

# Analysis of the Romanian Conventional and Organic Farming

**Dr. Ion TONCEA**

**Head of Agro-ecological Center of Research, Innovation and Technological  
The National Institute of Research and Development Fundulea**

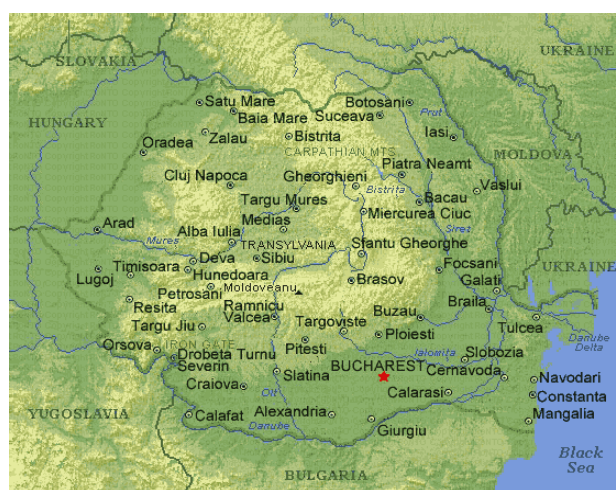
**N. Titulescu 1, 915200 Fundulea/Calarasi – Romania**

**Tel: 00 40 213 150 805, 00 40 724 384 301; Tel/fax: 00 40 242 642 044**

**E-mail: [toncea@ricic.ro](mailto:toncea@ricic.ro), [contact@fnae.ro](mailto:contact@fnae.ro)**

## 1. Introduction

**Romania** is a country in South-Eastern Europe, placed between 20° 15' 44'' and 29° 41' 24'', East longitude and 43° 37' 07'' – 48° 15' 06'', North latitude. Romania's territory has a stretch of seacoast along Black Sea and the Eastern and Southern Carpathian Mountains run through its center. The Carpathians, aside and other, sweeten into hills, towards plains. The area of Romania is distributing equally between mountainous (31%), hills (36%) and lowland (33%) territories. Romania's geographical diversity has led to an accompanying of flora and fauna, as well as of population. The **Danube** River that flows into Black Sea, forming the Danube Delta, the largest delta in Europe (fig. 2), marks a large part of Romania's South border. The Danube is joined by the **Prut** River, which forms a part of the East border, with the Republic of Moldova. A part of Romania's West border, with Hungary is marked by the Tisa River.



## 2. Conventional Farming

### a. *Historical context in the development of the conventional farming.*

The development of the conventional farming in Romania is dependent on the evolution of the political system. In this context, the history of Romanian conventional agriculture started after World War II and has 3 major stages: socialist period (1944 – 1989), the transition period from socialism to democracy (1990 – 2006) and democratic period, after accession in European Union (2007 – up to the present). Therefore, our report is based on information of representative years of these three periods: 1938, 1989 and 2000 – 2005.

- b. *Economic aspects of the current farming activity (relevance in the economy of the country, profile of the farming exploitations, area –i.e. extension- of the exploitations, number of heads of cattle, profile of the productions, etc.);*

According to The National Agency of Cadastre and Real Estate Advertising (table 1), Romania was and is an agriculture country because of the total area, more of the 60% is agriculture area. The land fund, also, has not suffered major changes in time, except arable land, as well as forest vegetation lands and hayfields, which, in socialist period, decreased, respectively increased with about 0.600 million hectares. In the end of 2005, out of the country area of 23,839 million hectares, 14,741 million hectares is represented by the agriculture area, which consist of 9,420 million hectares arable land, 4,879 million ha of pastures and hayfields, as well as 0,224 million hectares of vineyards and 0.218 million hectares of tree plantations. Romania has, also, 6,743 million hectares of forest and 0.841 million hectares of waters area.

Table 1

**Total Land Fund, by Use**  
*(Romania, 1938, 1989 and 2000 - 2005)*

<i>Specification</i>	<i>Thousand hectares</i>							
	<i>1938</i>	<i>1989</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>
<b>Total country area:</b>	23750.0	23839.0	23839.1	23839.1	23839.1	23839.1	23839.1	23839.1
<b>Agricultural area</b>	15005.9	14759.0	14856.8	14852.3	14836.6	14717.4	14711.6	14741.2
<i>Arable</i>	10092.8	9458.3	9381.1	9401.5	9398.5	9414.3	9421.9	9420.2
<i>Pastures</i>	2702.7	3256.9	3441.7	3421.4	3424.0	3355.0	3346.9	3364.0
<i>Hayfields</i>	1714.2	1448.3	1507.1	1510.0	1513.6	1490.4	1498.4	1514.7
<i>Vineyards and Nurseries</i>	249.2	277.5	272.3	267.4	259.6	230.5	223.3	224.1
<i>Orchards and Nurseries</i>	247.0	318.0	254.6	252.0	240.9	227.2	221.1	218.2
<b>Forests and other forest vegetation lands</b>	6112.8	6678.5	6457.3	6605.7	6663.1	6751.7	6779.3	6742.8
<b>Waters and Ponds</b>	839.5	903.9	867.8	868.4	851.7	843.7	839.1	841.4
<b>Other Areas</b>	1791.8	1497.6	1657.2	1512.7	1487.7	1526.3	1509.1	1513.7

*Source: National Agency of Cadastre and Real Estate Advertising*

The most important cultivated plants in Romania (table 2) were and are cereal for grains (61 – 81% of arable area), especially winter wheat and maize for grains, as well as fodder crops (6 – 13%), especially lucerne and clover. In the socialist period, leguminous for grains, oilseed crops, fiber crops, root crops, medicinal and aromatic crops and vegetables were other important crops. At present, unfortunately, only five crops type are important: cereals for grain, oilseed crops, especially sunflower, root crops, especially potatoes, vegetables and fodder crops.

Table 2

**Cultivated Arable Area, by Main Crops**  
(Romania, 1938, 1989 and 2000 - 2005)

<i>Specification</i>	<i>Thousand hectares</i>							
	<i>1938</i>	<i>1989</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>
<b>Total arable Area</b>	<b>10092.8</b>	<b>9846.8</b>	<b>8499.8</b>	<b>8905.0</b>	<b>9001.6</b>	<b>8880.6</b>	<b>8527.8</b>	<b>8467.9</b>
<b>Cereals for Grain:</b>	<b>8193.9</b>	<b>6027.1</b>	<b>5655.2</b>	<b>6294.9</b>	<b>6038.1</b>	<b>5541.8</b>	<b>6265.4</b>	<b>5865.7</b>
<i>Wheat</i>	<i>3023.7</i>	<i>2359.0</i>	<i>1940.2</i>	<i>2546.3</i>	<i>2297.5</i>	<i>1735.2</i>	<i>2295.9</i>	<i>2476.0</i>
<i>Maize grains</i>	<i>3877.8</i>	<i>2733.4</i>	<i>3049.4</i>	<i>2974.0</i>	<i>2894.5</i>	<i>3199.6</i>	<i>3274.1</i>	<i>2628.5</i>
<b>Leguminous crops for grain:</b>	<b>109.4</b>	<b>311.3</b>	<b>41.3</b>	<b>35.6</b>	<b>45.3</b>	<b>46.8</b>	<b>38.6</b>	<b>44.2</b>
<i>Peas</i>	<i>42.5</i>	<i>96.9</i>	<i>13.1</i>	<i>11.7</i>	<i>16.1</i>	<i>18.8</i>	<i>24.5</i>	<i>22.0</i>
<i>Dried beans</i>	<i>38.4</i>	<i>197.5</i>	<i>26.2</i>	<i>21.5</i>	<i>27.0</i>	<i>27.3</i>	<i>13.8</i>	<i>21.8</i>
<b>Oilseed Crops:</b>	<b>126.8</b>	<b>1071.6</b>	<b>1067.4</b>	<b>938.6</b>	<b>1076.4</b>	<b>1377.1</b>	<b>1197.5</b>	<b>1205.5</b>
<i>Sunflower</i>	<i>66.8</i>	<i>433.7</i>	<i>876.8</i>	<i>800.3</i>	<i>906.2</i>	<i>1188.0</i>	<i>977.0</i>	<i>971.0</i>
<i>Rape</i>	<i>0</i>	<i>19.8</i>	<i>68.4</i>	<i>82.4</i>	<i>74.6</i>	<i>17.1</i>	<i>49.7</i>	<i>87.8</i>
<i>Soya beans</i>	<i>0</i>	<i>512.2</i>	<i>117.0</i>	<i>44.8</i>	<i>71.8</i>	<i>128.8</i>	<i>121.3</i>	<i>143.1</i>
<b>Fibre crops:</b>	<b>54.7</b>	<b>123.2</b>	<b>0.9</b>	<b>0.9</b>	<b>1.4</b>	<b>1.6</b>	<b>1.5</b>	<b>2.3</b>
<i>Flax for fibre</i>	<i>13.8</i>	<i>70.1</i>	<i>0.4</i>	<i>0.3</i>	<i>0.4</i>	<i>0.4</i>	<i>0.3</i>	<i>0.2</i>
<i>Hemp for fibre</i>	<i>39.2</i>	<i>46.1</i>	<i>0.5</i>	<i>0.6</i>	<i>1.0</i>	<i>1.2</i>	<i>1.2</i>	<i>2.1</i>
<b>Root crops:</b>	<b>167.7</b>	<b>607.3</b>	<b>366.7</b>	<b>349.4</b>	<b>360.1</b>	<b>363.0</b>	<b>298.1</b>	<b>337.2</b>
<i>Potatoes</i>	<i>135.1</i>	<i>351.4</i>	<i>282.7</i>	<i>276.7</i>	<i>283.2</i>	<i>282.0</i>	<i>265.7</i>	<i>284.9</i>
<i>Sugar beet</i>	<i>32.6</i>	<i>255.9</i>	<i>48.4</i>	<i>39.0</i>	<i>41.6</i>	<i>45.2</i>	<i>20.8</i>	<i>25.2</i>
<b>Medicinal and aromatic crops</b>	<b>-</b>	<b>41.6</b>	<b>4.3</b>	<b>10.0</b>	<b>10.6</b>	<b>12.2</b>	<b>9.1</b>	<b>4.6</b>
<b>Vegetables:</b>	<b>77.8</b>	<b>252.8</b>	<b>281.9</b>	<b>269.9</b>	<b>282.0</b>	<b>286.9</b>	<b>308.2</b>	<b>266.7</b>
<i>Tomatoes</i>	<i>8.4</i>	<i>52.2</i>	<i>47.9</i>	<i>46.1</i>	<i>48.4</i>	<i>49.5</i>	<i>58.5</i>	<i>47.1</i>
<i>Dry onion + garlic</i>	<i>21.1</i>	<i>41.7</i>	<i>51.9</i>	<i>51.8</i>	<i>53.0</i>	<i>51.7</i>	<i>37.0</i>	<i>48.1</i>
<i>Cabbage</i>	<i>23.5</i>	<i>22.6</i>	<i>39.6</i>	<i>39.9</i>	<i>40.5</i>	<i>42.2</i>	<i>42.1</i>	<i>54.8</i>
<b>Fodder crops from arable land:</b>	<b>635.5</b>	<b>1149.2</b>	<b>992.7</b>	<b>937.9</b>	<b>1105.7</b>	<b>1182.5</b>	<b>558.4</b>	<b>820.4</b>
<i>Lucerne</i>	<i>136.3</i>	<i>364.1</i>	<i>323.1</i>	<i>322.3</i>	<i>345.5</i>	<i>367.4</i>	<i>235.4</i>	<i>310.5</i>
<i>Clover</i>	<i>171.3</i>	<i>126.4</i>	<i>137.7</i>	<i>133.0</i>	<i>142.1</i>	<i>142.0</i>	<i>49.7</i>	<i>91.6</i>

Source: Romanian Statistical Yearbooks (1975, 1995, 2006)

The quantity of natural and chemical fertilizers used in agriculture, as well as the irrigated areas' situation in 1989 and between 2000 and 2005, are presented in table 3, in order to characterise agriculture's level of development.

The largest quantity of fertilizers was used in the socialist period: 2.8 t/ ha of natural fertilizers, 78.5 N/ha, 45.1 kg P<sub>2</sub>O<sub>5</sub>/ha and 11.1 kg K<sub>2</sub>O/ha and 3.169 millions hectares were irrigated.

At the end of 2005, the consumption of fertilizers used in agriculture was as follows: 1.1 t/ha of natural fertilizers, 20.3 kg N/ha, 9.4 kg P<sub>2</sub>O<sub>5</sub>/ha, 1.6 kg K<sub>2</sub>O/ha and only 45.7 thousand hectares were irrigated.

Table 3

**Natural and Chemical Fertilizers Used in Agriculture and Irrigated Area**  
(Romania, 1989 and 2000 – 2005)

<i>Specification</i>	<i>Thousand tonnes</i>						
	<i>1989</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>
<b>Natural Fertilizers</b>	<b>41603</b>	<b>15813</b>	<b>15327</b>	<b>15746</b>	<b>17262</b>	<b>17749</b>	<b>16316</b>
<b>Chemical Fertilizers</b>	<b>1158.8</b>	<b>342</b>	<b>369</b>	<b>326</b>	<b>362</b>	<b>380</b>	<b>461</b>
<b>Nitrogenous</b>	<b>665.3</b>	<b>239</b>	<b>268</b>	<b>239</b>	<b>252</b>	<b>270</b>	<b>299</b>
<b>Phosphatic</b>	<b>329.3</b>	<b>88</b>	<b>87</b>	<b>73</b>	<b>95</b>	<b>94</b>	<b>138</b>
<b>Potassic</b>	<b>164.2</b>	<b>15</b>	<b>14</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>24</b>
<b>Irrigated area (thou. ha)</b>	<b>3168.7</b>						<b>45.7</b>

*Source: Romanian Statistical Yearbooks (1975, 1995, 2006)*

As regards animals breeding (table 4), the most important species for Romania's economy were and are: bovine, swine, ovine, poultry and bees. As with crops, the political regime has significantly contributed to the increase and decrease of the animals' number, the largest animals' growth took place in the socialist period and the lowest took place during the transition period, from socialism to democracy and for some species, as swine and poultry before 1944.

Table 4

**Livestock**  
(Romania, 1989 & 2000 - 2006)

<i>Species</i>	<i>Thousand Heads</i>							
	<i>1938</i>	<i>1989</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>
<b>Cattle</b>	<b>3653</b>	<b>6416</b>	<b>2870</b>	<b>2800</b>	<b>2878</b>	<b>2897</b>	<b>2808</b>	<b>2862</b>
<b>Pigs</b>	<b>2761</b>	<b>14351</b>	<b>4797</b>	<b>4447</b>	<b>5058</b>	<b>5145</b>	<b>6495</b>	<b>6622</b>
<b>Sheep</b>	<b>10087</b>	<b>16210</b>	<b>7657</b>	<b>7251</b>	<b>7312</b>	<b>7447</b>	<b>7425</b>	<b>7611</b>
<b>Goats</b>	<b>364</b>	<b>1078</b>	<b>538</b>	<b>525</b>	<b>633</b>	<b>678</b>	<b>661</b>	<b>687</b>
<b>Horses</b>	<b>-</b>	<b>702</b>	<b>865</b>	<b>860</b>	<b>879</b>	<b>897</b>	<b>840</b>	<b>834</b>
<b>Poultry</b>	<b>27325</b>	<b>127561</b>	<b>70076</b>	<b>71413</b>	<b>77379</b>	<b>76616</b>	<b>87014</b>	<b>86552</b>
<b>Bees<sup>x</sup></b>	<b>-</b>	<b>1418</b>	<b>649</b>	<b>745</b>	<b>781</b>	<b>840</b>	<b>888</b>	<b>888</b>

*x – thousand families*

*Source: Romanian Statistical Yearbooks (1975, 1995, 2006)*

**c. Farmers' Profile (the number of workers, ages, professional profiles, educational level, etc.).**

In order to describe the profile of the Romanian's farmer, the following pieces of information are presented, in the next three tables, regarding the population occupied with the main activities of the national's economy in the year 1989 and between 2000 and 2005 (table 5), the population's structure in the rural areas occupied in 2005, after the professional status and group age (table 6) and the structure of the agriculture's exploitation in 2005 (table 6).

From the table no. 5, it is very clear that in Romania over 30% of the active population is working in agriculture and that the number of agriculturists is decreasing.

Table 5

**Civil Employment, by Main Activity of National Economy**

<i>Activity</i>	<i>% of total population</i>						
	<i>1989</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>
<b>Agriculture, Hunting and Sylviculture</b>	27.5	41.4	40.9	36.2	34.7	32.0	31.9
<b>Fisheries and Pisciculture</b>	-	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
<b>Industry</b>	38.1	23.2	23.5	25.5	24.8	24.9	23.5
<b>Construction</b>	7.0	4.1	4.0	4.4	4.8	5.1	5.5
<b>Services</b>	-	31.2	31.6	33.9	35.7	38.0	39.1

*Source: Romanian Statistical Yearbooks (1995, 2006)*

Also, in agriculture most workers are aged between 25 to 34 years (28.8%), 45 to 54 years (26.9%) and 35 to 44 years (20.9%).

Table 6

**Rural Employment Structure, by Status in Employment and by Age Group, in 2005**

<i>Status in Employment</i>	<i>% of total employments</i>					
	<i>Age Groups</i>					
	<i>15 – 24</i>	<i>25 – 34</i>	<i>35 – 44</i>	<i>45 – 54</i>	<i>55 – 64</i>	<i>over 64 years</i>
<b>Employee</b>	12.8	32.7	29.7	19.9	4.8	0.1
<b>Employer</b>	0.5	22.8	36.4	30.3	8.3	1.8
<b>Self-Employed</b>	3.7	17.2	18.4	20.3	20.7	19.7
<b>Contributing family worker</b>	20.6	25.3	14.0	13.6	15.7	10.8
<b>Worker in an agricultural holding</b>	12.2	28.8	20.1	26.9	11.2	0.8

*Source: Romanian Statistical Yearbook (2006)*

Regarding the profile of agricultural's exploitation (Table 7), the mixed agricultural's exploitation are dominated in Romania (with agricultural areas and animals), followed by the vegetal ones (only with agricultural areas) and the livestock (only with animals), but as size, the individual households are the most numerous, the small size households (about 2.1 ha), followed by the public administration's units, commercial companies with private capital and agricultural companies and associations, which have larger dimensions (376 to 441 ha).

Table 7

**Agricultural Holdings, by Legal Status, in 2005**

Legal Status of Agricultural Holdings	Number of Agricultural Holdings				Average Agricultural area in Use (hectares) per Holding
	Total	Mixed Holdings	Crop Holdings	Livestock Holdings	
Individual agricultural holdings	4237889	3315797	787607	134485	2.1
Units with legal status	18263	2532	15311	420	263.1
<i>Agricultural companies/associations</i>	1630	212	1402	16	455.3
<i>Commercial companies with private majority social capital</i>	4574	917	3408	249	376.2
<i>Commercial companies with state majority social capital</i>	250	38	200	12	240.0
<i>Units of public administration</i>	4818	589	4161	68	441.0
<i>Cooperative Units</i>	108	12	77	19	30.1
<i>Other Types</i>	6883	764	6063	56	22.4

Source: Romanian Statistical Yearbook (2006)

In conclusion, using other information, the Romanian farmer's age is between 25 to 54 year, is a male, has a mixed holding and a medium level of professional training, but not specialized.

- d. The Common Agricultural Policy (CAP) in Europe: current problems and future expectations.

Romania has the ninth largest territory (238,391 km<sup>2</sup>) and seventh largest population (22,303,552) in the EU. With a GDP per capita (PPP) of 10.152 in 2007, Romania is considered to have an upper-middle income economy of central-eastern Europe, the 19<sup>th</sup> largest in Europe by total nominal GDP and the 15<sup>th</sup> purchasing power's parity.

From 2000 onwards, however, the Romanian economy was transformed into one of relative macro-economic stability, characterized by high growth, low unemployment and declining inflation. In 2006, according to the Romanian Statistics Office, GDP growth was recorded at 7.7%, one of the highest rates in Europe. Unemployment in Romania was at 5.0% in September 2006 which is very low compared to other middle-sized or large European countries such as Poland, France, Germany and Spain. Foreign debt is also comparatively low, at 20.3% of GDP. Exports have increased substantially in the past few years, with a 25% year-on-year rise in exports in the first quarter of 2006. Romania's main exports are clothing and textiles, industrial machinery, electrical and electronic equipment, metallurgic products, raw materials, cars, military equipment, software, pharmaceuticals, fine chemicals, and agricultural products (fruits, vegetables, and flowers). Trade is mostly centered on the member states of the European Union,

with Germany and Italy being the country's single largest trading partners. The country, however, maintains a large trade deficit, as it imports 37% more goods than it exports. After a series of privatizations and reforms in the late 1990's and early 2000's, the government intervention in the Romanian economy is somewhat lower than in other European economies. In 2005, the government replaced Romania's progressive tax system with a flat tax of 16% for both personal income and corporate profit, resulting in having one of the lowest fiscal burdens in Europe, a factor which has contributed to the growth of the private sector. The economy is predominantly based on services, which account for 55% of GDP, even though industry and agriculture also have significant contributions, making up 35% and 10% of GDP, respectively. Additionally, 32% of the Romanian population is employed in agriculture and primary production, one of the highest rates in Europe. Since 2000, Romania has attracted increasing amounts of foreign investment, becoming the single largest investment destination in Southeastern and Central Europe. Foreign direct investment was valued at €8.3 billion in 2006. According to a 2006 World Bank report, Romania currently ranks 49th out of 175 economies in the ease of doing business, scoring higher than other countries in the region such as Hungary, Poland and the Czech Republic. Additionally, the same study judged it to be the world's second-fastest economic reformer in 2006. The average gross wage per month in Romania is 1418 lei as of December 2006, equating to €419.38 (US\$ 545.36) based on international exchange rates and \$846.06 based on purchasing power parity.

### 3. Organic Farming

#### 3.1 General Framework;

Ecological Agriculture (similar term to organic agriculture or biological agriculture) is a modern system to cultivate plants, to breed animals and/ or to process agricultural products in order to produce healthy food and clothing, proper to the metabolism of the human body and with full respect for the nature and its laws.

Ecological Agriculture does not use fertilizers and synthesis pesticide, growth stimulating, as well as hormones, antibiotics and intensive systems of animals breeding. Genetically modified organisms and their derivatives are, also, prohibited in organic farming.

The transition from conventional agriculture to the ecological one is made through conforming to the conversion period, which in vegetal production has a term of two years for the annual crops and three years for the perennial crops.

In Romania, the products' control and certification obtained from the ecological agriculture is now assured of **inspection bodies and private certification**. These are approved by the Ministry of Agriculture, Forestry and Rural Development, based on criteria of independence, impartiality and competence by the Commission for

accreditation's of inspection bodies and certification of ecological agriculture's sector, consisted of five persons. The approval by MAFRD for the control bodies is preceded by accreditation in accordance with EN ISO 45011:1998, issued by Romania's Accreditation Association- „RENAR”.

Labeling of organic agricultural products is required. On the applied label of organic products, the following statements are required, specific for farming system: the reference to the ecological production, the logo, the name and the agency's inspection and certification code, which carried out the inspection and issued the certificate for organically product and since 2006, the logo, "ae".

“ae” logo ensures that the product, so labeled, comes from organic farming and is certified by a body control, allowing the consumer's an easy identification of these products on the market. The rules for the use of the logo, "ae" are listed in Annex no.1 to Common Order for amending and supplementing the Annex to the Minister's Order of Agriculture, Forestry and Rural Development no. 317/2006 and the chairman of the National Authority for Consumer Protection Rules no.190/2006 for approving specific Rules regarding the label of organic agricultural products, published in M.O. no. 593 in July, the 11th.

In the context of the adherence to the European Union, organic agriculture in Romania enjoys numerous developments' opportunities and diversification, which certainly will be fully developed.

### **3.2 Economic Aspects of the Organic Production.**

Ecological Agriculture is a dynamic sector in Romania, which since 2000, when it was officially recognized, had an upward trend, both in vegetal and livestock sector. Although the governmental support given to organic farming has been negligible and, especially, inconsistent, the area of cultivated land in organic system (Table 8) increased from 17.438 hectares in 2000 to about 180.000 hectares in the year 2007 and, except for grain cereals which recorded a decrease in the rate of annual growth in 2006, the area cultivated in the organic system with oil plants, pastures and haystacks, vegetables, trees and spontaneous Flora increased continuously. As regards the relationship between species of plants cultivated in organic system, currently, the largest area is occupied by pastures and haystacks (51.200 hectares), spontaneous Flora (38.700 hectares), oil plants (23.872 hectares) and cereal grains (16.310 ha) and the smallest area is occupied by tree plantations (292 ha) and vegetables (720 ha).

This development is, also, recorded in the case of animals' (table 8), the number of dairy cows, sheep and goats are continuously increasing from 2.100 to 9.900 heads, respectively from 1.700 to 86.180 and the hens for eggs was lower in 2006 than in 2005 with 2.700 heads. As regards the relationship between species of animals bred in organic system, the order of importance is that in which they were included in the table: dairy cows, sheep, goats and hens for eggs.

Table 8

**Area and Livestock Evolution in Organic Agriculture  
(Romania, 2000 – 2006)**

<i>Specification</i>	<i>U.M.</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>	<i>2006</i>
<b>1. Total Area:</b>	ha	17438	28800	43850	57200	73800	110300	143000
<i>Cereals for grain</i>	ha	4000	8 000	12000	16000	20500	22100	16310
<i>Pastures and hayfields</i>	ha	9300	14000	20000	24000	31300	42300	51200
<i>Oilseed crops</i>	ha	4000	6300	10000	15600	20100	22614	23872
<i>Vegetables</i>	ha	38	100	700	200	300	440	720
<i>Orchards (cherry, apples etc.)</i>	ha	-	-	50	100	200	332	292
<i>Wild products</i>	ha	50	100	300	400	500	17630	38700
<b>2.Livestock:</b>								
<i>Milking cows</i>	heads	2 100	5 300	6 500	7 200	7 200	8 100	9 900
<i>Sheep and Goats</i>	heads	1 700	3 700	3 000	3 200	3 200	40500	86 180
<i>Adult hens</i>	heads	-	-	-	2 000	2 700	7 000	4 300

Source: M.A.D.R & Certification Bodies

Production and market organic agricultural products from Romania are also constantly growing and are targeted for both domestic consumption and for export. The production of agricultural products and market of the organic vegetables (table 9) are relatively diversified: cereal grains, oil seeds, vegetables, fruits, in particular forest's fruits and preserved fruit and vegetables are intended for the internal market and for export. The only products which are not exported are still vegetables, preserved vegetables and fruits. Compared with the demand for organic vegetable Romania's bid is 20 to 25%, especially raw materials, unprocessed.

Table 9

**Organic Crop Yield and Market  
(Romania, 2000 – 2006)**

<i>Products</i>	<i>Yields/ Market</i>	<i>tonnes</i>						
		<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>	<i>2006</i>
<i>Cereals for grain</i>	<i>Yield</i>	7 200	12 500	16 000	14 400	41 000	55 000	48 441
	<i>Export</i>	-	-	-	-	7 100	11 100	16 500
<i>Oilseed crops</i>	<i>Yield</i>	5 500	7 200	11 000	12 480	37 000	45 600	73 082
	<i>Export</i>	-	-	-	-	9 800	12 100	16 100
<i>Vegetables</i>	<i>Yield</i>	600	4 000	4 000	2 000	3 000	7 200	8 708
<i>Wild products</i>	<i>Yield</i>	200	400	300	320	4 500	16 748	24 692
	<i>Export</i>	-	-	-	-	3 800	14 200	15 400
<i>Other products</i>	<i>Yield</i>	2	300	800	900	1 200	6 350	11 041
<i>Preserves (vegetables, fruits)</i>	<i>Yield</i>	-	-	-	-	35	50	42

Source: M.A.D.R & Certification Bodies

The production and market of organic products and livestock (table 10) are also in continuous development and diversification, are market-oriented, whether internal or

external. So far, among the most sold products are organic honey and cheese, both in the domestic market and export. Given the increasing market of organic food, as a result of opening organic stores and sections of organic products in major supermarkets, it is believe that in the future the production of organic food will be more diversified and will be addressed, especially, to the internal market.

Table 10

**Organic Livestock Yield and Market  
(Romania, 2000 – 2006)**

Products	Yields/ Market	U.M	2000	2001	2002	2003	2004	2005	2006
<b>Cow milk</b>	<b>Yield</b>	<b>HI</b>	<b>58 367</b>	<b>63 885</b>	<b>92 747</b>	<b>92 485</b>	<b>92 868</b>	<b>100 000</b>	<b>112 000</b>
	<b>Export</b>		-	-	-	-	-	-	<b>7 492</b>
<b>Cow cheese</b>	<b>Yield</b>	<b>to</b>	-	<b>121</b>	<b>250</b>	<b>220</b>	<b>253</b>	<b>330</b>	<b>642</b>
	<b>Export</b>		-	-	-	-	<b>52</b>	<b>210</b>	<b>43</b>
<b>Schweitzer</b>	<b>Yield</b>	<b>to</b>	<b>23</b>	<b>23</b>	<b>100</b>	<b>110</b>	<b>116</b>	<b>268</b>	<b>576</b>
	<b>Export</b>		-	-	-	-	<b>61</b>	<b>160</b>	<b>22</b>
<b>Sheep and goats milk</b>	<b>Yield</b>	<b>HI</b>	<b>701</b>	<b>1 740</b>	<b>1 360</b>	<b>1 470</b>	<b>1 800</b>	<b>13 500</b>	<b>15 500</b>
<b>Sheep cheese</b>	<b>Yield</b>	<b>to</b>	<b>18</b>	<b>46</b>	<b>36</b>	<b>45</b>	<b>48</b>	<b>480</b>	<b>520</b>
	<b>Export</b>		-	-	-	<b>38</b>	<b>48</b>	<b>180</b>	<b>141</b>
<b>Honey</b>	<b>Yield</b>	<b>to</b>	<b>10</b>	<b>20</b>	<b>80</b>	<b>110</b>	<b>320</b>	<b>610</b>	<b>1 242</b>
	<b>Export</b>		<b>6</b>	<b>12</b>	<b>52</b>	<b>93</b>	<b>210</b>	<b>509</b>	<b>755</b>

Source: M.A.D.R & Certification Bodies

### 3.3 Workers' Profile.

From the information of the Ministry of Agriculture and Rural Development, show, that at the end of 2007, were registered in 3156 operators of the ecological system, of whom 1961 are breeders of animals, 719 beekeepers, 278 growers of field plant, vegetables and fruit tree, 80 traders and 67 processors.

Whereas previous information and those that follows, show that the worker in organic farming is male, is aged between 35 to 54 years, has a medium level of professional training, but not specialized and manages a mixed farm, a vegetable/ animal/ integrated type, vegetable/ animal + processing type and/ or marketing agricultural's products and organic food.

### 3.4 Relevance of the five productive types: cattle for meat, cattle for milk, cereal, wine, and the breeding of pigs.

The previous tables show that in Romania are more relevant types of agro-environmental products, including 2 – dairy cows and cereals, which are provided in the project. According to the information provided by the National Federation of Ecological Agriculture, there are also other relevant types of organic products covered by the project, like ecological wine and cattle and pigs for meat .

### **3.5 The organic farming consultant: current legislation, professional profile, required educational level, etc.**

An essential condition for the development of organic farming is represented by training actions and promoting the concept of organic farming in order to train the producers' and consumers' awareness of the importance of organic products (quality and health). The producers's actions of awareness, training and promotion the concept of organic farming are made by state organizations, private and non-governmental organizations. Also, organic farming is introduced as a study field in the main institutions of higher education profile.

## **4. Training:**

### **4.1 Current training in general farming.**

The National Agency of Agricultural Consultants (A.N.C.A) is the official responsible institution for training in agriculture in Romania. A.N.C.A. organized 989 training courses in various trades, according to COR, attended by 32,822 participants in the 2007.

Within the National Agency of Agricultural Consultants, continuous training is carried out through the following types of courses:

- ***Qualification trainings to the agricultural producers;***

The thematic content of the professional training included, in addition to specialized modules for specific trade, other modules, as follows:

- *Farm management;*
- *Marketing farm;*
- *Elements of accounting and economic management;*
- *EU and national legislation in the field;*

- ***Organic Farming;***

- *associative forms.*

- **Training courses to agricultural producers;**

The thematic topics included:

- new technological elements of vegetal, animal, husbandry, fisheries fields etc.;
- news legislative domain (M.A.D.R. subsidies)
- U.E. legislation, P.A.C., associative forms, etc.;
- promoting the programs on access to governmental funds and Community's funds;
- the agricultural life annuity ;
- informing farmers in order to fill in the applications for payment area;
- the milk quota;
- the farm management;
- the marketing of agricultural products;
- the code of good agricultural practices;

- the presentation of items regarding the food's security of the population according to EU standards;
- Organic Farming;
- agricultural technologies - the season's works.

- **Training to improve the professional training of consultants in agriculture;**

The Training and Information Center (CPI) - UASVM Bucharest began the training of consultants in agriculture in the Project MAKIS "The Modernization of the Knowledge System and Information in Agriculture ". So far, there were held three series of training, attended by 60 consultants in the Southern area of Romania.

#### **4.2 Specific current training in organic farming.**

The professional training in organic farming activity's is the current activity of the professional associations: BIOTERRA, ARAD and the National Ecological Agriculture, which annually organize at least one training course of organic farmers.

Also, these associations have participated as a partner in training programs of governmental institutions: the Ministry of Agriculture, Ministry of Economy and Commerce and non-governmental organizations.

Among the training courses conducted by organic farmers in Romania, it is mention the following:

**IAIR 2000**, financed by the Foundation for an Open Society, with the purpose of training and giving technical assistance in organic farming for 140 rural entrepreneurs from eight Romanian counties: Satu Mare, Cluj, Sălaj, Maramures, Bacău, Suceava, Olt and Constanța;

**Quality Management and International Packaging** (September, 03rd – 07th 2007), financed by the ITC Geneva and Romanian Ministry of Economy and Commerce;

Preparing the professional training on agricultural production methods designed to protect the environment and to maintain the rural landscape, a project developed in 2007 under the measure 4.1 SAPARD programme, attended by 575 people.

#### **4.3 General overview of the e-Learning in the country.**

In Romania, E-learning methodology is used by several universities, with the exception of Agricultural Universities.

Romania is a country with a very highly rated University system, with a very long tradition in education: first documents attest the existence of an Academy in Bucharest

as early as 300 years ago, and the oldest University that exists today was established in 1864.

During communism and in current times Romania is a very attractive higher education destination for Arab, Albanese, Bulgarian, Chinese and other students, as a proof of value.

Romania's presence in international science Olympics has always been a very powerful one, proving once again that the education system is valuable.

Such a system would not be complete without modern approaches like Computer Based Teaching, Web Based Teaching, Open Distance Learning (ODL), LifeLong Learning , blended learning and eLearning.

In the academic environment, the ODL movement preceded the eLearning movement and adoption, with the first Universities adopting some form of ODL in the late nineties, more exactly around 1998-1999. At that time ODL was facing an identity crisis, since 'low frequency learning' had a blemished reputation from the communist days.

As years passed, the markets fully understood the true potential of ODL for re-schooling and upgrading and updating employees' skills.

The natural next step in the evolution of ODL came along with the higher penetration of ICT and Internet in family homes. Although a very good solution to deliver learning contents to remote and impoverished areas, e-Learning was not quickly adopted in the beginning, mainly due to bandwidth restrictions (or better said, lack thereof).

However, thing progressed very quickly after 2002 and eLearning flourished. Both public (state owned , state run Universities) and private Universities, as well as private companies exponentially developed their eLearning programs as internet penetration grew strongly (in the vicinity of 30% per year) and bandwidth became less and less of a problem.

Currently all major universities offer some form of blended learning programs, in which they use e-Learning as a delivery method, use eLearning methodology for permanent assessment and some legally compulsory face-to-face meetings for final exams , term papers and graduation papers and presentations.

The fields where eLearning is more spread are, of course, related to IT&C, both in academic Masters Programs and in privately run training programs. However, due to an ever increasing dynamic on the labor market, eLearning and blended learning programs are quickly becoming the norm for active persons.

e-Learning programs are also becoming common for teaching history and languages.

Another very important aspect that needs to be mentioned when covering the subject of the current spread of eLearning, is the fact that Romania is a very important and active country in the industry-sponsored learning programs (Microsoft IT Academy and Cisco Netowrking Academy). These are blended or e-Learning programs that allow participants to access industry certifications that open them large numbers of options on

the national and international market. The training is either in blended or in fully eLearning form.

Universities lead the way with roughly 30% of students in higher education programs being enrolled in e-Learning or blended learning programs both as Faculty level (primary Bologna cycle) but mostly in Masters courses (secondary Bologna cycle).

For example, the University of Bucharest has around 30 000 students yearly, out of which 60% are in ODL / eLearning programs. Most Universities have their own Virtual Campuses (be it in-house developed or Moodle implementations), Virtual Libraries , etc.

The government has especially supported eLearning in the past years, by a national funding program for 'Learning Platforms'.

In the field of agriculture, eLearning is less present than ODL. The University of Agronomic Sciences and Veterinarians has their own Department for ODL that covers 2 faculties and 2 Masters Studies Programs. However, we firmly believe that blended learning (e-Learning combined with face to face practical activities) is a very good solution for upgrading the skills of the currently employed workforce.

Currently employed staff in traditional agriculture already has practical experience and first hand contact with the daily problems of agriculture. On the other hand, they could not be easily removed for long periods of time in order to participate in traditional face-to-face training programs. eLearning would be a great solution to deliver the contents regarding the pass to bio-agriculture, and also a good tool for permanent assessment (given the different times of year different cultures are harvested).

As in all programs, some degree of face-to face meetings or seminars should be present, to ensure the quality of the learning process.

#### **4.4 E-learning experiences in the agricultural sector, and especially, in the organic agriculture.**

ECOLEARNING is the first research project that will test the methodology of E-learning training of the organic producers in Romania. Given the necessary facilities (computer + suitable software) and the farmers' opportunities in Romania, it is believed that the target group must be students from agricultural universities, which in the analytical curriculum have organic farming courses, especially farmers enrolled in courses with reduced frequency.

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