

Romania's agriculture: trends and challenges

¹Dacina Crina Petrescu, ²Ruxandra Mălina Petrescu-Mag, and ³Vasile Surd

¹Faculty of Business, Babes-Bolyai University, Cluj-Napoca Romania

²Faculty of Environmental Sciences, Babes-Bolyai University, Cluj-Napoca Romania,

³Faculty of Geography, Babes-Bolyai University, Cluj-Napoca Romania. Corresponding author: R. M. Petrescu-Mag, pmalina2000@yahoo.com

Abstract. The present paper reviews Romania's agriculture in terms of trends and challenges. The general factors with influence on the Agriculture, a historical of the agrarian reforms, the enlargement process and its consequences for the agriculture of the Central and Eastern European Countries, some comparative results between the negotiations of Romania and other Central and Eastern European Countries, and other actual problems and solutions are discussed.

Key Words: Romania, agriculture, trends, challenges, solutions.

General factors with influence on the agriculture. Romania is situated in the south-eastern part of the Central Europe inside and outside of the Carpathians Arch, on the Danube lower course (1075 km) and has exit to the Black Sea. Romania's relief is diverse and proportionally distributed: mountains account for 31% of the territory (the highest peak is Moldoveanu - 2544 m, in the Carpathians), hills and plateaus occupy 36%, plains and meadows cover 33%. The Danube Delta is the youngest relief unit under permanent formation (with an average height of 0.52 m). The Danube Delta is one of the most magnificent deltas in the world, and in 1991 was declared as both a Natural World Heritage and Ramsar site. The network of Romania's rivers is radial-shaped, with 98% of the rivers springing from the Carpathian Mountains and being collected directly or through tributaries by the Danube. In addition, Romania has around 3,500 lakes, but only 1% of them have an area exceeding 1 km². Romania is endowed with a wide range of natural resources from crude oil to gold to mineral water springs and geothermal water deposits etc.

Romania's climate is a transitional temperate-continental with oceanic influences from the West, Mediterranean ones from the South-West and excessive continental ones from the North-East. Climatic variations are caused by geographical elements, the position of the main mountain ranges, elevation, etc. The average annual temperature varies with latitude, standing at 8°C in the North and 11°C in the South, with 2.6°C in the mountains and 11.7°C in the plains. In winter, the Scandinavian (Arctic) anticyclone frequently affects the country, influencing the climate with the specific features of the sub-polar Scandinavian climate. An absolute minimum temperature of -38.5°C was registered at Bod in Brasov County and an absolute maximum temperature of 44.5°C at Ion Sion in the Baragan Plain. The duration of sun shine has a high value in plain areas (2100 - 2200 hours yearly) and a lower one in mountain areas (1800 hours). Annual precipitation decreases in intensity from west to east, from 600 mm in the Romanian Plain to less than 400 mm in Dobrogea, but can reach 1000-1400 mm in the mountain areas.

During the last decades, severe weather events were more numerous in Romania than in the past: flash floods, hail, intense cloud to ground strokes and many severe wind related events like tornadoes, downbursts, waterspouts and funnel clouds (the majority of these occurred in the south-eastern part of Romania). Climate variability and change, drought, flooding episodes and other extreme climatic events may have significant effects on all economic sectors, but mostly on agriculture, which is the most dependent on the

weather. Every physical, chemical and biological process that determine the growth and development of crops is regulated by specific climatic demands and any deviation from those demands can determine large variability as regards the yields and, implicitly major negative consequences on the food security. In Romania, natural disasters (floods, droughts, desertification tendency etc) have affected agriculture. For instance, in the years with severe droughts, very small yields (below 1000kg/ha) were obtained, with a reduction of 60-70% of the productive potential of the areas, and sometimes the yields were totally damaged (Busuioc & Trusca 2005, p. 167).

The total surface of Romania is 238,391 km², which puts it on the 9th place in EU. Land stock represents the most important natural resource, including the land plots (and the areas covered with water) regardless of their use. The agricultural land represents 62% of the total surface and decreased slowly each year. According to the Romanian Government (2004), arable areas represent 39.2% (63% of the total agricultural), forests 28%, pastures and hayfields 20.5%, vineyards and orchards 2.3%, buildings, roads and railroads 4.5%, waters and ponds 3.7% and other areas 1.8%.

Romania has a population of 21.7 million (2004), occupying the 7th place in EU. Since 1990 (23.2 million inhabitants), Romanian population has decreased by about 1.5 million. This tendency has a direct influence upon the labor force and the negative effects come out stronger if, at the same time, we consider the increasing trend of pensioners in total population. In 2005, agriculture, hunting and forestry (and fishery) involved 12% of the total population, 63% of the rural population, 26% of the active population, 29% of the employed population, 32% of the civil employed population (Voicilas, D. M., 2008, p. 172). The share of agriculture in the labor force decreased to 28,8% in 2008 (INS, 2009, p. 18). In Romania, 46% of the active population lives in the rural area and about 60% of the rural population is employed in agriculture. (Vincze & Kerekes, 2009, p. 75)

Romania is one of the most rural countries in Europe, with its rural area covering 87.1% of the country's territory and including over 45.1% of the total population, with a density of 45 pers/km² (2005, according to NIS, PNDR, 2009, p. 10). The main municipal cities and towns in Romania account for more than half of the total population, 25 of them having over 100 thousands inhabitants each, which represents in total 57.6% of the urban population. The first six largest cities (Bucharest, Iași, Cluj-Napoca, Timișoara, Constanța and Craiova) concentrate over 30% of the urban population. The high share of rural population orients an important part of labor force towards agriculture.

Historical roots: agrarian reforms of 1921, 1945 and the influences of the Soviet model. The four Romanian agrarian reforms of 1848, 1921, 1945 and 1991 had almost the same features: each of the four agrarian reforms was based on the tensions in the agriculture and dominated by the social issues (Udrea 1995), leaving on the second place the economical aspects of the changes. All the land reforms and especially the one of 1921 had as a consequence the reduction of the number and size of the great landed property and the increase in the number and surface of small landed property. The reforms were different from each other in only two nuances (Petrișor 1995). During the first reform, the allotment took into account the peasants' endowment with labor animals, so as to ensure that the landed property received would be entirely tilled (Petrișor 1995). The land reforms of 1848 and 1921 expropriated only a part of the former landlords' estates and did not expropriate their agricultural inventory. In 1945, the reform wiped out the landed gentry and its agricultural inventory. The Law 187 / 23.03.1945 on the agrarian reform had 26 articles and established, among others, that the following will be transferred under the state ownership:

- the land and any kind of agrarian property belonging to the German citizens and to the Romanian citizens, individuals or companies, of German nationality, that had collaborated with the Nazi Germany;
- the land and any kind of agrarian property belonging to the war criminals and to those guilty of the disaster in the country;
- the land and any kind of agrarian property belonging to those that were absent;

- the land belonging to those that in the last seven consecutive years did not cultivate their lands under their own administration, excepting the plots under 10 hectares, etc.

The collectivization policy established by Lenin and Stalin was a compulsory model for the Central and Eastern European states. Initially, the land was transferred from the private property under the state property. After that, a program of socialist structures development was implemented, creating production cooperatives, state farms etc and destroying the private structures (see Table 1).

Table 1

The agricultural situation in several Central and Eastern European countries during the communist period

<i>Area (thousands ha)/ Country</i>	<i>Poland</i>	<i>Romania</i>	<i>Czechoslovakia</i>	<i>Hungary</i>	<i>Bulgaria</i>
Land area, 1987	18 791	15 038	6 778	6 511	6 165
Area of agricultural land of total surface (%)	60	63	53	71	56
Area of arable land in 1987	14 403	9 994	4 755	5 046	3 825
Irrigable area in 1980 (%)		21.2	6	8.3	28.7
Hectares of arable land per worker	2.8	3.2	5.1	4.8	3.9
The weight of agriculture (1)*	18	16	8	20	15
- within the production (average 1981-1985) (%)					
- within the workforce (average 1981-1985) (%)	35	34	18	26	26
- within the investments (average 1981-1985) (%)	28	20	20	19	11
Weight of investments in agriculture (2)					
1975 (%)	15.1	13.5	12.3	16	14.6
1987 (%)	15.9		13.8	16.7	5.8
Weight of active population working in agriculture					
1970 (%)	34.6	49.3	18.5	26.4	35.8
1987 (%)	28.8	28.7	12.2	20.9	20.0

(1) Comparison within the production sector; (2) Comparison within the national economy; Source: Magazine Le courrier des Pays de l'Est ¹ (The Table is composed by data extracted from the statistical information of CAEM member states of 1987 and 1988 and from the Report of the European Economic Commission of 1986-1987 and 1987-1988).

The agricultural collectivism led to two negative consequences than can be found in each Central and Eastern European state, but less in Poland, where the private sector continued to have a high share:

- This policy denied the whole responsibility of the peasant for his work. The system of planned economy excluded the co-operator from the decisional process. The peasant, as well as the factory worker, was carrying on a segmented activity.

- It broke the ancient sacred link between the peasant and his land. This relationship was totally denied and abolished. The peasant became an agricultural worker.

In Romania, in the years preceding 1989, there were three types of agricultural production units: *the state farms*, *the agricultural co-operatives* and *the small landowners*. Starting with the '50, the agriculture was the victim of an intense

industrialization policy. In Romania and Bulgaria, the huge transfer of workforce from agriculture to industry generated a veritable penury of workers in this field.

Briefly, the state of the nation during the forty years of communism can be described as follows: "Romania knew, during four decades in the post-war period, a series of qualitative changes. It was transformed from a predominant agrarian country into a industrial-agrarian country, from a low education level country into a medium education level one, from a nation with a majority of the population pauper and semi-pauper into a social community with a guaranteed minimum subsistence standard" (Bondrea 2000).

The historical, political and economical context of the enlargement process and its consequences for the agriculture of the Central and Eastern European Countries (CEECs)

The pre-accession strategy and instruments. The disintegration of the soviet bloc and the disappearance of the Soviet Union amplified the discussions on the accession to the European Union (EU). According to the Treaty of Rome, there are no geographical boundaries or other restrictions to prevent a country from acceding to the EU and the main condition to become a member state is to share the European values. After the fall of communism, the EU organisms initiated a negotiation process finalized with agreements or commercials commitments, such as those signed in 1991 by Hungary, Poland, Czech Republic, in 1993 by Romania and Bulgaria, in 1995 by Estonia, Latvia, Lithuania, that had as a main objective the creation of free trade areas (Popescu 1999).

The CEECs dispose of altogether around 1/3 of all the arable land of the European Union. It can therefore be stated that the new member countries of the European Union constitute the food base of Europe in the domain of crop production. Animal production has a relatively lower significance than in the countries of Western Europe. This is demonstrated by the low numbers of animals bred. Another feature of agriculture of Central Europe is a relatively high share of population employed in this sector. This confirms the still high significance of agriculture in the national economies of these countries. (Banski 2008, p. 7)

The European Council in Essen in 1994 established the pre-accession strategy in order to prepare CEECs for the progressive integration of the *acquis communautaire* into their national law, to achieve a higher compatibility between the CEECs and the economy, institutions and legal system of the EU. This strategy is based on the following elements: The European Agreements, The White Paper of 1995 and the financial instruments for pre-accession.

Over the past two decades, Romania has been subjected to radical socio-economic upheavals. Agriculture suffered extensive transformations, as the state-owned farms or cooperatives controlled by the central authorities have been supplanted by private property. Transformations in agricultural economy have been significantly influenced both by the pre-accession processes as well as by later developments after obtaining the EU membership.

By signing the Association Agreement to the EU (The Europe Agreement), Romania engaged in the integration process. One step forward was made in June 1995, at Snagov, when the National Strategy for the Preparation of Romania's Accession to the EU was adopted (Dăianu & Vrânceanu 2002). The strategy marked the procedural steps and the actions to be undertaken in the process of alignment to the Community's structures. The main provisions of the Agreement concerning the agricultural products were:

- The two signing parts of the Agreement established that The Community shall abolish at the date of entry into force of the Agreement (01.02.95) the quantitative restrictions on imports of agricultural products originating in Romania.
- Romania committed itself to abolish quantitative restrictions on imports of agricultural products originating in the Community upon entry into force of the

Agreement. This provision, without any details, favored the Community and disadvantaged the Romanian producers.

- Some agricultural products originating in Romania shall benefit, upon the date of entry into force of the Agreement, from the reduction of levies within the limit of Community quotas or from the reduction of customs duties and upon the conditions provided in the Annexes of the Agreement.

- Notwithstanding other provisions of the Agreement, if, given the particular sensitivity of the agricultural markets, imports of products originating in one Party, which are the subject of concessions granted, cause serious disturbance to the markets in the other Party, both Parties shall enter into consultations immediately to find an appropriate solution. Pending such a solution, the Party concerned may take the measures it deems necessary.

- Community and Romania shall examine, product by product and on an orderly and reciprocal basis, the possibilities of granting each other further concessions.

The provisions of the Association Agreement were completed by the White Paper (1995) "Preparation of the Associated Countries of Central and Eastern Europe for Integration into the Internal Market of the Union". The White Paper contained the main measures designed to assist the CEECs to operate under the requirements of the EU' internal market and to monitorize the progress of the CEECs in transposing the *acquis communautaire* (Luțaș, 1999). The White Paper was an instrument of pre-accession and its purpose was to intensify the commercial relations among the candidate states and the EU.

On the 29th of May 1997 Romania ratified the Agreement on accession of Romania to the Central European Free Trade Agreement (CEFTA). The parts were The Czech Republic, the Republic of Hungary, the Republic of Poland, the Slovak Republic and the Republic of Slovenia on the one side and Romania on the other side. Provisions concerning the commerce with agricultural products were included, for instance regarding vegetables, fruits, cereals (Mazilu 2001). Romania accepted the list of agricultural products for which the CEFTA member states apply zero or low custom fees. For the agricultural products under temporary derogation, the process of duty fee elimination expired on the beginning of the year 1999.

Although after the accession to the CEFTA, the Romanian exports increased in some measure, they did not reached the level of the demand of the CEFTA member states. Alarming was the fact that regardless the improvement tendency of Romanian exports, the imports from other CEFTA member states were high. During 1997-1999 the imports of chicken meat from Hungary increased over 20 times, 80% of the imported yogurt and over 57% of non-concentrated milk came from Hungary (Mazilu 2001). During this perion the protection of the agricultural sector signified was very important: "the lack of protection of the agricultural sector, means deliberate participation to the distruction of the Romanian agriculture" (Mazilu 2001). In 1998, the Romanian Ministry of Agriculture and Food took some measure on this direction: the distribution of summer and autumn cupons that summed in 1998 almost 50 billion and increased in 1999-2000; subsidies of 50% of the wheat seeds price and the creation of a wheat found; sustainement of the agricultural producers in buying tractors and other agricultural machinery; granting of a 150 lei/kg gratification for the export of one million tons of maize (grains) of the crop of 1997. During 2000-2006 the EU measures and the structural adjustment instruments for the agricultural sector were included by each candidate country in the "National Plan for Agriculture and Rural Development". The EU assisted the candidate countries through instruments like: PHARE, SAPARD, ISPA programs, EBRD, World Bank loans.

Two key documents in the way to the accession to the EU were the National Strategy of Economic Development of Romania and the National Action Plan. The National Strategy of Mid-Term Economic Development comprised the main directions for the economical consolidation and modernization for the accession to the EU structures. The National Strategy of Mid-Term Economic Development of Romania (Păun 2000) provided the means for stimulating the creation of economical effective and optimal dimension agricultural holdings and ditered the fragmentation of the agricultural property

below a certain limit. In the view of deepening the structural reforms, the consolidation of agricultural holdings and the privatization of companies were emphasized. The Action Plan established precise deadlines for the enforcement of the measures concerning the expansion of the agricultural holdings. During 2001-2004 these areas were supposed to be extended by association, consolidation, land tenancy, sale-purchase. The same Plan established measures for the development of the institutional framework for the utilization of the structural programs of pre-accession. Thus, the creation and development of the institutional structures for the implementation of SAPARD program were included; measures for the transition from the exclusively agricultural policy to the rural development policy during 2000-2004 were stipulated. The accession partnership signed by Romania was the key element of the pre-accession consolidated strategy. It laid down the principles, the objectives and the action priorities gathering within a single framework all the EU support forms. During 2006 a series of measures concerning the agricultural sector (The Government of Romania, 2006) were initiated. The law on the reform of property and justice and adjacent measures were issued. A Government Decision (GD) on the creation and administration of the "Information system for agriculture and forestry" was issued (an integrated system that comprised and administrated all information on the agricultural and forestry land and it was consistent with the general framework and with the land identification system). The PHARE project "Support in development of agricultural land consolidation policies" was launched in 2006. The main objective of this project was to provide technical assistance for strengthening the institutional capacity to deal with land size related constraints and the formulation and implementation of sound agricultural and rural development policies enabling the development of a more competitive sector.

The adoption of the *acquis communautaire* has as objectives both the transposition of the legal EU regulations into the national law and their enforcement before the accession to the EU. Consequently the accession generated costs and benefits before and after the accession moment. The advantages and obstacles that the candidate countries would have to face were often signalized and they were reflected in the referenda of the candidate countries: in 1997, 80% of the population was in favour of the accession in Romania, 49% in Bulgaria, 47% in Hungary (<http://www.eurostat.com>). Among the accession defenders' main motivations there are the generated progress, a better standard of living, while the principal reasons of the accession opponents are the aggravation of the crises, the decreasing of independence (especially economical). Another problem is the long period of sacrifices. For more than ten years the candidate countries endured severe economic reforms that led to the decrease of the living standards for most of the population. The situation is more alarming as the starting point is more tragic than those of Spain or Portugal in 1986. Slovenia, the richest of the new member states, has an annual per capita income of 59% of the EU average annual per capita income, while in Letonia, the poorest new member state, this value of 18%. The average gross national product (GNP) of the candidate countries did not surpass 32% of the community one, which is half of the GNP of Spain and Portugal in 1986, while the assistance amount was lower than the one granted to Spain and Portugal when they acceded to the EEC.

The land reforms launched after 1990. The direct consequences of the reorganization. The accession specificity of the CEECs. The integration of the CEECs had several features different from the previous enlargements because of factors like: the high number of states that acceded at the same time, the low level of economic development and per capita income to the EU average. The total GNP of the newest 10+2 member states is lower than that of one member state – Netherlands, only four of the CEECs have a development level close to those of Greece, Ireland, Spain, Portugal at the moment of their accession: Slovenia is close to Spain (in 1986), Czechia to Greece (in 1981), Hungary and Poland (less) to Portugal (in 1986) (Mocanu & Voicu 2001).

The elimination of the collective and state farms was imposed with the object of reintroducing the individual landed property and reconstructing the private property. Even if this was a common objective of all former communist countries, the way of

achieving it was different from one country to another. Bulgaria, Romania and Albania decided the radical reorganization of the agricultural sector, launching a real "agricultural revolution". The majority of the CEECs were more concerned about the co-operators and about their production structures and developed a gradual reorganization process of the agriculture (Hatos 2002; Simion et al 1998). Regardless of the means to reconstruct the private landed property, the reorganization process was slow in all these countries, partly because of the revendications of the former owners. Two issues had to be cleared up: *Which was the most adequate mean to reconstruct the landed property of the former owners – the restitution of the land or the payment of an equivalent amount of money? Which will be the structure of this sector in the future?* The answers were different from country to country. Romania, Bulgaria and Poland directed to the family farms, while Hungary preserved the structure of state farms. Regarding the first question, Czechia and the Eastern European countries returned completely the land to the former owners, Hungary paid compensations for the land (see Table 2), in Poland most of the landed property remained under private property; in Slovakia and Poland, where 92%, respectively 77% of the agricultural estate were private property (Sima 1996), the emphasis was put on promotion and development of collective farms according to the EU model.

Table 2

The main features of the landed privatization process in CEECs

Source : after Elena Sima (1996), Annex 2, p. 25

<i>Country</i>	<i>Former owners/co-operative members and workers</i>	<i>Maximum dimensional restriction</i>	<i>Land sale-purchase</i>
Bulgaria	- The restitution of the land within the original borders or substitution; - The lease of the land - Recent attempts to make restitutions for the incorrect restitution of the landed property	30 ha in property; unlimited lease	Allowed
Czech Rep. and Slovak Rep.	- The restitution of the land; - Lease rights of the users protected by the law.	No restrictions for the individual property One owner can have nor than 150 ha of land, 250 ha in total for one family	Allowed
Hungary	- The restitution by compensated guarantees; - Taking possession of the land within the collective forms allowed to function.	300 ha individual property	Allowed
Poland	- Most of the land remained under individual property: some discussions aimed the restitution of the land owned by the state.	No restrictions	Allowed
Romania	- The restitution of the land; - The granting of the property over the land.	10 ha/family in ownership; 100 ha/family including the land leased	3 years for restituted land+10 years for allotted land

The main components of the reorganization in the transition countries are, according to some authors:

- The land reform;

- The decollectivization;
- The privatization and reorganization of the state farms.

Consequently, analyzing the reorganization process, we observe the following direct consequences of the reorganization:

- a) *The collapse of the agricultural production was the first consequence of the reorganization.* The CEECs faced a drastic decrease of the agricultural production (from 3% in 1990 to 14% in 1993). These countries were forced to appeal to imports or food aid to cover the fall of the national production.
- b) *The decrease in the jobs number in agriculture (Nancu 2001) was the second consequence of the reorganization.*

The fundamental purpose of the ownership changes was to transform the socialist sector into a modern market economy. The land returned, mainly, to the former owners, which brought about enormous changes in the agrarian structure and high degree of fragmentation of land. The liquidation of the socialist cooperatives and state farms caused in many cases disrepair or complete destruction of farm buildings, infrastructure, equipment, livestock, irrigation systems, etc. Also, the sales market collapsed, which forced many farmers to get directly involved in distribution and sale of agricultural products, which generated a worsening of labor productivity. The small farms produced for their own needs and do not constitute competition for the limited group of the truly commercial farms; thus, they have poor chances to survive in a market competition (Banski 2008, p. 18).

The strengthening of private property represents the basis of structural reforms. The process has been initiated in 1991, by the adoption of Land Law no. 18, followed by Law no. 1/2000 regarding the restoration of property rights on agricultural and forestry land. Law no. 54/1998 regarding the legal procedure for circulation of lands facilitates the functioning of land market. The Emergency Governmental Ordinance no. 102/2001 for the modification and completion of Law no. 1/2000 regarding the restoration of property rights on agricultural and forestry land, and respectively of the Land Law no. 18/1991, was adopted in order to remove the problems in the implementation of the Law no. 1/2000.

Agricultural reform was structured on three pillars: re-organization, re-structuring and privatization. Implementation of the land laws in Romania was difficult and the reform process was very slow, as well as the privatization process of the former state enterprises (in comparison with other CEECs). The state-owned land that remained after having satisfied the restitution claims, falls into two legally distinct categories: public state domain and private state domain. Lands in the public state domain are of special "public interest and use". They cannot be sold or exchanged, but they can be leased out, given in concession etc. Land in the private state domain is the residual land that belongs to the state but is not classified as public domain land. This state owned land could be sold (through privatization), leased out, given in concession, exchanged, and so forth. Parts of this private state land belong to villages, towns, municipalities, and counties, where they are earmarked for local needs and uses. Parts are under the central administration of the State Domain Agency (SDA) and given on concession to private farmers (Voicilas 2008, p. 168).

The economical and political context of the demarches of Romania for the integration in the EU. After 1990, the agricultural sector has had rather a bad image in Romania. Many Romanian farmers carry on a subsistence agriculture and the agricultural landscape is dominated by a huge number of small family farms, that work narrow strips of land and cannot obtain large production. Moreover, an important part of the results of their agricultural activities is for self-consumption. The agricultural market is not completely functional – many basic peasant products can be sold only at a very small price to intermediaries, which often have a monopoly over the local markets. Along with the Law 18/1991 the structure of the agricultural sector evolved. This law was the core of a series of laws that were detached from the tradition of centralized production system and beyond. This law allowed dissolving more than 3200 cooperatives and redistributing 9 million hectares (from which 65% arable land). Five million people have received the

refund (1.8 ha / beneficiary). The decision was based on political, social criteria and legal standards of fairness, and not so much based on economic rationality. Compared with neighboring states, Romanian land law (until the last amendments) was characterized by a number of peculiarities:

- Dissolved the agricultural production cooperatives;
- Assigned ownership of private land from a minimum of 0.5 ha to 10 ha per family;
- Provided for the purchase/sale of land plots, but limited their further concentration to a maximum of 100 hectares per family (Histrache 1995).

The effect of the land reform was particularly negative in the early years: the uncertainty over property titles and land fragmentation (Apetroaie 1995) – average size of new holdings did not exceed 2 hectares – triggered a collapse in production. Additionally, drainage and irrigation systems were misused and the production costs were increased.

The ownership changes in Romania were very deep – the share of agricultural land in private hands increased from 15% in 1989 to 55% in 2002. Privatization processes brought strong fragmentation and differentiation of the agrarian structure. According to the Agricultural Census (2002), two organizational types of farms characterize Romanian agriculture: one comprises 4.5 million farms of the average area of 1.73 hectare, controlling nearly 55% of agricultural land; the other is constituted by agricultural holdings classified as legal entities (farm associations, commercial companies, public administration units and other types of holdings - NGOs, religious estates, cooperative units), in number of 22000 and disposing, on the average, of 274 hectares of agricultural land (Voicilas 2008, p. 169-170). Some spontaneous consolidation has been occurring, as evidenced by the increase in the proportion of relatively large individual farms. At the same time, there are signs of increasing fragmentation. Romania is thus experiencing a certain polarization of farm sizes in the individual small farm sector, as the number of both the smallest and the largest among the generally small family farms grows while the number of mid-sized farms is shrinking. This process is not unique to Romania: similar trends are apparent in other Central and Eastern European countries (Voicilas 2008, p. 171-172). In 2005, according to the National Institute of Statistics (2006), the situation was as presented in Table 3.

Table 3

Farms dimension and agricultural land used
Source: PNDR (2009), p. 19

Share of the total number of farms	80%	19.7%	0.3%
Farm dimension	< 5 ha	5-50 ha	>50 ha
Share of used agricultural land	40%	20%	40%

The small farms lack the capacity to make investments, fertilize the soil, use irrigation systems and apply modern technologies. Consequently, productivity did not increase and profitable market relations are yet to be established. The optimum type of land concentration should be achieved by the sale of small properties and by association.

The overall analysis of the Romanian agriculture show a 10% decrease in the total number of farms between 2002 and 2007. The number of small farms decreased, the large ones increased, the parcels concentrated into bigger farms, mainly of 10–20 ha and 20–50 ha. The introduction of the Single Area Payment Scheme directly caused the concentration of land in larger farms, as direct payments were applied first in March 2008. However, as the examples from the more developed EU countries demonstrate, we can consider that land concentration is a middle- and long-time process. From the perspective of the Romanian agriculture's competitiveness the fact, that between 2002 and 2007 the number of farms with less than 5 ha decreased can be considered as a

positive development. From the social point of view, this situation raises some problems, as subsistence farming ensured everyday existence for many rural residents (Bezemer & Davis 2002, Davis & Cristoiu 2002, Sandu 2003, apud Vincze & Kerekes 2009, p. 76). Concentration can also be observed in cattle-breeding. This concentration accelerated after the introduction of CAP subventions for milk and cattle and also because EU hygienic norms were step by step made compulsory. However, the economic scale of market sale is still very low. This situation leads to the conclusion that non-agricultural jobs have to be created in order to avoid the depopulation of the villages and to stop the extension of unused agricultural areas. During 2002–2007 the extension of non-agricultural employment could not compensate the decrease of agricultural employment. Between 2002–2005, due to the SAPARD programme, an important increase of the number of individual holdings carrying out food processing or agro-tourism activities can be observed. The number of service provider individual holdings tripled, of those producing non-conventional energy and dealing with aquaculture increased with around 2.5 times. The process slowed down in the period 2005–2007 because of the EU norms and standards which raised investment costs, and consequently the own contribution and because of the changes in the conditions for sale (conditions imposed by big commercial chains, competition from low price imports) (Vincze & Kerekes 2009, p. 76).

The restitution and redistribution of the agricultural and forested land started in 1991 and by 2005, 95.6% of the agricultural land and 33% of the forested land was given back to the former owners or to their legal successors (PNDR 2009, p. 19). Nevertheless, the property titles were not properly issued, which generated many legal disputes.

The process of agriculture restructuring has been limited largely to decollectivization and reprivatization of the areas belonging to former agricultural production cooperatives and did not spread on productive capital of the agriculture mechanization units. The lack of correlation in time among the factors of production (land and mechanical tools) has hampered the transition, increasing the social cost of this process. In many cases, the pensioners took advantage of the partial return of land to former owner, who could not or did not want to exploit the land. These led to the main economic consequences (Histrache 1995):

- Private property was divided into small lots, leading to the formation of a large number of non-viable farms, low-yield;
- Because of the power vacuum, of the authority crisis, in many agricultural production co-operatives (APC), the liquidation under the law was applied physically, destroying the livestock buildings, irrigation facilities, etc;
- Between 1991-1992, much of the land remained unused, due to the fact that most of the land belonged to the townspeople and elderly farmers;
- Land fragmentation has negative effects on the use of the irrigation, drainage systems; additionally, current owners do not have modern agricultural inventory or adequate technical knowledge.

These conditions led to the dramatic decrease of agricultural production. This situation differentiates Romania from neighboring countries, which managed to secure their food needs from their own production and even to produce for export. Each land reform brought about a crisis of means of production and financial capital. The reform of 1991 found the former members of the ACP sites completely deprived of means of production, production inputs and financial capital and thus unable to work the land in optimum conditions (Petrișor 1995).

Agricultural policy measures adopted during this period varied in extend and intensity. During 2001-2003, Romania's agricultural policy has attempted to approach rapidly the coordinates of the CAP. A culmination of Romania's preparation for adoption of the Community mechanisms is given by the completion in February 2003, of the Agricultural and Rural Development Strategy for the Accession to the European Union, prepared by the Ministry of Agriculture. This document identified specific issues related to the adoption of the CAP and the necessary adjustments of the national legislation and institutions. The liberalization of agricultural trade between Romania and the EU continued and since January 2003, tariffs on imports of cereals, dairy products, beef and

sheep meat from the EU were eliminated or reduced. Also, for certain agricultural products, Romania and the EU agreed to eliminate export subsidies. Since October 1, 2002 Romania opened the accession negotiations with the Chapter 7 "Agriculture", which was closed, as proposed, in 2004.

Briefly, the main cost generating elements are (IER 2004)

- CAP implementation budgetary costs (i.e. quality certification, sanitary and phytosanitary control, common market organization)
- Institutional creation costs (i.e. National Agency for Food Safety, Agricultural Accounting Information Network)
- Costs related to the adoption and implementation of the quality standards of the agricultural and processed products, of the sanitary and phytosanitary norms, of the quality certification systems etc.

The total costs for the development of the institutional framework for the period 2004-2007, including those for the improvement of the quality standards of the products and for the compliance of the sanitary and phytosanitary norms, were around 5.4 million euro.

The main benefits from the accession to the EU (Coșea 2004) concern:

- A stable political and economic climate, boosting sustainable development;
- Trade development, an important stimulus for the national economy and employment;
- Opportunity to participate in decision-making processes regarding the future of Romania;
- Financial support from the Community budget of agricultural policy;
- Creation and development of market mechanisms: the establishment of similar institutions to those in the EU and increased role of professional associations will play a major role in the functioning and organization of the market, thus leading to benefits for both producers and consumers;
- Development of rural areas; great opportunity for Economic and Monetary Union (EMU) implementation;
- Benefits derived from the free movement of agricultural products and the EU price guarantee mechanism: Romanian products must meet quality standards, sanitary and phytosanitary measures, as only EU accredited units are allowed to sell products on the EU market.

Country Reports and Monitoring Reports. Negotiations on Chapter 7 were opened in October 2002 for animal and plant health sectors and the rest of the sectors in December 2002. The *Acquis communautaire* on agriculture is structured on four main issues: horizontal issues, common market organizations, rural development and forestry, veterinary and phytosanitary sector. The horizontal measures are those actions, laws and financial instruments that are applicable to the whole agricultural sector irrespective of the nature of the product concerned; they contained the legislation on EAGGF (European Agriculture Guarantee and Guidance Fund), today called European Agricultural Fund for Rural Development (EAFRD).

Starting with Agenda 2000, the European Commission evaluated yearly the fulfillment of the accession criteria, including the agricultural policy of the candidate countries, among which Romania was included.

In the 2000 Report, The Commission found that the slow progress of the macrostabilization process and the low speed of the reorganization and privatization did not create a supportive environment for the modernization and sustainable development of the agriculture and for the diversification of the rural economic environment. The Commission held that policies would be necessary to develop market infrastructure, to ensure market transparency and information on prices and to strengthen the private households with larger land through land lease and sale. With respect to the horizontal measures, progress in application of rural development was slow, as in 2000, a coherent and comprehensive framework for the implementation of SAPARD (Special accession programme for agriculture and rural development) had not been created yet.

The **Reports for 2001 and 2002** registered the significant progress accomplished by Romania in the adoption and implementation of the *acquis*

communautaire. The 2002 Report highlighted the facts that the policy for state support of the agriculture should have been oriented towards the market and that the rural development and the adequate human resource allocation between the central and local level were very important. Also, it drew attention to the need to strengthen administrative capacity to implement the *acquis* in the veterinary and phytosanitary sectors and to accelerate the structural reform. The most difficult negotiation points were viticulture and implementation of EU sanitary-veterinary rules for meat and milk products and processing units. Romania obtained a transitional period of 4 years for wine-growing inventory, of 8 years to remove prohibited hybrid wine varieties under the EU wine *acquis* and a period of up to 3 years for veterinary and phytosanitary aspects.

In 2002, agriculture's contribution to gross value added was 12.9%. Percentage of population employed in agriculture was still very high, which had negative consequences for farm productivity and rural income level. Most of the rural population depends on income derived from subsistence or semi-subsistence agriculture.

In 2003, the overall trade in agricultural products between Romania and the EU has increased, because of the increase of both the Romanian exports to the EU and the Romanian imports from EU. The result was that the Romania's commercial deficit in the favor of the Community reached 217 million Euro (which is a lower value than the 246 million of 2002). The EU imports were again dominated by livestock, vegetables and oilseeds. Meat, cereals, edible preparations and tobacco were the main goods exported by the EU. The **2003 Country Report** concluded that Romania made further progress in transposing the *acquis* and in restructuring the agricultural sector, although the farm structure remained largely unfavorable. Most of the agricultural *acquis* had been transposed, but the limited managerial capacity made its implementation difficult. Major efforts were still required to achieve full compliance to the EU requirements on food safety and consumer protection, by accession date. Romania had to focus further efforts on strengthening administrative capacity to implement and enforce the *acquis*, in particular in the veterinary and phytosanitary fields, and on accelerating the structural reform of agriculture and agri-food sectors. Negotiations on this chapter continued.

The **2004 Country Report** highlighted that the Romania's agricultural sector was still significant in terms of the agricultural area owned, of the contribution to the GDP and, especially, of the percentage of the population working in the sector. Two of the most difficult and lasting reform, land restitution and privatization of state farms, had been almost completed. The problems of labor excess and of the fragmentation of agricultural area were dealt only with accredited SAPARD measures and no domestic support measures were introduced. The use of SAPARD program registered significant progress, but the delay in the implementation of the program was alarming and Romania was risking losing by the end of 2004 the funds allocated in 2000. The personnel involved in the program should have been increased. Overall, Romania made significant progress in the transposition of the legislation and in the strengthening of its own administrative capacity. Concerning the market mechanisms, a development of administrative structures with all the structures involved was required. On the 4th of June 2004 Romania closed the negotiations on Chapter 7 – Agriculture.

Monitoring Report 2005 presented the results of the assessment made by the Commission on Romania's preparations for the accession; the report assessed the situation until the end of September 2005. The negative aspects pointed out in the Report referred to:

- There were blockages on the establishment of the National Agency for Payments;
- Romania was asked to intensify the information campaigns for farmers on the functioning of the Community institutional system, and beyond
- During the last six months of the reporting period, Romania hurried the preparations for the creation of the Integrated Administration and Control System (IACS). However, the implementation of the existing Community-wide norm in this area was required. It was estimated that that IACS would not be operational upon accession.
- The timing for the establishment of the Land Parcel Identification System (LPIS) had expired.

Therefore, most of the problems and delays were those related to: the payment agencies, the integrated administration and control system, the sanitary-veterinary system, the control measures on transmission of contagious diseases in animals, the guarantee of veterinary public health, the animal identification, the creation of Border inspection jobs. The report highlighted the fact that Romanian agriculture was unable to cope with the competitive environment in the EU, that there were many subsistence farms and too many people were involved in agriculture. European business environment was concerned about food safety standards and the legislation.

Several of the positive aspects mentioned in the Report were:

- There has been progress in the implementation of EU legislation regarding the agricultural products trade mechanisms.
- The legal Framework for the Farm Accountancy Data Network was adopted in November 2004.
- The creation in March 2005 of the department responsible for granting – within the Community norm – the state-aid, although was not operational at the reporting moment.
- Romania completed the transposition of the *acquis* in the field of animal identification and registration and of their movements.

In September **2006** the European Commission of the European Communities adopted its last **Monitoring Report** on Bulgaria's and Romania's accession preparation. It was mentioned (www.infoeuropa.ro) that, regarding the Agencies for Payments and the Integrated Administration and Control System, progress was made, but Romania was not completely prepared to manage and distribute the majority of EU agricultural funds. In order to become operational, the Agencies had to hire additional staff, acquire appropriate IT equipment and establish internal control and inspection structures. There was a real risk that IACS would not operate in Romania on the accession moment. Concerning the food safety, the following observations were made: the deadlines for the upgrading and the construction of the collection units, scheduled for the end of November 2006, were very close, in relation with the time required to obtain the Romanian veterinary authorities approval and the notification to the Commission. Restrictions on the use of certain animal by-products would be imposed if, before accession, Romania would not deploy throughout the country an animal waste and animal by-products collection and treatment system and would not complete the modernization of slaughterhouses units (because swine fever was present in Romania, it was not allowed to export to the EU pigs, pork and some pork products, and the ban was to be enforced until the eradication of the disease).

Comparative results between the negotiations of Romania and other Central and Eastern European countries. Accession negotiations of the 2004 ten members were concluded in late 2002. Transition periods were accompanied by conditions of application, preventing new states to use them for gaining competitive advantages due to temporary non application of the *acquis communautaire*. Some of the transitional period granted to the ten Member States were (http://www.infoeuropa.ro/iweb/imgupload/10+2_intrebari_despre_agricultura_si_dezvoltare_rurala.pdf):

- Authorization to derogate from Community rules on the selection of breeds eligible for premium for the dairy cows: Latvia, Lithuania, Poland, until 2006;
- Authorization to maintain certain State aid schemes: Slovakia - 2006, Slovenia - 2009, Malta - 2015;
- Deferment of application of rules concerning the production and marketing of dairy products: Poland - 2006, Malta - 2009;
- Authorization of non-application of structural requirements for sanitary conditions of production and marketing of fresh meat: Hungary, Lithuania, Czech Republic, Slovakia - 2006, Poland - 2007;
- Exemption from the Community requirements for minimum fat content of whole milk: Cyprus, Hungary, Latvia, Lithuania, Malta, Poland -2009 etc.

Romania received 50 transitional period and transitional arrangements, Poland won 48 of the transitional period, Hungary 35, Malta 47. Romania oriented towards rural

development (to solve the problems of over-population in agriculture and of subsistence farming) and to the sectors where was a development potential (animal husbandry, grain, vine, milk, sugar), Poland turned especially to direct payments, and Bulgaria, to products with traditional character, particularly the vegetables. Some of the transition periods and other arrangements for Romania were:

- A transitional period of 3 years for the modernization of milk and meat processing units, with the introduction in the Treaty, of mechanism to update by accession.
- a transition period of 8 years (until 31.12.2014) to eliminate the culture of hybrid vineyards over an area of 30,000 hectares (compared to the 130,000 requested initially) and to replant them with varieties of *Vitis vinifera*; the right to replant was recognized (no other state has achieved this transition period); additional rights-of-planting vines for quality wines with protected designation of origin and table grapes, on 1.5% of the total area planted with vine; the right of adding saccharose to musts for enrichment to raise the alcoholic potential of wines.
- Recognition and protection of designations of origin and geographical for: 13 spirits of plum ("țuică de...", "horincă...", "turt..."), 5 distilled spirits of wine ("vinars de..."). Recognition and protection of the generic name for spirit "Pălincă".
- Romania obtained the right to receive subsidies from the EU for 7 millions ha of arable land (cereals, oilseeds, protein crops, flax for oil, fiber, hemp fiber). For the remaining 2.4 million ha of land (planted with forage crops, potatoes, sugar beet, vegetables, tobacco, melons, herbs, etc) Romania had the right to receive subsidies in the amounts established under the EU *acquis* for each crop.

Romania's Agriculture today: reality and challenges. The way to sustainability.

According to the European Council regulation no. 1290/2005 on the *financing* of the CAP, two European *funds* for agriculture were created: the European Agricultural Guarantee Fund (EAGF, that finances direct payments to farmers and measures to regulate agricultural markets such as intervention and export refunds) and the European Agricultural Fund for Rural Development (EAFRD, that finances the rural development programs of the Member States). The Council Regulation (EC) No 1198/2006 of 27 July 2006 on the European Fisheries Fund established a new European Fisheries Fund (EFF) for the period 2007-13. The new Fund provided financial assistance to help implement the latest reform of the common fisheries policy (CFP) and to support the restructuring that has become necessary as the sector had developed. In 2006 the National Strategic Plan for Agriculture and Rural Development for 2007-2013 were prepared. The rural development policy aims at increasing the economic dynamism of Romanian rural area while as maintaining the social dynamism, sustainable agriculture and ensuring the preservation and consolidation of natural resources. The document included a review of the current (2006) status and identified the development priorities for agriculture, forestry and rural development, in the context of a new EU Member State. The strategy for 2007-2013 is structured on 4 activities: 1. Increased competitiveness in agriculture and forestry - provides support for the agriculture policy for the improvement of agriculture companies as follows: the setting up and upgrading of farms, assistance provided to farms entering the market, setting up of producer groups, improvement of primary processing and the marketing of agriculture and forestry products by efficient investment; 2. Improvement of the environment in rural areas - secures the sustainability of the environment and farming land used in areas of concern for the preservation of traditional landscapes; 3. Better life standards in rural areas and diversification of the rural economy – grants support for the agriculture policy and the development of rural areas, by improving conditions for rural life; 4. LEADER - a combination of the previous 3 actions to identify local needs and to develop local development strategies. (romnc4)

During 2007-2009, agriculture benefited from EU subsidies of about 4.7 billion euros. A Romanian producer received in 2007 only 25% of the subsidy granted to other EU farmers, but this amount will grow and reach 60% in 2012 and 100% in 2016.

Romania was penalized in 2008 by the European Commission with almost 14 million euros, as agricultural subsidies from European funds for year 2007 were not paid

on time. Around 1.2 million farmers benefited by EU subsidies. Under European legislation, their pay should have been completed by June 30, 2008. Thus, for the period July 1 to October 15, 2008, the European Commission has calculated the penalty for delay of 8.6 million euros and for the period 16 October 2008 to 31 March 2009, the Commission has added 5.3 million euros in the first debt, which means a total of 13.9 million euros. Penalties were applied in installments (www.newschannel.ro).

During October 2009 – January 2010 the rural development programs were modified and additional funds of 5 billion euro are now available for investments in agriculture, environment protection and broad band infrastructure for rural areas. Romania was assigned with 102 millions euro, from which 36 millions for renewable energy, 22 for water management and 18 for climate change, 14 millions for biodiversity and 12 millions for the reorganization of the dairy sector. The sources of additional budget are: in 2009 (as a consequence of Health check of the CAP and some transfers within CAP) a supplementary budget of 3.9 billion euro was allocated to the member states for rural development and 1 billion euro was provided through the European Economic Recovery Plan (to be spend on broadband in rural areas and any/all of the priorities: climate change, water management, renewable energy, biodiversity, restructuring the dairy sector and innovation linked to any of the above priorities).

A brief statistic review shows the decline of the Romanian agricultural sector during the transition to the market economy. In terms of agricultural policy, the '90s can be characterized as years of transition to market economy with timid reforms, liberalization trends, but also with a system of state intervention in the economy. The share of agriculture in gross value added is significant in Romania (7.5%) compared to EU-27 average of 1.9% (2007); a similar situation is seen in Bulgaria, Lithuania and Poland. High fluctuations from year to year in agricultural production have become chronic and the sector share in total gross value added declined steadily from 24% in 1994 to less than 8% in 2007. Agricultural land price has increased 5 times between 2003-2007 to around 1.000-3.500 euro/ha, but still remains 3 to 7 times lower than the European average. Marketing estimations show a continuing rise in the coming years due to the foreign interests in the land market in Romania (Vlad, 2008)

The *share of agriculture in Gross Domestic Product (GDP)* decreased considerably, as seen in Table 4.

Table 4

The share of agriculture in the GDP during 1989-2008 (%)

Year	1989	1992	1994	1996	1997	1998	1999
The share of agriculture in the GDP	13.7	18.6	20.6	20.1	19.5	15.8	14.8
Year	2000	2001	2002	2005	2006	2007	2008
The share of agriculture in the GDP	11.4	14.6	10.5	8.4	7.8	5.7	6.5

Source: European Commission, Directorate-General for Agriculture, Agricultural Situation in the Candidate Countries. Country Report on Romania, Brussels, July 2002; INS, 2009, p. 43

Normally, this trend was not a drawback in itself, given that, in general, in developing countries agricultural production allows other higher value added sectors (industry and especially services) to develop. But, in Romania, the declining share of agricultural production in GDP was accompanied by a significant increase in the share of *agricultural population* within the active population. Obviously, such a correlation suggests the efficiency decrease of agricultural production. Furthermore, the structure of the agricultural population in Romania is not a premise in favor of an efficient agricultural operation: national agricultural population is aging and, in general, poorly qualified (Popescu 1999).

Table 5

The share of agricultural population within the total active population during 1990-2005

Year	1990	1995	1996	1997	1998	1999	2000	2001	2005
The share of agricultural population within the total active population	28.2	40.3	38.0	39.0	40.0	41.7	42.8	44.4	32.2

Source: European Commission, Directorate-General for Agriculture: Agricultural Situation in the Candidate Countries. Country Report on Romania, Brussels, July 2002; PNDR, 2009, p. 14.

The *agricultural production* in Romania has dropped compared to 1989. Indices of agricultural production for the period 1989-2000 reflect this trend (Table 6).

Table 6

Indices of agricultural production for the period 1989-2000
(selected years) (after Leonte et al 2003)

Indices (percentage)	1989	1992	1996	2000
Agricultural production	100	84.4	99.2	85.7
- crop sector	100	82.5	101.7	89.2
- animal sector	100	88.0	95.0	82.2

The main *crops* cultivated are winter wheat and grain maize, followed by sunflower, potatoes, sugar-beet and soybeans. Vegetables (tomatoes, onions, cabbages, peppers) and fruits (apples, grapes – a variety of high-quality wines are produced and exported) are also largely cultivated. In Romania, the wheat crops represent 23% of the arable surface covered by the field crops, 36% of the cereals and 30% of the total cereal production. The maize crop puts Romania on the 9th place in the world as cultivated surface, the mean production/ha representing 59.6% of worldwide mean production (2004).

In agriculture, the *crop and animal production* represent the main activities with the most important share in total value, while the agricultural services have a minor role (and they were introduced in statistical calculations starting with 1999). In 2008, the value of the agricultural production was distributed like this: vegetal – 67.7%, animal – 31.2%, services – 1% (INS 2009, p. 48). The evolution of production indices shows a large variation from year to year, demonstrating that agriculture is a weak sector, very strongly dependent upon weather, without specific instruments, capacity of development and modern investments. Agriculture and the activities close to agriculture govern the Romanian rural areas and their development. The plant production structure is strongly extensive and is based on crops (about 65% of the arable land). A large part of land (up to one million hectares) was taken out from the agricultural system and became unused land. Some land was destroyed due to the lack of investments and natural degradation, some was unused and abandoned by the owners because of their incapacity of adapting to the market economy, limited financial capacity and outdated technologies (Voicilas 2008, p. 173-175).

In case of cereals, the general characteristic is a large variation of the area cultivated from year to year, which show us a lack of consistency in Romanian agricultural policy. The dynamics of production was very closely connected to the weather changes. One explanation of these results is the lack of irrigation, small quantity of pesticides used in Romanian agriculture and, additionally, lack of investments in mechanization and modern technologies, as well as land fragmentation (Voicilas 2008, p. 173-175).

The average production per inhabitant, for the main crops grown in Romania, is lower than in other CEECs and has negative effects on the commercial balance, the balance of payments and the quality of food and life. The difference between production and consumption is covered by imports, not always at the best quality level. For many years, livestock production has been in a grave and critical situation.

After 1989, the number of animals decreased dramatically for all species and currently, Romania has less animals than many other countries with a smaller area or less natural potential. The state property disappeared almost completely, leaving the private property dominant up to almost 100%. The consequence is that, at present, Romania does not have the capacity to cover internal demand from domestic production and recurs to imports (Voicilas 2008, p. 179). "The decline of the sector can be explained by the following factors:

- the former state enterprises were too big and inefficient;
- weak competitiveness/productivity compared to the imported products due to the high domestic production costs;
- the enterprises were kept in the state portfolio for too many years, the privatization and the transfer of the property to private owners were done too late;
- the lack of financial capacity and inadequate conditions of maintenance for a bigger number of animals, in case of the private owners;
- aggressive policy against the state enterprises (aiming at their destruction) from the side of the former managers, without a concrete strategy, good intentions and plan of restructuring;
- no clear state policy for this sector and lack of interest in its recovery;
- lack of protection against products from abroad (tax reduction for imported products)" (Voicilas 2008, p. 180).

The *non-agricultural activities* in the Romanian rural areas are little developed. A thorough analysis of rural areas shows the following features:

- The dominating are the activities of the primary sector, like exploitation and processing of raw materials.
- The collapse of the industrial activities, services and rural arts. The most important causes are improper organization, lack of interest, lack of initiative and knowledge of trade and free market.
- The Romanian natural potential (history, traditions, customs, landscape) for rural tourism are not used by the entrepreneurs and local authorities. The causes are: weak infrastructure, lack of information, lack of tradition and initiative in this field, limited sources of financing.
- The SME category in rural area was not a priority for the governments. Almost half of the SMEs in rural areas were established in trade sector, 20% in processing and only 0.3% in the primary sector (Ministry of Agriculture 2004). Most of them are the family associations without employees.
- The pre-accession funds from the EU had a small impact on rural areas. Among them, SAPARD funds seem to be the most important, as helping the local communities in their efforts and as being a good "training" to the attracting the EU structural funds (Voicilas 2008, 184).
- The rural economy is mainly agricultural, as the agricultural economy per se accounts for 60.5%, compared to 14.1% in EU. In the Romanian rural area, the non-agricultural economy (SMEs with industrial profile, rural tourism) has a low share; rural tourism, in all its variants, except for certain mountain zones (Bran – Moeciu, Apuseni, Maramureş, Bucovina) and for the Danube Delta, is almost non-existent. (Otiman 2009, p. 116)

Food and agricultural products have traditionally played an important role in Romania's *foreign trade*. These products were particularly important during the early transition period and they have increased in importance in recent years. While before 1989 Romania was a net exporter of agri-food products, after 1990 it became a net importer. For instance, in 2005 the deficit of the balance of trade for the agri-food products was of 1.3 billion euro (PNDR 2009, p. 21). During the last years, the main Romanian food and agricultural products exported were live animals, oilseeds, vegetables, milk and dairy products, honey, fruits, wine, oils, canned fruit and

vegetables, bakery products, and cereals. The major imports were cereals, meat, tobacco, sugar, fruits, citrus, and coffee. The share of processed products in exports slowly increased, but it still remains below the levels achieved by other CEECs. (Voicilas 2008, p. 181-182). It is worth mentioning that more than 60–62% of Romania's food imports are represented by products that could be obtained in our country: meat and meat products (over 31–32% in recent years), cereals and wheat flour (with a maximum share of 20% in 2003, and 8% in 2007), soybean and soybean oil cakes (over 50% of the necessary after the year 2005 when the cultivation of GMO soybean was forbidden; in the period 2001–2004, in soybean and soybean oil cakes the balance was positive), fresh vegetables, fruit and flowers (8–12% each year in the period 2000–2007), sugar, tobacco, hops, etc (Otiman 2009, p. 106-107). The major causes of the deficit and of the structure of the agri-food trade are the lack of performance of the food industry, even within the domestic market, the fluctuations of the crops and their productivity below the real potential.

The *infrastructure* is an important component of the rural development, having great impact on the level of civilization and modernization, on the economic and the social fields. The roads, water supply system and sewerage network represent a major constraint for development of economic activities in rural area. The level of the rural infrastructure is very distant from the urban one and remained mostly in the state of 1989. The density of the public roads in the countryside is low (27.3 km roads for 100 km² of rural territory). At 2003 level, the road network deserved only 3/5 of the rural population and about 25% of the commune's roads could not be used during the bad weather (NSPRD 2006, p. 27). At the level of communes, 60% of roads are made of stone and 25% do not have improved surfaces (Green Book 1998, apud Voicilas 2008, 185). The level of modernization of the houses and farm buildings is poor: in 2004, only 29% of the rural households had access to water supply from public systems or private wells and the situation was much critical when it came to hot water supply system; only 6,4% (1117 km) villages were connected to a sewerage network (NSPRD 2006, p. 27), and only 0.5% had central heating (Voicilas 2008).

The SAPARD Programme had an important contribution to the modernization of the rural infrastructure. The EU funds were allocated especially to roads, sewers and water supply, but they did not cover all the rural needs. The funds for infrastructure from SAPARD were the only one among all measures that had an impact on rural areas, raising high demands and actual applications from the local authorities (Voicilas 2008).

Romanian agriculture uses old and worn out *machines*. Recently, through governmental support, the level of technology in agriculture increased. However, even though the number of tractors, ploughs, cultivators and seeders increased, the effects were not significant.

After 1989, the *irrigation* systems were destroyed and unused. This explains the weak performance in Romanian agriculture, in the case of the crops which depend on irrigation. Unfortunately, the process of rebuilding of the irrigation systems is slow and requires important financial inputs. During the last two decades no investments in the rehabilitation/modernization of the irrigation systems were made; only some annual expences with the maintenance were registered, in the places where the farmers requested it. However, in the last years, irrigation and the increase of area under irrigation was included among the preoccupations of the decision makers in Romanian agriculture.

Fuel consumption, especially diesel oil consumption, increased, even though it is still at a low level, lower than the necessary consumption for the agricultural processes all over the year. Additionally, due to the old infrastructure, it is not efficient.

The *biofuel* market has the potential to change the present structure of the crops. Even if currently the Romanian production of biofuel is low, its potential of growth is very promising and attracts many foreign investors.

The application of *fertilizers* and *pesticides/herbicides* collapsed after 1989, when total volume used decreased by 70% (1999-2004) (Voicilas 2008, p. 182-184). Even if this brings a decrease of productivity, it has also a positive affect, by creating the background for the organic agriculture.

Organic agriculture represents, along with IT and the light and furniture industries, one of the main resources of Romanian exports. Romania has a huge potential in the organic agriculture sector, mainly because of the existence of traditional agricultural systems, extensive in their majority, and the fact that in average the use of chemical fertilizers is 8 to 10 times lower than in EU states, and products for phytosanitary use are only assured up to 20 – 25 % (NSPRD 2007-2013, 2006, p. 22). Unfortunately, the consumption of organic products in Romania is extremely low due to lack of information about the benefits of consumption of organic products and to the higher prices than conventional products. Prices of organic products could be only 10-20 percent higher than those of conventional products, if Romania had more certified organic farms and slaughter-houses. In 2008, Romania had only two certified hen farms and several organic dairy farms, but exported significant amounts of organic wheat, which returned, imported as processed products, at prices 2-3 times higher than the conventional ones. In 2008, Romania exported about 129,000 tones of organic products, worthing 100 million euros, and about 80% of those were raw material. In the same year, the imports of organic products valued 8.10 million, almost double than in 2007, and the most significant were jams, preserves, coffee and sweets. Area cultivated with organic crops in Romania was estimated at 220,000 hectares in 2008, compared to only 190,000 hectares in 2007. Romania is the only EU country which has not included financial support through the National Rural Development Program (PNDR) for the organic sector (<http://www.gazetadeagricultura.info>).

Conclusions and General Solutions. The major factors generating the current crisis of land use efficiency are analyzed below.

The agricultural property is excessively fragmented. The large number of farms are subsistence and semi-subsistence. According to statistics on farm structure in 2007 (Farm Structure Survey 2007) nearly two thirds - 64% - of the 866,700 active Romanian holdings in 2007 produced mainly for own consumption, whereas 35% produced mainly for direct sales. If all the 866,700 Romanian holdings produced for direct sales, then would supply food for 30 million people. Statistics say that the 866700 Romanian farms cultivate an area of only 9.4 million hectares which represents half of the useful agricultural area. This means there is a potential that can provide food for another 30 million people. Only 1.6% of holdings used 50 ha or more, while the EU average holding area is 30 ha. In order to become competitive, the Romanian holdings must be extended (see Table 7).

Table 7
Main facts on Romanian farms (Farm Structure Survey 2007)

<i>Farms in Romania</i>	
Total number	866,700 farms
Share of farms over 50 ha	1.6%
Used agricultural area	9.4 ha
Share of used agricultural area in total available agricultural area	50%
Capacity to supply food on the used agricultural are	30,000,000 people
Capacity to supply food on the total available agricultural area	60,000,000
Production for own consumption (share in total)	64%
Production for direct sales (share in total)	35%

The financial support to agriculture under different forms (fixed subsidy per hectare, vouchers depending on the cultivated area, and allocations per animal head) largely represented a "hidden form" of social protection rather than farm development and farm performance increase modalities. (Otiman 2008, p. 101). External funding is crucial for agriculture because government support will be small in coming years, along with increased pressure on social budgetary spending. Banks have mainly focused on large customers and to a lesser extent on the smaller ones, which should be the main beneficiaries of national programs. This approach is closely related to the risk taking level (Vlad 2008). We observe a general lack of correlation among the main input factors within the same holding (ie land, capital, labor and managerial skill) adversely affect the efficient operation of the land.

The national strategies did not focus CAP objectives as farm modernization, price stability or income to farmers and were not oriented towards the producer. The level of compatibilization and competitiveness of Romanian agriculture on the Common European Agricultural Market or in general on the world market is low. Additionally, the food industry is insufficiently developed to provide an attractive market for agricultural commodities. Rural space lacks an economic and social infrastructure adequate for the diversification of economic activities, for supporting education and health services, for ensuring higher income for the population in this area and for protecting the natural environment. The productivity and yields are low. The share of autarchic (subsistence) economy is high and the share of commercial agriculture is too low, which generated market contraction. The Romanian agricultural market was transformed to high degree into an outlet for imported products. The prices are distorted, the food trade balance lacks equilibrium, with a negative balance of payments and there is a totally imbalanced distribution in the participation of agricultural holdings to the final profit of the agricultural commodity chains (i.e. the farmers have the lowest share of participation to GVA while the traders get the highest share). All these contribute to significant food safety disequilibria (Otiman 2008, p. 97).

The social desertification of the rural area, mainly in the less-favored areas (or mountain areas) reached an alarming level (due to increasing rural-urban, rural-rural and rural-foreign countries migration). Extremely beautiful traditional villages, with a special landscape, with a non-polluted or low polluted environment, are being depopulated and are demographically and physically ageing, being in danger of extinction due to the diminution or end of agricultural, fruit farming, sheep breeding, mining or other activities (Otiman 2009, p. 118-119). The share of agricultural workers within the active population and of old farmers is too high (young farmers under 35 years represent less than 5%) (EUROSTAT 2005). The absorption of agricultural labor force in the off-farm rural economy is low.

Other aspects that require attention and improvement are: precarious infrastructure; deficient land management and technical endowment of the rural territory, localities and houses; strong disequilibria at all levels of agricultural activities; very slow economic growth and great dependency on the weather conditions throughout the year; technological and structural obsolescence of the capital stock; low investments that result in non-significant increase and modernization of fixed assets; low absorption of the European funds (Otiman 2008, p. 97).

Agriculture is an economic activity vital for society, and consequently it is a sector that contributes to maintaining the stability, continuity and economic growth. Therefore, investments in a system of coherent and appropriate solutions that can improve the agricultural sector by generating performance, competitiveness, food security and safety, jobs etc must be made. Some of solutions are:

- Development with priority of animal husbandry and increase in its share in the overall agricultural production, improvement of pastures, tree, vegetable and vine growing, sectors which lag behind a lot.
- Improvement of the cattle breed with support from state with a view to obtaining the meat and milk quotas.

- Stimulation of integration vegetal production with animal one to obtain a substantial production increment meant to assure domestic consumption, and cut in the imports on each product.
- Consolidation of small farms should be encouraged, because owning larger area stimulates is usually associated with a higher standard of living in rural households.
- Commercial farming should be supported and encouraged in Romania. The majority of the Romaniana farms is small and has a limited activity on the market. Their commercial activity is carried on almost exclusively on the local markets or in the form of direct sales from the farm and they have almost no direct relations with large retailing systems. In order to increase profitability and surviving capacity on the national and international agri-food market, these farms need to be integrated into vertical supply chains. Farms that do not become integrated will face two options: to remain subsistence farms, providing only additional income, or to disappear, providing scope for consolidation. Farms that do become integrated will become larger and more commercial, they will adopt improved technologies, stimulated by the challenges of vertical chains (Voicilas 2008, p. 188).
- Increase in the exports of agri-food products, the participation of our country on the foreign agri-food markets, and achieve an equilibrium in the agricultural commercial balance, through measures to support the marketing policies of domestic producers for external markets.
- Food processing should be encouraged because: is an ideal complement to the agricultural activities of the rural population, it can be set up in villages with little effort or investment, increases the income of entrepreneur families, creates local jobs etc. The agro-processing sector can be supported in various ways by the policymakers: facilitating the consolidation of privatized agro-processing industries, promoting and attracting Foreign Direct Investment into the sector, developing policies that encourage domestic investment in small and medium-size processing plants in rural areas (Voicilas 2008, p. 187-188). Investments on commercial companies (SMEs in particular) processing the agricultural raw materials, which results in gross value added from rural agrifood and non-agricultural economy must be made.
- Financial and fiscal support extended to agriculture through multi-annual programs.
- Increase in the subsidy, from own revenues, for priority fields, at a level similar with the other EU states until the convergence with the European subsidy program.
- Banks and non-bank financial institutions do not meet the requirements of the rural population and development. The financial system needs to be upgraded. Additionally, concern should be granted to: the strengthening of legal institutions (which are now unable to adequately enforce existing collateral laws); the developpement of non-bank sources of finance, including reduction of tax constraints on equipment leasing firms; the support of expansion (and regulation) of micro-finance institutions serving rural clients; the support the development of the private sector risk management tools in rural areas. (Voicilas 2008, p. 189)
- Reconsideration of some irrigation systems and their orientation towards the gravitational irrigation system, using the country's hydro-energetic potential; securing the irrigation source up to distribution stations; repairing and functioning of irrigation system.
- Massive investments must be made in the infrastructure that generates rural development and agricultural production increase (irrigation system, farm consolidation), as well as in the technical and technological equipment of the agricultural territory, of the rural area and localities, in the off-farm rural economy, agriculture and overall rural development, as economic growth factors (Otiman 2008, p. 97).
- Halting the decline of forested areas and forestation of lands with low agriculture potential until an optimum forest coverage of the national territory is reached will have multiple beneficial effects upon the ecologic equilibrium, environment protection, landscape improvement, carbon dioxide absorption, agricultural land protection, protection of localities, of communication ways and of dykes, water accumulation in

soil and diminution of wind power, etc. Some of the ways to do this are: the creation of forest protection curtains on agricultural areas from areas exposed to drought, desertification and erosion; the planting of forest protection belts of localities, circulation ways, canals and dikes; the investments in the renaturalization of significant wet and green areas (natural pastures), the development of areas under permanent pastures (pastures and renaturalized hayfields), all these coordinated with the environment and landscape protection actions.

- Stimulation through special economic programs the mountain area, Danube Delta, and other disfavored areas.
- Implementation of a program to monitor the food quality, in accordance with specific norms.
- Exercise of a sanitary-veterinary and phyto-sanitary control in accordance with the regulations set with corresponding authorities from European Union.
- Support for the installation of young farmers in rural areas; investments in rural labour training and professional reconversion.
- Investments in generating new knowledge based upon basic and applied research (Oțiman 2009, p. 113)
- Support of rural space development, ecological production, traditional products.
- Modernization and expansion of land improvement system, agriculture adaptation to climate changes.
- Over the last years, agriculture has acquired a new function – producer of energy raw materials. Thus, the agricultural bioenergy production is a promising solution for agricultural and rural development (Oțiman 2009, p. 120-121)
- Development of alternative fields: organic agriculture, bio-energy crops etc.

References

- Apetroaie, C., 1995 Proprietatea rurală în România: trecut și prezent. In: Simpozionul național XV, Societatea de Istorie și Retrologie Agrară din România, Arad.
- Banski J., 2008 Agriculture of Central Europe in the period of economic transformation, in Contemporary changes of agriculture in east-central Europe, Rural Studies **15**:7-20, Warsaw.
- Bondrea A., 2000 Starea națiunii 2000 România încotro?, Vol.I, Ed. Fundatiei România de mâine, Bucuresti, p. 91.
- Busuioc A., Trusca V., 2005 Climate change Impacts, Vulnerability Assessment and Adaption Measures, in Romania. Romania's Third National Communication on Climate Change under the United Nations Framework Convention on Climate Change, p. 151-182, Ministry of Environment and Water Management, Bucharest.
- Comisia Europeană, 2004 Raportul Periodic asupra progreselor înregistrate de România în vederea aderării la UE, COM(2004) 657 final SEC(2004) 1200 Bruxelles, p. 62-70.
- Comisia Comunităților Europene, 2006 Raport de monitorizare, SEC (2006) 596, {COM (2006) 214 final}, Bruxelles, p. 26-28.
- Commission of the European Communities, Directorate-General for Agriculture, 2002 Agricultural Situation in the Candidate Countries. Country Report on Romania, Brussels.
- Commission of the European Communities, 2006 Communication from the Commission, Monitoring report on the state of preparedness from Eu membership of Bulgaria and Romania, COM (2006), Brussels, www.infoeuropa.com/Monitoring_report_2006_EN.
- Coșea M., 2004 Economia integrării europene, Editura Tribuna Economică, București.
- Dăianu D., Vrâncianu R., 2002 România și Uniunea Europeană, Editura Polirom, Iași.
- Guvernul României, 2006 Raport – sinteză asupra îndeplinirii prevederilor Programului de guvernare în anul 2005 și primul trimestru 2006, 15 mai 2006, p. 53, <http://www.guv.ro/obiective/200606/guvernare2005-012006.pdf>
- Hatos A., 2002 Transformarea structurii agrare a Europei Centrale și Răsăritene în perioada 1989-2000, Aletheia, Oradea, **13**:356-369.
- Histrache D., 1995 Legea fondului funciar și implicațiile sale. In: vol. Simpozionul național

- XV, Societatea de Istorie și Retrologie Agrară din România, Arad, p. 338.
- Institutul European din România (IER), 2004 Evaluarea costurilor și beneficiilor aderării României la UE. In: Studii de Impact II, București, p.66-68.
- Leonte J., Giurcă D., Câmpeanu V., Pietet P., 2003 Politică Agricolă Comună – Consecințe asupra României. Institutul European din România, București.
- Lutas M., 1999 Integrarea economică europeană. Editura Economică, București.
- Martins C., Spendlingwimmer F., 2009 Farm Structure Survey in Romania – 2007, Eurostat, available at http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-SF-09-080/EN/KS-SF-09-080-EN.PDF
- Mazilu D., 2001 Integrarea europeană. Drept comunitar și instituții europene, Editura Lumina Lex, București, p. 32.
- Mocanu O., Voicu A., 2001 Analiză comparativă a studiului negocierilor în vederea aderării la Uniunea Europeană a statelor candidate din Europa Centrală și de Est (coord. N. Idu). Institutul European din România, București, www.ier.ro, p. 7.
- Nancu D., 2001 Tendințe recente în evoluția forței de muncă din mediul rural, In: Revista Geografică, Institutul de Geografie, București, **8**:166-172.
- Oțiman P. I., 2008 Rural development and agriculture: opportunities to attenuate the economic and financial crisis and to resume economic growth. *Agricultural Economics and Rural Development* **5**(3-4):97-128.
- Păun N., 2002 2000 And Enlargement of the European Union. A view from Romania. In: *South-Eastern Europe, the Stability Pact and EU Enlargement*, Cluj-Napoca, p. 121-129.
- Petrișor P., 1995 Trăsăturile comune ale marilor reforme agrare din România. In: vol. Simpozionul național XV, Societatea de Istorie și retrologie Agrară din România, Arad, p. 377.
- Petrescu D. C., 2006 Economia integrării europene, EFES, Cluj-Napoca.
- Popescu G., 1999 Politici agricole. Acorduri europene, Editura Economică, București.
- Sima E., 1996 Referiri ale rolului agriculturii în țările central și est europene. In: *Restructurarea agriculturii și tranziția rurală în România* (coordonator Dinu Gavrilescu). Editura AGRIS, București.
- Simion L., Ungureanu C., Piscureanu C., 1998 Economii în tranziție: Cehoslovacia, Ungaria și Polonia – lungul drum al nopții către zi. *Istoria economiei. Anuar științific studentesc* **1**:43-50.
- Surd V., Mac I., 1986 Modelul energetic al Câmpiei Transilvaniei, in *Studia Universitatis Babeș-Bolyai, s. Geographia*, Cluj-Napoca.
- Udrea T., 1995 Reforma agrară din 1945. Retrospectivă critică în lumina ultimelor schimbări politice. In: vol. Simpozionul național xv, Societatea de Istorie și retrologie Agrară din România, Arad, p.389
- Vlad L., 2008 Agricultura României până în 2013, rev. *Lumea satului*, no. 22, available at <http://www.lumeasatului.ro/1016--agricultura-romaniei-pana-in-2013.html>
- Voicilas D. M., 2008 Romanian agriculture and rural development at the start of integration in the European Union, in *Contemporary changes of agriculture in East-Central Europe. Rural Studies* **15**:165-189, Warsaw.
- Vincze M., Kerekes K., 2009 Impact of cap's pillars on Romanian rural employment, in *ABSTRACT: Applied Studies in Agribusiness and Commerce: 75-80*, Agriinform Publishing House, Budapest, available at http://ageconsearch.umn.edu/bitstream/53572/2/14_Vincze%20Maria_Apstract.pdf
- ***, *Le courrier des Pays de l'Est*, 1989, no. 336, p. 5.
- ***, <http://www.eurostat.com>
- ***, http://europa.eu.int/comm/enlargement/report_2003, 2003 Regular Report on Romania's progress towards accession.
- ***, www.infoeuropa.ro
- ***, http://www.infoeuropa.ro/ieweb/imgupload/10+2_intrebari_despre_agricultura_si_d_ezvoltare_rurala.pdf
- ***, www.mie.ro (Guvernul Românie, Ministerul Integrării Europene, Rezultatele negocierilor la Capitolul 7- Agricultura, p. 3,4)
- ***, http://www.gazetadeagricultura.info/index.php?option=com_content&view=article&i

- d=2133:politici-pentru-cresterea-productivitatii-agriculturii-romanesti&catid=89:editorial&Itemid=107
- ***, www.newschannel.ro
 - ***, <http://www.gazetadeagricultura.info>
 - ***, <http://europa.eu/rapid/pressReleasesAction.do?reference=IP/10/102&format=HTML&aged=0&language=EN&guiLanguage=en>
 - ***, 2009 Agrocultural Statistics, Main Results 2007-2008, Eurostat, http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-ED-09-001/EN/KS-ED-09-001-EN.PDF
 - ***, Central European Free Trade Agreement - Accession of Romania, <http://www.worldtradelaw.net/fta/agreements/ceftaromfta.pdf>
 - ***, Europe Agreement establishing an association between the European Economic Communities and the their Member States, of the one part, and Romania, on the other part, Official Journal of the European Communities, NO L 357/2 of 31.12.94, available at <http://ec.europa.eu/world/agreements/prepareCreateTreatiesWorkspace/treatiesGeneralData.do?step=0&redirect=true&treatyId=742>
 - ***, 2006 National Strategic Plan for Rural Development 2007-2013, draft 20.11.2006, Ministry of Agriculture Forests and Rural Development, Bucharest.
 - ***, Preparation of the Associated Countries of Central and Eastern Europe for Integration into the Internal Market of the Union, White Paper, Commission of the European Communities, Brussels, 03.05.1995, COM(95) I63 final, available at <http://aei.pitt.edu/1120/>
 - ***, 2005 Romania's Third National Communication on Climate Change under the United Nations Framework Convention on Climate Change, Ministry of Environment and Water Management of Romania, available at <http://unfccc.int/resource/docs/natc/romnc3.pdf>.

Received: 30 April 2010. Accepted: 30 July 2010. Published: 30 July 2010.

Authors:

Dacina Crina Petrescu, Babes-Bolyai University, Faculty of Business, Str. Horea nr. 7, 400174, Cluj-Napoca, Romania, crina.petrescu@tbs.ubbcluj.ro ;

Ruxandra Mălina Petrescu-Mag, Faculty of Environmental Sciences, Babes-Bolyai University, Str. Fantanele nr. 30, 400294, Cluj-Napoca, Romania, pmalina2000@yahoo.com ;

Vasile Surd, Faculty of Geography, Babes-Bolyai University, Str. Clinicilor 5-7, 400006, Cluj-Napoca, Romania, vsurd@goeografie.ubbcluj.ro .

How to cite this article:

Petrescu D. C., Petrescu-Mag R. M., Surd V., 2010 Romania's agriculture: trends and challenges. *AAB Bioflux* **2**(2):151-174.

The paper was presented in the programme of: ENLARGEMENT OF THE EUROPEAN UNION AND THE AGRICULTURE OF THE CENTRAL AND EASTERN EUROPEAN COUNTRIES (Gembloux, 9-11 March 2010).