statistics-data-sources.html?&L=2

At European Union level, the organic area increased from more than 4 million ha in 2000, to more than 10 million ha in 2014. In Figure 1, there can be seen the ascending linear tendency of the number of ha of organic areas in the European Union. The same conclusion, at EU level, can be expressed about the lack of any effect of the economic crisis upon the expansion of organic areas.

Representing the evolution of the extent of Romanian organic surfaces on the secondary Y axis, allows for the assessment of the size of the bio phenomenon, both in Romania and at EU level.

Comparing the weights of organic agricultural areas in agricultural lands, during the period 2000-2014, in Figure 2, the same ascending tendency shows the lesser yearly proportions in Romania as compared to the EU level.

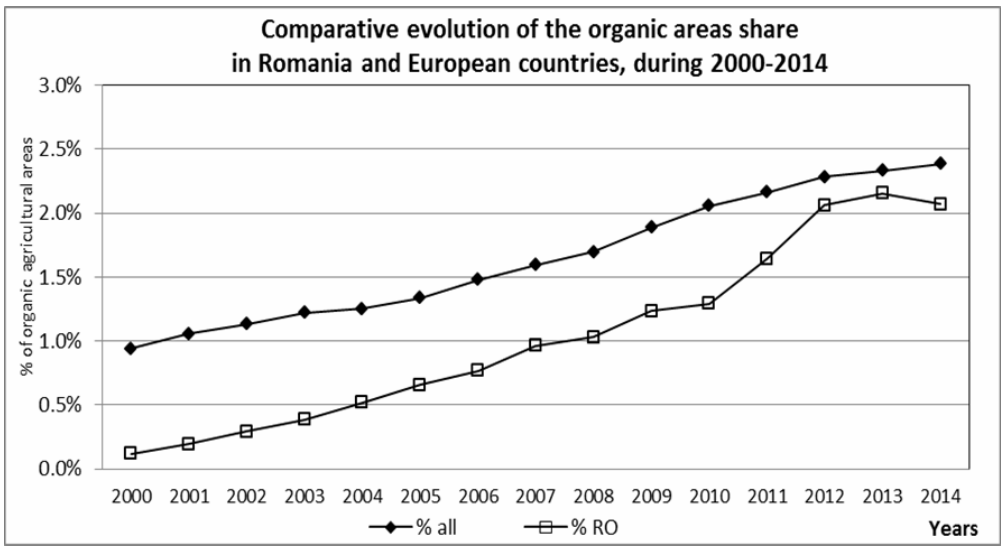

Fig. 2. *Share of organic agricultural areas in Romania and the EU, during 2000-2014*

Source: http://www.organic-world.net/statistics-data-sources.html?&L=2

As it can be seen in Figure 2, the changes of the weights of organic agricultural areas in the Romanian agricultural land have followed an ascending tendency during the period 2000-2014, even more rapidly than the changes at European Union level. In 2014, the weight of Romanian organic area was lower than the whole European level; if the changing pace had been kept, it could have been very close to attaining it.

3.2. The development of agricultural areas in Romania, after 1990

The proportions of agricultural land in Romania were approximately constant during the period 1990-2003, around 64% and varied between 59%-61%, during the period 2004-2011, as presented in Figure 3. The decrease of these proportions by 3%-5% after 2003 is explained by the GDP sustainable growth, starting with the year 2002, the first year which surpassed the level of 1990. The economic development led to building area extension, starting with the year 2004.

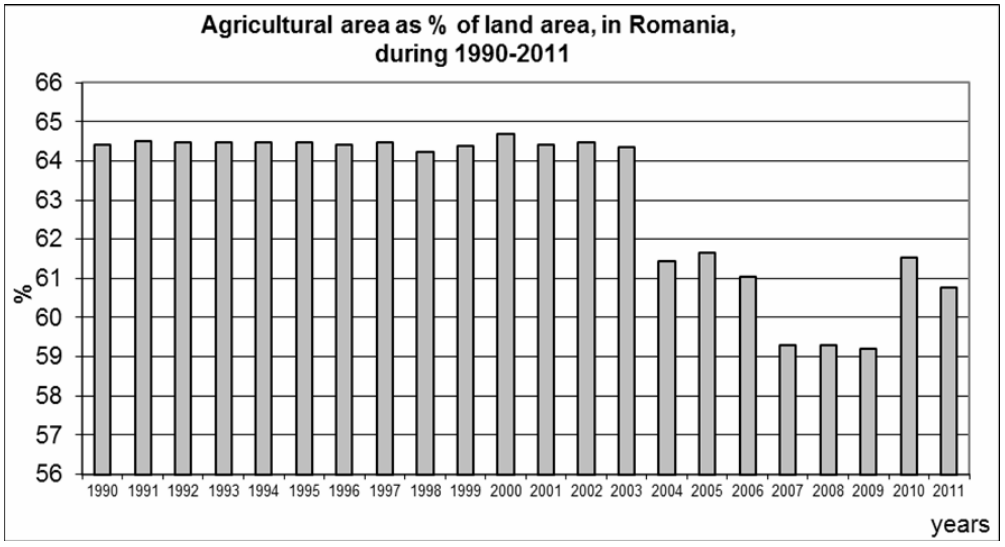

Fig. 3. *The agricultural area in land area of Romania, during the period 1990-2011*
Source: http://www.organic-world.net/statistics-data-sources.html?&L=2

The proportions of arable land as percentage in the agricultural land of Romania, varied by plus or minus 1%, around 64%, during the period 1990-2011. Starting with 2005 this weight has slowly increased, as seen in Figure 4.

Evolution of organic agriculture area and its weights in Romanian agricultural land, during the period 2000-2014 is shown in Figure 5.

The increasing tendency of organic agricultural areas was not affected by the economic crisis which started at the end of 2008. The Romanian organic agricultural surface increased mainly in the period when the crisis began and during its time, but slowed after its end. The strech of the organic agricultural area, reported in 2014 was lower than that in 2013. The proportion of organic area in the entire agricultural surface of Romania decreased from 2.2% in 2013 to 2.1% in 2014.

Romania increased its contribution to the development of the European organic area from 0.4% in 2000 to 2.92% in 2013, and then reaching 2.77% in 2014.

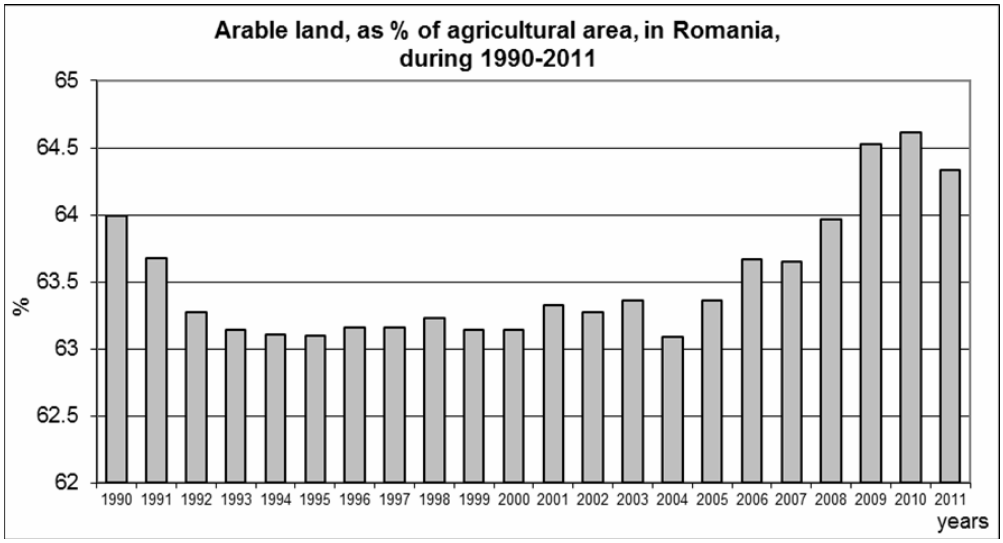

Fig. 4. *The arable land in the agricultural area of Romania, during the period 1990-2011*
Source: http://www.organic-world.net/statistics-data-sources.html?&L=2

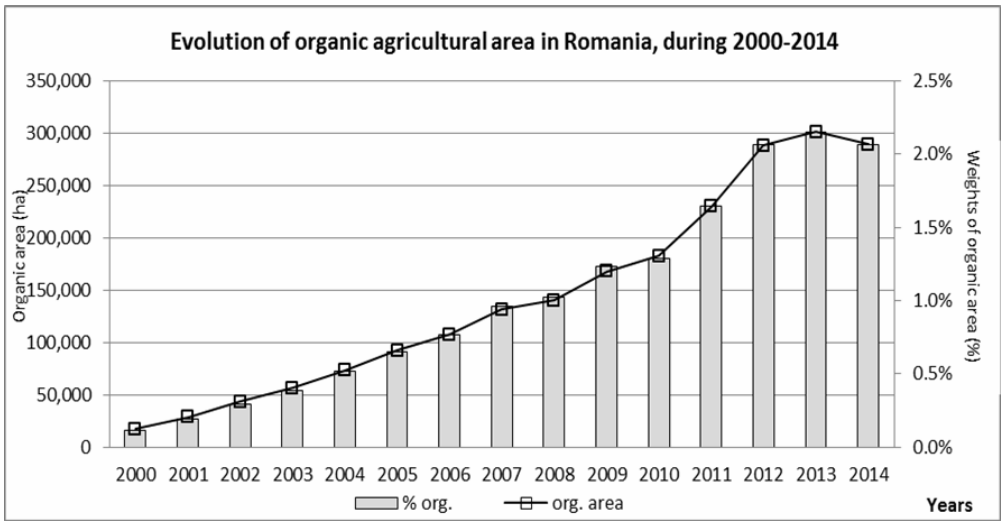

Fig. 5. *Evolution of the areas for organic agriculture and its weights in the Romanian agricultural land, during the period 2000-2014*
Source: http://www.organic-world.net/statistics-data-sources.html?&L=2

3.3. Characteristic aspects of organic farming in Romania, during the period 2011-2012

The most important characteristics of organic farming in Romania which were analysed refer to: the structure of organic agricultural land for crops, the structure of permanent crops and the structure of organic livestock. These aspects were considered for two consecutive years 2011 and 2012, because these two years marked a powerful increase of organic agricultural areas (Figure1 and Figure 2).

The structures of *organic agricultural land for crops*, in 2011 and 2012, are presented in Figure 6. The two charts from Figure 6 show the land structure in the organic area used for cereals, oilseeds, root crops, vegetables and protein crops.

Significant changes were recorded for *cereals* whose land proportion increased from 61% in 2011 to 68% in 2012. Meanwhile land proportion for *oilseeds* decreased from 35% in 2011 to 28% in 2012. The proportions for *dried pulses and protein crops for grain production*, *root crops*, and *vegetables* remained the same.

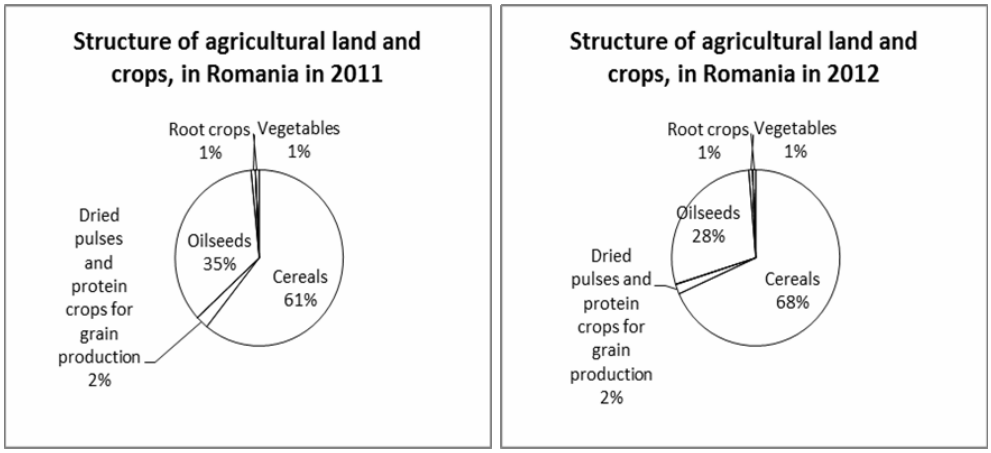

Fig. 6. *Changes in the Romanian structure of organic land and crops in 2012 as compared to 2011*

Source: http://faostat.fao.org/site/678/DesktopDefault.aspx?PageID=678#ancor

The most important organic *cereals* are: barley, grain maize and corn cob mix, oats, rice, rye, triticale, and wheat. The category *of dried pulses and protein crops for grain production* refers to: beans, peas, and protein crops, but in Romania in both years there were only protein crops. The *oilseeds*: linseed (oil flax), oil seeds, rape, sunflower seed, and soybeans – were in 2011, but in 2012 there were only oil seeds. The *root crops* are composed of: potatoes and sugar beet. The organic *vegetables* are: brassicas, vegetables – fruit, leafy, root tuber and bulb, and others.

The category of organic *permanent crops* consists of: *grapes*, *nuts*, *berries*, *and temperate fruits*. The organic *temperate fruits* are: apples, apricots, cherries, peaches and nectarines, pears, plums, and peaches.

The structure of *permanent crops* is presented in Figure 7. It has been easily changed in favour of *grapes* from 21% in 2011 to 23% and for *nuts* from 5% to 8%. Both *berries* and *fruits* have lower weights in 2012, especially *fruits*, from 68% in 2011 to 64% in 2012.

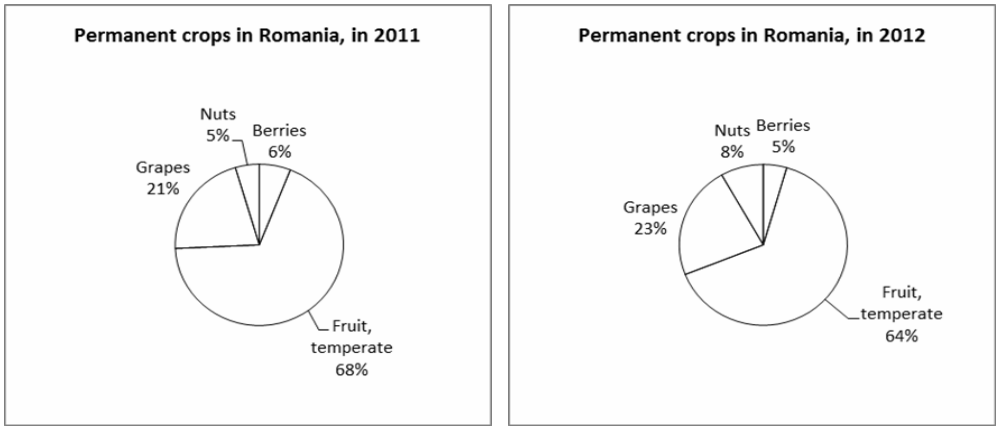

Fig.7. *The structure of Romanian organic permanent crops, in 2011 and 2012*
Source data: http://faostat.fao.org/site/678/DesktopDefault.aspx?PageID=678#ancor

The category of organic livestock is composed of: sheep, poultry, cattle, pigs, and goats. The structure of *organic livestock* is presented in Figure 8.

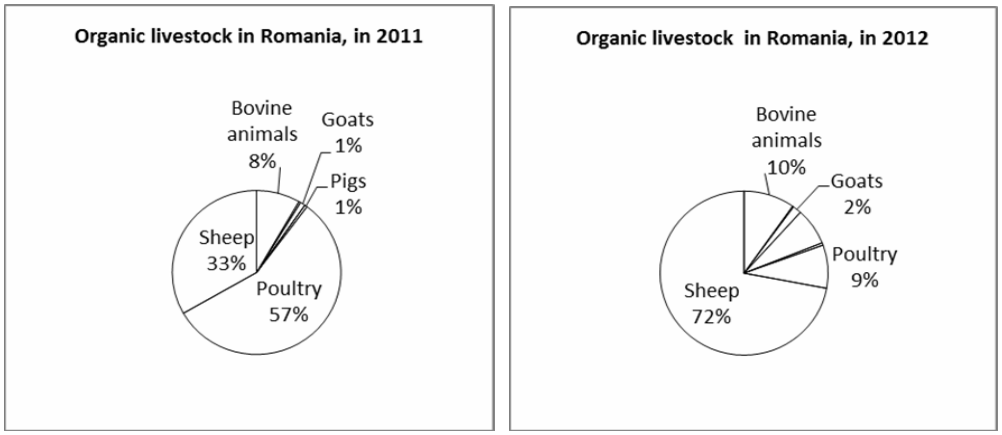

Fig. 8. *Romanian structure of organic livestock, in 2011 and 2012*
Source data: http://faostat.fao.org/site/678/DesktopDefault.aspx?PageID=678#ancor

A significant change was recorded for *sheep*, from 33% in 2011 to more than double, 72% in 2012. Meantime the organic *poultry* livestock dramatically decreased from 57% in 2011 to 9%, in 2012. The other animals: *cattle* and *goats* had low increases of 2% and 1% respectively.

The increase of *sheep* exports to Arab countries determined this significant change in the structure of livestock, in a single year.

4. Conclusions

The emphasized tendencies of organic areas expansion show that the economic crisis was not felt in the bio field of agriculture; on the contrary the crisis offered the opportunity for its development, both in Romania and in European countries.

For presenting the characteristics of organic farming in Romania, the best two years, 2011 and 2012, of the development of organic areas and of their proportion in the agricultural land were chosen. Finding the determinants of this growth could reveal the forces to be exploited in the future for a better use of organic agricultural surfaces.

The European funds which can be accessed for agriculture and rural development represent the main way of development for the organic sector.

Finding new markets for organic products, especially for exports could be a viable manner of development for organic farming. Furthermore the domestic consumption must be stimulated. People consuming organic products must have information about their benefits.

The consumers of food and other organic products not only have an adequate education level allowing them to understand the consequences of an organic way of living, but also a certain level of living in order to afford the organic products.

These are some important directions which should be considered for the development of organic farming in Romania.

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