INSTITUTE OF AGRICULTURAL AND FOOD ECONOMICS
NATIONAL RESEARCH INSTITUTE

Farms in Central and Eastern Europe – Today and Tomorrow

no 98.1
Warsaw 2008

MULTI-ANNUAL PROGRAMME 2005-2009

THE ECONOMIC AND SOCIAL CONDITIONS OF THE DEVELOPMENT OF THE POLISH FOOD ECONOMY FOLLOWING POLAND`S ACCESSION TO THE EUROPEAN UNION

Farms in Central and Eastern Europe – Today and Tomorrow

INSTITUTE OF AGRICULTURAL
AND FOOD ECONOMICS
NATIONAL RESEARCH INSTITUTE

Farms in Central and Eastern Europe – Today and Tomorrow

THE ECONOMIC AND SOCIAL CONDITIONS OF THE DEVELOPMENT OF THE POLISH FOOD ECONOMY FOLLOWING POLAND`S ACCESSION TO THE EUROPEAN UNION

Warsaw 2008

Farms in Central and Eastern Europe – Today and Tomorrow

This publication was prepared within the Multi-Annual Programme "The economic and social conditions of development of the Polish food economy following Poland's accession to the European Union"
in topics:
Polish farms in the initial years of EU membership
in tasks:
Economic performance analysis of Polish agriculture;
Economic condition and business activities of various categories of Polish farms;
Adaptation processes in large area farms.
Impact of EU Structural Funds upon the development of rural regions in the initial years of EU membership. A general concept of development support for the period 2007-2013, using Structural and Cohesion Fund resources
in task:
Analysis of implementation progress and impact of the Rural Development Programme (PROW) and Sector-Specific Operating Programme (SOP)

The purpose of this study is the identification of the economic situation of the agriculture and farms in Central and Eastern Europe countries.

English translation by:
dr Witold Czartoryski
Contact Language Services

Redakcja
Tomasz Czekaj
Zofia Mirkowska
Jolanta Sobierajewska

Opracowanie komputerowe
mgr Zofia Mirkowska

Korekta
Joanna Gozdera

Redakcja techniczna
Leszek Ślipski

ISBN 978-83-60798-72-0

Instytut Ekonomiki Rolnictwa i Gospodarki Żywnościowej
− Państwowy Instytut Badawczy
00-950 Warszawa, ul. Świętokrzyska 20, skr. poczt. nr 984
tel.: (0 22) 50 54 444
faks: (0 22) 50 54 636
e-mail: dw@ierigz.waw.pl
http://www.ierigz.waw.pl

CONTENTS

Introduction

Polish agricultural producers needed ca. 13 years to adapt to the conditions resulting from the change in the socio-economic system - from centrally-governed economy to market economy. I mean the period, which started in the second half of 1989 and ended by the end of April 2004. This time was difficult, taking account of the fact that income per 1 full-time employed in an agricultural holding decreased dramatically in that time. In 1989 the income was close to the average level of income in the whole national economy, while in 2003 these reached as little as 40% of this income. State and collective farms lost on economic importance, while the importance of those farms, which were owned by natural persons – in other words, individual farms - grew. But even in the latter group significant changes took place. The so-called income polarisation progressed. It consisted in the growth of the number of very small income farms at the cost of medium-sized farms, but also the number of large farms which obtained excellent production and economic results.

In May 2004 another change in farming conditions occurred, resulting from the fact that Polish farms were covered by the Common Agricultural Policy. 4 years have passed since then, analyses were developed and we know a lot about how our agriculture evolves in these new conditions.

We know that the integration with European Union had not brought a radical improvement of the situation of most Polish small farms. The income of their owners is only a little higher than in the previous period, which neither brings them a satisfactory standard of life, nor allows them to invest in such a way so as to at least recover the used up fixed assets of the farms. Maintaining this status for a longer period of time may lead to a situation, where these farms cease to exist. Only ca. 10% of Polish farms reach now the income higher than the average remuneration in the whole national economy and allows for investing up to the level, which allows for the modernisation and extension of their property. Only these farms, thus, have a chance to survive.

We also know that a big part of those larger and profitable Polish agricultural holdings is competitive towards German, Danish, Swedish and Hungarian farms, i.e. farms in the countries with similar climatic conditions to Poland.

We could even go as far as to formulate a forecast of the condition of Polish agricultural and various groups of agricultural holdings at the turn of the new EU programming period i.e. in 2014, if it were not for the very limited knowledge we have regarding climate change and its impact on agriculture and our limited knowledge of investment costs relating to meeting the cross-compliance standards.

In that situation, we have agreed that the time has come for the confrontation of the results of our research with analogous arrangements of agricultural economists from the countries of central-eastern Europe. We have invited them therefore to take part in the conference organised in Białowieża, entitled: Today and tomorrow of agricultural holdings in the countries of central and eastern Europe. Invitations were sent not only to persons from the new states which joined the European Union (EU-12), but also in Austria and Finland, in order to provide for an opportunity to exchange opinions formed on the grounds of experience which is longer than ours. We have also invited our eastern neighbours to be able to compare their achievements with our own, as well as representatives of Serbia, which applies for the membership in the European Union. In the end, our conference was attended – apart from Polish guests – agricultural economists from Austria, Belarus, Finland, Czech Republic, Latvia, Russia, Romania, Serbia, Slovakia, Slovenia, Ukraine and Hungary.

The following results have been obtained in the confrontation of opinions:

● in all the above countries agriculture undergoes significant transformations which are to a significant extent related to the change of ownership relations and generation change among agricultural producers,

● there are grounds for serious worry about the high share of small and very small farms in agricultural production and employment (in part referring to the size not entirely of the farm, but rather agricultural land); such situation is present not only in Poland, but also in such countries as Bulgaria, Lithuania, Hungary, Slovenia and Russia; the future of those small farms is problematic, since the production in these farms is ineffective.;

● in all countries there is an opinion that good perspectives for the future are displayed by larger farms, whose scale of production is big enough to ensure that agricultural production is effective; in Belarus, in Russia and Ukraine there is a little interest in large and effectively functioning individual farms, and their number gradually decreases. In new Member States (EU-12) on the other hand, the future of agriculture is seen in large farms belonging to natural persons (in Poland, for example, farms sized 16 or more ESU, with average area of 63 ha), in the Czech Republic in farms as large as 100 ha or more;

● the processes of production concentration had different tempo in different former socialist countries; in some these were highly advanced, and this situation was not changed (often very rapid) privatisation, therefore currently the farms are characterised by higher concentration of production than the countries of the former EU-15; Estonian farms serve as a good example here, where the concentration of production is higher than e.g. in Finland;

● economists e.g. from Poland, Hungary, Russia and Ukraine regretted that land markets are scarce, which limits the tempo of farms' area structure transformation; the causes for the phenomenon vary however in different countries, therefore it was difficult to find a universal solution to the issue,
● an attempt was made to unify the terminology, in particular the names of respective types of agricultural holdings; In Poland for example among farms owned by natural persons, there is a group of subsistence farms, which undertake production only to satisfy the needs of the owner's family. Hungarians call these individual farms, which is a term used in Poland in similar meaning as the farm owned by a natural person.
● opinions were exchanged as regards methods of calculating the effectiveness of agricultural production, which is an important factor describing the sustainability pf agricultural holdings; it was particularly stressed not to apply the data envelopment analyses without any reservations, since in specific circumstances it may provide false data concerning the level of a given indicator,
● in Slovakia, there is a three-person team, which undertakes very interesting forecast research over the future of their agriculture, which reminds of similar research conducted in other countries, e.g. in France,
● our colleagues from Serbia and Ukraine could see that the membership in the European Union does not mean that the state needs to give up its own agriculture - it needs to change though to adjust to changing conditions; also our Russian and Belarusian colleagues could confront the processes and phenomena occurring in their countries with the processes and phenomena behind their western borders.

Finally, I would like to stress that the conference in Białowieża showed, that phenomena and processes occurring in Polish agriculture do not differ much from the phenomena and processes in other countries of Central and Eastern Europe. Our agriculture, of course, has its characteristics, but the general direction of further development is consistent with those in other EU-12 States.

I believe that international meetings of that kind should be repeated, if only to discuss the terminology and methods of economic analysis and exchange experience regarding the methodology of forecasting economic phenomena in agriculture. To make sure that we have our domestic food on our tables, we need to find such solutions – and this today – which foster the production of regional and domestic food.

Włodzimierz Dzun, Wojciech Józwiak
Institute of Agricultural and Food Economics – National Research Institute
Warsaw, Poland

Farms in Poland Before and After the EU Accession

The accession of Poland to the European Union (EU) is the effect of the transition of the political and economic system from a centrally planned economy to an open market economy, initiated in our country in the early 1990s. This process exerted a significant impact upon the situation of farms before Poland's accession to the EU.

Structural Change in Agriculture

The Polish agriculture in the period prior to systemic transformation, contrary to the other sectors of the national economy, was based on individual farms privately owned (peasant farms), with a minor role of agricultural co-operatives and state-owned farms. At the beginning of the year 1990 there were about 3.8 million peasant farms, which utilised 76.2% of agricultural land (UAA) and had at their disposal 76.9% of fixed assets. The basic features of the individual holdings was their strong fragmentation and "over-employment". Almost 1.7 million farms had up to 1 ha of UAA, over 1.1 million had 1-5 ha, and only less than 134,000 – 15 ha or more. The individual farms employed about 3.56 million people (85% of the total labour force in agriculture). About 2,200 agricultural co-operatives covered 4% of the total agricultural land and employed approx. 4% of the labour force in agriculture (0.16 million persons), and the figures for the group of about 2,200 state-owned farms were 18.7% and 10% (0.43 million persons) respectively. Because the shares of the private sector in the total labour force in agriculture and in the ownership of arable land were very high, the sector was expected to be the driving factor in the Polish economy. The great potential for growth of the individual holdings in the labour intensive production lines, especially in animal production, was also observed.

The first phase of transition brought, however, a big shock and all farmers were faced with very unstable operating environment. The main objectives of the agricultural policy were to reduce the state intervention and to balance the market as soon as possible by means of rapid decrease of demand. As the particularities and weaknesses of this sector in comparison with the non-agricultural ones had not been taken into account, the priorities of the policy turned out to be too hard to be implemented in agriculture at the beginning of the transition. In consequence, a sudden fall of real producer prices of agri-food products and the subsequent difficulties with their sales were noted which in turn led to liquidity problems. It affected most painfully the market oriented farms, closely linked to the market,

especially heavily indebted ones. Moreover, under the conditions of growing unemployment, one of major problems of the peasant farms consisted in the radical reduction of opportunities to get paid work outside the farm. According to the agricultural census (PSR) of 1996, the number of individual farmers and members of their family households, who lost their jobs in the years 1990-1996 (by the time when the agricultural census was completed) due to partial or total liquidation of the enterprise or reduction of the workforce, accounted for over 600,000, i.e. a fourth of this socio-occupational group. Most of them returned to work on their farms (almost 3/5), which provided them with an honourable refuge in the event of redundancy, and about a fourth started to earn the livelihood from other sources.[1] Therefore, the number of people who worked exclusively on their own farms increased from 3.29 million in 1988 to 3.72 million in 1996. At the time of the fall in demand for agri-food products and the stagnation in the agricultural production, all these circumstances led to a sharp rise in hidden unemployment in agriculture.

Table 1. Basic changes of farms in 1996-2007

Specification	Years			
	1996	2002	2005	2007
Farms in total (‘000)	3066.5	2933.2	2733.4	2579.2
- of which active farms	2763.4	2177.6	2476.4	2391.0
Agricultural land utilised by farms, total (ha’000)	17348.3	16899.3	15906.0	16177.1
- of which utilised by active farms	.	15160.2	15320.3	15848.6
Average farm area (ha of UAA)	5.66	5.76	5.82	6.29
- of which active farms	.	6.96	6.42	6.77
Set-aside and fallow land * (ha’000)	1321.3	2302.0	1028.5	1140.8
People employed in agriculture (AWU’000)	.	2254.8	2291.9	2299.3
- per 100 ha of UAA	.	16.3	16.4	15.8

* in 2007 fallow, set aside area and agricultural land under bad cultivation

Source: Authors’ calculations based on the data from the Agricultural Censuses of 1996 and 2002, as well as representative surveys by the Central Statistical Office (GUS) in 2005: “Użytkowanie gruntów. powierzchnia zasiewów. pogłowie zwierząt oraz charakterystyka gospodarstwa rolnego” [Land use, sown crops area, animal headage and characteristics of agricultural holdings] and 2007: “Charakterystyka gospodarstw rolnych” [Characteristics of agricultural holdings].

The above presented situation has been closely associated with changes in both the number and the structure of agricultural holdings (Table 1). In the pre-accession period the following tendencies were observed in Poland:

- the fall in the total number of farms, in particular the farms practising active agricultural production;
- the reduction of the area of agricultural land utilised by agricultural holdings;
- the growth of the area of fallow and set-aside;

[1] Frenkel I., Rosner A.: *Ludność i wiejski rynek pracy w Polsce* [The rural population and labour market in Poland], in: Klank L., (ed.): ‘Rynki wiejskie: ziemia, kapitał, praca’ [Rural markets: land, capital, labour], IRWiR PAN, Warszawa 2001.

- the growth in the number of farms trying to improve their income situation by means of non-farming business activities;
- the large number of people employed in agriculture.

Poland's accession to the European Union, the inclusion of the agricultural sector in the Common Agricultural Policy (CAP) structures, and above all the introduction of direct payments led to the increase in the area of agricultural land of the farms conducting agricultural production and a "temporary" increase in the number of such farms.

Although, unlike the case of other transition countries, private individual farms were dominant in Poland even at the beginning of the transition, the processes of privatisation of the state-owned farms and decollectivisation of the agricultural co-operatives also took place. Nevertheless, owing to the unfavourable income situation of the farms, the structural development was rather insignificant in the first phase of the transformation. (Table 2).

Table 2. Structure of agricultural land by legal type (%), 1989-2007.

Specification	Years					
	1989	1992	1996	2002	2005	2007
Private sector	80.0	80.3	91.2	94.5	95.8	96.5
- individual (private) farms	76.0	76.4	82.1	87.9	88.1	89.1
- cooperatives (RSP)	4.0	3.6	2.7	1.9	1.7	.
- companies	0.0	0.3	6.4	4.7	6.0	.
Public sector	20.0	19.7	8.8	5.5	4.2	3.5
- state-owned enterprises	18.7	17.7	6.7	5.4	.	.

Source: Authors' own calculations based on: Rocznik Statystyczny Rolnictwa (Yearbook of Agriculture) 1998. GUS. Warszawa 1999; Rocznik Statystyczny Rolnictwa i Obszarów Wiejskich (Yearbook of Agriculture and Rural Areas) 2007. GUS. Warszawa 2007.

An acceleration of the structural change took place in the years 1993-1996 in connection with a certain improvement in the income situation of farms and the abundant supply of cheap agricultural land coming from the state-owned farms, undergoing liquidation since 1992. After 1996 the pace of the process slowed down in connection with the reduced supply of agricultural land. Generally, the private sector in agriculture was significantly expanded and strengthened as a whole, and its share in the utilisation of agricultural land in 2007 was as high as 96.5%. Also the position of individual farms (owned by natural persons) was stronger. Their share in utilisation of agricultural land increased to 89.1%. The fast development of private holdings established on the basis of the fixed assets of the privatised state-owned farms is worth noting.

The structural changes of the agricultural holdings have occurred in recent years as a result of low profitability of the agricultural production, the new operating environment on the agri-food market where the emphasis has shifted to the needs of the consumers and in the conditions of the distribution of land

previously belonging to the state-owned farms and the introduction of the CAP instruments, especially direct payments. In consequence, the big reduction in the number of the subsistence or semi-subsistence farms producing only or mainly for their own consumption (up to 1 ha of UAA) over the years 1990-2007 (by 54%) was recorded. These holdings were either liquidated or they became larger in size and moved to other size categories, mainly to the group of holdings with 1-2 ha of UAA, which total number increased by 138,000, i.e. by 37%, in 1990-2002. The increase in the number of farms in this farm size class resulted also from the numerous purchases of small holdings for recreational purposes and the reduction of the costs of social insurance and taxes levied on real estate properties.[2]

Table 3. Structural changes of agricultural holdings, 1990-2007

Year	Holdings total	including:		Structure of farms with more than 1ha UAA by size category (%)					
	('000)	<1ha UAA	>1ha UAA	1-5	5-10	10-20	20-30	30-50	>50
1990	3834.0	1691.0	2143.0	52.7	29.7		11.6		
1996	3066.5	1019.7	2046.8	50.3	25.5	14.8	2.7	1.0	0.6
2002	2933.2	977.1	1956.1	56.6	21.8	13.6	3.3	1.6	1.0
2005	2733.4	946.7	1786.7	57.6	21.7	13.7	3.6	1.9	1.2
2007	2579.2	771.1	1808.1	57.3	22.1	13.6	3.6	2.1	1.3

Source: Authors' own calculations based on: 'Rolnictwo i Gospodarka Żywnościowa 1986-1990' [Agriculture and Food Economy 1986-1990]. GUS. Warszawa 1992; data from the Agricultural Censuses (PSR) of 1996 and 2002; 'Charakterystyka gospodarstw rolnych w 2005 r.' [Characteristics of agricultural holdings in 2005]. GUS, Warszawa 2006; and 'Charakterystyka gospodarstw rolnych w 2007 r.' [Characteristics of agricultural holdings in 2007]. GUS. Warszawa 2008.

The trend towards the increase in the number of large farms was also noticeable in the analysed period, but the average size threshold at which such an increase takes place has risen steadily. In the first half of the 1990s it was 15 ha and the farms with over 15 ha of UAA were regarded as large and tended to grow in number, in the late 1990s it was 20 ha, and in recent years (after the year 2000) – 30 ha. At the same time, before 2002, the reduction in the number of holdings with 3-10 ha was observed. The pace of the structural change was exceptionally fast in the 1990s and the beginning of the new decade it became slower in consequence of the small supply of agricultural land. The shortage of land resulted from the late stage of distribution of land coming from the liquidated state-owned farms as well as the reluctance of farmers to sell their land or to offer it for long-term lease just before the application of the CAP in Poland and the introduction of direct

[2] If the area of a plot exceeds 1ha UAA, it may be regarded as a farm and its owner may enjoy the privileges, to which the individual farmers are entitled.

payments. Comparing the data for the years 2002, 2005 and 2007, it is quite obvious that the pace of structural development in agriculture was slower after Poland's accession to the EU, especially as a result of the introduction of the simplified system of direct payments. In 2005-2007 the fast fall in the number of farms with 1-2 ha UAA slowed down, the rate of growth in the number of farms with 2-3 ha remained at the same level and the small growth in the number of farms with 5-10 ha was observed.

Table 4. Structural changes of agricultural land by size of UAA, 1990-2007.

Year	UAA* in total (ha'000)	UAA of farms			Structure of farms with over 1 ha by category of UAA (%)					
		Total	<1ha	>1ha	1-5	5-10	10-20	20-30	30-50	>50
1990	18783.8	18719.8	850.0	17870.0	17.3	25.7		57.0		
1996	18504.4	17348.3	380.0	16968.3	16.8	21.9	24.5	7.8	4.3	24.6
2002	18462.0	16899.3	396.5	16502.8	16.8	18.4	22.2	9.3	7.2	26.2
2005	18418.0	15906.0	378.4	15518.6	16.3	17.8	21.7	10.0	8.4	25.8
2007	18332.4	16177.1	330.8	15846.3	15.8	17.9	21.2	9.9	8.8	25.7

* excluding built-up agricultural land, ponds and ditches, which since 2002 have been included in the utilised agricultural area and in 2002 covered 0.70 million ha while in 2005 - 0.73 million hectares.
Source: as in Table 3.

As the main structural changes of agricultural holdings occurred above all in the conditions of the distribution of land coming from the liquidated state-owned farms (3.5 million ha UAA) and the agricultural co-operatives both liquidated and undergoing restructuring (approx. 450,000 ha), the structural development was not as favourable as expected (Table 4). Above all, the area of UAA of the holdings with over 50 ha decreased, although their share in the total UAA stayed at the same level. A slight reduction of UAA was recorded in the group of holdings with 1-5 ha and as a result their share in the total UAA only slightly decreased (from 17.3% to 15.8%). The share of farms belonging to the size categories of 5-10 ha and 10-20 ha decreased more. The increase in both the area of the holdings with 20-50 ha and their share in the total UAA was a very positive tendency. But their share is still very small and amounts to 18.7%.

The above mentioned conditions obviously had their significant impact upon the production capacity and economic situation of the farms. The growth of agricultural production slowed down due to the declining demand for agri-food products and the reduction of current inputs. In the early 1990s the sharp fall in yields and crops (with the exception of sugar beet) and the reduction in the area sown to crops were recorded. The situation greatly improved in the next few years, but the return to the level of the late 1980s was not possible until the year 2000. The potato yields are still low and the crops almost 2.5 times smaller than in the late 1980s owing to the reduction of the area under potatoes.

The significant growth of the sown area was recorded after the accession to the EU, in connection with the increase in profitability of agricultural production, and above all as a result of the introduction of direct payments.

The tendency to decline the number of livestock units (especially sheep and cows) has been observed since the early 1990s. The number in the animal equivalent for livestock went down from 12.2 million in 1990 to 7.2 million in 2004, that is approx. by 41%, and only after the EU accession a small growth was noted. Poultry production is the exception. After the stagnation in the early 1990s, the production of poultry meat increased over 3 times, whereas the production of eggs was 1.5 times higher in 1995-2005.

The above trends are reflected in the structure of farms by the production line. The number of farms without any type of animal production was decreasing. In the years 1996-2007 the number of farms practising cattle husbandry or milk production almost halved, the number of pig farms went down by 40%, and sheep farms – by 70%. Mainly the smallest farms with 1-2 cows and some pigs quit animal production, whereas the number of farms with the larger number of livestock has been increasing. The farms practising animal production, especially cattle husbandry, have also bigger area of land and belong to the larger herd size classes. But the percentage of farms with large herds is still very small. The number of holdings specializing in crop production is increasing and the further specialization and concentration of crop production is also observed. The cultivation of potatoes is the example of this tendency. The number of private farms (with more than 1 ha UAA) specialising in potatoes production in the years 1996-2007 went down from 1.68 to 1.01 million, i.e. by about 40%, whereas the number of farms with 10 ha or more under potatoes increased from 900 to 1,900, i.e. more than doubled. But the gap in this regard between Poland and our homologues in the EU is still large.

Farm Incomes and their Development

The decrease in the volume of agricultural production accompanied by the sharp fall in its profitability caused the deterioration of the income situation of farms. Gross disposable incomes of individual farmers fell in real terms over the years 1990-1991 to the level of 36.5 (assuming the income level of 1989 as 100), and after a slight increase in the mid-1990s they went down again to about 24 in 2001-2002. The payment of family labour accounted for 40% of the average wages in the non-agricultural sectors of the economy.[3]

Poland's accession to the EU and the incorporation of the agricultural sector into the CAP exerted a clearly positive impact upon the incomes of farmers. In

[3] J. Zegar, *Dochody rolników na progu akcesji do Unii Europejskiej* [Farmers' incomes on the eve of EU accession], IERiGŻ, Warszawa 2003.

2004 they increased in comparison to the average level of 2001-2003 more than two times, and in comparison to 2003, which was very bad for agriculture – even 2.4 times. The situation mainly resulted from the substantial growth of agricultural support which had increased over nine times. The growth of incomes was also influenced by the general improvement in the situation of the agriculture. Above all, the index of price relations improved. The prices of agricultural products increased by 11.4% in connection with the complete elimination of barriers to free trade in agri-food products with the EU member states, whereas the prices of goods and services purchased by farmers increased by 8.6%.

The increase in incomes is a long-lasting phenomenon which results from the growing direct payments. In 2004, in comparison to 2003, the share of direct payments in farm incomes rapidly increased from 9.5% to 38.9%, and over the years 2005–2006 from 47.1% to 52.1%.

Generally, the changes led to the noticeable decline of incomes from agriculture in the budgets of individual farms in the period concerned. Agricultural activities are the main source of incomes for smaller and smaller number of them. In 1996 they still constituted 44%, in the year 2000 they represented less than 35%, and in 2002 – 32.8%. After the inclusion of Polish agriculture in the CAP of the EU and the improvement of profitability of agricultural production this percentage slightly increased (in 2005 - 36.3%), but in 2007 it fell again to 33.7%.

Table 5. Production, value added and incomes in the Polish agriculture before and after Poland's accession to the EU, in current prices (PLN'000,000)

Specification	2001-2003	2003	2004	2005	2006	2004-2006
Production in basic prices	52632	51785	64656	60574	63008	62725
Indirect consumption	32955	33268	37615	36047	37607	37192
Gross value added	19678	19517	27042	24528	25401	25533
Income per 1 farmer	9497	8466	20502	17801	21032	19676
Agricultural support total	864	802	7972	8393	10949	9112
Share of agricultural support in incomes (%)	9.1	9.5	38.9	47.1	52.1	46.3

Source: J. Gomułka. Wyniki ekonomiczne polskiego rolnictwa w latach 2003-2004 [Economic performance of Polish agriculture in 2003-2004]. IERiGŻ-PiB. Warszawa 2005; Z. Floriańczyk. Wyniki ekonomiczne rolnictwa polskiego w roku 2006 [Economic performance of Polish agriculture in 2006]. in: Wyniki ekonomiczne polskiego rolnictwa w 2006 r [Economic performance of Polish agriculture in 2006]. IERiGŻ-PiB. Warszawa 2007.

The income situation of farmers and their assessment of the trends in this regard had a decisive impact upon their willingness to make investments. The proportion of the farms conducting investments, after its sudden fall at the

beginning of the transformation, was maintained at a low level.[4] The rate of capital accumulation of farms keeping agricultural accountancy showed a rapidly declining trend, from 53.5% in 1989, 39.8% in 1990, 8.5% in 1991, to a negative one in 1992. In 1993-1996 the growing willingness among farmers to invest was observed, but in the following years the pace of investments slowed down. When comparing the census data of 1996 and 2002, it is possible to claim that the percentage of farms making investments to expand the production decreased from 16.8 to 10.9. An important role in maintaining the level of investments in agricultural holdings and their modernisation had preferential investment loans subsidised from the national budget (290,400 loans were granted over the years 1994-2003) and other support funds, but above all the SAPARD programme (the measure regarding investments of agricultural holdings covered 13,700 of them). The support funds also positively influenced the operating environment of the farms (modernisation of agri-food processing enterprises, improvement in physical infrastructure in rural areas etc.).

All the changes are reflected in the economic size of farms. The vast majority of the Polish agricultural holdings (approx. 80%) belong to the group of farms of very small economic size (up to 4 ESU). After the inclusion of the Polish agriculture in the CAP, the number even increased from 1.7 million in 2002 to 1.9 million in 2007, as a result of taking up agricultural activities again by many farmers in order to be entitled to direct payments. The positive phenomenon is the fast increase in the number of farms with 16-40 ESU (from 62,900 to 80,300) and with more than 40 ESU (from 13.0 to 18.600) in the years 2002-2007. But their total share is still small (in 2002 - 3,4%, in 2005 - 4.1%).

The structure of utilisation of agricultural land is slightly better. The farms with more than 40 ESU which share is 0.8%, utilize 18.5% of UAA, whereas the farms with 8-40 ESU (8.9%) have 32.3% UAA. Unfortunately, the share of farms with more than 40 ESU in the utilization of agricultural land has increased no more and the rate of growth of the share of farms with 8-40 ESU has been lower (in 2002-2005 the increase from 24.1% to 30.8%, and in 2005-2007 - from 30.8 to 32.3%) in consequence of the weak activity of the market for agricultural land in recent years.

[4] A. Woś, *Inwestycje i akumulacja w rolnictwie chłopskim w latach 1988-1998* [Investments and accumulation in peasant farming in 1988-1998], IERiGŻ Warszawa 2000 r.; W. Dzun, *Nakłady inwestycyjne i bieżące w rolnictwie polskim w świetle dochodów rolników w latach 1990-2001* [Capital and current expenditures in Polish agriculture in the light of farmers' incomes in 1990-2001], Wieś i Rolnictwo, No 3, 2003 r.

Table 6. Structure of farms and agricultural land use by size categories (in ESU) in Poland and in the selected EU countries in 2005.

Country	Number of farms ('000)	Structure of farms by economic size groups in ESU (%)							
	UAA (ha'000)	< 2	2-4	4-8	8-16	16-40	40-100	100-250	>250
Poland	2476.5	69.4	11.8	9.2	6.0	2.9	0.5	0.1	0.0
	14754.9	19.9	13.1	16.2	17.1	15.2	6.7	4.6	7.2
Germany	389.9	12.6	11.1	11.8	12.6	19.3	21.0	9.3	2.4
	17035.2	1.1	1.6	2.7	4.7	12.2	26.2	23.3	28.2
Denmark	48.3	1.9	7.9	14.3	17.7	20.5	15.4	15.8	6.6
	2589.9	0.3	0.9	2.4	5.5	13.1	18.7	32.6	26.5
Czech Republic	42.3	53.7	12.3	9.3	7.8	7.2	4.0	2.3	3.4
	3557.8	1.9	1.5	2.2	3.5	6.7	9.3	13.1	61.9
Hungary	714.8	87.0	5.7	3.6	1.8	1.2	0.4	0.1	0.1
	3859.7	9.1	5.8	7.8	8.6	13.4	12.7	9.7	33.1

Source: Authors' own calculations based on Eurostat data.

The analysis of the data indicates that the process of land concentration in Poland is still at its early stage. This is particularly visible in comparison with our competitors on the Single Market of the EU. Whereas in Poland the farms with more than 40 ESU utilize 18.5% of the total UAA, the figure for Germany is 79%, for Denmark – 77%, for the Czech Republic – 84%, for Hungary – 56%. The development path for agriculture in Poland in terms of land concentration was different than in the EU-15 or in the former socialist countries.

The majority of economically larger farms in our country conduct extensive plant production on large areas. The production is usually well mechanised and they employ only a small part of the labour force in agriculture. In 2002, the share of people (calculated per full-time work units) employed on farms with more than 40 ESU, utilising 18.5% UAA, accounted for 4.3% of the total labour force in agriculture.

The analysis of the structure of agricultural holdings in Poland by their economic size indicates that it is the commercial farms with more than 2 ESU which contribution into value added in agriculture is the highest (they generate at least 90% of the standard gross margin).

The farms with less than 2 ESU represent over 69% of all agricultural holdings in Poland, they operate on approx. 20% of UAA and employ about 39% of the labour force in agriculture, but they generate only 10% of the standard gross margin. They are also characterised by the highest share of fallow and land under bad cultivation. More active is only 30% of them and the farming activity is the source of only 10% of their incomes.[5]

[5] W. Józwiak, *Funkcjonowanie i role społeczne najmniejszych gospodarstw rolnych* [The functioning and social roles of the smallest farms], Wieś i Rolnictwo No 2, 2006.

The number of farms with 2 ESU and more is slightly increased from 745,000 in 2002 to almost 767,000 in 2007. But the vast majority of farms in this group are small (2-8 ESU). In 2002-2007 their number stayed at the same level of about 520,000, though their share declined (from 70% to 68%).

The analysis indicates that the growth of the economic size of farms in the analysed period was accompanied by:

- the increase in the land area of farms including the land under lease;
- the decrease in labour inputs per hectare, the moderate increase in land productivity and the high increase in labour productivity;
- the substantial increase in the value of direct payments per 1 farm, although it tended to decrease in terms of both the volume of production and the income from farming.

The analysis allows also an evaluation of capacities of farms, especially the private individual ones, owned by natural persons, to develop under the present economic conditions. The farms characterised by such capacities usually generate the income of farmers and their family members at the level of the parity remuneration of work at least (the average net wages and salaries in the national economy) and ensure a relatively high profitability of the capital invested in agriculture as well as the expansion and modernisation of farms.

The family farms are characterised by the following phenomena:

– Farms with up to 8 ESU have no capacity for development. The income generated does not cover the remuneration (the income of the farms with 2-4 ESU accounts for 40% of the average wages in the economy, the figure for the farms with 4-8 ESU is 60%) nor the reproduction of fixed assets;
– Farms of the size 8-16 ESU are on the threshold of development capacity. The average level of their incomes covers the remuneration in years favourable for agriculture (in 2006 - PLN 20,300 per year), but is insufficient in less favourable years (in 2005 - PLN 16,200). Their net investments are at the low level and in unfavourable years the depreciations decrease because the investments are lower than the depreciations;
– Farms with 16-40 ESU have the potential for development (almost 62,500 holdings in 2002, in 2005 their number increased to approx. 80,000). Their annual average income per 1 FWU amounted to PLN 32,700 in 2005 and PLN 38,200 in 2006, and it was allocated to consumption and net investments (in 2005 - PLN 10,800, in 2006 - PLN 20,600). Therefore, the farmers were able to obtain an adequate compensation for the labour and capital investment;
– Farms with more than 40 ESU have big potential to development (in 2002 - 11,300, in 2005 - 16,600 holdings). The average level of income assures high

compensation for own labour, the high rate of return on own capital and the further dynamic development of farms.

Also many of the 4,200 holdings owned by entities with legal personality status have the development capacities, but there is considerable variation in this regard between them. Most of them are characterised by high efficiency of their production and they are expected to adapt more easily to new conditions through investment and economies of scale. But many of them are still in the process of modernization and restructuring**.**

Table 7. Selected indicators for the farms under FADN by economic size groups in 2006

Specification	units	Farms by size (ESU)						
		total	2-4	4-8	8-16	16-40	40-100	>100
Economic size	ESU	10.1	3.1	5.4	11.7	24.9	56.7	325.5
Agricultural area (UAA)	ha	17.8	8.0	11.5	19.8	35.1	74.2	539.3
Production per 1 farm	PLN' 000	87.9	28.0	48.2	100.4	202.5	497.8	3017.6
Agricultural support	PLN' 000	14.2	7.9	10.2	15.3	26.0	50.5	337.0
Income per 1 family farm	PLN' 000	29.0	9.8	17.3	35.4	70.7	149.1	696.4
Share of agricultural support in incomes	%	49.0	80.6	59.0	43.2	36.8	33.9	48.4
Income per 1 FWU*	PLN' 000	18.9	7.6	11.6	20.3	38.2	78.7	605.4
Gross investments	PLN' 000	14.3	1.9	6.1	18.1	45.6	117.6	355.8
Net investments	PLN' 000	1.1	-5.1	-3.2	2.6	20.6	63.3	122.9

*) labour inputs of farmers and their family members calculated as full-time work units

Source: Authors' calculations based on: Wyniki standardowe uzyskane przez gospodarstwa rolne uczestniczące w Polskim FADN. [Standard performance of farms participating in the Polish FADN] IERiGŻ-PIB. Warszawa 2007.

The farms owned by legal persons are also deprived of the privileges to which the farms of natural persons are entitled (small social security contributions to the Agricultural Social Insurance Fund, no personal income tax, tax reliefs from other types of taxes, no legal obligation to keep accounts). Moreover, these farms has also had very limited access to some of support funds in recent years. As a result, the situation often leads to changes of their organisational form and legal status in order to gain the benefits to which farms owned by natural persons are entitled. Also the existing unclear legislation on lease of land and properties is a source of uncertainty about the future of farms

having great share of leases, which may reduce the willingness to make investments. Therefore, the financial results of farms with legal personality status may deteriorate.

The inclusion of the Polish agriculture in the CAP exerted various impact upon the income situation of these farms, according to their production lines. Such differentiation results from the introduced system of direct payments and the differences in the price relations of the agri-food products after Poland's accession to the EU. The simplified system of direct payments is more advantageous for larger farms, but worse for the farms, which economic size is based on labour and capital resources.

Table 8. Incomes of individual farms by production lines in 2004 and 2006 (PLN'000 per 1 FWU)

Year	Farms by production lines						
	Field crops	Horticulture	Orchards	Dairy cows	Other grazing animals	Pigs and poultry	Combined plant and animals
2004	21.5	27.8	19.3	15.0	18.5	41.9	12.7
2005	13.5	24.6	18.0	16.7	17.4	31.1	10.1
2006	19.6	27.5	23.7	19.0	22.0	26.2	13.8

Source: FADN for Poland.

As regards the impact of prices, the significant growth in prices of animal products (by 22.2% in 2004 compared with 2003) and the small increase in prices of plant products (by 0.7%) were recorded, though the rate of growth varied greatly between products.

When analysing the incomes of agricultural holdings by their types of production in the years 2004-2005, it should be taken into account that the weather conditions in 2004 were very favourable, which was an underlying factor behind the very large growth in the volume of plant production.

In sum, about 99,000 farms in Poland (with natural or legal personality status) achieve good economic and financial results and have big production capacity. The farms' size is more than 16 ESU and they encompass approx. 5 million ha of agricultural land (33.7% of the total agricultural land). Also there are about 146,000 agricultural holdings with 8-16 ESU (they have 2.5 million ha of agricultural land – 17.1% of entire agricultural area). They are usually on the threshold of having development capacities, but some of them invest, so they can move to the group of economically larger farms in the future.

Competitiveness of Farms

The possibilities of the Polish farms to operate on the EU agricultural market largely depends on their competitiveness.

According to the results of the research[6], the Polish small commercial farms (2-8 ESU) are not competitive. They are able to operate on the market only on condition of low remuneration for own labour and the decapitalisation of the possessed fixed assets (the consumption of capital), because the gross farm income does not cover, or only very partially, the reproduction of fixed assets. The situation of economically small farms in the other EU countries is similar. However, such farms with less than 8 ESU pose a particular problem in Poland as they generate a third of the total agricultural output. The Polish economically larger farms (16 ESU and more) are competitive on the single market. Their farm incomes are sufficient to allow farmers to obtain high compensation for the labour (above the parity remuneration), the relatively high rates of return on own capital invested in the enterprise (higher than the deposit interest rates at banks) and the steady development of farms (the capital expenditures are higher than the depreciations). Their ability to compete is based above all on lower external costs (of payment for hired labour, taxes, land rents etc.). But it should be emphasized that such competitive abilities were achieved in the conditions of lower direct payments and subsidies in relation to the farms in the "old" EU member states.

*
* *

The above observations raise further question about the future prospects of the Polish farms. Taking into account the income situation of farms with 2-8 ESU (0.5 million commercial ones)[7] it may be stated that they have no chances on the agricultural market without expanding the production. The expansion will be not, however, an easy task because there is not enough arable land available and there are many difficulties in obtaining the loan capital from financial institutions. Anyway, most of them will operate under the simplified direct

[6] W. Józwiak, Z. Mirkowska, *Sytuacja ekonomiczna i aktywność inwestycyjna gospodarstw rolnych w Polsce i innych krajach unijnych* [Economic condition and investment activities of farms in Poland and other EU countries], IERiGŻ-PiB, Warszawa 2006; *Sytuacja ekonomiczna i aktywność inwestycyjna różnych grup gospodarstw rolniczych w Polsce i innych krajach unijnych w latach 2004-2005* [Economic situation and investment activity of different farm categories in Poland and other EU countries in 2004-2005], IERiGŻ-PIB, Warszawa 2007.

[7] We do not analyse the situation of over 1.6 million farms with less than 2 ESU, which are not market-oriented.

payments system, as the agricultural policy in Poland is rather favourable for them. But their existence hinders the emergence of "professional" farms requiring much larger surface areas and the development of the agrarian structure in our country. As regards the holdings with more than 8-16 ESU, a part of them is expected to move to the group of economically larger farms on condition of the good economic situation of agriculture and the agricultural policy aimed at enhancing their expansion.

The relatively high level of competitiveness of economically larger farms (over 16 ESU) is likely to be maintained in the next years, although the costs of labour and land will increase. Since 2006 the wages and salaries have been on the rise, and since 2007 also the growth of land rents has been recorded. The costs of interest rates of credits and loans for the necessary investments in the environmental protection, the irrigation of crops, the improvement in animal welfare, the substitution of labour inputs etc., will also increase rapidly. These growing costs will be compensated by the growth of direct payments and the effects of modernisation until 2013. But in the long run, provided that the growth in incomes depends only on the improvement in productivity and labour efficiency, the income situation of the Polish farms may be more difficult.

If the period favourable for agriculture is not taken advantage of for the improvement in the agrarian structure in Poland until 2013, the farms will lose their ability to compete successfully on both the EU and the global agricultural markets. Therefore, the re-orientation of the national agricultural policy is essential.[8] The support funds should be directed mainly to the developed "professional" farms as well as to the farms striving to expand and increase the efficiency of their production and having good chances to become such farms in the future.

References

1. Dzun W.. *Nakłady inwestycyjne i bieżące w rolnictwie polskim w świetle dochodów rolników w latach 1990-2001* [Capital and current expenditures in Polish agriculture in the light of farmers' incomes in 1990-2001]. Wieś i Rolnictwo No 3/2003.
2. Dzun W.. *Gospodarstwa rolne w procesie transformacji systemowej (lata 1990-2002)* [Farms in the process of the systemic transformation (1990-2002)]. Wieś i Rolnictwo No 1/2004.
3. Dzun W.. *Duże gospodarstwa rolne w Polsce i wybranych krajach UE 15* [Large farms in Poland and in the selected EU-15 countries]. Wieś i Rolnictwo No 3/2006.

[8] W. Józwiak, *Nowe warunki rozwoju rolnictwa* [New conditions for the development of agriculture], in: Wyzwania przed obszarami wiejskimi i rolnictwem w perspektywie lat 2014-2020 [Challenges to rural areas and agriculture facing the prospects for the period 2014-2020], ed. by: M. Kłodziński, IRWiR PAN, Warszawa 2008

4. Frenkel I. Rosner A. *Ludność i wiejski rynek pracy w Polsce* [Rural population and labour market in Poland]. in: Klank L.. (ed.). Rynki wiejskie: ziemia. kapitał. praca. [Rural markets: land, capital, labour]. IRWiR PAN. Warszawa. 2001.
5. Gomułka J. *Wyniki ekonomiczne polskiego rolnictwa w latach 2003-2004* [Economic performance of Polish agriculture in 2003-2004]. IERiGŻ-PiB. Warszawa. 2005.
6. Józwiak W.. Mirkowska Z.. *Zdolność polskich gospodarstw rolnych do konkurowania* [Competitive capacity of Polish farms]. Wieś i Rolnictwo No 3/2006.
7. Józwiak W.. Mirkowska Z.. *Sytuacja ekonomiczna i aktywność inwestycyjna gospodarstw rolnych w Polsce i w innych krajach unijnych* [Economic condition and investment activities of farms in Poland and other EU countries]. IERiGŻ-PiB. Warszawa. 2006;
8. Józwiak W. *Nowe warunki rozwoju rolnictwa* [New conditions for the development of agriculture]. in: Wyzwania przed obszarami wiejskimi i rolnictwem w perspektywie lat 2014-2020 [Challenges to rural areas and agriculture facing the prospects for the period 2014-2020]. ed. by: M. Kłodziński. IRWiR PAN. Warszawa. 2008.
9. *Sytuacja ekonomiczna i aktywność inwestycyjna różnych grup gospodarstw rolniczych w Polsce i innych krajach unijnych w latach 2004-2005* [Economic situation and investment activity of different farm categories in Poland and other EU countries in 2004-2005]. ed. by: W. Józwiak. IERiGŻ-PiB. Warszawa. 2007.
10. Woś A.. *Inwestycje i akumulacja w rolnictwie chłopskim w latach 1988-1998* [Investments and accumulation in peasant farming in 1988-1998], IERiGŻ Warszawa. 2000.
11. *Wyniki ekonomiczne polskiego rolnictwa w 2006 r*. [Economic performance of Polish agriculture in 2006], IERiGŻ-PiB. Warszawa. 2007.
12. Zegar J.. *Dochody rolników na progu akcesji do Unii Europejskiej* [Farmers' incomes on the eve of EU accession]. IERiGŻ. Warszawa. 2003.

Rasa Melnikienė, Irena Krisciukaitiene
Lithuanian Institute of Agrarian Economics, Lithuania

The Competitiveness of Lithuanian Farms in the EU

1. Key Factors for Increasing Competitiveness

Increasing the competitiveness of agriculture is of particular importance for Lithuania after joining the EU economic area. The competitiveness of agriculture depends on the needs of consumers and most importantly – on the capacity to provide better quality and cheaper production than the competitors.

In 2004–2006 the purchasing power in the country increased and more money was spent on food products. In 2006 the consumption expenditure on food per one household member increased by 14%, in comparison to 2003. The volume of sales of food products expressed by their value on the internal market increased by 35%. Foreign markets for agricultural products are also increasing. Exports in 2006, as compared to 2003, increased 2.3 times. The increasing demand for agricultural products on the internal and foreign markets create preconditions for increasing production. Lithuanian agriculture was able to take stronger positions on the markets owing to the increased EU support.

Subsidies (direct payments and export refunds) to production have increased 8 times in 2006, as compared to 2003. Agricultural producers could acquire more material resources and modernise the production. However, the utilisation of the fixed capital within the three years of membership in the EU has increased insignificantly – only by 10%; accordingly, equity capital per ha in Lithuanian farms as compared to the farms of the EU member states was 4 times smaller value. The production of Lithuanian farmers per ha, in comparison to the EU-24 member states (excluding Malta), is several times smaller. The low level of production in Lithuania, as compared to the old EU member states, is conditioned not only by lesser support to production, but also by low labour efficiency. Agricultural farms in the country engage 73% more human labour per 100 ha (calculated in terms of full time employees) than the average of the EU-15, and 5% more in comparison to the EU-24 average. The analysis of the data on farms in the EU reveals that better production results are achieved in the countries, where farms have reached a high level modernisation of production, and where the provision with the main production funds corresponds to the area of arable land; where one employee produces 3 times more agricultural output value than a farmer in Lithuania.

Comparative analysis of the structure of Lithuanian farms, their average size, production and economic indicators, reveals that existing reserves are indeed available to increase their competitiveness.

2. Changes in Structure and Size of Farm Holdings in Lithuania in Comparison with EU Farm Holdings

The number of agricultural entities by categories within the period of 2003–2006 fluctuated unevenly: in 2006, as compared with 2003, the number of registered family farms increased 2.1 times. The number of agricultural companies and other agricultural enterprises decreased within the same period by 3.6%, and the number of individual households – by 30.3% (Table 1).

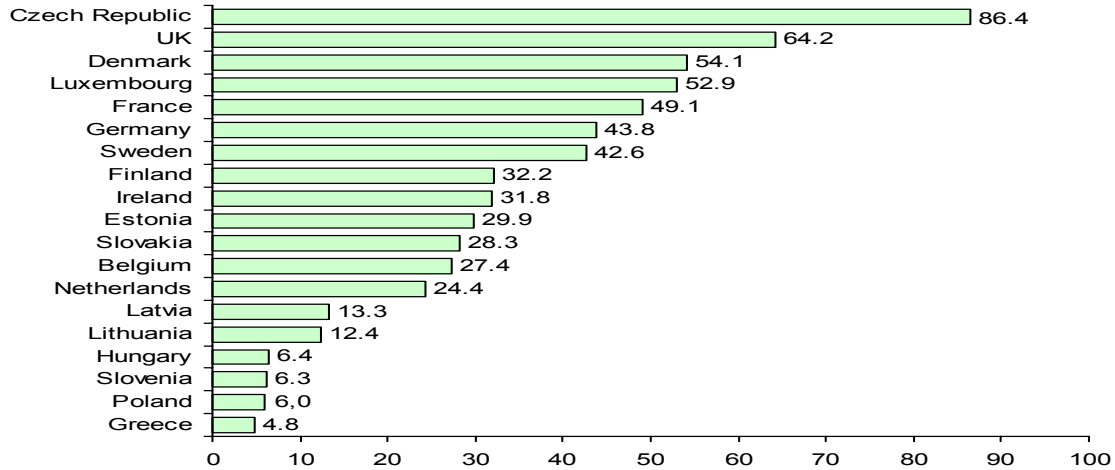
Table 1. The number of agricultural entities in 2003–2006

Agricultural entities	2003	2004	2005	2006
Registered family farms, thousands	45.0	76.5	85.9	94.2
Agricultural companies and enterprises	579	536	543	558
Individual households, thousands	200.7	163.9	153.1	139.9

Source: National Land Service under the Ministry of Agriculture; State Enterprise Centre of Registers; Department of Statistics to the GRL, State Enterprise "Agricultural Information and Rural Business Centre".

According to the declared area of arable land and crops of all agricultural entities in 2006, the average size of the farm in Lithuania was 12.4 ha, which was 7.8% larger than in 2005. The average Lithuanian farm is 2 times larger than in Hungary, Slovenia and Poland, but 7% smaller than in Latvia, and 2.4 times smaller than in Estonia (Figure 1.).

Figure 1. Average farm size in Lithuania (in 2006) and in selected EU countries (in 2004), in ha



Data concerning the declared area of land plots belonging to households and agricultural enterprises indicate an irrational farm structure. In 2006 only

3.2% of the farms were managing over 50 ha of land, and yet, the area managed by such farms accounted for 46% of the total declared area of arable land. Comparing the respective data with some of the EU member states, it is evident that a relatively worse situation has developed in Poland, Slovenia, and Romania. Farm structure in the EU-15 member states is more rational, with the prevailing number of farms managing larger areas of arable land (Table 2).

Table 2. Farm structure in Lithuania and in selected EU countries in 2005

Country	Farms ≥ 50 ha, %	
	by area of land	by number of farms
Denmark	77 %	33 %
Ireland	46 %	18 %
Finland	49 %	19 %
United Kingdom	85 %	30 %
Sweden	71 %	25 %
Belgium	52 %	17 %
Germany	73 %	22 %
Netherlands	45 %	13 %
Czech Republic	93 %	16 %
Austria	39 %	6.4 %
Estonia	73 %	8.2 %
Latvia	43 %	3.4 %
Lithuania*	**46 %**	**3.2 %**
Slovakia	94 %	3.9 %
Slovenia	10 %	0.4 %
Poland	24 %	0.8 %
Hungary	71 %	1.8 %
Bulgaria	79 %	1.0 %
Romania	40 %	0.3 %

** 2006.*

Following the accession of Lithuania to the EU, the number of specialised farms is increasing as well as the area of arable land and the number of animals. In 2005, as compared to 2003, the average farm cultivating cereals and rape increased by almost 50%, vegetable growing and horticulture farms increased by 34% respectively, dairy farms – by 20%, and mixed farms of agricultural crops and herbivorous animals – by 45%. The number of economically inefficient farms involved in cultivating cereals, rape and vegetables has notably decreased. Mixed production farms form the major part (56%) within the total number of

farms. Particularly small farms (2–4 EDV) account for 68% in the structure. The greatest changes have taken place in the sector of dairy farms, leading to the total increase by 83%, and to the growth of their proportion within the structure – by 7 percentage points. The analysis of farms by the type of farming and their economic size indicates that economically small size commercial farms still prevail in the country.

In all types of farms, according to EDV, positive structural developments are observed – the number of larger economic size farms is increasing.

3. Changes in Economic and Financial Efficiency of Farms, Taking into Account the Impact of Support from Budgetary Sources

Assessing the impact of EU support to farms (according to FADN data), it is evident that in 2004–2006, as compared to the pre-accession period, Lithuanian farmers invested more in the strengthening of production facilities through the EU support allocated for the implementation of SPD measures. Farms made more use of bank loans due to their stronger economic situation and the increased income from their activities. In 2005, as compared to 2003, bank loans per ha increased almost 4 times; however, in comparison to the EU-24 member states, this indicator was 9 times lower. Borrowing tendencies among farmers remained similar also in 2006. According to the data of the guarantee fund for loans to agricultural farms, the value and the number of guarantees granted to credit institutions increased almost 1.5 times in 2006, as compared to 2005.

In recent years, investments in production and subsidies to Lithuanian farms have increased and have generated changes in equity capital, which increased by more than one third in 2006, as compared to 2003. The value of equity capital of Lithuanian farms was worth almost one fifth less in comparison to the EU-24 member states.

The analysis of the activities of farms in 2004–2006 has revealed that the increased subsidies for production, more favourable conditions for expanding agricultural holdings (due to the active land market, etc.), the implementation of the measure on early retreat from commercial agricultural production, support for semi-subsistence farms, education of farmers, training and counselling, have increased the capacities of all farms in the country, as by size, as by the type of farming activity or the age of the farm owner, as well as their capacity to absorb the support provided through the implementation of SPD and RDP measures. On the other hand, the growth of the standard of living of the entire population in the country, the development of markets, and the increasing attractiveness of

agricultural businesses, encouraged to promote modern and competitive agriculture through active participation in the implementation of SPD measures (Table 3).

Table 3. The number of agricultural holding owners and the number of applications for EU support 2004–2006

Indicators	Number	Share of applicants, %
Owners of agricultural holdings of > 20 ha	18,556	4.4 %
Applications under "Investments into agricultural holdings"	824	
Owners of agricultural holdings under 40 years	33,899	2.2 %
Applications under "Setting-up of young farmers"	753	
Owners of agricultural holdings aged 55–62 years, 2004	50,315	42.8 %
Applications under "Early retirement", 2004-2006	21,554	
Owners of agricultural holdings of 5–20 ha	92,124	3.5 %
Applications under "Support for semi-subsistence farms undergoing restructuring"	3,194	
Farms with more than 5 cows	11,601	52,0 %
Applications under "Meeting EU standards"	5,997	

In 2006, less applications were submitted to the NPA (National Paying Agency) for the EU support than in 2005; however, they were still 15% more numerous than in 2004. During the period of 2004–2006 rural residents were mostly interested in two measures: "Early retirement" and "Meeting of the EU Standards". Almost 21,600 applications from 55–62 year-old owners of agricultural and rural holdings were submitted under the "Early retirement" measure of the 2004-2006 Rural Development Programme during the period of 2004-2006 (42.8% of potential applicants). The measure "Meeting the EU Standards" was less attractive for farmers in 2006, as 20% less applications were submitted than in 2005; nevertheless they were still 13% more numerous than in 2004. The NPA received 6 thousand applications under this measure. The measure in support of investment intended for owners of small holdings aiming at expanding their semi-subsistence farms and developing them into commercial farms was less popular. Over 3 thousand applications were received for support under the measure "Support for semi-subsistence farms undergoing

restructuring“. All this indicates the increasing initiative on the part of farmers seeking EU support for the improvement of farm structure and for increasing their competitiveness.

Under the SPD measure “Investments into agricultural holdings”, 824 applications for support were submitted during the period of 2007–2006, much more than anticipated. The NPA signed contracts with 600 applicants for the total amount of support worth 287.8 million litas, i.e. for 98% of the allocated funds. Support under the measure “For the settlement of young farmers” was requested by 753 applicants during the period of 2004-2006, and 90% of the applications were awarded by the signing of contracts. The disbursed amount reached 99.8% of the means allocated for the implementation of this measure. Subsequently, such measures facilitate the acceleration of the farm modernisation process, both in the newly set up farms and in the holdings of more experienced farmers.

4. Assessment of Competitiveness of Lithuanian Farms

Indicators of economic competitiveness of farms in 2003-2005 reveal an improvement of the situation. Distinct changes are observed in dairy farms – the value of total agricultural production per ha of arable land in 2005, as compared to 2003, has increased by 40%. Such positive changes were influenced by the increased milk prices (by 46%), and higher milk yields (by 8%). Mixed farms combining agricultural crops and herbivorous animals have also achieved good results. The total agricultural production per ha has increased almost 1.5 times. This could be explained by the fact that a major proportion within the structure of total agricultural production was contributed by milk production. Only slight changes were observed in the sector of agricultural crops. The total value of agricultural production per ha of arable land on the farms cultivating cereals, rape and other agricultural crops, has increased insignificantly – just by 1% to 4%, and on the vegetable-growing and horticulture farms it has even decreased. This situation was influenced by the fall of prices in 2005, the negative impact of which could not be offset by the slightly increased productivity of grain and other agricultural crops.

The net value added per ha in 2005, as compared to 2003, has mostly increased on the farms with mixed production (agricultural crops and animal husbandry) and in the dairy farms, 2.8 and 2.3 times respectively, but in the case of farms cultivating grain, rape and other agricultural crops – only 1.5 and 1.2 times. In the vegetable-growing and horticulture farms it decreased by 12%.

The increase of the net value added per ha generated by farms cultivating grain, rape and other agricultural crops was influenced more by subsidies than

by production growth. The proportion of subsidies in the net value added of farms cultivating grain and rape increased from 37% to 88% over the period of 2003-2005, and in the farms with agricultural crops and mixed production – from 23% to 40%. The proportion of subsidies in the net value added of vegetable growing farms was the smallest in comparison to other types of farms and accounted for 6% and 16%, respectively. In dairy and mixed production farms, where more than half of the production consisted of milk, the net value added per ha increased more than 2 times, and the proportion of subsidies rose only by 4 percentage points, accounting for 36% of the value added.

During the first year of membership in the EU, 2004-2005, the increased subsidies exerted a greater impact on the positive changes of indicators of economic competitiveness than the developments in production.

The analysis of production inputs shows that the growth rate of production outputs was higher than the growth of production inputs only in the dairy and mixed production farms, where milk accounted for a major proportion of the commercial production. In the sector of agricultural crops, the production input per unit of production increased approximately by 19%, and the total value of agricultural production per ha only by 3%. Already in the first year of membership in the EU, in 2004-2005, dairy and mixed farms, where herbivorous animals prevail, achieved better results in comparison to the farms cultivating agricultural crops. Production input per unit of production in dairy and mixed profile farms decreased by 15%, and the total value of agricultural production per ha increased by 40%. Better yielding capacity of cows and the increased milk prices have offset the costliness of production resources. Production input per ha of arable land, as per one litas of production output in all types of farms (except for vegetable growing and horticulture farms) increased from 18% to 22%, whereas expenditures on fertilizers and plant protection, calculated per ha of arable land in the farm, increased almost by 50%, depreciation and interest – about 36%, and the rent for land increased almost twice.

Indicators of labour efficiency reveal that the highest labour efficiency was reached by workers on the farms cultivating grain, rape and other agricultural crops. An employee of such a farm produced about 60% more of total agricultural production in comparison to the average in the country, about 50% more than a worker in dairy and mixed production farms, and over 2 times more than an employee in vegetable growing and horticulture farms.

Considerable differences in the net value added per one employee between farms depending on the type of farming decreased due to differentiated subsidies. The possibility for an employee of grain and rape growing farms to earn higher cash income (with subsidies to production) with less labour input

(labour value accounted for 15%) had a certain impact on the development of such farms not only in the favourable, but also in less favourable locations for farming. This could be assessed as not quite advantageous in the situation of aiming at efficient development of agricultural sectors at the regional level.

In 2003–2005 all types of farms increased their equity capital at a higher growth rate than the volume of production, yielding capacity of plants and productivity of animals. During this period, as compared to 2003, the rate of return on equity capital decreased in the farms cultivating agricultural crops and vegetables, as well as in horticulture and mixed production farms. An increase of profitability was only reached due to the increased subsidies to production in the farms cultivating cereals and rape. The rate of capital increase of the farms with mixed production and dairy farms hardly differed from the rates of growth of total agricultural production and of net profit (Table 4).

Local farms in the country increased their capital making use of EU and national support granted for the acquisition of new agricultural equipment, buildings and machinery, which was not fully employed in the first years of acquisition, because of the insufficient area of arable land and/or the size of animal herds and efficiency of production. This is evidenced by the reduction on most of the farms of their total agricultural production generated per 1 litas of capital.

The analysis of indicators concerning Lithuanian farms by their size in hectares indicates that the most competitive farms were in the size range between 50.1 – 100, and 100.1 – 150 ha. The profitability of farms smaller in size than 30 ha, where most of the capital accounted for 1 ha of arable land, was 18 percentage points lower in comparison to larger farms. In order to enhance the competitiveness of traditional agricultural production it is necessary to increase the size of farms by benchmarking to well capitalised farms, however, the rational proportion of the size of the farm, the amount of capital owned and the available labour force is of great importance.

Table 4. Efficiency of capital employment in Lithuanian farms by farming type in 2003–2005

Farm groups by farming type	The average capital of a farm per ha, in thousands of litas	The amount of the average capital per litas	
		Total value of agricultural production, in Lt	The net value added, in Lt
Grain, rape			
2003	1.54	0.73	0.28
2005	1.98	0.57	0.32
2005 compared to 2003, in %	129	78	114
Agricultural crops			
2003	2.01	0.83	0.38
2005	3.10	0.56	0.28
2005 compared to 2003, in %	154	67	74
Milk production			
2003	2.84	0.55	0.21
2005	4.36	0.57	0.30
2005 compared to 2003, in %	153	103	143
Vegetable growing and Horticulture			
2003	4.77	0.97	0.6
2005	6.11	0.58	0.38
2005 compared to 2003, in %	128	60	63
Mixed production			
2003	2.79	0.47	0.14
2005	3.65	0.52	0.30
2005 compared to 2003, in %	131	111	214
The average in the country			
2003	2.32	0.61	0.22
2005	3.23	0.52	0.28
2005 compared to 2003, in %	139	85	127

Source: Data about agricultural enterprises 2003, 2005.

5. Comparison of Competitiveness of Lithuanian and EU Farms by the Type of Farming

Aiming at defining the main course leading to the increase of competitiveness of Lithuanian farms, indicators of economic competitiveness of Lithuanian farms were compared with the respective average data of the EU-15, the EU-24, and the EU-9 member states, as well as to the EU member states with similar natural conditions and production structure (Latvia, Poland,

Denmark, Germany, Ireland and Austria). The analysis of indicators of economic competitiveness of Lithuanian and EU farms by the type of farming revealed that Lithuanian farms cultivating grain and rape produce, in terms of the total value of agricultural production per ha, approximately 2 times less, and the farms cultivating agricultural crops – 5 times less production, than the average of the EU-15, and correspondingly 1.5 – 2 times less, as compared to the average of the new EU-9 member states. Great differences in the total value of agricultural production between the farms in Lithuania and the EU-15 member states are influenced by higher productivity of grain crops in the old EU member states. For example, the average productivity of wheat in the farms of the EU-15 member states is 71.8, in Germany – 81.8, in Austria – 107.4; in the EU-9 member states – 53.8, in Poland – 59.4, whereas in Lithuania – 47.9 per 100kg/ha. The above countries, in comparison to Lithuania, use 4–5 times more fertilizers and plant protection measures in order to gain higher productivity. Large amounts of expenditure on seed indicate that quality seed is used, which also provides important means of increasing productivity.

A similar tendency prevails when comparing net value added per ha, however, the difference here comes down to 2 times less on the farms cultivating grain and rape, and 3.5 times less on farms growing agricultural crops, as compared to the average of the EU-15, and comparing to the average of the EU-9, 1.2 and 1.5 times, respectively (Table 6). Lithuanian farms cultivating grain and rape generate less net value added per ha only in comparison to the Czech Republic and Slovakia among the EU-9 member states, and the farms growing agricultural crops surpass only those in Latvia and Estonia.

The net value added amount was influenced by subsidies to production, the proportion of which in the net value added of Lithuanian farms by the type of farming accounted for 38% to 72%, and in the EU member states – from 40% to 93% (Table 5). The largest share of subsidies in the net value added prevails in the case of grain and rape farms, it is lesser for dairy and agricultural crop farms – approximately 41%. It should be noted that the net value added excluding subsidies per ha generated by Lithuanian farms is on average more than 3 times smaller in comparison to the average of the EU member states.

Table 5. Net value added and subsidies in Lithuanian and EU farms by the type of farming in 2005*

Farm categories by the type of farming	Lithuania		EU-24 member states		Lithuania compared against the EU-24 MS, in %	
	Net value added per ha, in Lt	Subsidies per ha	Net value added per ha, in Lt	Subsidies per ha	Net value added per ha, in Lt	Subsidies per ha
Grain, rape	567	409	1,086	1,011	52	40
Agricultural crops	858	367	2,715	1,080	32	34
Milk production	1,166	473	3,377	1,400	35	34
Mixed	1,083	414	1,887	1,045	57	40
Average	915	472	2,789	1,105	33	43

* *agricultural crops and herbivorous animals prevail*

Labour efficiency of Lithuanian workers on dairy and mixed production farms, as compared to similar average data of the EU-15 member states, Germany and Ireland, is around 5 times smaller, and in comparison with Danish farms – even 10 times less. Dairy and mixed production farms in the old EU member states have reached high levels of mechanization and modernisation. About 500 thousand litas of equity capital per one employee is engaged in the dairy and mixed production farms, whereas in similar Lithuanian farms – less than 100 thousand litas. Danish farms are distinguished by particularly large equity capital, but also by the lowest profitability.

Lithuanian farms, as compared to the old EU member states, make less investment into production. Production input per ha in Lithuanian farms by the types of farming is worth between 6 and 10 times less, accordingly, the produced net value added per ha of agricultural production is 3.5 – 5 times less. This indicates that Lithuanian farms have the possibilities to pursue the enlargement of production by means of intensifying it accordingly.

The extensive experience of the EU member states indicates, that countries with intensive agricultural sectors consider the extension of the scope of production and the improvement of labour efficiency of the workforce as the major development factor. In most EU countries agricultural reform oriented towards the market economy and the voluntary choice of farming forms facilitated the development of much larger farms in comparison to Lithuanian farms. Lithuania, due to certain aspects of the reform, has developed a rather unfavourable situation in comparison to the EU member states with intensive farming, which consists of the size of prevailing farms. Aiming to achieve the

assured stability of production in agricultural farming, as in any other business, combined with reasonable, and not just minimum satisfaction of the needs of farm workers, it is essential to increase the competitiveness of Lithuanian farms.

6. Concluding Remarks

In 2003–2005 the indicators of economic competitiveness of farms give evidence that the situation is improving. Distinct changes in the development of dairy and mixed production farms enabled to increase the total value of agricultural production per ha by 40% and 1.5 times, respectively. Higher productivity of cows (8%) and increased milk prices (46%) covered the costliness of production resources. Dairy animal husbandry farms compared to the farms of agricultural crops have achieved better results.

The analysis of the production input into the farms of different farming type has indicated their development in different directions. Production input per unit in dairy animal husbandry farms decreased, but increased in the farms of agricultural crops. Such changes influenced the increase of the net rate of return in dairy and mixed production farms, and its decrease in the farms cultivating grain, rape and other agricultural crops.

In 2003–2005 Lithuanian farms increased their capital through the EU and the national support schemes for the acquisition of new agricultural equipment, buildings and machinery, which were not fully employed in the first years of acquisition, because of the insufficient area of arable land and/or the size of animal herds and the efficiency of production. During this period, the rate of return on equity capital decreased in the farms cultivating agricultural crops, vegetables, horticulture oriented and mixed production farms. However, the increase of profitability of farms cultivating grain and rape was reached owing to the increased subsidies to production.

Labour efficiency indicators show that the highest efficiency of labour was achieved by employees on the farms cultivating grain, rape and agricultural crops. An employee of such farms produced about 60% more of the total agricultural production as compared to the average of the country, 50% more than on dairy and mixed production farms, and over 2 times more than an employee of a vegetable growing and horticulture farm.

The analysis of competitiveness of Lithuanian and EU farms indicates, that Lithuanian farms cultivating grain and rape produce, in terms of the total value of agricultural production per ha, approximately 2 times less, and farms cultivating agricultural crops – 5 times less production, than the average of the EU-15, and correspondingly 1.5–2 times less in comparison to the average of the

new EU-9 member states. A similar tendency prevails when comparing the net value added per ha, but the disparity here is reduced due to the subsidies to production.

Labour efficiency of employees on Lithuanian dairy and mixed production farms, as compared to the average data of the EU-15 member states, is 5 times inferior, and comparing with the Danish farms, even 10 times weaker. Dairy and mixed production farms in the EU-15 member states are noted for their high level of labour mechanization and modernisation. About 500 thousand litas worth of equity capital per one employee is available in their dairy and mixed production farms, whereas in similar Lithuanian farms – less than 100 thousand litas.

The most competitive farms in Lithuania, as assessed by competitiveness indicators, were found to be the farms in the size range of 50.1–100 ha, and 100.1-150 ha. The profitability of farms of having less than 30 ha with the highest equity capital per ha of arable land was approximately 18 percentage points lower in comparison to the larger farms. The best indicators of competitiveness may be reached, when the provision of capital and labour force on the farm corresponds to the area of arable land and the scale of production.

Gejza Blaas, Marian Božík
Research Institute of Agriculture and Food Economics
Bratislava, Slovak Republic

Prospects of the Slovakian Farm Sector under the CAP

Introduction

The accession to the EU has altered general conditions of farming in Slovakia mainly in two directions: it changed the institutional environment (rules for agricultural support, food safety and environmental legislation) and enhanced the monetary receipts of farmers (not only in the form of higher direct payments, but also by improving access of farmers to lending capital). Rural development programmes have produced significant effects in the field of modernisation and renewal of physical farm assets. But the softening of the economic environment has been only partial or one sided, because the terms of trade relating to marketed goods have kept worsening, i.e. the price scissors between farm products and input products continued to widen to the detriment of farmers. At the same time, environmental legislation has imposed stringent obligations and duties on primary producers. The costs of meeting them are not negligible.

The response of the farming sector to the changing institutional and economic conditions within the sector is a gradual process with several time sequences. In general, we may speak about short term, medium term and long term responses. None of the reactions, empirically observed during the first three years after accession might prove to be sustainable in terms of longer time perspective. On the other hand, for most of the observable impacts of accession we will have to wait for another couple of years or so.

In this paper, we would like to discuss the impact of accession on farm structure and to present an outlook on further evolution of farm prices, land use, agricultural support and income within the time frame until the year 2025.

Farm structure is pursuing its own way

The transformation, privatisation and restoration of property rights, which were conducted in the early stages of transition to market economy (privatisation of state farms was completed in 1999) has yielded a farming structure, which has been and still is dominated[1] by large-scale farms operated

[1] In depth discussion of the reasons for that is beyond the scope of this paper. We only mention, that the reasons were historical, socio-economic and institutional. Among institutional reasons the way, how the judicial re-installment of property rights was provided

by legal persons (transformed co-operatives, limited liability companies, joint-stock companies). In 2001, more than 87 per cent of the land in agricultural use was operated by corporate farms, about 10% by registered individual farms and about 2.6 per cent of such land was farmed by 63,500 very small subsistence farms. The average size of corporate farms in hectares of farmed land was 1,241 hectares, registered individual farms operated on average 39 hectares, and subsistence farmers farmed 0.87 hectares on average. (Structural, 2001, 2003, 2005) The main trends during the decade before 2001 consisted of the demise of state farms, the decrease of the number and acreage of co-operatives, the increase of the number and acreage of business companies and of registered individual farms.

During the period between 2001 and 2006 no change in this basic pattern occurred. The number of co-operatives and their share of land continued to decline, whereas in the case of business companies, specifically of limited liability companies, their share in the number of farms and their acreage continued to grow further. The holdings of individual farmers also expanded. During this period, the average acreage of limited liability companies decreased from 877 to 595 hectares, the size of producer co-operatives sank from 1,582 hectares to 1,357 hectares, but individual commercial farms increased their average acreage from 39 to 41 hectares. The most typical (modal value of per cent share on a scale of interval distribution) size bracket for limited liability companies, but also for individual farms, has come to be that between 100 and 500 hectares (for individual farms the second most typical was in the range between 10 and 50 hectares).

There is a clearly observable trend that the scale of farming either of corporate farms (except for co-operatives) or individual farms is progressively approaching the pattern of the farm size between 100 – 500 hectares. This is accompanied by the concentration of equity ownership.

During the period of time, which involves Slovakia's accession to the EU, the concentration of equity property ownership in all types of farms has been increasing. Between 2001 and 2006 the average number of equity owners in co-operatives sank to 85% and in limited liability companies to 70%. An average LLC has now 16 owners, while an average co-op 187 owners (Table 5). Most

---

must have been decisive. Mathijs and Swinnen (1998) made the proposition that for the newly emerging farm structure in transition countries it was of crucial importance whether the legislation enforced the restitution of historical property rights to land (Czechoslovakia alike) or if it gave priority to distributrion of land among individuals, who had been involved in former socialist enterprises).

recently, we have been observing a notable entrance of large investors (financial holdings) not only into agribusiness, but also into farming itself.

Another observable trend of farm structure evolution is that of progressing product specialisation of the farms (Table 4). This is to a certain extent linked with another observable trend, i.e. the diminishing scale of operations. The number of corporate farms which were specialising in horticulture fell between 2001 and 2005 to index value 82, but at the same time, the occurrence of this specialisation among individual farms grew three times more (by index 298). This is a typical shift between legal type sectors and is mostly the result of the collapse of vegetable markets in 2004-2005, when massive dumping price imports ruined the local producers.

Other observable shifts in specialisation patterns go across legal sectors. Specialisation in plant crops increased both in the individual and corporate farms by index 125, similarly, the number of farms specialised in livestock breeding and permanent crops increased within both sectors at a similar pace (by value index 130 and 120, respectively). On the other hand, at the end of the surveyed period we had less mixed production farms and less farms specialising in pigs and poultry.

Table 1. Farms by legal form, acreage and share of total farmland

Legal form	Number of farms			Average acreage (hectares)			Share of total national acreage (%)		
	2001	2003	2005	2001	2003	2005	2001	2003	2005
State-owned	6	5	5	2 851	3 383	1 972	0.8	0.8	0.5
Co-operative	722	644	603	1 582	1 598	1 357	52.4	47.6	43.5
All Corporate farms	825	941	1 087	1 002	931	646	33.5	36.4	37.3
Partnership	2	1	1	390	420	430	0.0	0.0	0.0
LLC	700	817	959	877	831	595	25.5	28.6	30.3
PLC	123	123	127	1 842	1 684	1 032	8.0	7.8	7.0
Other legal persons	83	70	110	221	140	70	0.8	0.4	0.4
Legal persons total	1 636	1 660	1 805	1 241	1 181	852	87.5	85.3	81.8
Individual farms	5 874	6 550	7 172	39	42	41	9.9	12.2	15.5
Registered farms total	7 510	8 210	8 977	301	272	204	97.4	97.4	97.3
Farms without legal status	63 529	63 528	59 514	0.9	0.9	0.9	2.6	2.5	2.7
All farms	71 039	71 738	68 491	30.4	29.8	27.4	100.0	100.0	100.0

Source: Structural Census of Farms 2001, Structural Surveys 2003, 2005. Statistical Office of the Slovak Republic.

Table 2: Evolution of the number of individual farms by size (%)

	2001	2002	2003	2004	2005	2006	2006/01*
Without land	0.7	0.7	1.2	3.5	0.2	0.8	142.9
Less than 5 ha	1.3	1.2	0.6	0.4	0.9	1.1	92.9
5- 10 ha	3.4	3.3	2.9	2.5	2.4	1.2	41.7
Over 10 to 50 ha	39.2	34.3	31.9	30.3	26.3	32.6	95.2
Over 50 to 100 ha	23.4	23.9	24.9	26.1	29.6	28.1	137.1
Over 100 to 500 ha	27.0	31.5	33.6	32.5	35.7	32.1	135.7
Over 500	5.0	5.1	4.9	4.8	4.7	4.0	92.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	114.3

*Index calculated from absolute numbers of farms in respective categories.
Source: Central Database of the Ministry of Agriculture, RIAFE. Return of farm surveys 2001- 2006.

Table 3 demonstrates the observable reduction of the number of corporate ventures pursuing agriculture or similar activities without having any land. This may be attributed to the implementation of single area payment type of CAP support in the country, which deprived farms not having any land from eligibility for public subsidies. Those farms were either closed down, or made efforts to acquire appropriate land holdings.

Table 3. Evolution of the number of business companies (PLC+LLC) by size (%)

	2001	2002	2003	2004	2005	2006	2006/001*
Without land	6.6	5.8	6.7	5.8	4.4	1.6	35.1
1 to 100 ha	8.8	10.3	11.4	11.6	18.2	17.5	285.7
101 to 500 ha	23.4	24.7	28.3	29.5	28.2	28.8	153.8
501 to 1000 ha	20.2	20.0	18.4	19.8	19.1	21.3	150.0
1001 to 1500 ha	15.4	14.2	12.5	13.4	12.35	13.1	122.1
1501 to 2000 ha	7.7	7.6	8.3	7.5	7.0	6.5	120.9
Over 2000 ha	18.0	17.4	14.5	12.6	10.8	11.1	88.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	142.7

*Index calculated from absolute numbers of farms in respective categories
Source: Central Database of the Ministry of Agriculture, RIAFE. Return of farm surveys 2001-2006.

To conclude the topic of structural change, it may be stated that the CAP implementation did not change the prevalence of corporate type of farming in the country, nevertheless it enhanced the process of scale adjustment towards a uniform pattern irrespective of the legal form of business. It further intensified farm specialization, in particular the massive abandonment of livestock production and the expansion of crop growing for the market.

Table 4. Type of production by legal form – change between 2001 and 2005

Production type	Corporate farms			Index 2005/	Registered (commercial) individual farms			Index 2005/
	2001	2003	2005	2001	2001	2003	2005	2001
Total	1 636	1 660	1 805	110.3	5 874	6 550	7 172	122.1
Field cropping	485	523	611	126.0	2 863	3 349	3 589	125.4
Horticulture	17	14	14	82.3	57	113	170	298.2
Permanent crops	50	93	115	230.0	197	402	414	210.1
Grazing livestock	314	287	407	129.6	900	767	1 176	130.7
Pork and poultry	116	120	110	94.8	332	389	273	82.2
Mixed plant production	128	169	110	85.9	395	447	441	111.6
Mixed livestock production	94	67	38	40.4	230	177	211	91.7
Mixed plant and livestock	413	370	393	95.2	854	829	887	103.9
Unclassified	18	17	7	38.9	46	77	11	23.9

Source: Green report, Ministry of Agriculture 2007, Structural Census of Farms, Statistical Office of the Slovak Republic 2001, Structural Survey of Farms Statistical Office of the Slovak Republic 2003, 2005.

Table 5. Average number of equity owners in corporate farms

	2001	2002	2003	2004	2005	2006	Index 2006/2001
Co-operatives	220	223	216	209	198	187	85.5
LLC and PLC	23	23	20	20	21	17	70.6

Source: Farm Survey of the Ministry of Agriculture, 2003-2006.

Projection of prospects for agriculture in Slovakia under the reformed CAP

The estimation of future farm production and income under the reformed CAP was conducted by means of simulation on a model processed by RIAFE. The modelling work was based on three scenario assumptions concerning future policy options.

1. Baseline Scenario (BS) – based on the continuation of current trends with the inclusion of scheduled reforms in line with the ongoing CAP Health Check and their enforcement after the year 2010. This scenario assumes totally decoupled payments and support targeted on the fulfilment of environmental requirements.
2. Developing Scenario (DS) – committed to the assumption of progressive and prospective development of agriculture as an important sector of the national economy. It assumes the sustaining of product oriented coupled direct payments at a level equalized over all EU Member States.

3. Liberal Scenario (LS) – works with the assumption of phased elimination of internal and border support and of trade barriers, which will lead to the abolition of production constraints and to overall market environment liberalisation.

Modelling tools in brief

Two models were developed for the medium term projection of CAP impact on Agriculture:

- Partial equilibrium model (RIAFE-AGRO);
- Regional model of agricultural production systems (PPS).

RIAFE-AGRO simulates production – economic effects on three markets:

- Agricultural market - land, individual crops area, animal herds, prices, production, oversupply (or deficit), revenue, costs, subsidies and income);
- Food market - prices, production, oversupply (or deficit), revenue, costs, and income);
- Consumer market for food - food consumption and demand, prices, consumer expenditure.

Model results attained at the national level (supply, demand, prices) are used as exogenous parameters (inputs) of the regional PPS model, which solves the optimization task and allocates supply across the 15 agricultural regions of Slovakia. Each region has common and some particular own constraints defined, e.g., for land, productive potential, up and bottom structure of crops and livestock bound, nitrogen consumption and livestock feed crops bounds, and some other. This simulation resulting in the range of land use, animal herds, production, revenue, costs, subsidies by different targets of support, income and some environmental effects. Iterations of both models were run in GAMS at the same time in the time series 2005-2025.

Results

Because of the limited space of this article, we focus our attention on major modelling results as follows:

- Prices
- Land use
- CAP support and payments
- Income from agriculture

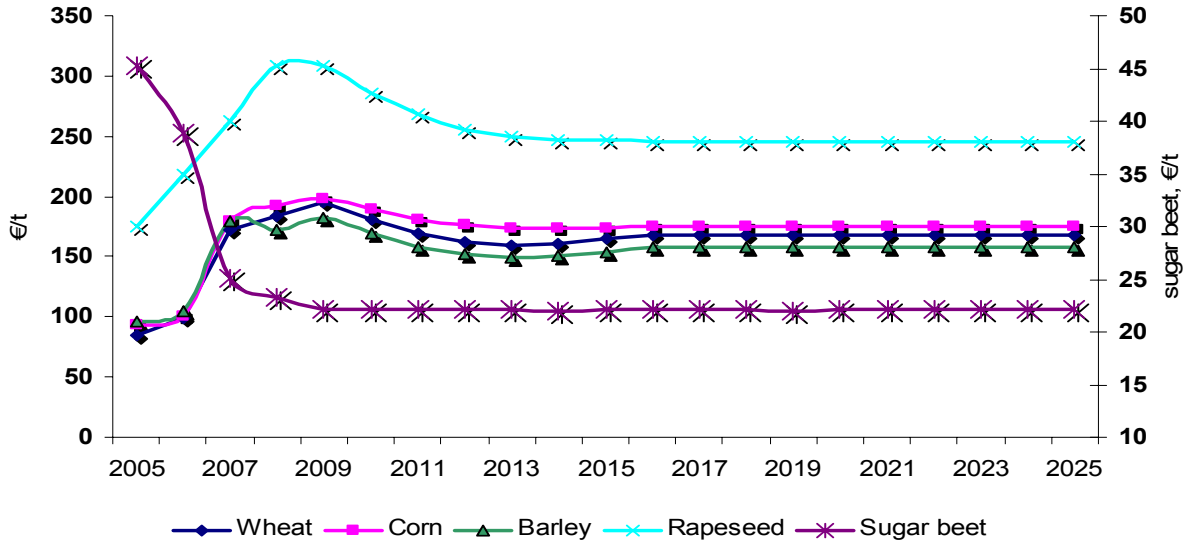
Prices

Price development is one of the projection driving forces. Its projection is taking into the account the latest (spring, summer 2007) OECD, FAO and EU projections.

Basic developments, which will influence price levels of individual commodities:

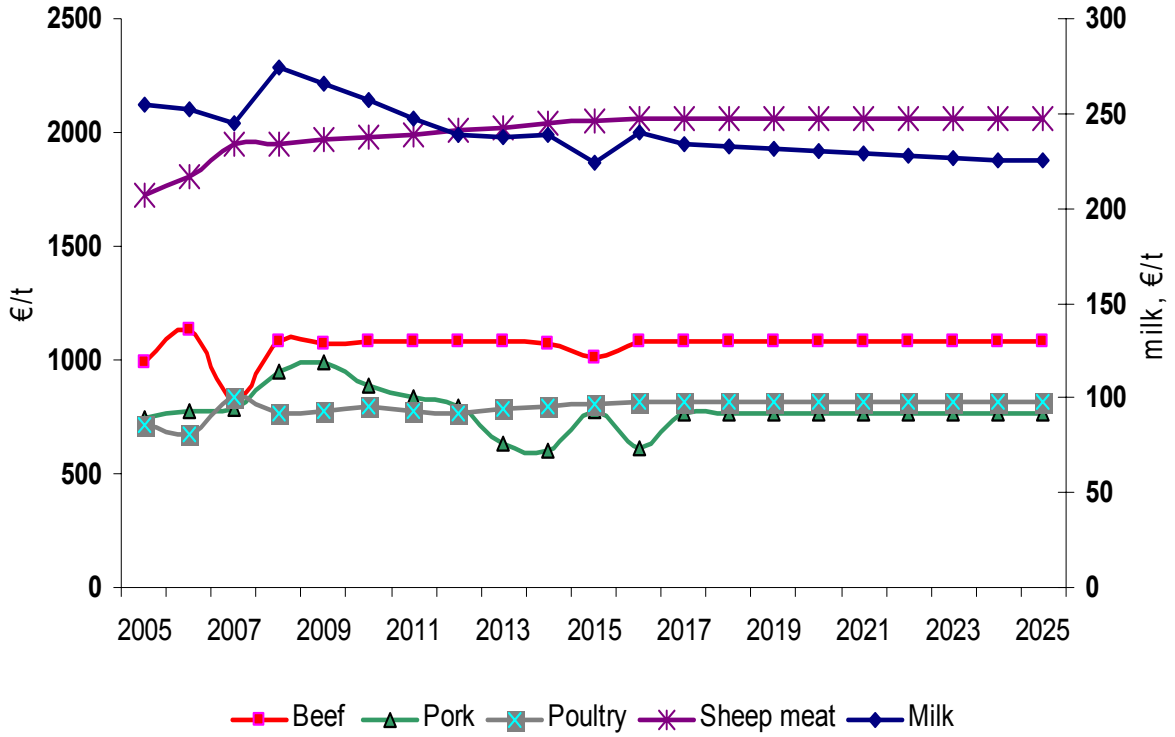
- Change of agricultural markets from surplus to more balanced (every now and again some imbalances). This implies that the price levels of cereals, milk products and some other commodities reached in 2007 will be maintained, or will not grow dramatically. Demand for energy crops will continue to act as an important price factor on the market for cereals and oilseeds.
- Price adaptation starting after the EU accession (with delay of 1-2 years), contributed to the current domestic price level creation (e.g. milk) and will not be significantly accelerating the growth of domestic prices.
- Price changes caused by policy reforms (e.g. sugar) will be lasting.
- CAP reform (decoupling, supply reduction) will lead to price growth to some extent (e.g. beef and mutton). Permanent growth of demand for poultry could also ensure price growth. The price of pork will vary in cycles, similarly as up to now.

Figure 1. Price projection for crops



Source: RIAFE.

Figure 2. Price projection for livestock



Source: RIAFE.

Land use

The economic impacts of trends assumed under the scenarios of CAP reform are directly dependent on the world and European agricultural markets, supply, demand, prices, along with the influence of the macroeconomic environment, technology, intensity of production, as well as climate change and consumer behaviour.

Land utilization differs by alternative scenarios. From the top it is limited by the amount of available agricultural land (1,965,000 hectares) and by the assumption of arable land not exceeding the maximum of 1,360,000 ha. On the other hand, a shift in favour of grassland is possible. Besides some uncertainties caused by the scale of the scenarios and the projected period, demand for non-agricultural production activities could lead to other than agricultural use of land.

Baseline Scenario

Owing to the extent of cereals production and to changes after the reform (2013), this scenario will lead to stable arable land use during the whole period. Crops on the eligible area will be 23% higher in comparison to 2006. Permanent

grasslands reflect the acreage *needs for animal herds* (cattle and sheep). Compared to 2005, slight growth from the year 2010 sets this area as becoming larger by 60,000 ha. This will be in line with the slight increase of suckler cows and ewes (livestock units). This will be the case mainly for mountain regions. In general, in this scenario the incentives to produce in less efficient regions are weak.

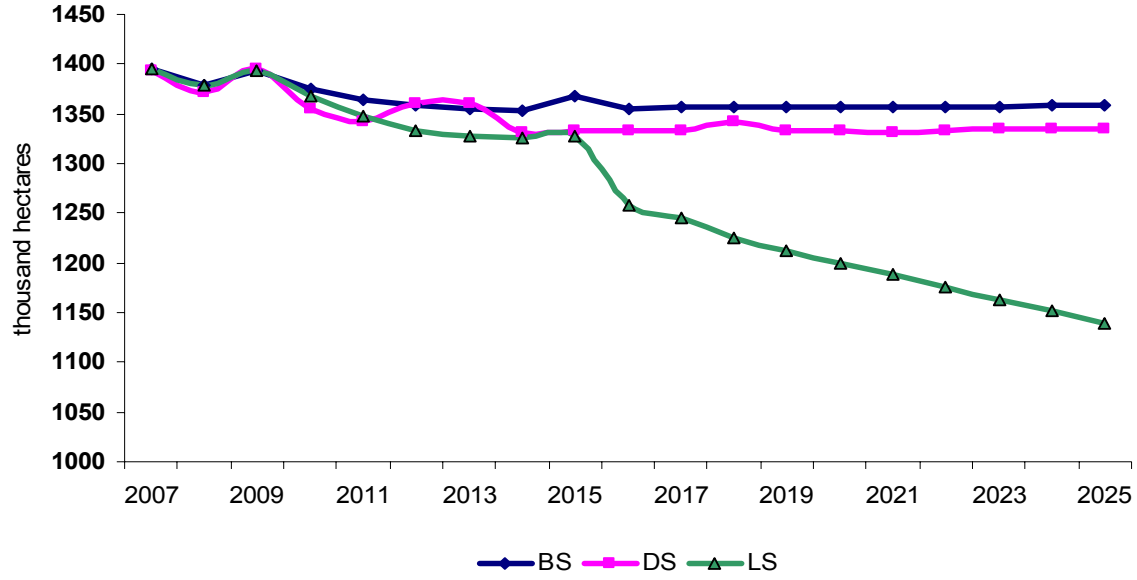
Developing Scenario

Along with policy impact, results in this scenario are partly influenced by the intensification of production (shift of modulation resources toward modernisation). This effect resulted in slightly lower arable land use compared to the baseline. Policy stimulation will be partly weakened by supply (and demand) and competitiveness on global and regional markets. Economically, this scenario favours both crops and livestock (coupled payment). Cattle breeding will increase the demand for grassland, mainly in mountain regions. On the other hand, the result of the DS partly eliminates production from less efficient regions together with its allocation to the more efficient ones. This effect is accompanied by a slight shift of arable land into the grassland. This could be the case for mountain regions.

Liberal Scenario

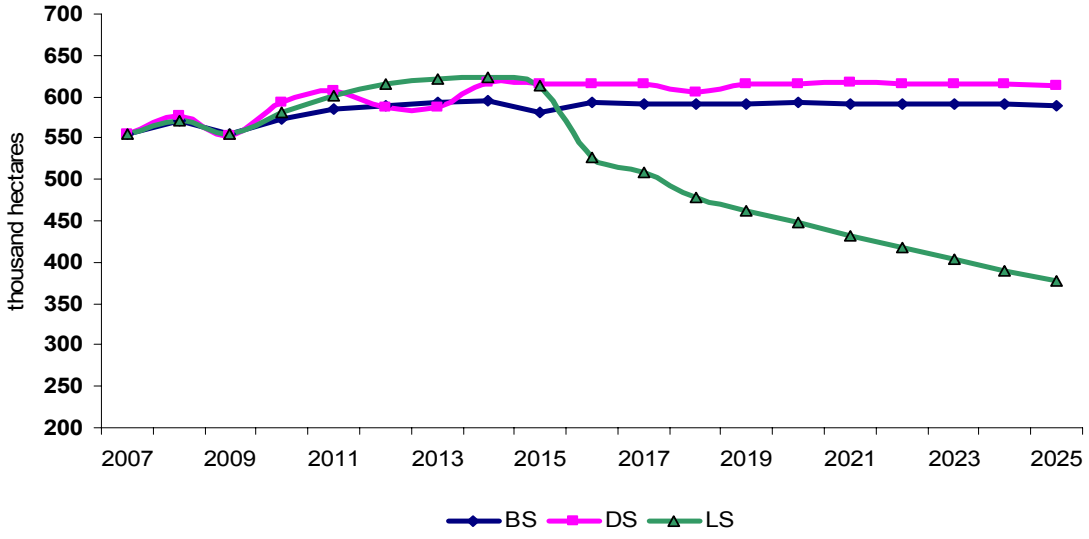
The liberal scenario does not offer, except for the first decade (until 2015), such production stimulus as the previous ones. Apart from phased cancelling of all support measures (direct payments and payments for LFA), with the exception of environmental support, we assume the increase of competition on agricultural and food markets. These assumptions could cause the decline of arable land use by some 20%, compared to the current period. Pressure for more efficient land use will be evident and will prevail during the whole projected period. The reduction of cattle and sheep herds will generate low demand for feed obtained from grassland. Therefore, the acreage of grassland at the end of the projected period will be at the level of 70%, compared to 2005-06.

Figure 3. Arable land



Source: RIAFE.

Figure 4. Permanent grassland

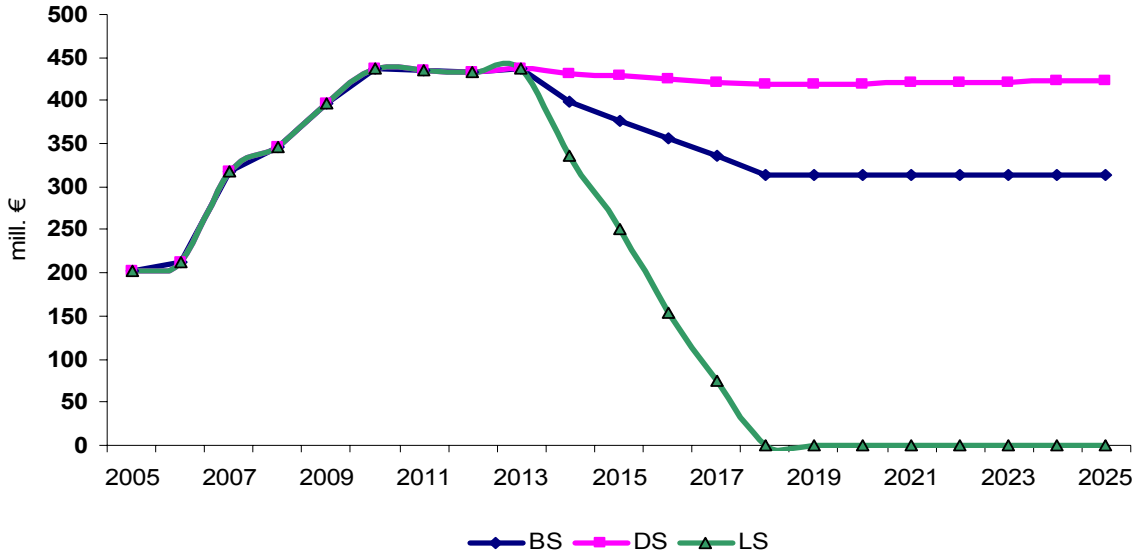


Source: RIAFE.

CAP support and payments

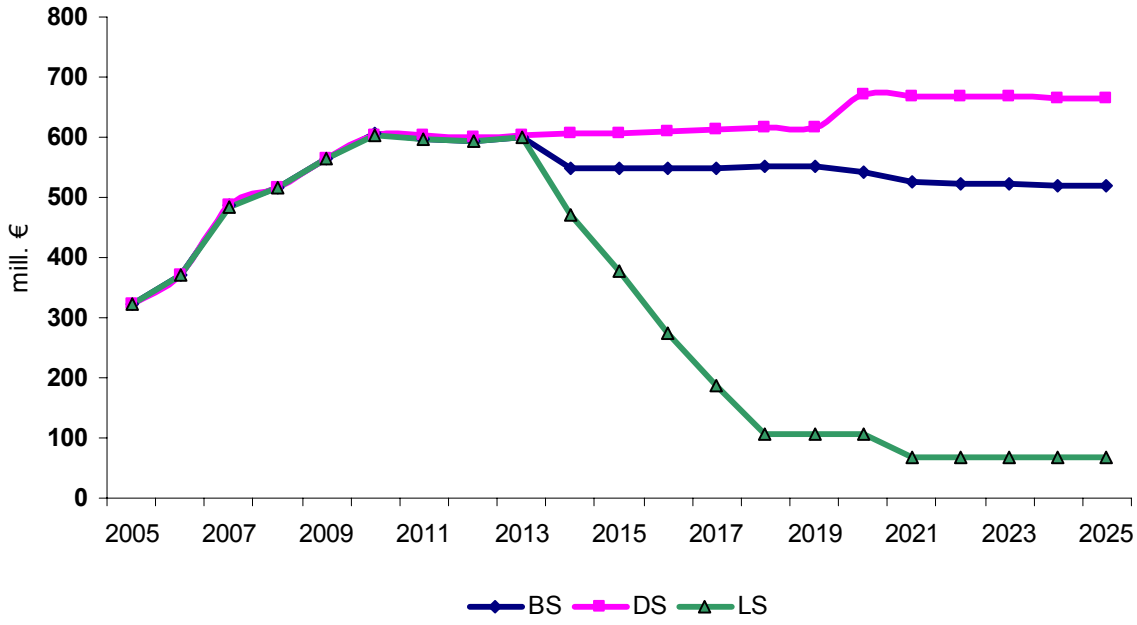
Different support targets in the scenarios BS, DS and LS will imply different volumes of financial resources. These will be reduced with varying intensity during the whole period, but most markedly in the liberal scenario. According to the LS, from the year 2018 the CAP support will be restricted just to environmental goals. This scenario will mainly affect the lowlands. The slight increase of support after the year 2020 in the DS is a result of a shift in the use of modulation resources from modernisation to environmental targets.

Figure 5. Direct payments



Source: RIAFE.

Figure 6. Total support of Agriculture



Source: RIAFE.

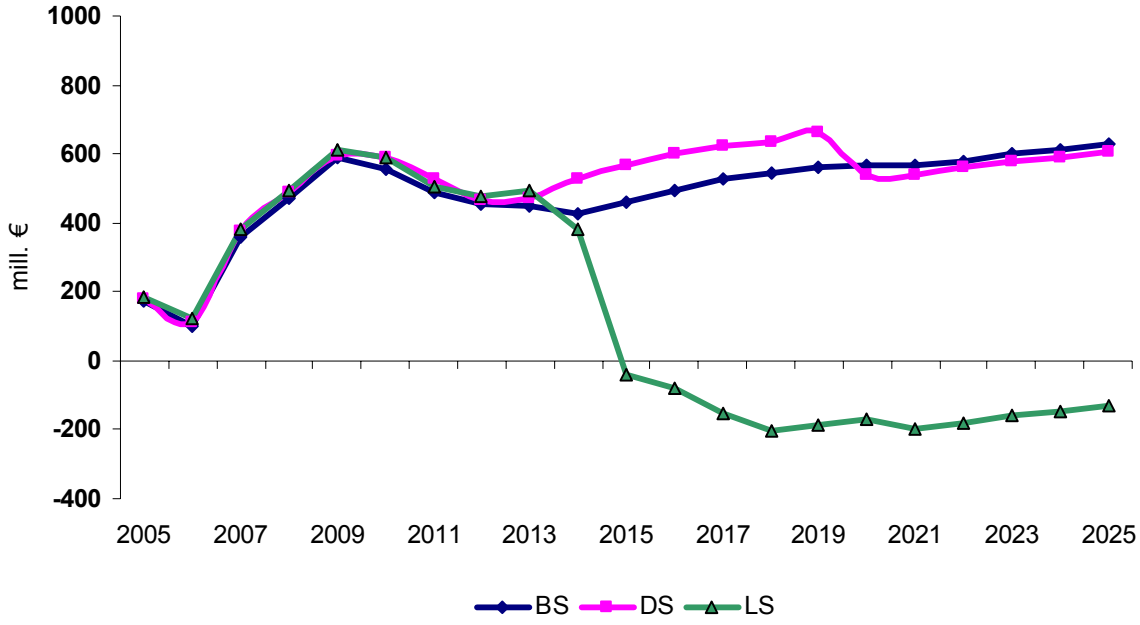
Income from agriculture

Support measures will influence agricultural income also in the future. Their share in income and the importance of support will be significantly weakened. As can be seen from the graph, in the case of the LS this will increase the need to diversify income sources and farm activities in advance, mainly in

the LFA areas. This problem could be solved by more efficient regional allocation based on competitiveness within the country. The presented results take into account the agricultural market oriented activities only.

Despite of better income results and higher support in the future according to the DS, the baseline scenario shows that decoupling could generate results on a similar level, but with less distorted markets. After the year 2020 there was no significant difference between the Baseline Scenario and the Developing Scenario.

Figure 7. Total income from Agriculture



Source: RIAFE.

Table 5. Model scenarios

Scenarios	Production constraints	Direct payments		LFA payment	Acreage of LFA
Baseline scenario (BS)	Milk quota abolition from 2015-16, set aside at the current level of 10%	Decrease by 25%, phased to the level of 75% in the year 2018	Decoupled from the year 2014, SR will be coupled until 2013 on EA and LU	Decrease from 2011 -13 by 5%, 2014 -2020 by 10% and 2021-2025 by 20%	Decrease O LFA and S LFA 2014-2020 by 20%, 2021-2025 by further 20% and mountain LFA by 20%
Developing scenario (DS)	Milk quota abolition from 2015-16, set aside at the same level as in BS	Decrease by 5%, phased to the level of 95% in the year 2018	Decoupled from the year 2025, SR will be coupled until 2013 on EA and LU. 2014 - 2025 coupled on EA and livestock	2011-2013 no change, 2014-2018 phased increase by 30%, 2019-2025 decrease to 120% of the 2013 level	No change
Liberal scenario (LS)	Milk quota abolition from 2015-16, no set aside from 2013	Phased decrease pending total abolition in the year 2018, phased removal into the II. pillar CAP	Decoupled from the year 2014 - 2017, SR will be coupled until 2013 on EA and LU.	Decrease from 2011 -13 by 5%, 2014 -2020 by 50% and 2021-2025 decrease pending total abolition in the year 2025	Decrease LFA 2014-2020 by 20%, 2021-2025 total acreage abolition
Scenarios	Modulation	Distribution of modulation		Environmental constrains	
Baseline scenario (BS)	Resources obtained by direct payment decrease will be distributed between country and other member states in proportion 20:80	2014-2020: 20% of resources obtained by country from modulation will be distributed on modernisation and 80% on environmental targets	2021-2025: 25% of resources obtained by country from modulation will be distributed on modernisation and 75% on environmental targets	2014-2020: acreage of the land with environmental constraints will increase to 15% of all agricultural land	2021-2025: acreage of the land with environmental constraints will increase to 35% of all agricultural land
Developing scenario (DS)	Modulation resources will be distributed between country and other member states in proportion 80:20	2014-2020: 100% of resources obtained by country from modulation will be used for modernisation	2021-2025: 70% of resources obtained by country from modulation will be distributed on modernisation and 30% on environmental targets	2014-2020: no change in acreage of the land with environmental constraints (current 9% of all agricultural land)	2021-2025: no change in acreage of the land with environmental constraints (current 9% of all agricultural land)
Liberal scenario (LS)	Until DP cancelling (2018), resources distributed in proportion 50:50.	No resources after 2018	No resources for modulation distribution	2014-2020: no change in acreage of the land with environmental constraints (current 9% of all agricultural land)	2021-2025: no change in acreage of the land with environmental constraints (current 9% of all agricultural land)

Source: Prognosis and vision of agriculture, forestry, food industry and rural of Slovakia, RIAFE – Ministry of Agriculture of the Slovak Republic, 2007, 233 p.

References

1. Mathijs, E., Swinnen, J. (1998): *The economics of agricultural decollectivization in east Central Europe and the former Soviet Union*. Economic Development and Cultural Change 47(1), pp. 1-26.
2. Forecast and vision of agriculture, forestry, food industry and rural of Slovakia*, RIAFE – Ministry of Agriculture of the Slovak Republic, 2007, 233 p.*
3. Structural Census of Farms 2001. *Statistical Office of the Slovak Republic, 2001*
4. Structural Survey of Farms 2003*, 2005. Statistical Office of the Slovak Republic.*

Václav Bašek, Emil Divila
Research Institute of Agricultural Economics
Prague, Czech Republic

Farm structure in the Czech Republic – Today and Tomorrow

1. Introduction

In the past period after the so called Velvet Revolution of 1989 substantial changes took place in the enterprise structure of the agricultural sector of the Czech Republic. The originally minute weight of private farmers and/or holdings of natural persons (HNP) has increased markedly while the weight of both crucial sectors of former socialist agriculture has decreased considerably. The sector of production cooperatives has been substantially reduced and the state sector has practically disappeared. The resulting gap was filled by HNP to a smaller extent and by a new enterprise form in Czech agriculture – commercial business companies to a larger extent (mostly limited liability companies and joint-stock companies).

At the turn of the years 2007-2008 incorporated agricultural business companies and cooperative farms managed more than 70% of the agricultural land and almost ¾ of arable land. Their share in the stocks of the basic species of farm animals was even higher. Eighteen years after the November Revolution, the farm structure in the Czech Republic is very different not only from that in the EU-15 countries, but also from the other new member states (except for Slovakia). Not only for this external reason, but also due to some internal aspects (including the unfinished transformation of property rights of cooperative farms), other significant changes may be expected in the years to come.

2. Enterprise Structure of the Present Czech Agriculture

The present enterprise structure of the sector of agriculture in the Czech Republic is characterised by the great weight of holdings of legal persons (HLP) (Table 1). Among them, incorporated business companies – limited liability companies (s.r.o.) and joint-stock companies (a.s.) – are the prevailing legal forms (while the share of partnerships and special partnerships is small). Agricultural production cooperatives have also had a significant share until now, whereas the share of other legal persons is marginal (less than 1%). Self-employed farmers (SEF, with the relevant authorisation for business activities in agriculture) have the highest share in the land managed by all holdings of natural persons (HNP).

Holdings of legal persons (HLP) have a still higher share in the stocks of the basic species of farm animals than in the farmed land. Considering the legal forms of holdings, cooperative farms are the largest producers of cattle, followed by joint-stock companies. The largest producers of pigs are also joint-stock companies, followed (at a great distance) by cooperative farms and limited liability companies, whereas the largest producers of poultry are joint-stock companies, limited liability companies and self-employed farmers.

The great weight of HLP influences all basic structural characteristics of Czech agriculture. It applies mainly to the dual size structure of farms. According to the updated agricultural register of the Czech Statistical Office, in 2007, 66.1% of farms with the maximum land areas of 10 ha managed only 2.2% of the total area of agricultural land (a. l.) farmed by all agricultural holdings, while the 3.8% of farms with the land area above 500 ha managed 72.2% of the total land area. Out of this, HLP accounted for 65.0% and HNP for 7.2%.

Table 1. Enterprise structure of the sector of agriculture in the Czech Republic, as at the end of 2007[1)]

Legal forms of agricultural holdings	Farm structure (%)	Share of main categories of holdings (%)				
		Cultivated land		Stocks of farm animals		
		agricultural	arable	cattle	pigs	poultry
Holdings of natural persons	93.3	29.8	25.7	22.3	9.5	11.5
of which: SEF[2)]	64.1	28.0	24.4	21.1	8.8	10.9
Holdings of legal persons	6.7	70.2	74.3	77.7	90.5	88.5
including: - Ltd. (s. r.o.)	3.8	22.9	21.6	17.8	16.7	38.2
- joint-stock comp. (a.s.)	1.3	22.5	25.2	27.7	49.8	41.5
- cooperative farms	1.2	23.5	26.3	31.0	23.0	8.4
Total	100.0	100.0	100.0	100.0	100.0	100.0

1) Preliminary data.
2) Self-employed farmers (with relevant authorisation for business activity in agriculture).
Source: CZSO - Agricultural Register.

A high number of smalls entities (mostly HNP) markedly influences the average area of all registered agricultural holdings, traditionally determined as a simple arithmetical mean. According to 2007 data this indicator was 74 ha of agricultural land. Taking into account the different weights of the farm size groups in relation to the total area of farmed land, the weighted arithmetical

mean is much higher – 1,403 ha[1]. The average area calculated in this way describes the real size profile of agricultural holdings more reliably, because it eliminates the influence of greater fluctuations of the number of marginal entities entered in the agricultural register or during structural surveys.

The weighted arithmetical mean should be used also in international comparisons. Based on Eurostat data from 2005, we can compare e.g. the respective indicators for the Czech Republic and for the United Kingdom, which has the largest average area of agricultural holdings in the "old" EU member states: the simple arithmetical mean in the Czech Republic was 1.6 times higher, while the weighted mean was 3 times higher than in the United Kingdom. In the case of the latter indicator, the weight of larger farms in the Czech Republic played a greater role (i.e. of farms above 100 ha of agricultural land).

The results of structural surveys in the agricultural sector of the EU member states from 2005, published by Eurostat in 2006-2007, make it possible to compare the basic structural characteristics for the Czech Republic with other countries of the Union, in this case with the group of EU-15 countries (Table 2).

The average size of farms by area in the Czech Republic is substantially larger than in the compared countries (in the EU-25 this indicator was somewhat higher only in Slovakia in 2005). A several times higher share of annual work units (AWU) on the farms above 100 ha a. l. than in other countries (e.g. twice as high as in Denmark and more than six times higher than in Austria) also documents the marked dominance of large-sized farms in the Czech Republic.

The share of land owned as freehold in the total area of agricultural land managed by farms in Czech agriculture (less than 14%) is the lowest among all the compared countries. This share is also relatively low in Belgium and Germany. On the contrary, it is the highest in Denmark (more than 75%). Here this indicator is quite balanced across the different farm size groups. It ranges between 90%

on farms smaller than 20 ha and 68% on farms above 100 ha; in the Czech Republic it varies from 73% to 9%, respectively. A major part of farms in Czech agriculture consists of leaseholders of land. This implies some risks for the future prospects of these farms.

---

[1] The weighted mean was calculated according to the formula $\frac{\sum_i vi\ pi}{100}$,

where

vi = the average area of farms in the size groups less than 5 ha, 5 to 10 ha, 10 to 50 ha etc. up to 2 thousand ha and more

pi = the percentage share of the size groups in the total area of agricultural land.

A high number of holding managers work part-time on the farms: more than 44% in the Czech Republic, almost 60% in Denmark, but just less than 34% in the Netherlands. These figures reflect different degrees of intensity of agricultural production in these countries, connected with different work load of farm holders and/or managers. In 2005, in the Netherlands, the average economic size of 1 farm (at the relatively low average area of agricultural land) was 102.6 ESU, whereas in Denmark it was 73.2 ESU. In the Czech Republic agricultural holdings manage on average a five times larger area of agricultural land than in the Netherlands, but their average economic size is smaller by almost a half (57.6 ESU). It is influenced especially by the much lower intensity of agricultural production, as documented by low stocks of farm animals per unit of land.

The share of HNP in the total number of agricultural holdings in the Czech Republic is the lowest among the compared countries. But the number of HNP is highly dominant also in the Czech Republic. However, their weight in the economics of the given sector has been relatively low until now. This is evidenced by the share of family labour force in the total number of annual work units (AWU). This share amounts to less than one fifth in the Czech Republic, while it is ranges from more than three thirds to over nine tenths in the compared EU-15 countries. Unlike other countries with the mostly "family" profile of agriculture, this sector has the markedly "hired labour" (employees) profile in the Czech Republic.

A more detailed comparison shows that in the case of holdings of natural persons the structural characteristics of farms in the Czech Republic and in the selected EU-15 countries are different. However, much larger differences exist between member states in the majority of the analysed indicators for the entire agricultural sector involving of all legal forms of holdings. This applies both to the selected group of countries and to all the EU countries, for which Eurostat published results of the relevant structural survey in 2005.

Table 2. Selected indicators of the farm structure of agriculture in the Czech Republic and in a group of EU-15 countries in 2005[1)]

Indicator	Czech Republic	Belgium	Denmark	Germany	Nether-lands	Austria
Share of legal persons in total number of holdings	10.3	7.1	0.8	1.3	4.9	0.4
Average area of a. l. (ha/farm)	133.6	27.9	53.8	45.7	23.9	19.6
including - farms with area above 50 ha a. l.	514.6	84.9	124.7	146.4	82.1	99.1
Share of freehold owned land (%)	13.6	32.0	75.2	36.1	60.8	67.5
Average number of ESU per 1 farm	57.6	67.0	73.2	52.2	102.6	18.3
Share of farms with the area above 100 ha a. l. in total number of AWU[2)] (%)	71.6	21.8[3)]	36.1	22.8	16.4[3)]	11.0[3)]
Share of family labour force in total number of AWU (%)	19.8	80.2	62.3	69.5	63.1	90.4
Share of part-time holding managers (%)	44.2	32.0	59.6	53.5	33.6	56.9
Share of farms with ecological agriculture (%)	2.2	1.1	5.0	3.6	1.5	12.9
Share of farms without farm animals (%)	26.2	12.1	37.0	27.5	31.7	21.3
Number of LU per 100 ha a. l.	58.1	280.7	170.8	106.8	326.2	90.6
Share of agricultural holdings with non-agricultural gainful activity (%)	13.9	4.2	18.3	23.1	22.5	24.7

1) Data on agricultural holdings with the economic size larger than one European size unit (1 ESU = 1 200 euros).
2) AWU - annual work unit; 1 AWU = 1 adjusted worker with the annual working capacity of 1 800 hours.
3) Data on holdings above 50 ha a. l.
Source: Eurostat - Statistics in focus, 18/2006, 21/2006, 5/2007, 11/2007, 13/2007, 26/2007.

For example, the average area of farms in the Czech Republic and in Slovakia (134 ha and 143 ha a. l., respectively) is more than a hundred times larger than in Malta (1.2 ha) and many times larger than in Cyprus (4.8 ha), Slovenia (7.4 ha), Italy (9.0 ha) or Poland (12.1 ha). Among the other EU countries, farms in the United Kingdom, with the average area of 81.3 ha a. l., are approaching the average size of Slovak and Czech farms. The share of land owned as freehold in the total area of land managed by agricultural holdings was almost 77% in Poland and 82% in Ireland, while it was less than 14% in the Czech Republic and less than 8% in Slovakia. The share of family labour force in the total labour force active in agriculture (adjusted for full-time work): less than 20% in the Czech Republic and less than 16% in Slovakia, whereas it is almost 93% in Ireland and more than 93% in Poland. The share of less-favoured

or mountain areas: zero in Denmark, Cyprus, Latvia and Netherlands, but 100% in Finland, Luxembourg and Malta. The share of permanent crops in the total area of agricultural land: 0.2% in the United Kingdom and Estonia, 18% in Italy and Spain and less than 26% in Cyprus (1.1% in the Czech Republic). The number of livestock units (LU) per 100 ha a. l.: 32 in Latvia and 362 in the Netherlands (58 in the Czech Republic).

The harmonisation of different national preferences and interests is obviously very difficult under the conditions of such heterogeneous agricultural structures (farm and production) in the EU member states. With the enlargement of the Union the respect of the principles of subsidiary and/or the relevant role of national agricultural policies in the framework of EU agricultural policy are increasingly claimed.

3. Prerequisites of Further Development

Even though the increase of the share of HNP in farmed agricultural land has been considerable to date in relation to their minute share in the pre-November period (a hundred times: from 0.3% in 1989 to almost 30% in 2007), their weight in Czech agriculture continues to differ substantially from the countries of Western Europe and other countries with a dominant role of family farms. This is the case despite the fact that the fundamental legislative conditions for the restoration of dominance of privately owned farms (HNP) were laid down eighteen years ago by the restitution and guarantee of private property in the land.

Based on the respective laws and their latest amendments, three specific transformation processes have taken place in Czech agriculture: restitution of ownership of land and other farm assets as private property; privatisation of previously state-owned farm assets, including the land; and transformation of property rights of former agricultural cooperative farms that were the main legal form of farms in Czech agriculture until 1990. The so called Transformation Act significantly supported the renaissance of agricultural holdings by transferring 80% of the book value of the assets of agricultural cooperative farms that were designated for transformation to individual owners of land (50% by virtue of the land ownership itself and 30% by virtue of the ownership of other farm assets before the origination of so called Unified Cooperative Farms). Nevertheless, no general transformation of cooperative farms into holdings of private persons has taken place.

Further development of the enterprise structure of Czech agriculture will be influenced not only by normal economic competition between different size groups and proprietary business forms of agricultural holdings. In the nearest

future this development will be directly influenced by topical factors, such as the acceleration of the sale of state-owned land, new legal regulation defining the settlement of property shares from the transformation of property rights of cooperative farms and some others.

The law in force regulating the sale of state-owned land enhances the desirable consolidation of the market for land on the supply side. At the same time, the sale of land to natural persons engaged in agricultural production is treated preferentially, contributing to the stabilisation of property rights to land, to an increase in the share of land owned as freehold and to better economic prospects of holdings of natural persons as the buyers. The same tendency in connection with the sale of land owned by the state, however, cannot be expected in the case of holdings of legal persons. Only the shareholders of the respective business companies or members of cooperative farms can privatise the state-owned land. They can lease it to "their own" companies.

The privatisation of state-owned land should be accelerated by an envisaged amendment of the Act on the Sale of State-owned Land (along with amendments of the Land Act and the Act on the Land Resources Fund of the Czech Republic, which administers the agricultural land owned by the state). A significant area of this land is to be sold. In 2006 the Land Resources Fund leased out 411,000 ha a. l., which represented 12% of the total farmed land in the Czech Republic. This included 122,000 ha leased to natural persons and 289,000 ha leased out to legal persons.

The transformation of property rights of cooperative farms, realised in 1992-1993, confirmed the basic rights (right of possession, use and disposal) of the owners of the land managed by cooperative farms. The division into and/or transfer of so called transformation shares of the respective part of property – the net worth of cooperative farms was carried out at the same time. About 20% of this property was allotted to members working in the given cooperative, ca. 40% to members not working in the cooperative (mostly members- pensioners) and ca. 40% to non-members (mostly small owners of land farmed by cooperative farms).

The transformation law did not specify any time limits for the settlement of property shares of cooperative members that were given by the general legal regulation of business obligation relations and by the statutes of the cooperative farms. The shares – the claims of those members who started agricultural production were to be settled immediately. The shares of the non-members not engaged in agricultural production were "frozen" for a period of seven years pursuant to the transformation law. Subsequently, these entitled persons would require the settlement of the respective claims. Because the transformation of

property rights of cooperative farms was completed in 1993 in terms of the distribution of property shares, the time limit for the settlement of the resulting obligations to the entitled persons – non-members matured in 2000.

The majority of these obligations has remained unsettled until now. Many cooperative farms as obliged persons have relied on the government in the belief that it would participate in the settlement of transformation obligations anyhow. The maximum estimate of the respective amount is about 10 billion Kč or about 400 million euros. As a major part of cooperative farms was transformed into business companies in the past period, these companies, particularly joint-stock companies, should also settle a portion of the respective claims. This situation should be solved by a new "finishing" law concerning the settlement of property shares from the transformation of agricultural cooperative farms.

This may become a problem of further existence for some cooperative farms. But most of them should be able to cope with the final settlement of transformation shares. It should be so, as a several-year payment regime will apparently be laid down in the above-mentioned law. Nevertheless, the financial situation will worsen in holdings with larger volumes of outstanding shares that have not been settled until now. Especially if the relatively high total indebtedness of HLP is taken into account. According to FADN, Czech data from 2006, the average rate of indebtedness of these holdings (external resources/total assets*100) was 41.9% (of this 48.4% in cooperative farms), while in HNP it was 16.0% on average (including 22.0% in those with an area above 300 ha a. l.). The holdings of natural persons operate with a much higher share of own equity capital and therefore their rate of indebtedness is markedly lower than in cooperative farms and corporate business companies.

The less favourable financial situation of cooperative farms and commercial business companies will also weaken their position in the competition with HNP for the lease (or purchase) of land from individual owners (non-farmers). According to the results of the structural survey in agriculture (FSS CZ), in 2005 the share of leased land in holdings of legal persons was 94.9% on average, 96.7% in cooperative farms and 96.1% in joint-stock companies. In holdings of natural persons this figure was 63.6% on average, 31.4% in those with the area of less than 50 ha and 73.2% in holdings with the area above 100 ha. The leasehold of land is extremely vital for HLP. A large difference between the amount of subsidies (direct payments) per unit of land and the rent naturally increases the demand on the part of landholders.

The rent for land in the Czech Republic is several times lower than in neighbouring Germany and in other countries of Western Europe. For the overwhelming majority of the large Czech agricultural holdings the use of land

was hitherto a historical legacy, which was accompanied by the underdevelopment of the land market after 1989. Combined with the extreme fragmentation of land ownership (in the Czech Republic, with the ten million population, there are about two million owners of agricultural land) this leads to the persistence of actual dominance of the rights of tenant users over the ownership rights. Under such circumstances, large holdings have been realising an extraordinary return (profit) on the use of land at the expense of the owners since a long time.

As soon as the competition for rented land increases (which depends *i.a.* on the progress of so called complex re-parcelling), it will apparently lead to a more marked reduction of the large area size of cooperative farms and business companies existing to date. However, diminished size alone need not cause their economic non-viability and non-sustainability.

Table 3 shows 2006 data on FADN CZ for a sampling set of 1,263 holdings, 1,090 of which were profit-making and 173 were loss-making ones. It is documented that compared to the loss-making farms, the profit-making HLP are usually characterised by a significantly larger size – by area and by economic size, expressed in European size units (ESU), as well as by higher AWU per 1 farm. This also applies to HNP with the area by size above 300 ha a. l. Based on these data the conclusion is drawn that the size of the holdings need not appear to be their handicap under the given conditions. It may be surprising that according to FADN data there exists additional space for the efficient increase of the hitherto existing size of the "largest" agricultural holdings.

Table 3. The size of profit- and loss-making holdings in agriculture of the Czech Republic in 2006[1)]

Agricultural holdings	Area of managed a. l. per 1 farm (ha)		Labour force per 1 farm				Number of ESU[3)] per 1 farm	
			physical number		AWU[2)]			
	profit-making farms	loss-making farms	profit-making farms	loss-making farms	profit-making farms	loss-making farms	profit-making farms	loss-making farms
Holdings of nat. persons	149	104	4.4	4.0	2.8	2.9	49	38
including: above 300 ha	581	345	9.2	8.0	7.2	6.0	172	84
Companies s. r. o.(Ltd.)	973	812	32.9	32.9	28.3	21.9	373	317
Joint stock-companies	1 800	1 639	80.7	76.6	67.2	64.4	823	709
Cooperative farms	1 477	1 370	68.2	67.1	59.3	55.1	673	575

1) Excluding holdings not farming on agricultural land. The table does not include respondents without agricultural land.
2) 1 AWU = 1 adjusted full-time worker.
3) ESU - European size unit (1 ESU = 1 200 euros).
Source: FADN CZ.

The above comparison does not inform about the profitability of the studied categories of holdings. However, it is deduced that the share of loss-making farms in the total number of respondents of the given sampling survey is mostly higher in HLP than in the size groups of HNP. It is on average 22.1% for HLP, the highest share is for joint-stock companies – 27.4% and the lowest for limited liability companies – 14.3%. The average figure for HNP is 8.5%, and 10.6% for farms with the area 5 to 50 ha. Neither does this survey inform about the influence of different categories of holdings on the standard of living environment nor about their multifunctional behaviour in a broader sense.

The envisaged compulsory modulation of direct payments can have a significant impact on the incomes of large holdings. This is confirmed by the analyses done in the Research Institute of Agricultural Economics in Prague. The analyses were based on the structure of agricultural holdings – beneficiaries of direct payments according to the Czech Land Parcel Identification System (LPIS) and on the EC proposal of March 2008 concerning the modulation of direct payments. In 2013, when direct payments in the new member states are to be equalised with the EU-15, the impacts of this proposal would be as follows (Tab. 4).

Table 4. Probable impact of the EC proposal of March 2008 for the modulation of direct payments on agricultural holdings in the Czech Republic in 2013

Categories of payment beneficiaries (€)	% reduction[1)]	Numbers of holdings	Corresponding area of holdings (ha)	Total area (thousand ha)[2)]	Reduction in direct payments (thousand €)[3)]
0 - 4 999	0	10 276	0 - 19.7	85.5	0
5 000 - 99 999	13	8 787	19.8 - 393.7	715.3	43 234
100 000 - 199 999	16	720	393.8 - 787.5	412.1	26 521
200 000 - 299 999	19	477	787.6 - 1 181.3	459.5	20 271
above 300 000	22	854	over 1 181.3	1 809.7	44 749
Total	-	21 114	-	3 482.1	134 775

1) The percentage reduction in the volume of direct payments per farm.
2) Numbers of hectares of those farms the total area of which is in the given range.
3) Reduction by hectares in the given range.
Source: RIAE, Prague 2008, with the use of LPIS data.

Owing to its farm structure, the Czech Republic would belong to the EU member states with the highest reduction of direct payments. The reduction would be applied to a half of the holdings – present beneficiaries of these payments, managing more than 90% of the total area of agricultural land included in the Czech LPIS. With the present farm structure, the beneficiaries of the relevant payments that will be subject to the application of the two highest

rates of the given reduction (farms with the area less than 800 ha and more) would account for more than 65% of the agricultural land in the LPIS. They would comprise the majority of cooperative farms and joint-stock companies, a smaller part of limited liability companies and a low number of HNP.

The approval of the above-mentioned proposal would bring the annual reduction in direct payments per farm to larger holdings in the following intervals: 20 000 € for farms with 600 – 1 500 ha, 100 000 € for farms with 1 500 – 3 000 ha, and 224 000 € for farms with more than 3 000 ha. In the present Czech agriculture, 84% of all holdings in this size group are joint-stock companies and cooperative farms. Especially in the latter holdings the implementation of the EC proposal along with the above-mentioned amendment of the transformation law may lead to their splitting and reduction in their size.

The new rules for the early abandonment of agricultural activity by older farmers (in the framework of the Rural Development Programme), approved by the Ministry of Agriculture of the Czech Republic at the end of 2007, may be a significant stimulus to further development of HNP. The defined conditions for the granting of the relevant payment for early retirement should motivate farmers older than 55 years to transfer their farms to younger persons, contributing to the rejuvenation of Czech agriculture.

The applicant for this payment may be a farmer that has been active in agriculture for 10 years at least and whose average income from agricultural primary production for the last 3 years has been at least 20 000 euros per year. The share of these incomes should amount to 55% of his/her total income at least (including the incomes from non-agricultural activity). The minimum area of farmed land was reduced from 5 to 0.5 ha at the same time. It means that farmers with a very small area, but with the appropriate intensity of production designed for the market, e.g. vegetables, may newly apply for the early abandonment of agricultural activity.

4. Conclusions

The present farm structure of the agricultural sector in the Czech Republic is characterised by a great weight of mostly unusually large holdings (particularly in comparison with the EU-15). This is the reason why the extraordinarily marked dual size structure and high concentration of the factors of production, mainly of land and labour force, are typical of Czech agriculture. Other typical features are a high share of non-family labour force, very low share of own agricultural land and other specific structural characteristics.

Holdings of natural persons (sole holders), especially family farms, remain in the focus of the EU CAP. Their weight in Czech agriculture is very

low. Greater individualisation of so called collective farms in the Czech Republic is promoted by the latest measures, such as amendment of the Act on State-owned Land Privatisation, new law laying down of the settlement of the unsettled property shares from the transformation of cooperative farms in the early nineties of the last century, and by the new rules for the granting (subsidizing) of old-age pensions to farmers older than 55 years who transfer their farms to younger persons. The impact of the reduction in direct payments proposed by the EC will be much smaller in the case of HNP, with some exceptions, when compared to HLP.

According to the preliminary prediction of the authors of this contribution the share of HNP in the total area of farmed agricultural land could increase from the present less than 30% to 40-45% in the medium-term perspective (by 2013). And there would be a significant decrease in the share of HLP. Among them, the share of s.r.o. companies, which have some features in common with larger HNP, would increase (particularly at the cost of cooperative farms, and to a certain extent, of joint-stock companies).

References

1. Bašek, V. et al.: *Analytické podklady k pozici ČR ke změnám Společné zemědělské politiky EU do roku 2013 a po roce 2013*. VÚZE, Praha 2008.
2. Csaki, C., Debatise, M., Hinisch, O.: *Stav zemědělství v České republice: Od „sametové" transformace k otázkám vstupu do EU*. Materiály Světové banky. Agrospoj, Praha 1999.
3. Divila, E.: *Agrární struktura v České republice*. Politická ekonomie, 2001, č. 2.
4. *Farm Structure and Farm Characteristics* – Links to Non-Commodity Outputs and Externalities. OECD, Committee for Agriculture, 2005.
5. *Farm Structure Survey 2005. Statistic in focus*. Agriculture and Fisheries. Eurostat, 2006-2007.
6. *Strukturální výsledky za zemědělství ČR v roce 2005*. ČSÚ, 2006.
7. Vaněk, D., Divila, E.: *Multifunkčnost zemědělství a velikost podniků*. In: Sborník z mezinárodní vědecké konference Agrární perspektivy XVI (Agrarian Perspectives XVI). PEF ČZU, Praha 2007.
8. *Zprávy o stavu zemědělství ČR 1994-2007* (Reports on the situation in the Czech agriculture 1994-2007). The Czech Ministry of Agriculture, VÚZE, Praha, 1994-2007.

Matej Bedrač, Tomaž Cunder
Agricultural Institute of Slovenia
Ljubljana, Slovenia

Structural Changes and Measures for Improvement of Effectiveness and Economic Efficiency of Slovenian Farms

Introduction

Slovenia is a small European country with the total area of 20,207 km^2 and 2 million inhabitants. According to OECD classification, 2/3 of all Slovenian municipalities (NUTS 5), which represent more than ¾ of the entire national territory are designated as rural areas and constitute 41% of the total population. Despite this classification, agriculture contributes a relatively small share to Slovenia's GDP. Over the last fifteen years this share has declined from 5% in 1990 to 1.8% in 2005. The small average size of agricultural holdings and unfavourable natural conditions for intensive agricultural production are the two main reasons behind the low level of productivity and specialisation in agriculture.

Structural changes in the period 2000-2007

The basic characteristic of Slovene agriculture is the fact that for a long time it has been developing in a totally different direction than EU agriculture.

This is especially true in the case of agrarian structure and its development. Unlike in many other CEEC countries, over 99% of agricultural holdings remained in private hands during the socialist period. Only a small part of agricultural land was nationalised, providing the basis for the creation of "socially owned farms". While in the countries with developed agriculture, together with the improvement of agricultural technology the process of enlargement of farms and concentration and specialisation of production were going on relatively fast, the private sector of Slovene agriculture until the 1990s was characterised by permanent decrease and fragmentation of the land property, by low working intensity of production and, in some areas, by gradual abandoning of production.

According to the preliminary results of the latest agricultural sample census (2007) there are around 75,000 agricultural holdings/farms in Slovenia. By the standard of European Size Units (ESU) with respect to production capacity these farms are directly comparable to those in the EU.

The average size of agricultural holdings in Slovenia is 6.5 ha of UAA (2007) which is almost 3 times smaller than the average area in EU 25 member states. The share of grassland in the agricultural land use structure is nearly twice as large as the average EU share, but the average area per agricultural holding is three times smaller. In arable land area per agricultural holding Slovenia is almost six times smaller than the European average.

Table 1. Agricultural holdings according to land use in Slovenia and EU 25 (2005)

	SLOVENIA			EU-25		
	Number of agricultural holdings	Area (ha)	Average area (ha)	Number of agricultural holdings	Area (1000 ha)	Average area (ha)
Total land use	77,170	921,310	11.9	9,636,490	196,181	20.4
Utilised agricultural land	77,140	485,430	6.3	9,544,270	155,242	16.3
Arable land	67,630	174,090	2.6	6,410,960	93,227	14.5
Orchard plantations	27,970	9,950	0.4	1,568,790	2,308	1.5
Vineyards	27,340	16,430	0.6	1,429,030	3,198	2.2
Grassland	64,240	282,120	4.4	3,947,740	51,330	13.0

Source: Statistical Office of the Republic of Slovenia.

Family farms represent 99.8 percent of the total number of agricultural holdings and are utilising 94.8% of the total utilised agricultural area. Agricultural holdings in 2007 used more than 920,000 hectares of land, which is 3% less than in 2000, but the share of utilised agricultural area slightly increased.

Table 2. Agricultural area and holdings in Slovenia in the period 2000-2007

	Area (ha)				Number of holdings			
	2000	2003	2005	2007	2000	2003	2005	2007
Total land use	950,269	926,821	921,312	921,428	86,437	77,138	77,173	75,328
Total agricultural land	537,249	526,247	526,660	524,369	86,427	77,126	77,143	75,307
Utilised agricultural land	485,879	486,473	485,432	488,976	86,423	77,126	77,141	75,306
Arable land	170,571	172,144	175,864	174,895	80,877	72,276	71,981	69,703
Orchard plantations	5,249	4,665	4,395	4,030	4,981	3,107	3,084	2,240
Vineyards	16,603	16,556	16,428	16,101	35,129	28,705	27,337	27,340
Grassland	285,410	285,562	282,119	288,222	74,230	66,258	64,236	63,656

Source: Statistical Office of the Republic of Slovenia, EUROSTAT.

One of the most characteristic consequences of specific natural conditions suitable for agricultural production in Slovenia is the great share of absolute grassland (meadows and pastures) and a relatively small share of arable land and permanent plantations (orchards and vineyards) in the structure of agricultural land use. In spite of the high share, the characteristic feature of grassland in Slovenia is its relatively low economic cultivation, as extensive meadows still represent a higher share than intensive meadows. Meadows and pastures cover nearly two thirds of total agricultural land in Slovenia.

Almost one quarter of holdings are under two hectares and almost 60% are smaller than five hectares UAA. These farms, together with those from six to ten hectares, are the basis of agricultural production in Slovenia and occupy around two thirds of the agricultural surface in Slovenia.

Table 3. Number of farms and areas by farm size (UAA) in the period 2000-2007

	Area (ha)				Number of holdings			
	2000	2003	2005	2007	2000	2003	2005	2007
Total	485,879	486,473	485,432	488,976	86,467	77,149	77,175	75,341
0 - < 2	26,399	20,739	20,783	20,560	23,042	17,292	17,975	18,259
2 - < 5	101,112	91,116	93,072	84,791	30,386	27,103	27,864	25,611
5 - < 10	155,278	145,170	139,239	138,109	22,058	20,633	19,775	19,704
10 - < 20	121,063	130,261	118,142	117,692	9,165	9,695	8,819	8,682
20 - < 30	29,927	39,233	40,452	43,866	1,264	1,648	1,709	1,853
30 - < 50	13,805	20,660	26,345	31,210	377	555	723	845
50 - < 100	6,361	9,647	13,841	18,891	101	149	210	290
>= 100	31,933	29,647	33,558	33,856	74	75	101	98

Source: Statistical Office of the Republic of Slovenia.

The average economic size of family farms is 4.6 ESU (2005). The distribution of agricultural holdings by particular ESU classes shows that in Slovenia almost half (48%) of the holding belong to the lowest class (under 2 ESU) and that the economic size of almost three quarters of the holdings (73%) is under 4 ESU. Among family farms with less than 2 hectares of UAA there are around 80 per cent of farms with the economic size under 2 ESU. Most of them consist of the so called semi-subsistence farms, which produce only for their own consumption.

Table 4. Agricultural holdings in Slovenia by type of farming

	AGRICULTURAL HOLDINGS			SHARE (%)		
	2000	2003	2005	2000	2003	2005
Total	86,467	77,149	77,175	100.0	100.0	100.0
Field crops farming	2,819	3,269	4,801	3.3	4.2	6.2
Horticulture	438	646	478	0.5	0.8	0.6
Permanent crops	9,920	6,993	7,404	11.5	9.1	9.6
Grazing livestock	22,284	22,033	26,611	25.8	28.6	34.5
Granivores	2,028	590	201	2.3	0.8	0.3
Mixed crops production	10,975	14,822	13,574	12.7	19.2	17.6
Mixed livestock production	24,369	16,747	13,408	28.2	21.7	17.4
Mixed crops and livestock production	13,598	11,993	10,661	15.7	15.5	13.8
Not classified	36	0	10	0.0	0.0	0.0

Source: Statistical Office of the Republic of Slovenia.

Only 51.2% of Slovenian farms were specialised agricultural holdings (2005). All others belong to one of the mixed production types, whether mixed plant production, mixed animal husbandry or a combination of both. Compared to the Agricultural Census 2000 (43.4%) the share has increased by nearly 8 percentage points, but still remains low in comparison to the EU average (EU-25 2003: 72%).

Characteristic for plant production is a relatively intensive specialisation in horticulture and perennial crops production and a moderate specialisation in crop production. Livestock holdings are specialised particularly in meat and milk production. The livestock production of Slovenian farms is less versatile than crop production. Cattle production is dominant due to the natural conditions and indirectly due to great grassland share within the agricultural land structure.

Livestock breeding is the most important agricultural activity in Slovenia. Preliminary results of the Agricultural Census 2007 showed that almost 67,000 agricultural holdings were breeding livestock, that is 87% of all agricultural holdings.

Table 5. Structure of livestock production in Slovenia and EU 25 (2005)

	SLOVENIJA			EU 25		
	Number of agricultural holdings	Number of heads	Average heads/ holding	Number of agricultural holdings (000)	Number of heads	Average heads/ holding
Cattle	43,680	461,220	10.6	2,355	86,617	36.8
Pigs	33,950	505,160	14.9	1,878	148,690	79.2
Poultry(000 heads)	45,510	3,290,000	72.3	3,277	1,417	432.4
Sheep	5,750	131,130	22.8	685	96,552	141.0
Equidae	5,130	19,250	3.8	703	2,753	3.9

Source: Statistical Office of the Republic of Slovenia, EUROSTAT.

An agricultural holding in Slovenia breeds 3.5 times less cattle than an average EU 25 holding. Differences between agricultural holdings with other animal production are even greater.

Nearly 63% of all agricultural holdings engaged in animal production are involved in cattle breeding. Cattle breeding is traditionally the domain of small and medium sized farms, but the comparison of results of agricultural censuses in 2000 and 2007 shows that the process of concentration is very intensive. The number of farms has fallen by 30%.

Table 6. Number of farms and animals by category in Slovenia 2000-2007

	Number of animals				Number of holdings			
	2000	2003	2005	2007	2000	2003	2005	2007
Cattle	499,546	478,331	461,224	470,218	56,097	46,736	43,675	39,705
Pigs	601,953	607,881	505,161	544,444	44,623	39,484	33,945	31,711
Poultry	6,731,009	5,133,858	3,292,826	5,364,220	58,929	49,369	45,512	39,786
Equidae	14,407	16,879	19,249	19,623	4,634	4,728	5,128	5,081
Sheep	96,027	119,631	131,126	135,887	4,330	5,281	5,747	5,923
Goats	29,385	28,690	30,826	34,593	4,775	3,974	4,108	4,133

Source: Statistical Office of the Republic of Slovenia.

Pig production is the second most important animal production in Slovenia. In 2000 over 44,000 family farms and 17 agricultural enterprises were engaged in pig production. Production on family farms has predominantly self-supply character, unlike in agricultural enterprises where it is highly specialised and concentrated. Over the period 2000-2007 the number of farms declined by nearly 30%.

Poultry breeding is another animal production activity undergoing concentration and specialization. At the 2000 agricultural census nearly 59,000 agricultural holdings were engaged in various forms of breeding. Family farms were engaged mostly in extensive breeding for self-consumption and 29 large agricultural enterprises were involved in technologically and organisationally demanding industrial breeding. Structural changes in poultry production were very intensive in the period 200-2007, since the number of producers declined by 33% and flock size dropped by 20%.

Because of unfavourable conditions for intensive agricultural production and the large proportion of pastures and meadows in the structure of land use, the breeding of sheep and goats is gaining importance. The breeding of sheep and goats is especially important in mountainous areas, where it prevents overgrowth.

The intensity of livestock production measured by the number of LSU per agricultural holding in Slovenia has increased in the past period in spite of the absolute decrease of the number of animals.

According to preliminary results of the Agricultural census data for 2007, the total number of livestock units is over 440,000, which is 7% less than in the year 2000. The declining trend is even faster in the number of holdings with livestock. Over the last seven years the total number of holdings has decreased by 18%. The overall decrease was on the smallest holdings up to 10 LSU.

Almost one third of agricultural holdings still breed less than two LSU, and more than half breed less than five livestock units (LSU). Despite the fact that the number of large farms engaged in animal production in the period 2000-2007 increased, their share in size structure is still very low. Only 7% of the farms have more than 20 LSU.

In addition to the unfavourable natural and structural conditions for agricultural production, farms in Slovenia are affected by inefficient allocation of agricultural work.

Table 7. Number of farms and livestock units by LSU size classes in 200-2007

	Livestock units (LSU)				Number of holdings			
	2000	2003	2005	2007	2000	2003	2005	2007
Total	470,498	456,167	421,587	442,581	77,452	68,909	66,909	63,290
0 - < 2	22,701	20,746	19,621	16,290	29,108	26,079	26,787	24,471
2 - < 5	72,585	59,039	57,921	54,443	22,160	17,954	17,691	16,408
5 - < 10	99,851	86,897	81,360	78,349	14,159	12,471	11,420	10,945
10 - < 20	114,864	111,752	98,041	97,916	8,328	8,159	7,099	7,041
20 - < 30	53,106	58,489	51,919	57,048	2,209	2,402	2,142	2,365
30 - < 50	38,026	46,079	45,141	51,716	1,037	1,237	1,213	1,389
50 - < 100	23,473	33,067	30,421	36,051	363	507	463	544
>= 100	45,892	40,097	37,163	50,767	88	100	94	127

Source: Statistical Office of the Republic of Slovenia.

Work on agricultural holdings (family farms, agricultural enterprises, cooperatives) is performed by 207,501 persons. For more than 70% of them, agricultural work means only a supplementary activity or they help out occasionally. The consequences of this unfavourable structure of the working population are also shown in the socio-economic structure. Part-time farms are prevailing as the holdings are too small to ensure enough income only from agricultural activity. In Slovenia there are only 20 per cent full-time farms.

Farm work on 77,175 farms is measured as the equivalent of 95,263 Annual Work Units (AWU). The structure of the labour force differs relevantly from that of a similar structure in other EU countries. On Slovene farms, the majority of the work is done by members of family farms, as there are practically no regularly hired external workers on the farms. Consequently, relative immobility of the labour force is reflected in work intensity.

Table 8. Labour force in agriculture 2003, 2005

	Number		Index	Structure (%)	
	2003	2005	2005/03	2003	2005
Labour force in agriculture - total (persons)	211,245	207,571	98.3	100.0	100.0
- Agricultural enterprises and cooperatives	3,234	3,271	101.1	1.5	1.6
- Labour force on family farms	208,011	204,300	98.2	98.5	98.4
Number of AWU	95,605	95,263	99.6	45.3	45.9
- Agricultural enterprises and cooperatives	3,383	3,449	102.0	1.6	1.7
- Family farms	92,222	91,814	99.6	43.7	44.2
AWU/100 ha UAA	19.6	19.6	100.1	-	-
AWU/farm	1.24	1.23	99.2	-	-

Source: Statistical Office of the Republic of Slovenia.

Despite their small size, Slovene farms employ on average ten per cent more workforce than an average farm in the EU. It is therefore hardly surprising that labour productivity in agriculture is distinctly low. On average, one Annual

Work Unit utilises 5.1 ha of agricultural land or, in terms of economic size, produces within the scope of 4.2 European Size Units (ESU). Difficult growing conditions, the technology gap, a low level of vocational qualifications in agriculture and, in particular, an extremely disadvantageous farm structure exert a considerable impact towards low labour productivity and underdevelopment in agriculture.

Around 4% of family farms in Slovenia are currently engaged in some of the supplementary activities. Among them, four activities predominate: contract services with agricultural machinery, tourism on the farm, wood processing and different types of food processing activities. Other subsidiary activities are represented only to a smaller extent. The demand for products and services of subsidiary activities is on a steady increase.

Table 9. Family farms by supplementary activities 2003 - 2005

	Number of farms		Index	Share (%)	
	2003	2005	2005/03	2003	2005
TOTAL	**2,867**	**3,146**	**109.7**	**100.0**	**100.0**
Food processing - meat	101	189	187.1	3.5	6.0
Food processing - milk	115	185	160.9	4.0	5.9
Food processing – fruits and vegetables	354	390	110.2	12.3	12.4
Food processing – other	104	200	192.3	3.6	6.4
Wood processing	508	449	88.4	17.7	14.3
Services with agricultural machinery	905	796	88.0	31.6	25.3
Tourism on the farm	675	628	93.0	23.5	20.0
Cottage industry	130	171	131.5	4.5	5.4
Public utility services	149	297	199.3	5.2	9.4

Source: Statistical Office of the Republic of Slovenia.

Measures for improvement of effectiveness and economic efficiency 2000-2006

Slovenia defined its basic goals of agricultural policy by adopting the Strategy for Development of Slovenian Agriculture (1993). One of the basic goals was a permanent increase of the competitiveness of agriculture. Measures which directly affect the improvement of competitiveness and economic efficiency of agriculture consisted of: **Subsidies paid for investments and restructuring of farms;** they were the most important part of structural policy in the period after Slovenia gained its independence. They were allocated in the form of non-refundable financial support and interest-rate subsidies. The greatest share fell to the Programme of investments in agricultural holdings, land operations and Renewal of permanent plantations. **Subsidies paid for the restructuring of food-processing industry and cooperatives** were devoted to

the improvement of marketing, storage and processing of agricultural products. This measure was very important in the years 1997 and 1998, when larger investments were made into cooling rooms for fruit. A great part of financial support was dedicated to the restructuring of cooperatives. **The Programmes of development of rural areas** were based on the programmes of integrated development of rural areas and renewal of villages. They were designed on the basis of local development initiatives and exploitation of endogenous development potential. In that period the majority of funds was devoted to the development of rural economies, renewal of villages, and building of agricultural infrastructure and economic diversification of rural areas. Among **Other structural policy measures,** which stimulated marketing of agricultural products and establishment of agricultural producers associations, were the most important in that period.

The SAPARD Programme (2000-2006) was an EU pre-accession programme for the candidate members intended as a special form of aid for agriculture and rural development. The goals of the SAPARD Programme were the following:

- Creation of a competitive agricultural sector,
- Preservation of the rural population; and
- Implementation of the EU legal system.

The implementation of the SAPARD Programme was a good preparation for the performance of measures of structural funds (EKJUS, FIUR), which were introduced in 2004 in the frame of the Single Programming Document.

Based on the analyses and development options of agriculture and rural areas in Slovenia and on the expected volume of EU aid, two development priorities were determined:

- **Improvement of production and marketing structures in agriculture and food-processing industry**, within which the measures **Investments in agricultural holdings** and **Investments in food-processing industry** were carried out.
- **Economic diversification and improvement of rural infrastructure**, in the frame of which the two measures **Economic diversification on farms** and **Development and improvement of rural infrastructure** were carried out.

The main goal of the measure **Investments in agricultural holdings** was to encourage the competitiveness of agricultural economy by considering ecological and hygienic standards and standards of animal welfare. This measure can contribute primarily to the improvement of farming efficiency, increase the diversification of agricultural activities and improve the market

orientation of agricultural holdings. The investments were allocated for the purpose of new buildings or reconstruction of premises, purchase of equipment and agricultural machines and the first purchase of livestock on a farm.

The measure **Investments in food-processing industry** was intended for the enhancement of competitiveness. In the frame of this measure investments were encouraged into adaptation of production capacities and modernisation of equipment. A second objective concerned the introduction of new technologies which helped companies to harmonise with EU standards and rationalise their production processes.

The main goal of the measure **Economic diversification on farms** was the improvement of the efficiency of work input on farms and the assurance of additional sources of employment and improvement of income. The investments were intended for the construction or renewal of premises and purchase of equipment serving for tourist activities and crafts on agricultural holdings.

Development and Improvement of Rural Infrastructure was the fourth measure in the frame of the SAPARD Programme intended for the increase of the quality of life in the rural areas. For this purpose financial support was allocated in order to improve road infrastructure, the supply of drinking water and planning and construction of thematic paths (walking tours, cycling and educational paths).

At the time of programme implementation, 563 projects in the total value of more than € 42 million were endorsed. The greatest interest was directed towards the purchase of new agricultural machines, while the food-processing industry invested primarily in the modernisation of technological equipment and introduction of new technologies.

Table 10. Projects and funds approved according to individual measures in the SAPARD Programme

Measure	Number of contracts made	Funds paid (€ mio.)
Investments in agricultural holdings	406	15,219
Investments in processing and marketing of agricultural and fish products	32	16,584
Economic diversification on farms	85	5,514
Development and improvement of rural infrastructure	36	4,794
Technical assistance	3	0,099
TOTAL	563	42,210

Source: Ministry of Agriculture, Forestry and Food.

After the accession of Slovenia to the EU the majority of measures were continued within the Single Programming Document. Agriculture in SPD was discussed in the frame of the third priority task Restructuring of Agriculture,

Forestry and Fishery, which had a total of € 49,513 million at its disposal in the period 2004-2006. The priority goals were the following:

- To increase the competitiveness of the agricultural-food, forestry and fishery sector;
- To create conditions for the reaching of equivalent level of income of agricultural population;
- To preserve the settlement patterns and to restructure economically the rural area;
- Sustainable use of natural resources;
- Protection of rural environment and preservation of natural resources.

The agricultural structural measures in SPD 2004-2006 were partly co-financed from the guidance section of the EU Agricultural Fund and partly from the National Budget. The share of public finance assured by Slovenia was 50%. They were allocated on the basis of public tenders announced by the Agency of the Republic of Slovenia for Agricultural Market and Rural Development.

In the frame of the third priority task entitled Restructuring of Agriculture, Forestry and Fishery, seven measures were implemented in the period 2004-2006. One measure referred to forestry (investments in forests in order to improve their economic and ecologic value), two measures referred to fishery (modernisation of the existing watercrafts and small-scale inshore fishing; fish farming, processing and marketing), and the following four measures referred to agriculture:

- Improvement of the processing and marketing of agricultural products;
- Investments in agricultural holdings;
- Diversification of agricultural activities and activities close to agriculture;
- Marketing of quality agricultural and food-processing products.

A novelty among the already established measures was **Marketing of quality agricultural and food-processing products,** the purpose of which was to encourage the producers and processors of special top quality products and foodstuffs (products with origin label, geographic label, certificates of special character, higher quality products) to offer their products on the market. These funds were devoted to the preparation of documentation and registration and certification of special agricultural products and foodstuffs of top quality, founding of new producers' groups and introduction of quality assurance programmes.

Table 11. Number of contracts and Funds devoted to agriculture in SPD 2004-2006 (€ millions)

	2004		2005		2006	
	No. of contracts	Funds	No. of contracts	Funds	No. of contracts	Funds
Investments in processing and marketing of agricultural products	10	3.7	16	6.0	27	8.3
Investments in agricultural holdings	68	3.3	62	2.9	275	11.4
Diversification of agricultural activities	32	1.8	66	3.5	103	5.4
Marketing of quality agricultural and food products	7	0.2	14	0.2	12	0.3

Source: Ministry of Agriculture, Forestry and Food.

In the whole period 692 projects to the total value of nearly € 47 million were approved. More than half of all the projects were Investments in Agricultural Holdings, which cover mostly the sectors of milk production and fruit and vine growing, for which 37% of the approved funds was spent.

They were followed by investments in Diversification of Agricultural Activities, in which the majority of applications were intended for the development of tourism and investment in production.

The measure **Improvement of production and marketing of agricultural products** was devoted to food-processing industry, where 38% of all approved funds were spent on 53 investments.

Rural Development Programme 2007-2013

In the new programming period 2007-2013 Slovenia implements measures that encourage the competitiveness of agriculture, food-processing and forestry in the frame of the first and third development axis of the Rural Development Programme. They are oriented primarily towards the modernisation and restructuring of agriculture, increase of value added and quality in the production of agricultural, food-processing and forestry products and in the increase of employment possibilities in agriculture, forestry and food-processing industry, considering the principles of sustainable development and ecological standards. The table shows measures, expected results at the end of the period and indicated funds for each measure.

Table 12. Measures, indicators, target values and devoted funds under Axis 1 in the Rural Development Programme of Slovenia 2007- 2013

Measure	Indicator	Target 2013	Value (€ mio.)
Training for persons engaged in agriculture and forestry	Number of training participants	15,500	13.6
	Number of training days received	5,000	
Setting up of young farmers	Total number of assisted young farmers	1,200	35.3
Early retirement of farmers	Total number of farmers early retired	210	38.1
Modernisation of agricultural holdings	Total number of agricultural holdings supported	2,450	164.7
Improving the economic value of forests	Total number of forest owners supported	3,276	49.9
Adding value to agricultural and forestry products	Total number of supported micro enterprises and farm households	450	227.1
	Number of food establishments supported	126	
Improving and developing infrastructure related to the development and adaptation of agriculture	Number of operations supported (irrigation, hydro-melioration)	45	26.2
	Improving the land holding structure (number of operations)	50	17.4
Participation of farmers in food quality schemes	Number of supported agricultural holdings participating in quality schemes	10,000	40.4
Supporting producer groups for information and promotion activities for products under food quality schemes	Number of projects supported	50	18.6
Supporting setting up of producer groups	Number of supported producer groups	30	2.9

Source: Ministry of Agriculture, Forestry and Food.

It is evident from Table 12 that most of the money is devoted to Modernisation of agricultural holdings and Adding value to agricultural and forestry products. The support for modernisation of agricultural holdings is intended to increase management efficiency by introducing new products and technologies, meeting EU standards and stabilisation of incomes on agricultural holdings. Under the measure Adding value to agricultural and forestry products support is granted to investments or renovation of buildings, and investments in the purchase of machinery and equipment.

Development Axis 3: Quality of life in the countryside and diversification of rural economy exerts indirect impact upon the improvement of effectiveness and economic efficiency of agricultural holdings. With measures and activities under this axis (table 13) Slovenia stimulates employment and job creation in the non-agricultural and agriculture related activities. Most of the money is devoted to investments for the creation and development of micro enterprises,

especially in the field of tourism. The development of micro enterprises is particularly important in remote areas with limited employment opportunities. The table below shows the respective measures, expected results at the end of the period and dedicated funds for measures under Axis 3 of the Rural Development Programme 2007-2013.

Table 13. Measures, indicators, target values and devoted funds under Axis 3 in the Rural Development Programme of Slovenia 2007- 2013

Diversification into non-agricultural activities	Number of beneficiaries	360	63.1
	Number of supported tourism related projects	200	
	Number of participants who successfully completed training	50	
Support for the creation and development of micro enterprises	Number of micro enterprises supported	900	111
	Number of supported tourism related projects	150	
	Number of participants who successfully completed training	50	
Village renewal and development	Number of projects supported	200	60.5
	Number of willages supported	550	
Conservation and upgrading of the rural heritage	Number of projects supported	250	29.4

Source: Ministry of Agriculture, Forestry and Food.

Conclusions

Difficult production and structural conditions, the technology gap, a low level of vocational qualifications and, in particular, an extremely disadvantageous farm structure, have had a considerable impact on the economic efficiency and competitiveness of Slovenian farms. Employment outside agriculture (industry, services) represents the main additional activity for the Slovene rural population. More efficient allocation of the workforce at the agricultural holdings is the main objective of Slovenian agricultural policy. In the last decade, in particular after accession to the EU, the agrarian structure began to improve. This shows especially in the progress of concentration of land and consequently in the larger average size of agricultural establishments, due to the decreasing number of agricultural holdings.

It may be concluded that the measures of structural policy in Slovenia have been carried out continuously since the national agricultural policy was started. Measures, which encouraged the increase of efficiency and competitiveness of the agricultural sector were implemented throughout the

whole period, only the priorities and the type of measures were changing. With the aid of the pre-accession SAPARD Programme the concept of the present system of measures was developed and set up. It can be observed that the measures were complementary throughout the period and they are more and more target oriented.

About € 900 million of public and private funds, which will be devoted to measures improving economic efficiency and competitiveness in the period 2007-2013, demonstrate the readiness and importance of agricultural policy determined to enhance the creation of a competitive and efficient agricultural sector.

References

1. MKGP, *Strategija razvoja slovenskega kmetijstva*. 1992. Ljubljana, Ministrstvo za kmetijstvo, gozdarstvo in prehrano: 88 pp.
2. MKGP, *Poročilo o stanju kmetijstva, živilstva in gozdarstva v letu 2006*. 2007. Ljubljana, Ministrstvo za kmetijstvo, gozdarstvo in prehrano: 162 pp.
3. SURS, *Popis kmetijskih gospodarstev, Slovenija, 2000*, 2002. Ljubljana, Statistični urad republike Slovenije, 256 pp.
4. SURS, *Struktura kmetijskih gospodarstev,* 1.6.2007- Začasni podatki http://www.stat.si/novica_prikazi.aspx?id=1219 30.10. 2007
5. OECD, *Pregled kmetijske politike Slovenija. 2001*. Ljubljana, Ministrstvo za kmetijstvo, gozdarstvo in prehrano, 184 pp.
6. MKGP, *Rural development programme of the Republic of Slovenia 2007-2013*. 2007. Ljubljana, Ministrstvo za kmetijstvo, gozdarstvo in prehrano: 323 pp.
7. MKGP, *National strategy plan for rurarал development 2007-2013*. 2007. Ljubljana, Ministrstvo za kmetijstvo, gozdarstvo in prehrano: 55 pp.
8. MKGP, *Program razvoja podeželja za Republiko Slovenijo 2004-2006*. 2004. Ljubljana, Ministrstvo za kmetijstvo, gozdarstvo in prehrano: 205 pp.
9. SURS, *Farm structure survey 1.6.2005*. 2006, Ljubljana, Statistical Office of the Republic of Slovenia, 26 pages.

Ligita Melece, Dina Romanova,
Latvian State Institute of Agrarian Economics,
Riga, Latvia

The Influence of Accession to the EU on Latvia's Agriculture

1. Introduction

The Common Agricultural Policy (CAP) is a system of subsidies paid to European Union (EU) farmers. On 26 June 2003, the EU[1] adopted a fundamental reform of the CAP that will completely change the way the EU supports its farm sector. These new "single farm payments" will be linked to compliance with the environmental, food safety and animal welfare standards. The European Commission[2] stresses that the decoupling of the link between subsidies and production will make the EU farmers more competitive and market oriented, while providing the necessary income stability. More money will be available to farmers for environmental, quality or animal welfare programmes by reducing direct payments to larger farms. The driving force of the reform package remained that of providing a clear, long-term perspective for the future development of the CAP, by the following means:

- enhancing the competitiveness of EU agriculture;
- promoting a more market-oriented, sustainable agriculture;
- providing a better balance of support through more rural development.

These objectives could be achieved by: setting market intervention solely as a real safety net measure; completing the shift from product to producer support through the single farm payment; transferring funds from the first pillar to an expanded second pillar of the CAP through EU-wide modulation.

Since the EU enlargement in 2004, the New Member States (NMS)[3] have implemented Single Area Payment (SAP) schemes, while the new CAP reform was agreed to comprise the following four main measures: changes in market support, decoupling of support from production, cross-compliance requirements and support modulation. The SAP is the transitional scheme for the NMS on the way to adoption of the reformed policy, where a part of the direct support funding became available for the first time without the obligation to produce the determined output (Salputra, Miglavs, 2007).

[1] http://ec.europa.eu/agriculture/capreform/index_en.htm
[2] http://ec.europa.eu/agriculture/capreform/docs/prop2_en.pdf
[3] NMS – New Member States

2. Support for the Development of the Agricultural Sector in Latvia

EU legislation provides for a gradual increase of direct payments in the New Member States (NMS), stipulating that the NMS will catch up with the "old" EU Member States by 2013. Various sources will be used to finance the direct payments up to 2013: the EU budget as well as the national budgets.

Up to 2006, the Rural Development Plan based financing was available as an additional source to fund the direct payments. In 2006, 5% of the maximum amount of the direct EU payments or 4.82 million lats was available from the Rural Development Plan budget. In 2006, Latvia's farmers, similarly as in other NMS, received the direct payments in the amount of 65% of the payments obtained by the farmers of the "old" EU Member States.

In order to foster agricultural and rural development, as well as to improve the standards of living of the rural population, Latvia's government provides state support or subsidies in addition to the EU support. According to the Law on Agriculture, a minimum amount of subsidies as state support for development of agriculture has been established and the annual amount should be at least 2.5% of the total expenditure of the basic annual budget. In Latvia the direct payments available to the farmers in 2006 totalled 84.85 million lats[4] (Table 1). In comparison with 2004, the total amount of funding available as direct payments increased by 28.91 million lats.

Table 1. Sources of direct payments in Latvia (mln LVL), 2006

Total financing	Financing from EU budget		Financing from National budget	
	EU Financing	Co-financing in the rural development budget (80%)	National financing	Co-financing in the rural development budget (20%)
84.85	36.64	3.86	43.39	0.96
	40.50		44.35	

Source: data from Rural Support Service.

Latvia's farmers have received a huge amount of EU support to agriculture since 2004 (Table 2).

Table 2. Sources of support to agriculture in Latvia (mln LVL), 2001-2007

	2001	2002	2003	2004	2005	2006	2007
National subsidies	20.9	29.2	34.1	18.8	23.4	57.6	32.2
EU support	0.0	3.5	20.8	91.7	196.3	156.2	159.3

Source: data from Rural Support Service.

[4] Lat – LVL – Latvia's national currency, where 1 LVL=1.43 EUR or 1 EUR= 0.702804 LVL

As shown in Table 3, the largest amount of state funding was allocated to the following support programmes: SAPARD co-financing (2004 and 2005); development of animal breeding (average 19.3%) and investment support in agriculture (average 16.8%). In 2006, a large amount (43.1%) of support consisted of the compensation for damages caused by agro-climatic circumstances due the unfavourable (dry) weather conditions.

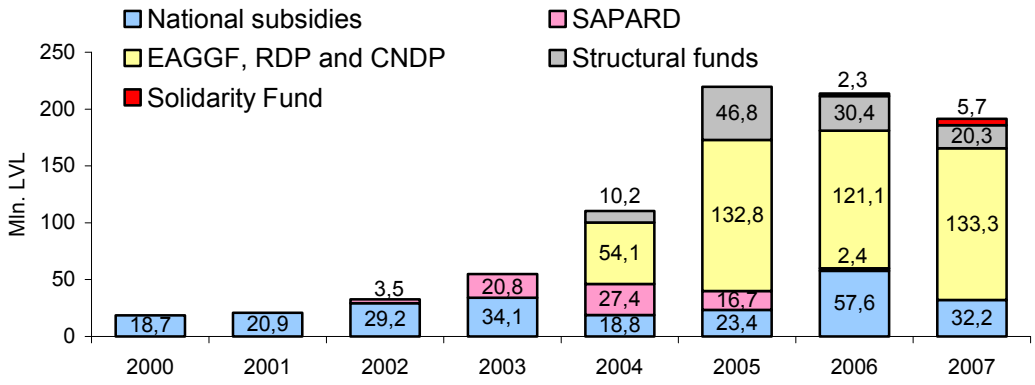
Table 3. Spending (%) on Latvia's support programmes, 2004-2006

Programmes	2004	2005	2006
Amelioration of agricultural land	2.6	1.5	0.5
Development of animal-breeding	16.5	24.3	17.2
Development of crop-farming	10.5	3.6	3.0
Education, science and spreading of information	3.5	9.4	3.6
Co-financing of Latvia in foreign co-projects	0.4	1.1	0.4
Investment support in agriculture	5.4	26.0	19.0
Support of agricultural non-governmental organizations and groups of producers	1.7	2.2	1.4
Support of organic farming	0.6	0.9	0.4
Market promotion	1.8	2.7	1.9
Compensation of damages caused by agro-climatic circumstances	2.1	9.9	43.1
Other programmes	23.4	3.8	8.8
Total for national subsidy payments	68.5	85.2	99.2
SAPARD co-financing	31.5	14.8	0.7
Total	100.0	100.0	100.0

Source: data from Rural Support Service.

Since 2004, total support to agriculture has increased significantly in comparison with the previous years (Figure 1).

Figure 1. Support for the agricultural sector in Latvia from EU and state subsidy funds (mln LVL), 2000 – 2007



EAGGF - European Agricultural Guidance and Guarantee Fund; RDP – Rural Development Plan; CNDP - Complementary National Direct Payments.
Source: data from Rural Support Service.

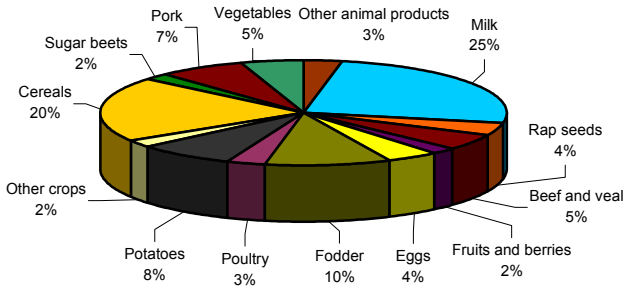
Latvia's process of accession to the EU, similarly as in other NMS (Kožar, Kavčič, Erjavec, 2005), has significantly changed the structure and

scope of support provided to agriculture. The direct payments became the most important element of agricultural policy with significant impacts on the income of holdings.

3. Tendencies of Latvia's Main Agricultural Indicators

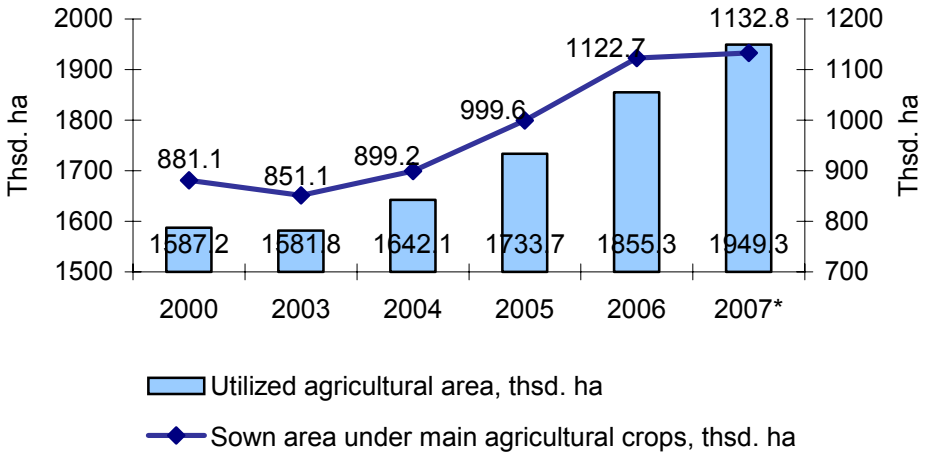
In 2006, the main branches of agricultural production expressed in agricultural end-products (Figure 2) were milk production (25%), cereals (20%) and fodder (10%). After Latvia's accession to the EU, the area of utilized agricultural land and sown area under the main agricultural crops have increased (Figure 3).

Figure 2. Structure of Latvia's agricultural end-products in 2006 (in basic prices)



Source: Economical Accounts of Agriculture, Latvian State Institute of Agrarian Economics.

Figure 3. Trends of utilized agricultural area and sown area under main agricultural crops in Latvia, 2000 - 2006



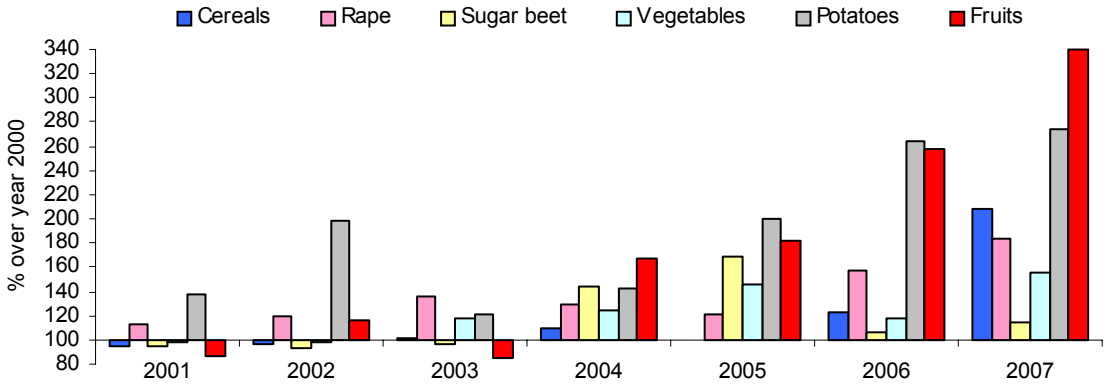
* Preliminary data

Source: data from Central Statistical Bureau of Latvia.

Due to the price increase of the production costs (fuel, electricity, mineral fertilizers, plant protection products, etc.), as well as due to the growth of wages

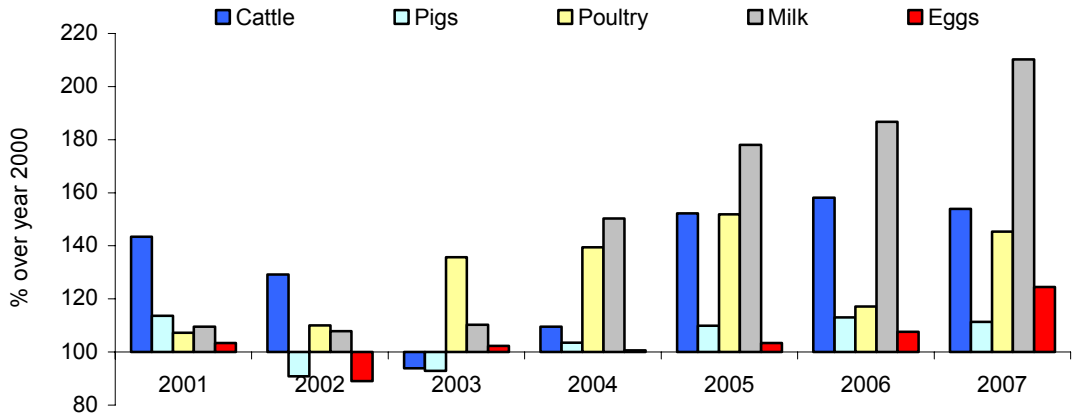
and salaries, producer prices in agriculture continue to grow.[5] The rapid producer price growth of crop production has exerted the strongest impact on the total price increase in agriculture. When compared to 2000, in 2007 the prices in cereal production rose by 208%, in rape production – by 183%, in vegetable production – by 156%, in potatoes production – by 275%, but in fruit production – by 390% (Fig. 4). The prices of livestock production have also gone up, but less than in crop production. The price increase was more noticeable after the year 2004 (Figure 5). Moreover, a rapid increase in producer prices can be observed after the year 2004.

Figure 4. Producer price indices of Latvia's crop production (% over 2000), 2001 - 2007



Source: data from Central Statistical Bureau of Latvia and EUROSTAT.

Figure 5. Producer price indices of Latvia's livestock production (% over 2000), 2001 - 2007

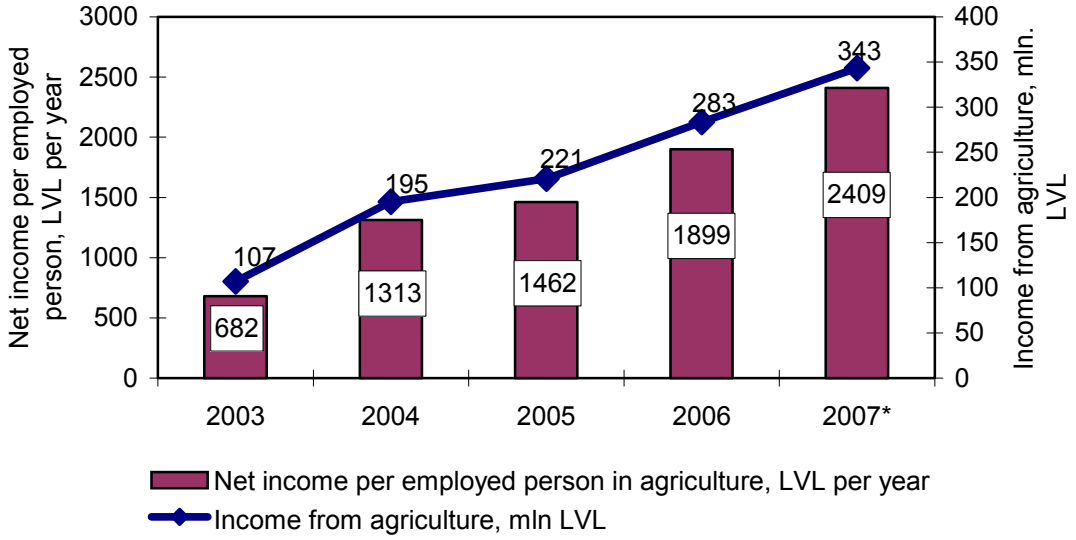


Source: data from Central Statistical Bureau of Latvia and EUROSTAT.

The revenues - net income per person employed in agriculture (LVL per year) and income from agriculture (mln LVL) from Latvia's agriculture increase year by year, but more rapidly since 2004 (Figure 6).

[5] According to Central Statistical Bureau.

Figure 6. Revenues from Latvia's agriculture in 2001-2006



* - Preliminary data

Source: data from Economical Accounts of Agriculture, Latvian State Institute of Agrarian Economics.

The net added value generated by the agricultural sector in terms of factor costs, in turn, has increased more significantly, reaching LVL 260.1 million in 2006. This is related with the significant increase of other support of production (+46%), which is larger than the increase of taxes on production (+4%) and the use of assets (+22%). Gross revenues from agricultural activities, calculated by subtracting the lease and interest payments from net value added in factor costs, amounted to LVL 252.7 million in 2006, which was 14.6% more than in the previous year.

Net income per person employed in the agricultural sector in 2006 was 1782 lats per year or 148 lats per month, which was equivalent to 69% of the average net salary in the country. The nominal increase of revenues per person employed in agriculture has reached 9.4%. Revenues in other sectors have increased more rapidly than in agriculture (the average increase of net salary in the country in 2006 was 23%). However, revenues of some farms significantly differ from the average revenues depending on the farm size, specialisation, natural conditions, business activities and access to markets. The increase of production prices alone could not compensate the loss of revenues generated by the production amounts, because due to the price increase the revenues increased by 17.3 million lats.

Veveris et. al. (2007) emphasize that the economic size of farms in Latvia is noticeably smaller than in other countries of the similar climate zone. The physical size of farms covered by FADN in Latvia, in turn, is one of the largest

in the EU in terms of land area and labour intensity, but one of the smallest according to the livestock number. It shows that the land and labour resources in Latvia are utilized less intensively, which might be a positive factor from the point of view of environment and sustainable aspects, though it reduces the economic efficiency of production. The overall share of production's output costs in Latvia is similar in comparison to other EU countries. Although Latvia has a larger share of intermediate consumption (especially, a comparatively high level of several direct cost items, first of all in total energy costs; in the case of specialisation in field crops – fertilizers; and in the case of specialisation in animal breeding – the costs of live-stock feed), it also has a smaller share of external costs and capital consumption. Consequently, as the costs of labour and land are rising, also the capital investment expenditures are increasing, which can negatively affect the overall competitiveness of Latvia's farms (Veveris et. al., 2007).

The main indicators of Latvia's agriculture have increased (Table 4), except for indices of agricultural and crop production in 2006, due to unfavourable weather conditions.

Table 4. Main indicators of the agricultural sector in Latvia, 2000-2006

	2000	2003	2004	2005	2006
Indices of agricultural production (at constant prices), % over 2000	100,0	112.7	116.8	127.2	122.2
Indices of agricultural production (% over previous year)	104.2	102.7	103.7	108.7	96.0
Including:					
Indices of crop production (% over previous year)	104.3	102.7	106.6	116.9	90.3
Indices of livestock production (% over previous year)	104.0	102.7	100.3	100.9	102.1
Agricultural production (at current prices), LVL million	292.2	378.3	450.6	509.8	586.8
Share of agricultural, hunting and forestry production in gross value added, %	4.3	4.0	4.3	4.0	n/d
Employment in agriculture, hunting and forestry as % of total employed	14.0	13.4	13.0	11.8	10.8
Average gross monthly wages and salaries from the main occupation, LVL	150	192	211	246	302
Including: in agriculture, hunting and forestry	115	154	179	211	255

Source: data of Central Statistical Bureau of Latvia; Ministry of Agriculture Republic of Latvia, 2007a.

4. Development of Latvia's Dairy Sector

Dairy farming is one of the basic agricultural sectors in Latvia, accounting for about 25% of its agricultural production. In 2006, 815,072 tons of milk were produced, including 812,133 tons of cow milk. The average milk yield in 2006 was 4,492 kg per cow, that is 3% more than in 2005.

Therefore, it can be considered that the production efficiency of the sector has increased in 2006. 115,685 tons out of the total milk produced were used in fodder, and 100,554 tons of non-processed milk were used for human consumption. In 2006, 593,514 tons were sold without processing, whereas 2,164 tons of milk were processed for the purposes of direct sales, including 963 tons used to produce cream, 265 tons for the production of cheese, 130 tons for butter production. The income from milk sold amounted to 99.1 millions lats, representing a 12.4 million lats increase year-on-year. The income from processed milk sales reached 880,490 lats.

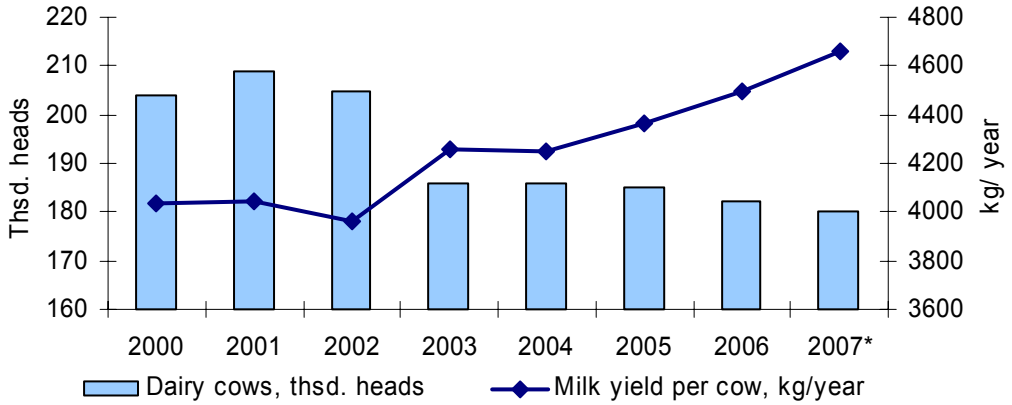
The main growth factors of the sector have consisted of market opportunities and development. The amount of milk sold to the milk processing enterprises increases every year. In 2006 it amounted to 73% of the total milk produced and exceeded the respective indicators of 2005 by 18.4%, but compared to 2004 – by 24.2%. This trend was caused both by the increase of milk purchase prices and by the concentration of production and processing as the result of successful development of production of certain dairy products.

The efficient use of the available resources, i.e. various dairy products, cattle breeding development, making the existing production structure more effective and supporting targeted investment in the production of competitive products, has resulted in improved quality of the milk produced, increased production volume of dairy products, creating value added of agricultural products, promoting processing and trade, using new product, process and technology development, as well as promotion of exports of dairy products.

Over recent years, milk has established its position with an annually increasing share of the total production value. There has been only a slight change in volumes. The main contributor to the growth of milk production value consists of the prices, which have risen considerably since Latvia joined the EU single market (Miglavs et al., 2007).

The analysis of the dairy sector shows that the number of dairy cows in the last seven years has slightly decreased, however the production level is stable and has even has increased (Figure 7). The increase of productivity of dairy cows may be mentioned as a positive factor, as since the year 2000 it has increased by 13.5% and reached 4,664 kg per cow per year in 2007. This tendency shows that the activity of Latvian dairy farmers has become more economically efficient.

Figure 7. Dairy cows (thousand heads), volume of milk produced (thousand tons) and average milk yield per cow (kg) per year in Latvia, 2000–2007



* Preliminary data

Source: data from Central Statistical Bureau of Latvia, 2007.

The necessity of concentration and specialization of milk production is well reflected in Table 5, showing that the highest milk yield is observed in the dairy farm type and on farms of large economic size class.

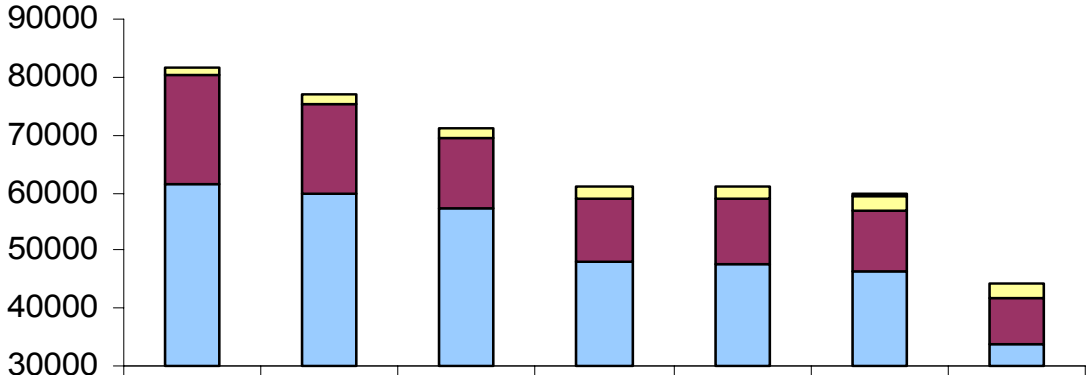
Table 5. Milk yield (t) per cow by farm economic size class, 2006

Type of farming	Ave-rage	Economic size class						
		2-<4	4-<8	8-<16	16-<40	40-100	100-<250	>=250
Mixed farming	5.1	4.3	5.0	4.7	5.4	5.1	5.3	5.7
Dairying	5.0	4.5	4.3	4.9	5.5	5.5	6.0	
Mixed livestock	4.2	4.0	4.1	4.5	4.8			
Cattle rearing and fattening	4.2	3.6	3.7	4.9				

Source: authors' calculations based on FADN data.

Structural changes have been taking place in the dairy sector for several years already. They have been greatly facilitated by the national and EU support granted to the sector, as well as the implementation of the milk quota system. Producers are motivated to invest in the renewal of herds (introducing more productive and enduring breeds), farm modernization and extension, which has allowed the dairy sector to develop. In spite of the positive trends of the last few years, the dairy sector is still rather fragmented, with a large share of small farms, which individually produce insignificant amounts of milk. In 2006, 45.8% of the total number of cows were kept on small farms with less than 10 cows per farm. The average dairy herd in Latvia in 2006 numbered 3.97 cows, which is one of the lowest indicators in the EU. However, the number of farms with 10 to 99 and more than 100 dairy cows in a heard is increasing and this could be mentioned as a positive factor towards the further development of commercial production (Figure 8).

Figure 8. Grouping of farms by number of dairy cows in Latvia, 2000 – 2006

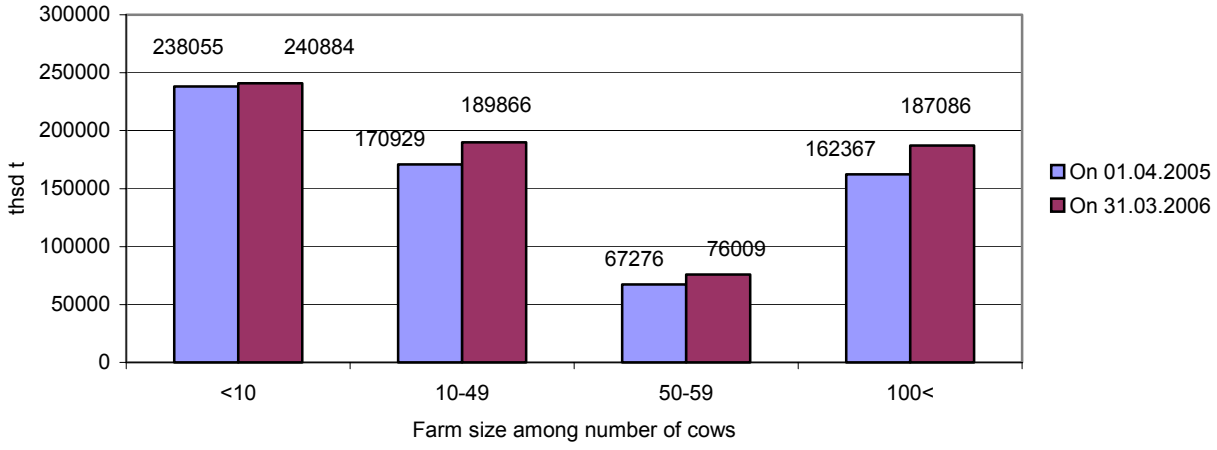


	2000	2001	2002	2003	2004	2005	2006
300 and more	26	25	28	32	27	33	34
100-299	76	108	71	73	76	79	114
10-99	1520	1694	1639	2067	2181	2488	2657
3-9	18527	15515	12319	10844	11225	10751	7922
1-2	61644	59832	57212	48092	47730	46243	33646

Source: data from Central Statistical Bureau of Latvia, 2007.

As a result of the market development, milk supplies for processing increase every year and the volume of milk supplied for direct sales decreases each year. These changes are also reflected in the milk quota system: the delivery quota for Latvia has grown from 468,900 tons in 2004 to 715,400 tons in 2007, whereas the quota for direct sales has decreased from 226,400 tons to 13.2 thousand tons over the reporting period (Figure 9). In 2006, 34.7% of the milk quota was used by farms keeping less than 10 cows per farm.

Figure 9. Milk quota allocation between farm size groups in Latvia at the beginning of 2004/2005 and 2005/2006 quota years



Source: author's own calculations from databases of Agricultural Data Centre.

As regards the price, after slight fluctuations in previous years, there has been a considerable increase since Latvia joined the EU single market (Table 6). Moreover, as shown in Table 8, the main indicators of the dairy sector have increased.

Table 6. Main indicators of the dairy sector in Latvia, 2000 – 2006

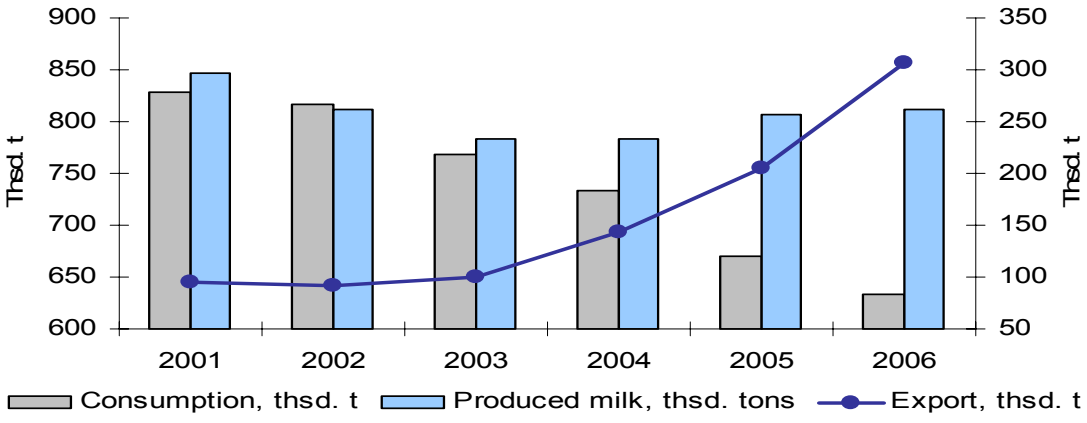
Indicator	2000	2001	2002	2003	2004	2005	2006
Milk producer price, average total, LVL per ton	83.9	93.6	92.2	94.0	127.1	154.6	166.9
Volume of milk sold to processing companies, thousand tons	398	403	385	436	464	502	592
Milk purchase price by industry, LVL per ton	87.2	95.5	94.1	96.1	131.1	155.2	162.8
Sales value of milk products*, mln. LVL	86	956	102	103	126	152	178

* Enterprises that correspond to CSB criteria of industry statistics (at least 20 employees and turnover of previous year over 300,000 LVL)

Source: Miglavs et al., 2007.

Although the consumption of dairy products (calculated in milk) decreases, the imports-exports balance of trade with dairy products is positive in Latvia, where in 2006, exports of milk and dairy products increased 2.3 times, whereas the value grew 1.6 times over the previous year in Latvia (Figure 10).

Figure 10. Trends of milk consumption, production and exports in Latvia (thousand tons), 2000-2006



Source: data from Central Statistical Bureau of Latvia, 2007; 2002.

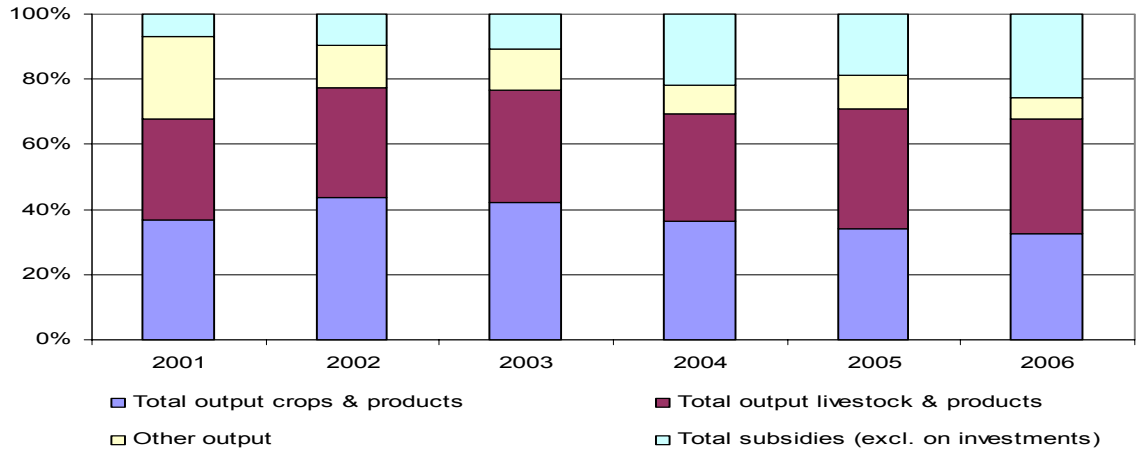
In 2006 priority was given to milk and beef production sectors. But an inflammable situation arose in the milk production sector. As the exports of milk as raw material increased, the available domestic supply of unprocessed milk as

raw material input was diminishing. Therefore, the milk purchase price has also increased. Nevertheless, compared to the previous years, the common indicators have improved both concerning production and processing, as well as productivity, in 2006. The milk and dairy products, which constituted 22% of the total amount of agricultural products exported to EU countries, were the main export groups of agricultural products of Latvia in 2006 (Ministry of Agriculture, 2007a).

5. Farming Profitability Trends in Latvia

Profitability is usually the primary goal of the farmers, so it is listed first in the analysis procedures. Bratka and Prauliņš (2008), when analyzing farm profitability, have looked not only at the absolute value of profit, but also its relative amount, considering four main components of the income of Latvian farms: crops and its products output, livestock and its products output, other output and total subsidies (excluding subsidies to investments, which are not directly related to agricultural production). Authors recognise that due to Latvia's entry to the EU, the particular weight of subsidies received in the revenue structure has increased (Figure 11).

Figure 11. Revenue structure of Latvia's farms, 2001-2006



Source: from Bratka, Prauliņš, 2008.

Whereas before the accession subsidies to Latvia's agricultural holdings represented on average 12% of their income, since the year 2004 they have grown 2.7 times. The greatest specific weight of subsidies for Latvia's agricultural holdings (26%) was observed in the year 2006. The farm income/average equity ratio and farm income/total average assets ratio of Latvia's farms have also significantly risen (approximately 2 times) after Latvia's accession (Table 7).

Bratka and Prauliņš (2008) find that the farms' financial environment has changed. With most farms earning more household income off-farm than from the farm, and with a significant portion of farm income coming from government payments, the potential for severe financial distress on the farms is mitigated. If successful models of the past cannot be repeated or are unsustainable, perhaps farm-management extension needs to focus on something completely different.

In 2005, Latvia was[6] in 23-rd position within the EU-25, when comparing Farm Net Value Added, and in 17-th position in terms of Family Farm Income.

Table 7. Farm income / average equity ratio and farm income / total average assets ratio of Latvia's farms, 2001-2006

Family farm income	2001	2002	2003	2004	2005	2006
Farm income / average equity ratio	12.2	8.1	14.9	32.8	33.9	29.1
Farm income / total average assets ratio	10.9	7.5	13.0	25.9	24.6	21.8

Source: from Bratka, Prauliņš, 2008.

In 2007 Eurostat[7] estimated the rises in real agricultural income per worker[8] for EU-27 comparing with 2006, where EU real agricultural income per worker is up by 4.7%. The strongest rises are for Lithuania (+58.5%), the Czech Republic (+20.6%), Estonia (+19.4%) and Luxembourg (+16.2%). Although Latvia's agricultural income per worker is in 10-th place (+10.2%), the changes or increases comparing with 2000 (indices 2000=100) are 311.6 and are the highest in the EU (EU-27).

6. Further Potential of Latvia's Agriculture Development

In order to ensure the availability of the EU funds in the next few years, the Ministry of Agriculture[9] has developed the Rural Development National Strategy Plan 2007-2013, taking into account selected priorities and expected influences, in accordance with the evaluation of the previous Rural Development Plan.

The implementation of the Rural Development Plan 2007-2013 is aimed at increasing the level of income of farms, developing and increasing the production efficiency of farms, meeting the environmental standards, and

[6] Produced by EUFADN Database.

[7] http://agriregionieuropa.univpm.it/FinestraPAC/Editoriale_9/Redditi_agricoli_Eurostat.pdf

[8] The real income of factors in agriculture, per annual work unit, corresponds to the real net value added at factor cost of agriculture, per total annual work unit. Net value added at factor cost is calculated by subtracting from the value of agricultural output at basic prices the value of intermediate consumption, the consumption of fixed capital and production taxes, and adding the value of production subsidies, Eurostat, http://agriregionieuropa.univpm.it/FinestraPAC/Editoriale_9/Redditi_agricoli_Eurostat.pdf

[9] Ministry of Agriculture of the Republic of Latvia

diversifying the economic activities and incomes in rural areas, and preserving the rural population on the land.

The Ministry of Agriculture foresees that the development of efficient, market-orientated economic units in the next seven years may result in a 1.5 times increase in the production of basic agricultural products and the related food processing. It is expected that the growth of agricultural and forestry sectors may accelerate 1.4 times, thus doubling the amount of the value added. In the total agricultural production structure, the share of agricultural producers manufacturing for the market will increase at least twofold, accounting for at least 2/3 of the total value added of the sector. These developments in combination with shrinking employment in the agricultural sector by at least 50% in seven years will result in at least a quadruple increase of labour productivity.

Latvia's government (Ministry of Agriculture, 2008) supports the possibility to consider the application of SAPS until 2013. Thus a simple, stable and foreseeable policy will be ensured with lesser administrative burden for farmers and administration institutions, and new Member States will be less motivated to transfer to a more complicated SPS for the only reason of being able to apply a partial coupling of payments. This is particularly relevant before the CAP changes that will most probably come closer to a fully decoupled payment scheme. Therefore, Latvia considers that entry into force of the package of cross-compliance standards in new Member States must be revised. Latvia is convinced that a full package of cross-compliance standards must be in force in new Member States only when the level of their direct payments reaches the EU-15 level.

Conclusions

1. Latvia's accession process to the EU has significantly changed the structure and scope of agricultural support, where the direct payments became the most important element of agricultural policy with significant impacts on the agricultural sector.
2. The revenues - net income per person employed in agriculture (LVL per year) and income from agriculture (mln LVL) from Latvia's agriculture increase year by year, but more rapidly since 2004.
3. Structural changes have been taking place in the dairy sector and the sector became most important in Latvia's agriculture and food production and exports.
4. The farm sector income (net entrepreneurial income) has grown significantly, mainly due to the implementation of direct payments and the income of farms (based on farm accounts data) have considerably increased since 2004.

5. Latvia's government supports the possibility to consider the application of SAPS until 2013 and points out that this policy will be ensured with lesser administrative burden for farmers and administration institutions and in the next seven years the production of basic agricultural products and the related food processing may increase 1.5 times.

References

1. Bratka, V., Prauliņš, A. (2008). *Comparative Analysis of Performance of Agricultural Holdings in the Baltic States.* Proceedings of 5th International Scientific Conference "Business and Management 2008", Vilnius Gediminas Technical University, (in print).
2. Central Statistical Bureau of Latvia (2002) *Agricultural farms of Latvia in 2002: collection of statistical data.* Rīga: Central Statistical Bureau of Latvia.
3. Central Statistical Bureau of Latvia (2007) *Agricultural farms of Latvia 2006: collection of statistical data*. Rīga: Central Statistical Bureau of Latvia.
4. European Commission (2007). *Prospects for Agricultural Markets and Income in the European Union 2007-2014*.
5. Kožar, M., Kavčič, S., Erjavec, E. (2005). *Income situation of agricultural households in Slovenia after EU accession: impacts of different direct payments policy options*. XIth International Congress of the EAAE The Future of Rural Europe in the Global Agri-Food System August 24-27, 2005, http://ageconsearch.umn.edu/bitstream/123456789/10911/1/pp05ko01.pdf
6. Miglavs A., Leimane I., Krieviņa A. (2007). Economic Analysis of the Value Added Chain in Milk Sectors. *Proceedings of the international scientific conference "Economic Science for Rural Development"*, No 13. Jelgava, Academy of Agricultural and Forestry Sciences of Latvia: pp. 69-77.
7. Ministry of Agriculture (2008*). Latvia's Position on „Health Check" Of the Common Agriculture Policy Reform,* http://www.zm.gov.lv/doc_upl/HC_pozicija_15022008_eng.pdf
8. Ministry of Agriculture Republic of Latvia (2007a). *Agriculture and Rural Area of Latvia.* Riga.
9. Ministry of Agriculture Republic of Latvia (2007b). *Rural Development Programme for Latvia 2007-2013*. Riga.
10. Salputra, G., Miglavs A. (2007). *Different CAP Support Systems – Evaluation of the Impact On Supply of Agricultural Products*. Proceedings of the International Scientific conference " "Economic Science for Rural Development", No 14, 67-74.
11. Veveris, A., Leimane, I., Krievina, A. (2007). *Efficiency Analysis of Agricultural Sector in Latvia Compared to other EU Countries, Based on FADN Data*. Economic Science for Rural Development No 12, p. 13-19.

Ivan Benet
Szeged University
Hungary

Transformation of Agricultural Holdings – with Question Marks[1]

Introduction

The agricultures of the former socialist countries reached the end of the 1980s, the start of the change of regime, with many similar, and also with a fair number of different features. Hungarian agriculture produced most of the products cheaper than the agriculture of Western Europe, and provided a balanced internal food market for the domestic population. In addition, with an export surplus of about 1 billion US dollars, it significantly contributed to maintaining the solvency of the seriously indebted country.

That was the situation in the country at the time of the change of regime. A new agricultural policy was needed, which would set a new direction for agriculture under the new conditions. In 1991, this new agricultural policy was developed and started to be put into practice. The transformation of the domestic agriculture following 1989 was determined and greatly influenced by the intention to join the European Union and also by the demand for historical justice.

1. Before the EU Accession

As for the most important issues of Hungary's preparation to the EU accession, the following can be said in brief:

- In 1991, the country signed the "European Agreement" in Brussels. It basically determined the relations between Hungary and the European Union (EU) until the country's accession. Article 76 of the European Agreement specifies in detail the tasks with respect to Hungarian agriculture. These include the development of private farms, the considerable transformation of distribution, the improvement of agricultural productivity, the promotion of integrated rural development, etc.
- In order to facilitate future accession, financial assistance was provided by the PHARE program from the beginning of the 1990s. This was accompanied by the ISPA and SAPARD programmes established at the Berlin Summit in 1999.

[1] The research was supported by the Federal Scientific Research Fund (K 63300).

- Hungary stated its position on agricultural accession in the so called Position Paper and submitted it to Brussels in 1999. The substantial negotiations were started in 2000 and concluded in 2004, allowing our accession in May 2004. The Position Paper had four basic principles.

1. Hungarian agriculture wished to join the CAP without any transition period, and there were only some issues where it requested temporary exemption;
2. Hungarian agriculture demanded to obtain all forms of support available to the EU-15 countries at the time of its accession. Here the most delicate issue was the case of the so-called *compensation (direct) payments*;
3. The tools of the CAP should be adapted to the Hungarian conditions according to Hungarian interests. These included the determination of quotas, the calculation of production-related support, etc. Here the most delicate issue was the determination of *the reference period*.
4. Hungary was undertaking to establish the system of institutions required for the adaptation of the CAP, and to take the necessary measures.

In addition to the obvious results, the agricultural policy aspect of Hungarian EU accession brought several painful failures as well, and all in all it could be characterized in one word as *contradictory*.

Firstly: the decision on the reference period was a painful compromise. We failed to assert the Hungarian position that the period of 1986-90 or a part thereof should be the basis for quantitative regulation and support. The ultimately accepted period of 1996-97 to 2000-01, due to the much lower level of production, meant several billions in resources lost for local agriculture.

Secondly: it was a painful compromise that Hungary finally agreed to the doubling of the CAP, which we had opposed from the start. In 2004, Hungary received 25% of the direct payments to which it was to be entitled, and 30% more was to be added on top of that from the national budget.

Thirdly: the contradictory nature is closely related to the new agricultural policy of 1991, or the effects thereof. The Hungarian agricultural model prior to 1989 incorporated two types of farms. On the one hand, large-scale farms with thousands of hectares, and on the other hand almost 1.5 million small-scale producers, some of whom were so-called “part-time” family farmers, personally selling their products on the local market, a special Eastern-European phenomenon. The proportions between these two types of farms in total net output were almost 50%-50%. The Hungarian agricultural model was also

characterized by great openness and constant change. Undoubtedly, the new agricultural policy went against the existing Hungarian agricultural model of the time. It insisted on the establishment of full-time family farms and the absolute prevalence of private ownership. *Perhaps the most important thesis of the new agricultural policy*, with decisive influence on transformation, was the following:

"The ownership, interest and organization system that developed over the past forty years is unable to meet the requirements of the market economy, and it stands in the way of the creation of a new economic-social structure. Due to the lack of tangible particular owners, neither the traditional state-owned company, nor the co-operative form, sufficiently encourage the efficient operation and increase of assets. Monopolies, operating in the processing industry and trade, hinder the operation of the market, and make the adjustment to it more difficult." (Ministry of Agriculture Survey: New Agrarian Policy, 1991, 3)

"In order to improve the competitiveness of Hungarian agriculture, the complete transformation of the current large-scale structures and ownership is essential. The process of replacing collective ownership and ensuring the dominance of private ownership, the development and operation of a market economy is inevitable. This is achieved by means of privatization..." (Ministry of Agriculture Survey: New Agrarian Policy, 1991, 7)

Fourthly: Thus the new agricultural policy *zealously supported privately owned farms. It was taken as a fact that state and co-operative ownership was unviable*, and for want of real owners these forms of ownership were to be eliminated. That is, without any serious historical analysis, they were "sentenced to death". According to this concept there was no mention of the fact that the decade between 1966 and 1975 was the most outstanding period in the 20th century history of Hungarian agriculture; moreover, the two decades between 1966 and 1985 were also extraordinary. The concept of privatisation was applied on the basis of oversimplified interpretation.

The new agricultural policy overlooked the indispensability of integration relationships. By completely renouncing state-owned farms and co-operative farms, it also *shattered to pieces the integration network of Hungarian agriculture*, which, on the whole, operated well. The developers of the concept failed to consider what could and should replace the old integration relationships.

Table 1. Meanings of Privatization

1. Sale of public assets to private persons;
2. Transition to private law legal forms;
3. Transfer of individual public supply tasks to private individuals (contracting-out);
4. Transition to private (profit-oriented) business management:
5. Increasing the autonomy for the management of public enterprises;
6. De-bureaucratization;
7. Decentralization;
8. Unifying rules for both public and private firms;
9. Promotion of market competition;
10. Eliminating or dismantling 'natural' state monopolies;
11. Privatization of jobs; adapting private sector wages;
12. Reduction of the nature and scope of public services;
13. Privatization of public resources;
14. Privatization of public revenue: conversion of revenues from public investments into private profits; or private access to public capital and its revenues;
15. Denationalization: pressures of international competition.

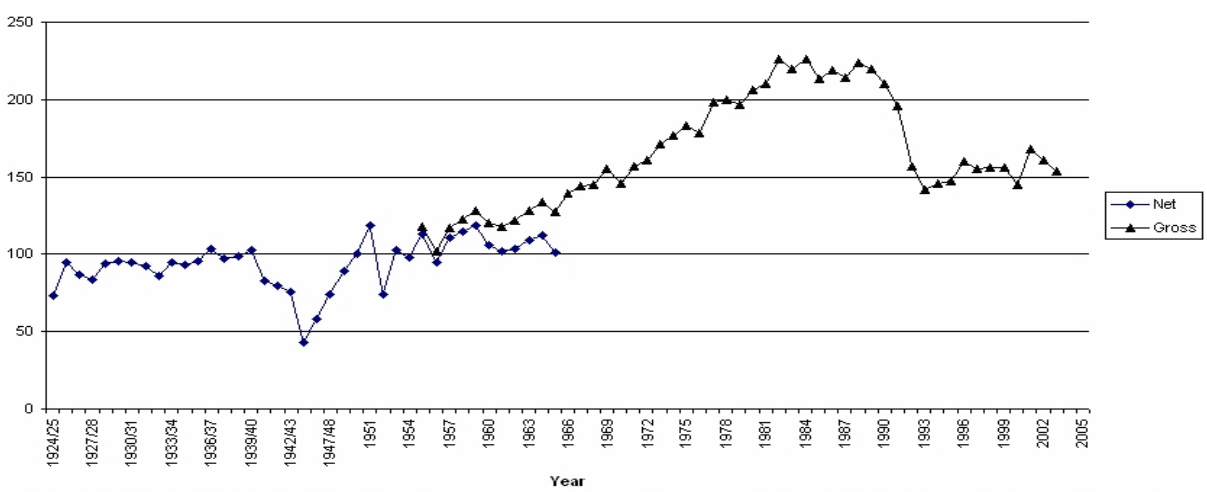
Source: Thiemeyer (1986) and Köbli, J: Public goals and private incentives: privatisation and its consequences for the theory of the firm. Dissertation. The University of Connecticut. 1992.

At the same time, the developers of the concept deserve praise for mentioning in the negotiations on the transformation of ownership as an important requirement, that, due to the interdependence of production processes, the privatization in the food industry and the trade sector should be performed in co-ordination with the agricultural sector. (Now we know that it did not happen that way). When they destroyed large-scale farms, they seemed to have forgotten that these were not simply producers, service provider companies, but at the same time integration and rural development centres as well.

The new agricultural policy was based not on evolution, but on revolution. A sign of this was that it wanted to achieve radical changes in ownership, in the farm, entrepreneur structure of Hungarian agriculture within a short time-span, which was manifested, for example, by the fact that it did not allow any co-operative farms, only some transformed state-owned farms, intending to create large numbers of full-time family farms, etc.

In the evaluation of the new agricultural policy, it is reasonable to turn to history. Perhaps in the historical context, even without the necessary perspective, some valid statements can be made. Over the eight decades between 1925 and 2005, Hungarian agriculture went through several periods of fundamental change. These are not evaluated here. In connection with our preparation for accession to the EU, we just point out the fact that *over the eight decades of Hungarian history in question production never declined, or collapsed to any similar extent as it happened during the period following 1989*. A similar decline occurred only during World War II.

Figure 1. Net and Gross Production of Hungarian Agriculture 1925-2005



Source: Statistical Yearbook of Hungary, Statistical Yearbook of Agriculture 2000. The net output indices are taken from Bródy, A.: The growth rate of the Hungarian economy from 1924 to 1965. (Közgazdasági Szemle, 1967;4: 417–431.)

A comparative look in the context of world agriculture is also possible. The difference between the performance of Hungarian agriculture and the agricultural sector worldwide reveals a shock effect.

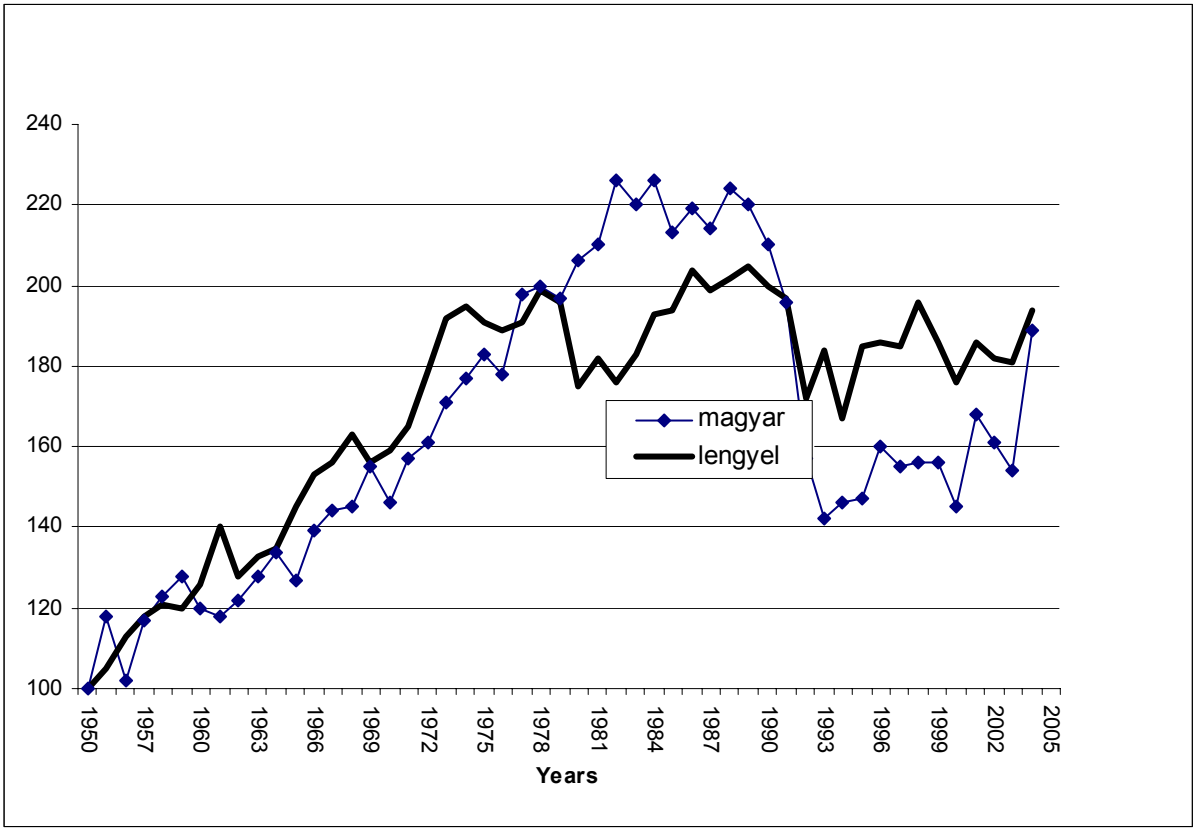
Table 2. Production indices concerning agriculture

Year	1989-1991=100%		
	Worldwide %	Hungary %	Difference between Hungary and the world
1989	98.1	102.7	4.6
1990	100.7	96.5	-4.2
1991	101.2	100.8	-0.4
1992	103.5	78.6	-24.9
1993	104.1	71.1	-33.0
1994	107.1	71.8	-35.3
1995	109.3	70.8	-38.5
1996	113.7	76.0	-37.7
1997	116.6	78.3	-38.3
1998	118.2	78.1	-40.1
1999	121.4	74.4	-47.0
2000	122.8	67.5	-55.3
2001	126.3	90.6	-35.7
2002	127.2	75.1	-52.1

Source: FAO Production Yearbook, 2000, Rome, 2002.

Comparison with Poland is also possible. It is not without conclusion!

Figure 2. Gross production of Polish and Hungarian agriculture 1950-2005



Fifth: The Law on Restitution of Property created thousands of new owners in Hungarian agriculture, many of whom had no agricultural knowledge, no practical experience in farming, and had or have no intention whatsoever to establish or restore "full-time" family farms. *In many cases the land-owner and the land-user were further removed from each other than in the co-operative farms, or even in the state-owned farms.*

The attempt to wipe out the so-called co-operative sector from the face of the earth, affecting all the 1400 co-operatives, irrespective of the level of their economic performance, has cost and still continues to cost the country a lot of money.

Subsequent to the privatization after 1989, Hungarian agriculture was, in terms of the economies of scale, in a more disadvantageous situation than the agriculture of the EU-15, although it is a current problem there as well, as we have known very well since Sicco Mansholt. He drew attention to this problem in the EEC already as early as in 1968.

Table 3. Farms of one hectare and more, number and area

Country	Year	Average farmsize	
		Area (ha)	EEC=100
Germany	1967	10.6	96
France	1963	17.8	162
Italy	1961	6.8	62
Netherlands	1966	11.0	100
Belgium	1967	10.5	95
Luxembourg	1967	16.9	154
EEC		11.0	100

Source: SOEC, Memorandum (1968).

Table 4. Agricultural Area and Agricultural Producers in the EU-15 and Hungary, 2003

Country	Number of agricultural producers (persons)	Agricultural area (ha)	Average farm size (ha)
Belgium	54,940	1,394,400	25.4
Denmark	48,610	2,658,210	54.7
Germany	412,300	16,981,750	41.2
Greece	824,460	3,967,770	4.8
Spain	1,140,730	25,175,260	22.1
France	614,000	27,795,240	45.3
Ireland	135,250	4,371,710	32.3
Italy	1,963,820	13,115,810	6.7
Luxemburg	2450	128,160	52.3
The Netherlands	85,500	2,007,250	23.5
Austria	173,770	3,257,220	18.7
Portugal	359,280	3,725,190	10.4
Finland	74,950	2,244,700	29.9
Sweden	67,890	3,126,910	46.1
United Kingdom	280,630	16,105,810	57.4
EU-15 total	6,238,580	126,055,390	20.2
Hungary	773,410	5,865,000	7.6

Source: http://epp.eurostat.ec.europa.eu; GSZÖ 2003.

The results of international comparison based on production values are quite astonishing.

With such economies-of-scale features, how could the individual farm sector owning roughly 50% of the agricultural area compete with Danish farms? Almost 90% of our individual farms are smaller than the smallest farm in Denmark.

Table 5. Farm Structure to Value of Production in 2003

Value of production	Hungary	Denmark	Belgium	Sweden	Finland	Ireland
Less than 750 000 HUF	79.2		4.2	11.3	1.	6.3
750 000-1.5 million HUF	8.9		4.5	10.5	7.	8.1
1.5-3 million HUF	5.6	5.4	6.5	15.5	13.	14.3
3-6 million HUF	3.2	14.6	9.1	16.5	17.	19.6
6-12 million HUF	1.6	17.3	10.0	13.1	18.	18.8
12-30 million HUF	0.9	20.5	16.7	13.7	27.	18.0
30-75 million HUF	0.4	17.7	29.5	13.1	14.	12.5
Above 75 million HUF	0.2	24.5	19.5	6.3	1.	2.4
Total	100.0	100.0	100.0	100.0	100.	100.0
Number of holdings (1000)	733.5	48.6	55.0	67.9	75.	153.3

Source: EUROSTAT (2004): Statistics in focus. Agriculture and fisheries. 33/2004, and Takács József: A magyar mezőgazdaság főbb jellemzői. Statisztikai Szemle. 8/2005.

To sum up the main features of the Hungarian accession to the EU, it is a fact that the transition was full of contradictions and that agriculture showed poor performance at the time of accession.

It is useful to compare the EU-15 and some CEE countries concerning the performance of agriculture during the 1990's.

Table 6. Production Indices concerning Agriculture (1989 and 1991=100%)

EU-15	2000	CEEC-10*	2000
Austria	101	Bulgaria	65
Belgium–Luxemburg	112	Czech Republic	70
Denmark	106	Estonia	46
Finland	96	Hungary	68
France	107	Latvia	47
Germany	96	Lithuania	63
Greece	103	Poland	85
Ireland	112	Romania	88
Italy	105	Slovakia	70
Netherlands	102	Slovenia	92
Portugal	102		
Spain	114		
Sweden	104		
United Kingdom	98		

Source: FAO Production Yearbook 2000.

2. After the EU Accession

In 2004 ten new countries joined the European Union. These countries could only accede to the CAP2, where direct payments amounted to 25% of those paid in the EU-15.

Hungary introduced the Single Area Payment Scheme (SAPS), which will be transformed into the Single Payment Scheme (SPS). Almost 90% of the support was directed to plant production and more than 10% to animal husbandry. At the end of the 1980s the proportion of plant and livestock production was 50-50%; nowadays it is 60-40%. The decreasing share of animal husbandry is connected also with the low level of its competitiveness. The gigantic competition prevailing on the single EU market is very strong and many Hungarian livestock farmers have given up farming. Today, the balance of pork production in Hungary is negative, so we have become a net importer country.

The total sum of agricultural support was increased after the accession. In 2006, 30% of the total agricultural support measures was directed to rural development purposes, which represent a higher share of them than in the EU-15.

The economies of scale seem to be a major lasting problem. The average farm size is 8 ha. Hungary has more than 700,000 farm holdings, more than 50% of which are producing only for self-consumption, 33% have a small surplus for the market and only 16% is constituted by market-oriented family farms. In 2006 roughly 230,000 farms could obtain support. They are mainly crop-farming and horticultural farms (215,000).

In agribusiness the bargaining position of agriculture and food industry is weak. The degree of concentration in the food distribution trade is much higher and it is much more capital-intensive than agriculture and the food industry.

Hungary is a food market loser before and after the EU accession alike. The Hungarian agricultural and food trade balance has remained positive (export surplus) but the positive balance has been decreasing. Our food imports from the EU countries has increased faster than Hungarian food exports to the EU countries. Hungary has become a net importer country for pork, fruit and milk products.

Total agricultural income has increased significantly after the accession. In 2003 it was negative, but between 2004 and 2006 it was positive to an increasing degree. Behind this there is a change in economic growth.

Table 7. Annual growth rate of gross production of agriculture

	%
1991-95	
1986-90	-6.2
1996-00	
1991-95	-0.7
2001-05	
1996-00	1.6

There is a change related to the total amount of support paid to agriculture which is increased too. The plan for 2007 earmarks support amounting to HUF 456 billion. In the calendar year 2005 the actual amount of support was close to HUF 330 billion. In terms of the dynamics, this amount is clearly increasing.

Table 8. Agricultural holdings by size % (2005)

	≤ 5 ha	5- <10 ha	10- <30 ha	30- <50 ha	50 ha ≤	Total
EU-25	45,2	18,1	20,3	6,2	10,2	100,0
EU-15	37,2	29,6	26,2	3,5	3,5	100,0
Denmark	3,1	19,7	30,1	13,9	33,2	100,0
Netherlands	28,9	14,4	27,0	16,6	13,1	100,0
France	22,3	9,5	19,1	13,4	35,7	100,0
United Kingdom	16,9	9,8	21,8	13,0	38,5	100,0
Germany	19,0	14,8	29,5	13,9	22,8	100,0
Finland	8,6	12,3	39,8	20,3	19,0	100,0
Hungary	53,9	17,7	16,8	4,1	7,5	100,0
Poland	35,3	32,2	27,5	3,1	1,9	100,0

Source: "Agricultural Statistics" Data 1995-2005. Eurostat, European Commission 2007.
The table contents the date of farms with min 1 ESU. 1 ESU=1200 EUR output.
In Hungary 155 thousand farm holdings were above 1 ESU and 560 thousand below 1 ESU.
The total number of agricultural holdings is 715 thousand

As far as the cultivation of agricultural land is concerned, 54% of the Hungarian agricultural holdings had less than 5 ha farmland area, whereas in Poland only 35%, in Denmark just 3%, in Finland only 9% of the holdings were in that size category in 2005.

9% of the total agricultural area of Hungary is used by agricultural holdings having less than 5 ha size. 30% of the agricultural area is cultivated by holdings with less than 50 ha of land.

Table 9. Distribution of agricultural land by size class (2005)

	Size classes of agricultural land used by agricultural holdings %						
	≤ 0,99	1,00-4,99	5,00-49,99	50,00-299,00	300,00-999,99	≥ 1000	Total
Total holdings	3	6	21	26	13	32	100
Of which private holdings	5	12	40	40	3	-	100

Source: Calculation of the author on the bases of (Agriculture in Hungary, 2005. /Farm structure survey/ Volume I.) Hungarian Central Statistical Office. Budapest, 2006. 156-161. pp.

The condition of the national economy as a whole is presently weak. We are far from meeting the requirements of the convergence indicators. Total public debt exceeds 60% of the GDP and the deficit of the central budget amounts to 6% of the GDP…

Closing Remarks

Sicco MANSHOLT, the then agricultural commissioner of the EEC stated what follows in his closing words of his final address at the Stresa Conference in 1958:

"…it is particularly encouraging that the conference has provided the opportunity for a frank discussion on doctrine and on the goals of our agricultural policy, that is to say, on the need to guide agriculture in the direction of sound family farms… In my view this must be so because…there can be no structural policy, or market policy, if we lose sight of this starting point, which is also our final destination in the long run:." *The family farm should remain the foundation of agriculture in the Community…."*

Such was the starting point of the transition period in agricultural policy transition after 1989 in the CEE countries. The key issue preceding any other questions is: Is this still valid for 21st. century agriculture ? Is the family farm the foundation of agriculture in the 21st. century?

References

1. Benet Iván:Az Európai *Unió és a mezőgazdaság. /Finnország és Magyarország/*. (The European Union and the Agriculture. Finland and Hungary) Budapest-Helsinki-Keszthely. Akadémia Alapítvány. Keszthely. 2001. 208 p.

2. Ivan Benet edited: *Agricultural Transition and Rural Development*. *(Some experiences from Finland, Hungary and Poland).* (Institute of Economics, Károly Róbert College and University of Pécs). Budapest, Gyöngyös, Pécs. 2006. 148 p
3. Buday Sántha Attila: *Agrárpolitika – Vidékpolitika* (Agricultural Policy – Rural Policy). Dialóg Campus Kiadó. Budapest-Pécs. 2001.463 p.
4. Csizmadia Ernő: *Bevezetés az élelmiszergazdaságtanba*: (Introduction in the food economics). Akadémiai Kiadó.Budapest, 1973, 371.p.
5. A Kormány: *Agrárpolitikája és programja* (The agricultural policy and programme of Hungary). Budapest, 1991. 44+15.pp
6. *Magyarország mezőgazdasága, 2005 (Gazdaságszerkezeti összeírás*). I.kötet. (Agriculture in Hungary, 2005 /Farm structure survey/ Volume I.) Központi Statisztikai Hivatal. Budapest, 2006. 372 oldal.
7. *The Common Agricultural Policy.* 2nd Edition. Edited: by C. Ritson and D. R. Harvey. 1997. CAB INTERNATIONAL. Wallingford. 440 p.
8. Udovecz Gábor-Popp József-Potori Norbert (szerkesztette): *Alkalmazkodási kényszerben a magyar mezőgazdaság.* (Hungarian agriculture under pressure for adjustment). AKI. Budapest. 2007/7.szám. 140 oldal.

Alexandri Cecilia, Luca Lucian, Tudor Monica, Voicilas Dan Marius,
Institute of Agricultural Economics - Romanian Academy
Bucharest, Romania

The Dynamics of Farms in Romania - Factors of Influence, Economic Implications and Perspectives

Introduction

In recent years, the economic importance of the agricultural sector has decreased. The share of Gross Value Added in Agriculture (GVAA) in the GDP reached 8.5% in the year 2005, significantly down from that in the early transition years (1990-1996), when it had reached even 18%-21%.

Figure 1: Evolution of the share of GVAA in the GDP* and of the share of population employed in agriculture in the total employed population

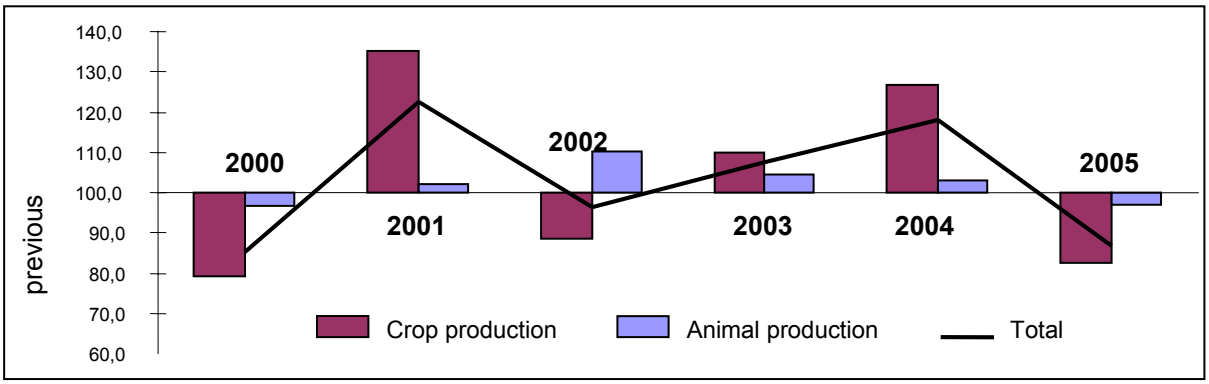
Source: National Institute for Statistics (NIS) - Romania's Statistical Yearbook 1990-2007.

The lack of growth of agricultural production parallel to the increase in agricultural employment[1] is related to several factors. The farmers have lacked the necessary factors of production and due to the specificity of land restitution the land holdings became small and fragmented.[2] Land fragmentation increased the cost of mechanical work per unit of area (Tudor 2003; IAE and CURS 1998). Gross agricultural output (GAO) significantly fluctuated from one year to another, crop production experiencing the greatest fluctuations, both in quantitative and qualitative terms, being much dependent upon the weather conditions. Overall, compared to 2004, GAO in 2005 decreased by 13.1%

[1] In absolute values, 2,939 thousand people were working in agriculture in the year 2005. Out of these, 18.5% were over 55 years old, agriculture being the economic sector with the oldest labour force.
[2] As a result of the reforms, a number of small individual farms emerged: 4.2 million individual farms cultivated 65% of Romania's arable land area in 2005, with an average size of 2.15 ha (NIS 2006, Structural Survey in Agriculture 2005).

overall, while crop production was down by 17.5% and livestock production by 3.1% (Figure 2).

Figure 2. Agricultural branch production indices (%)



Source: National Institute for Statistics - Romania's Statistical Yearbook 2001-2007.

In the year 2005, GAO totalled about 16 billion euro, at the yearly average exchange rate of the National Bank of Romania (NBR). As regards the production structure, the crop production accounts for 60-62% of overall agricultural production, and this share can further increase in the years with good harvests (e.g. in the year 2004 crop production accounted for 69%). The high share of crop production is the cause of the weather-dependent GAO and GVAA in Romania.

1. Farm Structures in Romania

Romania has 14.7 million hectares of agricultural land, in this respect being one of the European countries with the best resources for agriculture. More than 95% of the agricultural land is in private ownership, while the cultivated area totalled 8.5 million hectares in the year 2005.

The agrarian structure is extremely polarized, i.e. 65% of the cultivated area belongs to a huge number of individual farm holdings (4.2 million individual holdings with an average size of 2.15 hectares), while the remaining 35% of the cultivated area is operated by agricultural business enterprises incorporated as legal entities, which totalled 18 thousand in 2005, with an average size of 263 ha. Beyond these statistics, the picture features contrasting extremes, where holdings of a dozen thousand hectares or so, on which a modern type of farming is practiced, coexist with farms smaller than one hectare, with a subsistence type of farming, with a technological level that has not changed for at least a hundred years. This situation is commonly found on the large plains of the Southern, South-Eastern and South-Western parts of Romania.

The reform process in Romanian agriculture started in 1991 with the Law No. 18/1991 (reconstitution of land ownership rights). It was continued by the Law No. 1/2000, which extended the reconstitution of ownership rights and now, the reform process of the Romanian agricultural land is almost completed. The implementation of the land laws in Romania was difficult and the reform process very slow, in comparison with other Central and Eastern European Countries. By 2005 (January), the process was almost finalised, 98.8% of the respective ownership titles were issued, and that represents 96% of the area, which had to be restructured.

Table 1. Agricultural holdings by size categories

Size categories	Individual agricultural holdings				Legal entities			
	Number		Hectares		Number		Hectares	
	2002 *	2005 **	2002 *	2005 **	2002*	2005**	2002*	2005**
Total, including (%):	4,462,221	4,237,889	7,708,758	9,102,018	22,672	18,263	6,221,952	4,804,683
Without land	4.1	3.2			2.8	2.3		
Under 1 ha	48.5	43.6	9.8	7.6	14.4	11.3	0.0	0.0
1-2 ha	20.1	20.5	16.5	13.7	5.6	5.2	0.0	0.0
2-5 ha	21.3	23.9	37.6	34.6	12.6	12.5	0.2	0.2
5-10 ha	4.8	6.8	18.4	21.0	14.0	14.2	0.3	0.3
10-20 ha	0.8	1.5	5.9	9.1	6.4	7.6	0.3	0.4
20-30 ha	0.1	0.2	1.6	2.6	1.9	2.1	0.2	0.2
30-50 ha	0.1	0.1	1.7	2.3	2.2	2.6	0.3	0.4
50-100 ha	0.1	0.1	2.3	2.9	4.8	5.6	1.2	1.5
Over 100 ha	0.1	0.1	6.2	6.2	35.2	36.6	97.5	97.0

*Source: * NIS 2004, General Agricultural Censsuss 2002, ** NIS 2006, Structural Survey in Agriculture 2005.*

According to land ownership, in Romania's agriculture there are holdings based on the private or majority private ownership[3] (while in 1990 these holdings operated 12.6% of the total agricultural area, in 2005 they operated 95.6% of it) and holdings based on public or majority public ownership.[4] While at the beginning of the land restitution process (1991), many new land owners opted for association in land operation under associations with formal (legal) or informal status (33% of the land in private ownership was operated in associative forms in 1993 – OECD 2000), gradually these forms of operation have entered into the process of dissolution. In 1993, according to OECD data, there were 4,265 legal agricultural associations that operated about 14% of the utilised agricultural area (UAA), in 2005 there were only 1,630 legal agricultural

[3] Holdings based on private or majority private ownership: individual agricultural holdings, legal agricultural associations, commercial companies with majority private capital.

[4] Holdings based on public or majority public ownership: commercial companies with state or majority state capital, public administration units.

associations that operated 5.3% of UAA. This evolution resulted in the increase of fragmentation in land use; however, after 2002, the trend of this process seems to be reversed.

Individual agricultural holdings with less than one hectare account for 47% of the total number of holdings, yet they operate only 7.6% of the utilised agricultural area in 2005 (Table 1). These do not benefit from the direct payments received per hectare (SAPS scheme), because of the eligibility condition that the farm has to have at least 1 hectare and the component parcel size should be larger than 0.3 ha. At the same time, 97% of the land areas operated by the legal agricultural business entities have over 100 hectares on the average.

In the period 2002-2005 significant modifications were produced in the number of holdings and utilised agricultural area. Thus, in the above-mentioned period, the total number of farms decreased by 5%; all types of holdings followed this trend.

Table 2. Agricultural holdings and utilised agricultural areas

Legal status of holdings	Number of agricultural holdings			Utilised agricultural area (hectares)			Agricultural area per holding (hectares)		
	2002 *	2005**	05/02 %	2002*	2005**	05/02 %	2002*	2000**	05/02 %
Individual agricultural holdings	4,462,221	4,237,889	95.0	7,708,757	9,102,018	118.1	1.73	2.15	124.1
Legal entities, including:	22,672	18,263	80.6	6,221,952	4,804,683	77.2	274.43	263.08	95.9
- Legal agricultural associations	2,261	1,630	72.1	975,564	742,065	76.1	431.47	455.25	105.5
-Commercial companies	6,138	4,824	78.6	2,168,792	1,780,788	82.1	353.34	369.15	104.5
-Public administration units	5,698	4,118	72.3	2,867,368	2,124,737	74.1	503.22	515.96	102.5
- Other (cooperatives)	8,575	6,991	81.5	210,227	157,093	74.7	24.52	22.47	91.6
Total agricultural holdings	4,484,893	4,256,152	94.9	13,930,710	13,906,701	99.8	3.11	3.27	105.1

*Source: * NIS 2004, General Agricultural Census 2002, ** NIS 2006, Structural Survey in Agriculture 2005.*

The good thing is that simultaneously a concentration process was produced in land operation, and the average farm size increased. It is worth mentioning that the most significant increase was produced by 24% of the

average size individual agricultural holdings. The process of farmland transfer from legal entities to individual agricultural holdings continues, as the process of reconstitution of ownership rights to agricultural land goes on[5] and the landowners withdraw from the farm associations.

Table 3. Structure of holdings by economic size (ESU)

	2003		2005	
The number of holdings – total	4484890		4256150	
	Units	%	Units	%
The number of holdings with less than 2 ESU	4,138,610	92.28	3,871,240	90.96
The number of holdings with 2 to 4 ESU	268,540	5.99	289,260	6.80
The number of Holdings with 4 to 8 ESU	51,630	1.15	65,060	1.53
The number of holdings with 8 to 16 ESU	12,610	0.28	17,930	0.42
The number of holdings with 16 to 40 ESU	6,670	0.15	7,610	0.18
The number of holdings with 40 to 100 ESU	3,870	0.09	3,080	0.07
The number of holdings with 100 ESU and over	2,970	0.07	1,970	0.05

Source: EUROSTAT database 2008, http://epp.eurostat.ec.europa.eu/extraction.

As a result, in 2005 the configuration of the farm structure consists of four categories of holdings (Gavrilescu, Florian 2007):

- Small and very small holdings - under 5 ha – accounting for 91% of total holdings and 36.7% of total utilised area (average area 1.37 ha): on these holdings a subsistence type of farming is practiced, most products going to self-consumption; only insignificant amounts of products are sold on the market in order to obtain cash necessary to cover some basic needs.
- Small to medium holdings ranging from 5 to 10 ha, which account for 6.8% of agricultural holdings, operate 13.9% of the utilised area and have an average size of 6.7 ha; here a semi-subsistence type of farming is practiced, the production going mainly to self-consumption and partially to the market;
- Medium-sized holdings, from 10 to 50 ha, accounting for 2.0% of total agricultural holdings and 9.7% of the utilised area, with an average area of 16.1 ha. These holdings are characterized by a market-oriented farming activity, i.e. the commercial type of farming
- Large holdings, from 50 to 100 ha, and very large ones with more than 100 ha; their share is 0.3% of the total number of holdings and 39.9% of utilised agricultural area; these holdings have an average area of 402 ha and practice the commercial type of farming.

The excessive polarization of agricultural land operation into small and very small sized holdings has great implications for the production capacity of

[5] Law 247/2005 "Law on the reform in the ownership and justice" includes the principle "restitutio in integrum" (complete land restitution with no limit).

Romanian agriculture. Thus, the largest part of the holdings - over 90% - have an economic size of less than 2 ESU[6], while at the EU-27 level this share is 30% lower. Under these conditions, the average economic size of a holding in Romania was 1.1 ESU in 2005, representing a tenth part of the value of an EU holding (10.5 ESU per agricultural holding in the EU-27). The gap is still greater in the case of holdings of large economic size, over 100 ESU, which in Romania represented only 0.05% of the total number of holdings, compared to 2% at the EU-27 level. In the period 2003–2005, EUROSTAT data revealed a slight consolidation within the segment of medium economic size – from 2 to 40 ESU, the share of which increased. This evolution can be partially explained by the consolidation of land size in the possession of semi-subsistence and medium-sized holdings and by the market orientation of these categories of farms. Simultaneously, a decline of the importance of holdings with less than 2 ESU was produced, so we can say that significant changes have taken place in these small-sized holdings in the direction of consolidation of land (the number of small-sized holdings decreased in the period 2002-2005) and efforts to produce more efficiently.

1.1. Key Figures on Romanian Agricultural Production

The structure of cultivated areas reveals the prevalence of cereals in the crop mix, which accounted for 69% of the cultivated area in the year 2005. The main cereals are maize (about 50% of the area under cereals) and wheat (about 37-40 % of the area under cereals). At the same time, among the other cereals, barley and two-row barley are the most important (5-7%).

Cereal production features instability. For example, in the year 2000, it totalled about 10.4 million tons, but reached 24.4 million tons in the year 2004. In the last 10 years, the areas under oil crops increased, due to the special export opportunities for oilseeds. In the year 2005, the oil crops covered 1.14 million hectares; out of this area, 83% was cultivated with sunflower, 9% with soybean and 5% with rapeseed. Other relatively important crops consist of potatoes (3.2% of the cultivated area), vegetables (3%) and fodder crops (8.7%).

[6] ESU – European Size Units 1 ESU= 1,200 Euro of SGM

Table 4: Total production of the main crops (2000-2005 average)

	Total production – thousand tons	Average yield - kg/ha
Cereals, including:	16,736	
Wheat	5,704	2,507
Maize	9,487	3,160
Sunflower	1,159	1,200
Soy bean	187	1,774
Potatoes	3,910	14,003
Vegetables	2,960	15,573*
Sugar beet	777	22,881

* tomatoes only

Source: NIS 2006, Romania's Statistical Yearbook.

Although Romania has large agricultural land areas, the harvests that are obtained are modest and highly unreliable, due to the weather excesses (drought or floods) and to the non-application of adequate production technologies on large areas (Table 4). Most of small grains and oilseeds are cultivated in the zone of the plains in the southern and south-eastern part of the country, where the drought risk is very high. At the same time, the effectively irrigated areas are very small.

Table 5. Livestock (thousand heads)

	2001	2002	2003	2004	2005
Cattle	2,800	2,878	2,897	2,808	2,862
Pigs	4,447	5,058	5,145	6,495	6,622
Sheep	7,251	7,312	7,447	7,425	7,611
Goats	525	633	678	661	687
Poultry	71,413	77,379	76,616	87,014	86,552

Source: NIS 2006, Romania's Statistical Yearbook.

Livestock herds and meat production experienced a significant decline starting from the 1990s, as the very large pig and poultry raising units were no longer operational; these structures were rather specific of the former communist period and their economic performance was increasingly deteriorating. That is why the livestock herds significantly declined and at present most animals are raised on small-sized farms, which do not have the possibility to supply the market with a stable amount of meat, in quantitative and qualitative terms (Table 5). Starting from the year 2002, an increase in the number of bovines, pigs and poultry was noted, this increase being the result of support measures for livestock production adopted by the government beginning from the year 2001, 99% of livestock herds are in private ownership.

In the year 2005, slaughtered meat production measured in live weight terms, totalled 1,508 thousand tons, including 25% beef, 40% pork, 7.5% mutton and goat meat, and 27% poultry (Table 6). The domestic pork and poultry meat production is not sufficient and Romania has to import its

significant amounts in order to meet its domestic consumption needs. The preferences of the Romanian population are mainly directed at pork, which covers about half of the consumption, followed by poultry and beef. Meat consumption per capita reached 68 kg in the year 2005.

Table 6. Animal production

	Measurement unit	2001	2002	2003	2004	2005
Meat, including:	Ths. ton live weight	1,385	1,503	1,659	1,561	1,508
-Beef	Ths. ton live weight	295	319	378	391	383
-Pork	Ths. ton live weight	613	635	710	627	605
-Mutton and goat	Ths. ton live weight	114	118	135	166	114
-Poultry	Ths. ton live weight	355	425	430	372	401
Milk	Ths. hl	46,367	48,325	50,600	53,386	53,852
Wool	Tons	16,880	16,659	16,879	17,505	18,390
Eggs	Million pieces	6,001	6,432	6,641	7,381	7,310
Fish	Tons	13,417	16,232	10,050	13,143	13,352
Honey	Tons	12,598	13,434	17,409	19,150	17,704

Source: NIS 2006, Romania's Statistical Yearbook.

Milk production increased after the 1990s, reaching 60.6 million hectolitres, but the cowherds are scattered on many small-sized farms, making it rather difficult to assure adequate management of milk quality and hygiene and sanitary conditions. At the same time, there is no specialisation in the breeding of bovines between meat production and milk production.

2. Commercial Agriculture Performance. Technical Efficiency of Field Crop Farms

In this chapter we are using a non-parameter method (Data Envelopment Analysis) to assess the performance of commercial crop farming. The final objective of the analysis is to check, in the case of the Romanian field crop holdings (for which the necessary data were available), the connection between technical efficiency and the volume of received subsidies. In theory, highly subsidized holdings are less efficient performers than farmers receiving fewer subsidies, due to lowered effort and thus a waste of inputs. However, subsidies can help technological progress by relaxing credit constraints.

2.1. Performance of Corporate Holdings

Romania's commercial agriculture is presently concentrated in the relatively large holdings registered as legal entities. Thus, this situation does not resemble the European agricultural model, which presupposes a sustainable agriculture from the economic, environmental and social point of view,

promoting the multifunctional agriculture concept and based on the family holdings in reaching the model objectives, even though there are differences among the EU Member States as regards the production systems, the farm size and the production costs. Although certain farm polarization tendencies can also be noticed in the agriculture of Old EU Member States, most of them continue to be based on the medium-sized family holding. In Romania, even though the large-sized holdings currently play the main role in market-oriented production, it is not yet certain whether this will stay the same in the future.

Performance analysis of commercial holdings specialized in field crops, based on their results obtained in the year 2005, attempts to clarify certain aspects with regard to their technical efficiency and the impact that subsidies have upon efficiency. The expectations related to the average yields per hectare of different categories of holdings, influenced by the perceptions of the differences between the technologies used by the individual agricultual holdings and those used by the private[7] legal entities, are confirmed only to a small extent by the average results at the national level. Thus, the comparison of the average yields in 2005 of three of the most important crops (wheat, maize and sunflower) in the sub-sector of private legal entities vs. the individual agricultural holdings sector reveals (Table 7) higher yields of the private legal entities only in the case of maize (+20%).

Table 7. Characteristics of crop production for selected main products

Indicator	Year	Wheat	Maize	Sunflower
Share of private legal entities in total area cultivated by private agricultural holdings	2005	33.6%	13.7%	58.3%
	2004	32.5%	43.7%	49.2%
Difference between the average yields of private legal entities and individual agricultural holdings	2005	+1%	+20%	-5%
	2004	+12%	+4%	+2%
Average yield at national level for all types of holdings (kg/ha)	2004	2,965	3,952	1,385
	2005	3,403	4,441	1,595

Source: National Institute for Statistics 2006, Crop production for the main crops.

Even though in recent years the weather conditions have increasingly influenced crop production, even in 2004, which is one of the best years for grain production, the differences are not spectacular (+12% for wheat). On the other hand, there are large differences between the average yields by county, which may be an indication that the soil fertility and the natural conditions in general are more important than the introduction of modern technologies. These comparisons suggest that in reality the performance of large-sized holdings is

[7] Private legal entities = legal agricultural associations and private comercial companies.

higher only where these holdings operate in zones with a real agricultural potential.

2.2. Measuring the Technical Efficiency of Crop Farms. Methodology and Data Used

The analysis of performance of holdings specialized in field crops, which is presented below, was based on a computer program[8] using Data Envelopment Analysis (DEA). The necessary data for the application of this method are those referring to inputs and outputs, detailed at each holding level, such as those collected under FADN (Farm Accountancy Data Network). The distance from the benchmark threshold estimated by DEA is interpreted as inefficiency of the given agricultural holding.

DEA implies three main options: calculation of technical and scale efficiency; calculation of cost efficiency and allocative efficiency; calculation of changes in total factor productivity (as a result of triple changes: technological, technical efficiency and efficiency of scale). Although the model permits the calculation of different efficiency types (i.e. technical, allocative and economic), the most usual application is for the calculation of technical efficiency, with the advantage that this can be further split between pure technical efficiency and efficiency of scale, which permits the identification of farms that operate under increasing or decreasing returns from scale.

The model can measure efficiency under the input-orientation alternative (in this case it estimates the proportional diminution in input utilisation, the output remaining unchanged), and under the output-orientation alternative (that presupposes measuring the proportional output increase that can be reached by maintaining the inputs constant). The options with regard to the returns of scale include constant or variable returns from scale (that can be increasing or decreasing). In the considered case, the technical efficiency of field crop farms was measured on the basis of data collected by the Ministry of Agricultural and Rural Development (MARD), under FADN. The activity of FADN was initiated in Romania by collecting information from 203 agricultural holdings (from 18 counties) in the year 2001, being extended to 614 agricultural holdings (from all counties) for the 2002 data, to 840 holdings for 2003 and to about 1000 holdings in 2004 and 2005.

[8] DEAP - Data Envelopment Analysis (Computer) Program, by Tim Coelli, Centre for Efficiency and Productivity Analysis, Department of Econometrics, University of New England, Australia; DEA is a non-parametrical method, on the basis of which production efficiency is calculated by means of an efficiency limit (benchmark threshold), determined for a data set corresponding to certain holdings.

The response rate was about 80%. After validation, about 700 holdings remained in the database for the year 2005. Out of these, according to the classification according to the specialization of farms into 8 main groups (TF8), the sub-sample of field crop farms (T1) included 390 farms, from five organization types (Table 8).

Table 8. UAA of agricultural holdings, by organization forms

Organization form	Number of holdings	Average UAA (ha)	UAA in ownership	Main form of land use
Commercial company	245	776	3%	88% rented
Legal agricultural association	109	934	0.1%	95% share-cropping
Authorized physical person	15	177	5%	95% rented
Family association	15	186	16%	84% rented
Individual agricultural holdings	6	39	26%	74% rented

Source: MAFRD, FADN Department.

Most holdings in the sub-sample are specialized in grain and oilseed production, and almost all of them cultivate wheat, maize or sunflower; in total output value of the 390 holdings wheat production accounts for 41.9%, maize production 16.6 %, and sunflower production 17.5%, which altogether account for three quarters of the production value of the respective holdings.

Table 9. Characteristics of inputs and outputs used in the model

	Average	Minimum	Maximum
Output value (Euro thousands)	254	1.3	2,919
UAA (ha)	764	5.0	5,908
Labour (AWU)	17.5	0.4	226.2
Depreciation (Euro thousands)	29	0.005	587
Intermediary consumption (Euro thousands)	103	0.45	1,548

Source: our calculations by FADN Database.

Technical efficiency was measured on the basis of a model that used the output-orientation option, the only output that was taken into consideration being the crop production value. Four inputs were analysed, namely: land, measured by the utilised agricultural area (UAA), expressed in ha; labour, measured by the number of the annual working units (AWU); capital, estimated by depreciation, expressed in RON[9]; intermediary consumption, represented by specific costs for each crop (seeds, fertilizers, pesticides), expressed in RON. For use under the DEAP programme, in order to ensure data accuracy, those items were removed from the sample that contained data suspected of being

[9] RON-Romanian national currency, 1 RON=3.6 EURO in 2005.

misleading, with a corrected sample covering 321 holdings remaining to be investigated. The characteristics of this sub-sample are presented in Table 9.

2.3. Main Efficiency Measurement Results. Technical Efficiency and Efficiency of Scale

The synthetic result of farm efficiency measurement by means of the DEA method in the sub-sample taken into consideration is represented by a total efficiency estimate. This indicator can assume values ranging from 0 to 1, the maximum value (1) being attributed to holdings at the efficiency benchmark threshold; this threshold is determined by linear programming methods. Holdings featuring an efficiency indicator of less than one unit lie at a distance from the efficiency threshold that is greater, as their efficiency estimation is less than one.

Table 10. Descriptive results of efficiency estimations

	Mean	Min.	Standard deviation
Total technical efficiency	0.31	0.025	0.19
Pure technical efficiency	0.41	0.027	0.25
Efficiency of scale	0.80	0.089	0.19

Source: Authors' calculations using FADN Database.

With regard to the most performing technologies and managerial practices used at a given moment (by the threshold benchmark holdings), the mean of efficiency estimations is an indicator of the performance of the sub-sector as a whole (Table 10). In the presently investigated case, the low average efficiency is an indicator of heterogeneity of the performance of crop farms in the commercial sector. Total efficiency (that assumes constant returns of scale, CRS) can be decomposed into other two efficiency indicators, namely, pure technical efficiency and efficiency of scale. The pure technical efficiency is supposed to be the result of the farm head's managerial behaviour, while the residual value of the efficiency of scale can be used for the identification of the optimum holding size, by the indication offered by assigning increasing returns from scale (IRS) or decreasing returns from scale (DRS). The distribution of holdings in the sample between the three categories of returns from scale (Table 11) reveals that most holdings have a too large size, with decreasing returns from scale, while only 5% of holdings can be considered as having optimum size (those in the category with constant returns from scale).

Table 11. Shares of holding operating under CRS, IRS, and DRS

Field crop farms in 2005	CRS	IRS	DRS
Sample size: 321 holdings	5%	17.4%	77.6%

Source: Authors' calculations using FADN Database.

2.4. Holding Efficiency Determinants. Impact of Subsidies.

In order to identify the determinants of holding efficiency, two methods were used, i.e., cluster analysis and econometric regression. Cluster analysis divides the investigated sub-sample into two homogeneous groups of agricultural holdings, having in view the characteristics of the farms (Table 12).

Table 12. Characteristics of the two clusters

	Cluster 1	Cluster 2
Average UAA (ha)	722	1069
Average AWU	16	27
Average subsidies per ha (Euro)	54	638

Source: Authors' calculations using FADN Database.

Cluster 1 has a larger size, consisting of 281 holdings, while Cluster 2 consists only of 40 holdings. The average utilised agricultural area is larger in the case of Cluster 2, but the largest difference is appears according to the level of subsidies per hectare, which are about 12 times higher in the case of Cluster 2.

The subsidies comprise both operational subsidies/direct aids (procurement premia for the crop production sold on the market and input vouchers) and investment grants (from national funding or under the SAPARD Programme).

Table 13. Selected results of cluster analysis

	Average Cluster 1	Average Cluster 2	Probability (ANOVA)
Total technical efficiency	0.30	0.39	0.003
Pure technical efficiency	0.39	0.60	0.000
Efficiency of scale	0.82	0.74	0.018

Source: Authors' calculations using FADN Database.

The efficiency differences between the two clusters are statistically significant (Table 13), holdings from Cluster 1 having a lower technical efficiency, but higher efficiency of scale, while the ones from Cluster 2 show better managerial practices.

The econometric regression used for the identification of the technical efficiency determinants of farms took the following explicative variables into

consideration: share of rented land; share of hired labour; subsidies received per hectare; location in a certain socio-historical milieu (a dummy variable for the holdings in the old regions of South and East of Romania); holding organization form (a dummy variable for the holdings organized on corporate basis, as commercial company or legal agricultural association).

The estimation of the regression equation reveals that only the coefficient calculated for the subsidies per hectare is significant and as a result it can be considered as a determinant of the technical efficiency of crop farms with field crops (Table 14). The determination coefficient (R-square) of the equation is 0.088, which reveals that there are also other variables that can influence the technical efficiency of agricultural holdings, besides those for which the presented coefficients have been calculated.

Table 14. Values of regression coefficients

	Coefficient	Probability
Constant	0.351	0.000
Share of rented land	-1.7 E-4	0.449
Share of hired labour	3.1 E-4	0.613
Subsidies per ha	1.6 E-5	0.000
Dummy company	-0.071	0.155

Source: Authors' calculations using FADN Database.

The results depicted above indicate that in the case of holdings with field crops in Romania, granting subsidies has a positive impact, unlike the situation in other countries, for which similar studies have been produced (i.e., France and Hungary), where the effect of subsidies was negative from the efficiency point of view, generating a certain waste in input use. Yet, taking into consideration the fact that in the case of Romania the subsidies included direct aid and input subsidies, as well as subsidies for investments, it is likely that it is the investment subsidies (covered either from national or EU programmes) that positively contribute to efficiency.

Nevertheless, in total subsidies provided to the 390 holdings from the initial sub-sample, the largest share (30%) belongs to area payments (vouchers or cash), followed by premiums for production commercialization (20%) and, in the third place, by grants from SAPARD funds (16%). In fact the SAPARD program beneficiaries totalled only 49 holdings in the sub-sample (with an average area of 1,171 ha), some having only the project approved and no investment actually made. Furthermore, 15 of the same holdings were also beneficiaries of the national investment support programs.

2.5. Technical efficiency can be boosted through investment incentives

Corroborated, the results of the different analysis techniques employed in this chapter are able to put together a sketch of the field crop commercial holding sector. Overall, from the perspective of the main input use, this sector is characterized by poor efficiency and often oversized farming operations, but it responds positively to subsidy programs.

Nevertheless, the depressed efficiency, on average, in the considered sector points out rather that there are wide technical efficiency disparities within the commercial farming pole. In fact, this proves once more the prevalence of obsolete technologies and managerial skills at the level of the generic commercial cereal and oilseed crop farm in Romania, most of these operations being in the stage of assimilating advanced technologies. The encouraging side of the same picture is that many holdings have already made investments with the purpose of increasing efficiency. Although DEA is not able to measure the financial effect of the identified inefficiency, normally, in a fully functional market economy, this should be negative (which may not necessarily be the case in Romania). For example, the oversized area operated by the holdings in the sample may be the result of a too low lease rent, under the given circumstances on the market for land, with owners either being elderly or residing in cities, and for whom the only choice is to lease out their land (or, in the case of the holdings that operate state owned land under concession arrangements, it suggests that the level of the royalties is too depressed). Another possible explanation for the holding oversize is that the operators have purchased land in excess of the self-estimated optimum level, with the intention to make future investments that would require an enlarged agricultural area (based on the expectations created by SAPARD at that time – in 2005, or by the current National Plan for Rural Development, NPRD). These development strategies for holdings should be investigated using other methods.

With regards to the positive impact of subsidies, identified both in the cluster analysis and in the regression analysis, it should be noted that the pure technical efficiency difference between the two clusters is directly mirrored by the gap between the average subsidy in each group: while in the less efficient cluster the aid volume stood at 54 EUR/farm, in the less numerous but more efficient cluster (representing only 12% of the sample), holdings received 638 EUR on average, as a result of benefiting also from investment incentive programs (under SAPARD or national funding).

In conclusion, the results presented here indicate that investment subsidization programmes may lead to technical efficiency increases of the farm holdings, while the high share of rented land in the areas operated by

commercial holdings makes it relatively easy to adjust their size, depending on the technology used and the managerial practices. At the same time, the heterogeneity of performance in the investigated sample reveals that many holdings are undergoing full restructuring processes, and providing support to their investments seems to be the right way to improve their technical efficiency, rather than increasing the level of direct payments. This has direct implications when considering flexible allocations between the two CAP pillars in Romania.

References

1. Csaki, C., Kray, H., 2005: *Romanian Food and Agriculture from a European Perspective*, WB - Working Paper No. 39, Bucharest, Romania.
2. Coelli, T., Rao, P., Battese, and G. 1998: *An introduction to Efficiency and Productivity Analysis,* Kluwer Academic Publishers. Norwell, MA.
3. Gavrilescu, D., Florian, V. (eds.) 2007: *Rural Economy in Romania*, Romanian Academy, Bucharest, Romania.
4. Tudor, M. 2003: *Institutional models favouring or constraining the agrifood system development. Case study – Romania*, CERES grant report No. 5/2003.
5. IAE and CURS 1998, *Farm restructuring in Romania: causes, efficiency and political implications,* PHARE ACE project, P96-6090-R.
6. World Bank 2005: *The Romanian Agrifood Sector in an European perspective,* ESSD, Working Paper No. 39.
7. OCDE 2000: *Review of Agricultural Policies – Romania*. Bucharest, Romania.

Nina Koteva, Mimoza Mladenova, Maria Rissina, Hrabrin Bashev
Institute of Agricultural Economy
Sofia, Bulgaria

Structural changes in agricultural farms in the EU CAP conditions

After the accession of Bulgaria to the EU, the question for the Common Agricultural Policy (CAP) impact on the agricultural farms is very important. There are many questions needing an answer – in what degree a policy oriented to higher economic, technologic and market level of agriculture, in comparison to Bulgarian, would influence the agricultural farms development.

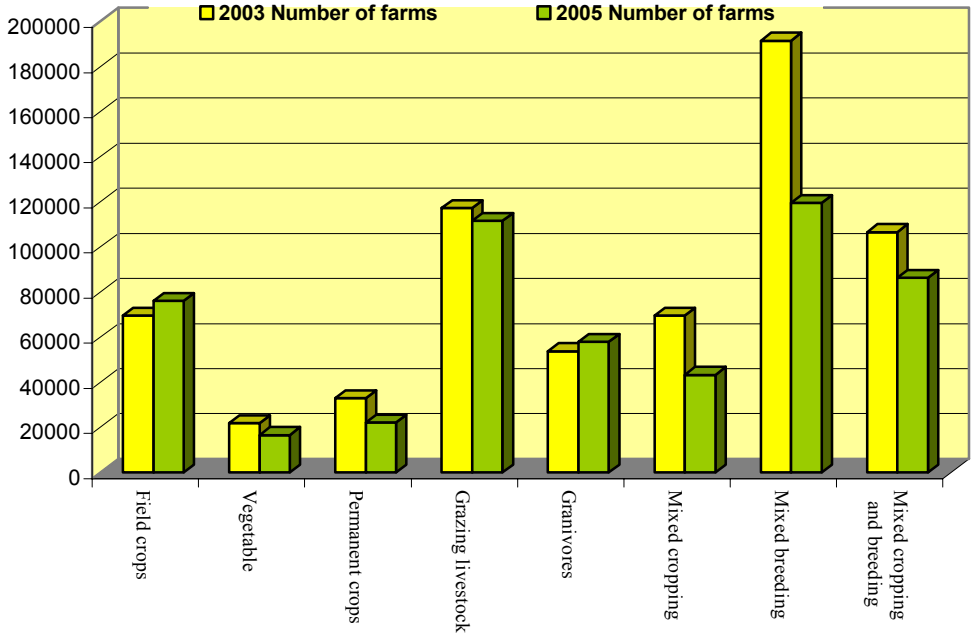
I. Restructuring of agricultural farm in the pre-accession period

The organization-economic structure is a determining factor and a result of the application of the CAP of the EU. The realized restructuring during the pre-accession period did not bring considerable positive changes in the organization-economic structure of agriculture and did not prepare the branch for full and efficient assimilation of the subsidies:

- The diminution of the number of the farms is due at a high grade to the significant reduction of the number of the small mixed farms. At the same time a process of an insignificant enlargement in size of the farms is observed.
- The small sized farms number is predominant. Over 70% of the total number of the farms are up to 1 ha , and only 3% are over 10 ha in size.
- The specialization level of the farms remains low. The half of them are not specialized. A negative trend is the reduction of the number of specialized farms – such as perennial plants, vegetables, ruminants.
- The running structural changes in the farms do not lead to an augmentation of their economic potential neither to an improvement of their market orientation.

The comparative analysis of farms typology indicates that the farms specialized in grain production which determines their higher abilities for support and development in the conditions of the CAP have the highest economic potential.

Figure 1. Dynamics by number of typology of farms



Source: MAF,"Agrostatistics", Results of counting of agricultural farms in Bulgaria during 2003; Structure of agricultural farms in Bulgaria during the economic year 2004/2005.

Table 1: Average economic size according specialization of agricultural farms, ESU

Farms' specialization	2003	2005
Field crops	5,9	5,5
Vegetables	3,7	4,0
Permanent crops	1,7	2,5
Grazing livestock	0,8	1,0
Granivores	2,1	1,7
Mixed farms	0,9	0,7
Average for the country	**1,6**	**1,7**

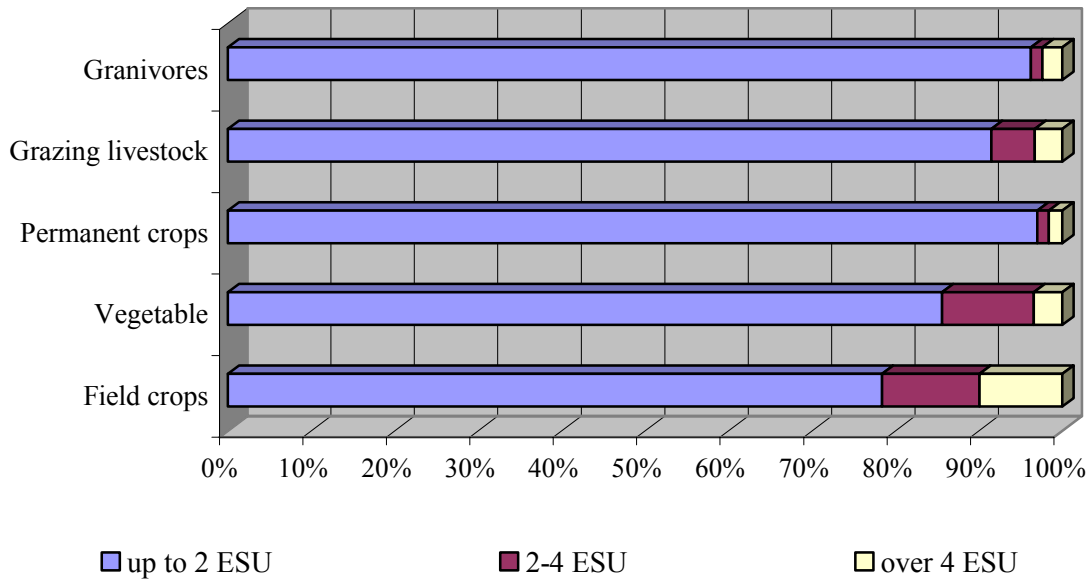
Source: MAF, "Agrostatistics", Results of counting of agricultural farms in Bulgaria during 2003.; Structure of agricultural farms in Bulgaria during the economic 2004/2005,own calculations.

The data indicates that the part of the market oriented farms – over 4 ec.units in all sectors is minimal (Figure 2). In plant growing the situation is worse for the specialized farms in permanent crops and in stock-breeding farms for those with granivores.

The chosen approaches for reformation in our country and the absence of a purposeful agricultural policy for organization-economic restructuring, predetermi-nated the preservation of the irrational organization-economic structure, radically different from the structure of the agricultural farms in the countries of the EU. The strong competitive pressure hides a serious danger for the development of the prevalent number of small farms, whose size and low

resource security set serious limitations to the possibilities for efficient use of the production factors and the access to the EU subsidies.

Figure 2. Relative part of the specialized farms, by economic size, %



Source: MAF, "Agrostatistics", Structure of the agricultural farms in Bulgaria during the economic year 2004/2005 and own calculations.

II. Agricultural farms' problems at the EU CAP application

Because of the low level of technologic development, competitiveness, vertical and horizontal integration etc., a lot of sectors (fruit-growing, viticulture, milk cattle-breeding etc.) are not sufficiently prepared for the absorption of contracted support and for the development in a new institutional environment. In the Common Market Organization conditions, the application of regulatory regimes and mechanisms will engender serious problems for agricultural producers.

- **Farms growing permanent crops and vegetables**

The sector will be included in the common European market after a prolonged for many years decrease of surfaces, yields and production, worse quality and producers withdrawing. With a lack of entire successive vision for the purposeful sector transformation in the pre-accession period and after the start of EU CAP and agrarian policy, which did not create suitable economic environment motivating producers and ensuring investments' effectiveness, the production concentration process does not run dynamically and at the necessary degree.

Particularly alarming is the situation in the fruit-growing, the newly established permanent plantations are few, there are abandoned orchards and vineyards in the limits of agricultural farms, which alternative is only the eradication. Financial resource for investment support from the pre-accession funds is insufficient for the fruit-growing renaissance. Without the creation of convenient economic environment and bigger financial resource for investment aid in CAP conditions, the low effectiveness and the non-sustainable development will remain.

There is one hopeful fact – big investors, related to the wine and spirits' production, have been oriented to the wine viticulture to stabilize their resource base and close the production cycle and through binding sectors on the vertical, they managed to close the cycle.

Extremely unfavorable is the situation for the producers of fresh fruit and vegetables**.** The lack of economic stimulus, raised from low purchase prices and the insecure realization are part of the reasons for withdrawing from these productions and for the farms' reduction in the sector.

At present one of the problems in front of the producers is also their difficult access to the market. In CAP conditions there are new restrictions – respect of marketing quality standards. For the predominant number extremely small farms having low economic potential until 2 economic units (for the vegetable-growing – 75%, for the permanent plantations – 96% of the specialized farms) it is impossible to meet standards for quality and to realize their production on the market. Their incapacity to adapt to the market exigencies will lead to reduction of their number.

The expectations are that the agricultural farms in these sectors would not receive essential support from European funds, which can stimulate their restructuring in a positive way:

- The small number of producers' organizations (till now 5 approved and 1 temporary approved producers' organizations) and the objective difficulties for attainment of the criterion for realized production volume for their approbation will deprive agricultural farms of real financial support in the sector.

- Supports (for the less-favored areas) will stimulate the started production restructuring to less demanding and less capital-consuming fruit species of plums, cherries, raspberries. We can not say that it is the most convenient restructuring having in view the effective use of natural resources, the income per surface unit and the investments profitableness.

- Direct payments would not have essential contribution for the increase in farms' net incomes because of the predominantly small size and high production expenses.

- The number of semi-commercial farms, having potential to transform in market- oriented, is minimal – respectively 500-600 in the vegetable-growing and 200-300 for the permanent crops. The processing enterprises are passive regarding to a vertical integration construction for farms producing fruits and vegetables and to support their restructuring and association. The insufficiency of raw materials is compensated by imports.

- **Agricultural farms with milk cattle-breeding**

The lack of adequate agricultural policy in the pre-accession period for the solution of noticed sector problems has conserved the small fragmentary production (97% of farms breeding 1-2 cows), low productivity, primitive breeding conditions, serious violations of technological and sanitary-hygiene requirements. The imposed for many years low purchase price for the milk and the increasing forage price, has deprived farmers of financial opportunities for production enlargement, improvement of the race composition of herds, purchase of the necessary equipment.

The low support level will be a restrictive factor for increase of the support which is strongly necessary for agricultural producers, because, according to the signed agreements, the increase of the support could not surpass the fixed limits from the year before the accession. This is the reason for the milk producers not to be able to receive the accorded annual support per cow.

Agricultural farms have had restricted access to the money from pre-accession funds despite of their urgent needs. Investments are oriented in priority for the modernization of the processing enterprises.

By the regulatory CAP mechanisms' application, in the actual state of the sector, a serious problem can be outlined, related to the impossibility of meeting the quality criteria for the milk**.** Now the milk production surpasses considerably the fixed quota, but after the finish of the gratis period in 2009, we would not be able to meet the requirements for the milk quality and to fulfill the quota. At the beginning of 2008, 1562 farms only (1,4 %), producing 246 242 t. milk (20 % of the total yield), respond to all the sanitary-hygiene and veterinary requirements. Real danger exists for the processing enterprises to remain without raw material of good quality and the non-realization of the quota will bring serious sanctions.

Considerable part of milk producers have to make considerable changes in the production hygiene, the production volume, the labor quality and the intensity and cares for the animals for insure the future milk sale. For the most of the farms the realization of the obligatory changes at the actual stage is related to considerable costs and investments. Extremely small is the part of the farms, which have potential (interior opportunities, access to exterior funds) for insure of the necessary investments related to the new institutional restrictions

and standards. Therefore, the real opportunities for adaptation to the new farms conditions in the sector will depend, in big degree, on their access to common support funds from the different CAP instruments and the national support.

III. Expected structural changes of farms after the EU accession

The possibilities for agricultural farms development are examined, in the sectors with the strongest regulation from EU CAP and in which, through the evaluation of this research, the most serious problems were outlined.

- **Farms with dairy cows**

The results from the survey show that for all milk producers, the most important factors, having influence for their development are: professional experience, available resources and opportunities for the enlargement of effective farms limits.

The majority of the big and market-oriented farms define as significant the factors, related to the improvement of the institutional environment, the social support, the regulation and the vertical integration, because regularly they are the most sensitive to the economic environment changes.

One of most important development factors for farm development is the further intensification of the integration with the milk producers.

The following directions for agricultural farms with milk cows' development can be outlined:

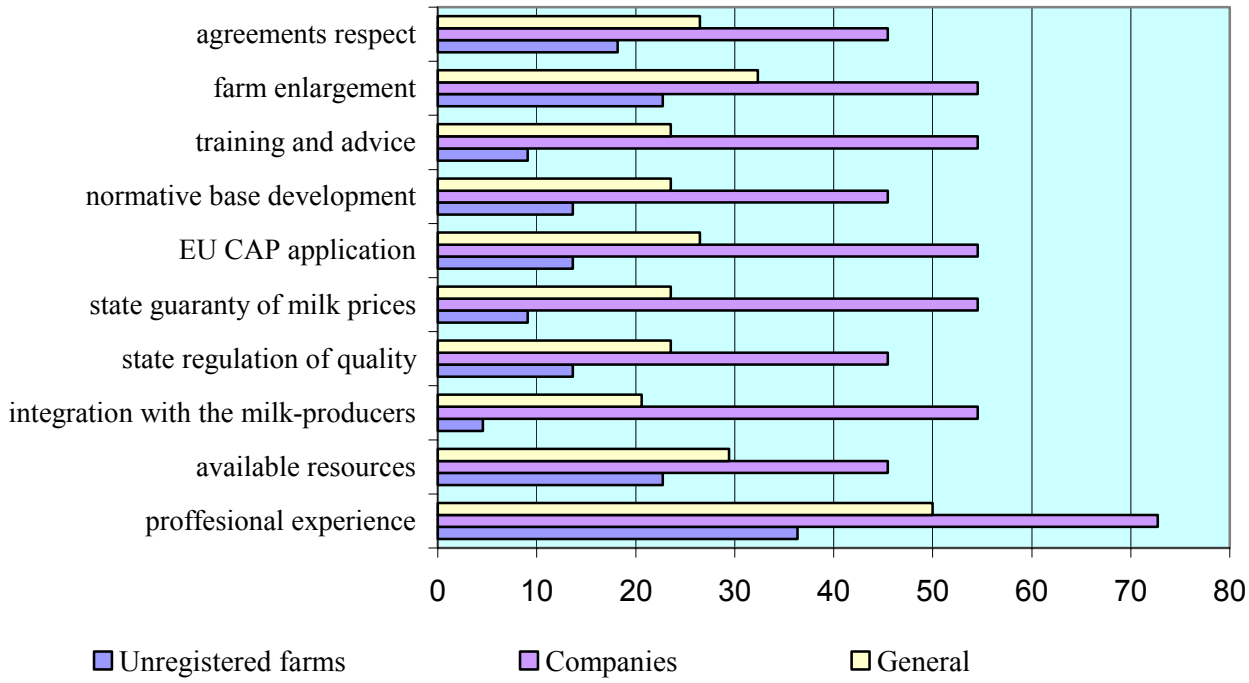
Firstly, in CAP conditions it is expected, in a very high degree, to improve conditions for social regulation and support of bigger farms. So, we can suppose that the sustainability of the firms and the big family farms will remain and even increase. They have considerably higher adaptation potential to the new institutional and market requirements from the unregistered farms and production co-operations.

In these farms the initiated process of production specialization and concentration will continue. They plan farm modernization, intensification of the vertical integration with the milk producers, participation in projects. Considerable part of farms intends to associate and cooperate.

Secondly, for a considerable part of semi-commercial farms it is difficult to adapt to the new exigencies. Apart this, big part of proprietors are in retirement age and do not have adaptation stimuli or opportunities and will interrupt their market activity.

The production restructuring gives a possibility of development for a part of semi-commercial farms. Alternative is the re-orientation to the cattle-breeding and sheep-breeding for meat, which are regulated in smaller degree by the CAP market mechanisms and regimes and for which production there are markets.

Figure 3. Parts of the farms, estimating as considerable to influence of certain development factors, %



Source: inquiry's data

- **Farms producing fruit and table grapes**

For the farms, specialized is in this type of production, the perspective is not too favorable. The farms number and the plants range will continue to decrease. In a non-motivating economic environment, the young and newly established plants are expected to be of limited size, which suggests that the fruit-growing will not play a role of important structure-defining and exportation sub-branch, despite of the competitive advantages related to soil-climatic conditions, experience and traditions.

The expectations are that the organizational and economic restructuring has to run in the following directions:

- In a middle-term perspective, the small non-market family gardens would disappear because of plants amortization, proved ineffectiveness and lack of succession. On their place the family farms will consolidate having plantation size of 1-6 ha, depending on the sorts of fruit-trees in the orchard;
- The farms of legal entities, having considerably bigger size up to 200-300 ha, will maintain their position. We can expect these farms to play the role of integrator – the creation of base for production conservation and realization, which is the main kernel for producers' organization construction.

- **Farms producing wine grapes**

On the background of diminution in the number of economic structures occupied of wine grapes production, organizational-economic restructuring, renovation and restructuring of vineyards will be realized, without expect the attainment of the specified vine size in the agreements with the EU. The specific particularities and the CAP reform in the sector will influence the farm development:

Firstly, physical persons' farms and part of co-operations do not have big chances to find solution to the problem with the produced grapes realization. The pressure of prices from the wine producers will discourage most of them.

Secondly, big part of farms of trade societies, specialized in viticulture, beneficiaries from the pre-accession funds, will develop successfully. Investments, which they expect to receive, will be put in the construction of new resources base or wine caves. Through the vertical integration' extension, they will insure quality raw materials, will apply the best enological practices and will produce high-quality wines.

Thirdly, the introduction and the development of non-typical business forms with foreign participation, operating by different size capitals (joint-stock companies, holdings). They buy vines and suitable lands, create new massifs and improve the existing plants. They organize the grapes production, according to European Standards and the good practices, which reflects on the quality and the realization of the wine. They diversify their activities (hotels, restaurants, tourist activities); in this way they guaranty the sale and minimize the risk.

The influence of EU CAP upon the development and restructuring of the agricultural farms leads to the following conclusions:

- With the exception of the grain-producers, the measures and mechanisms of CAP do not support in a sufficient degree the stable development of the farms in the remaining sectors. Neither the amount of the aid, nor the way of its distribution can stimulate in a significant manner the farms with milk cattle-breeding, permanent crops and vegetable-growing.
- The mechanisms of CAP and the offered aid are not adapted in a sufficient degree and in a suitable manner to the Bulgarian agriculture. The problems of the agricultural farms require structural changes which are not sufficiently provided financially.

To sum up, the achieved investigation shows, that it determinately couldn't be expected that EU CAP will effect only positively and sufficiently strongly the development of the farms. The achievement of purposeful organization-economic restructuring will depend on the state's policy as a corrective of the impact.

Boris Frumkin
Institute of Economics Russian Academy of Sciences
Moscow, Russia

Problems and Trends in the Development of Agriculture in Russia

1. Basic Consequences of Political Transition for Agriculture and Rural Areas

The democratic and market oriented transformations in Russia, in the initial period of transition, have led to the deep fall of agricultural production. This decline, in the period from 1992 to 1998 varied in its particular years between 5% and 13%. As a result, in 1998 the overall output of agriculture decreased in relation to its 1990 level to 56%, including the fall of plant production to 66%, and animal production below 50%.

In the same period substantial changes took place in the structure of agricultural holdings. The significance of large and medium size farms decreased (agricultural enterprises in their various legal and ownership forms), whereas the significance of farm type holdings (predominantly pertaining to the family farm type) increased together with the role of allotment plots cultivated by individual households[1]. Over the years 1990-2000 the share of agricultural business enterprises in the use of agricultural land went down from 98.1% to 80.0%, of farmer type holdings it increased from almost zero to 7.4%, and of household allotments from 1.4% to 2.9%.

Since 1999 the development of agriculture has displayed positive trends. This was a result of the reduction of increasingly expensive imports of agricultural and food products, the reestablishment of support for the development of agriculture financed from the state budget, as well as the increased interest on the part of private investors in investment in rural areas and in farming. The effect of that consisted of a 34% increase of agricultural output over the years 1999-2006. Production in farmer type holdings grew especially rapidly, it grow at a much slower pace, but systematically, in the agricultural enterprises, and slowly and unsystematically in household allotments. Nevertheless, the rate of such growth (in terms of the annualised average) was flattening out: from 6.8% in the years 1999-2001 down to just 2.1% in the years 2002-2005. As a result, over the years 1999-2005 overall output in relation to

[1] In literal translation, the designations of the indicated farm types are as follows: agricultural organisations (SHO), peasant (farmer) holdings (KFH), and personal auxiliary cultivated plots (LPH).

the 1990 level increased from 56% to just above 75%. At the same time, it should be noted that this growth was faster in the case of plant production, the 1990 level of which was achieved already in 2000. Nevertheless, the production of cereals in 2005 was by almost 1/3 lower than in 1990. At the same time, some areas of Russia (Southern Russia, Western Siberia) become export centres of wheat and sunflower, which have already gained a significant position on the global market for cereals and oil plants. The volume of animal production, however, stayed at 50% of the 1990 level. In 2005 the livestock headage of farm animals was by 2/3 lower than in 1990. The output of meat was down by 51%, of milk by 44%, and consumption declined by 30% and 40%, respectively.

Table 1. Structural changes in agriculture in Russia

Specification	1990	1995	2000	2004	2005	2006
The number of holdings by legal-organisational forms						
Agricultural business enterprises ('000)	25.8	26.9	27.6	20.6	19.0	16.9
Farmer type holdings ('000)	4.4	280.1	261.7	261.4	257.4	255.4
Household allotments ('000,000.)	16.3	16.3	16.0	16.0	16.0	17.4
Structure of agricultural land by types of users (%)						
Agricultural business enterprises	98.1	81.7	80.0	73.8	71.9	79.8
Farmer type holdings	0.0	5.0	7.4	9.7	10.2	12.9
Household allotments	1.4	2.5	2.9	3.4	3.4	4.8
Structure of agricultural production by farm categories %						
Agricultural business enterprises	73.7	50.2	43.4	42.6	41.2	41.2
Farmer type holdings	.	1.9	3.0	5.9	5.6	6.5
Household allotments	26.3	47.9	53.6	51.5	53.2	52.3

Source: Федеральная служба государственной статистики России. www.gks.ru

Despite the significant growth of agricultural production in this period, its development failed to keep up with the rapidly growing demand at home. Agricultural and food imports over the years 2000-2005 increased as much as 2.4 times and reached over USD 17.4 billion in value terms.

The Russian food economy sector[2] has continued to suffer from the crisis of the system, so in order to bring it to recovery from it the following measures are necessary:

- Restructure it with the objective to arrive at appropriate proportions between the sphere of agricultural production provided by farming and the sphere of services and agri-food processing; whereas within farming as such – adequate proportions between plant crops cultivation and animal husbandry. In 2005, on the one hand, farming production was not exploited to full

[2] In Russia the term agricultural-industrial complex (APK) is used.

capacity, whereas on the other hand, owing to insufficient volume and poor quality of such production, the production capacities of the food processing industry were used only to up to 50-70% of available capacity;

- Modernisation of the technical and technological base of agricultural production. In 2005, the value of investments realised in agriculture represented only 4% of total investment in the country. The proportion of the values written off from the fixed asset inventory to the newly introduced fixed assets in agriculture is 2:1. As a result of this, in 2005, the depletion of fixed assets in agriculture approached 50%, and of their actively operated part - 60%. According to some estimates, the development of the technical and technological production base of Russian agriculture to bring it up to the modern level will require capital expenditure in the order of USD 12-15 billion per year in the medium term horizon;
- Stabilisation of the situation in the demographic sphere and labour resources in rural areas. The number of rural inhabitants is decreasing in 84% of Russian regions, and almost 9% of rural localities do not have any permanent residents (75% of such localities are in the heartland of Russia – the central and north-western regions of the country). The rural and farming population is ageing. The share of employees in the countryside in pre-retirement and retirement age (50-72 years old) has increased to 20%, that of young workers (20-39 years old) has come down to 43%. At the same time, the share of rural areas in overall unemployment in the country (38%) is 1.4 times greater than the share of rural inhabitants in the total population of the country. At the same time, 75% of the rural unemployed consist of persons aged between 20 and 49 years of age. Such an unfavourable situation is above all the result of the deterioration of the standards of living of the rural and farmers population. Over the years 1992-2005 the average wage in agriculture has come down from 66% to 43% of the national average wage and has become the lowest pay among all the sectors of the national economy. Housing conditions have relatively deteriorated as well, the same is true of access to kindergartens and schools, health care centres, etc. (e.g. 1/3 of the villages is deprived of assured access to local and national roads). This hampers the development of non-agricultural jobs in rural areas. The crafts, commerce, services, agro-tourism, etc., generate just under 10% of the incomes of rural family households, that is 5 times less than in EU countries;
- The policy of equalising the economic conditions for business operation in agriculture with respect to other branches of the national economy. The instability and increased risk exposure of agricultural production, the lack of equivalence of farming in input-output terms in relation to other sectors, and also the necessity for agriculture to perform functions other than production

(social, ecological, recreational, etc.), requires adequate compensation. Until now state intervention in this regard is negligible. In the period preceding the changes of the system the share of agriculture in budgetary expenditure was 1.5 times higher than its share in the generation of GDP, but until 2005 the participation of agriculture in the central state and federal budget was four times lower than its share in GDP creation. As a result of this, the nominal profitability of agriculture in 2005 was only 7%, at a time of 13% inflation, and about 40% of the respective enterprises generated losses;

- For both economic and ecological reasons it is necessary to favour the multi-sector development of agriculture, that is involving the development of various types of agricultural business enterprises, farmer type holdings and household allotments of the rural and urban residents. Agricultural business enterprises (averaging 2,600 ha of arable land and 132 workers) utilise 72% of total agricultural land areas and produce only 41% of total agricultural production. They are dominant in the production of cereals, oil plants and other industrially processed plants. Farmer type holdings (average acreage 75 ha) exploit 10% of total agricultural land and produce 6% of total agricultural output. Household allotments (average acreage of 0.44 ha), in turn, using 3% of total arable land, produce as much as 53% of total agricultural output, including over 90% of potatoes, 80% of vegetables, 50% of milk, cattle and poultry for slaughter. The actual utilisation of the arable land at the disposal of the various forms of farming is very differentiated: in agricultural enterprises it is 71%, in farmer type holdings its is 81%, and in household allotments it is approximately 100%.

Insufficient state support addressed to farmer type holdings and household allotments does not favour their development. Over the years 1995-2005 approximately 50% of the farmer holdings restrained their agricultural production and 10% stopped operating and 70% ceased to keep any cattle. The number of household allotments is stable, successively less and less of them produce for the market (less than 1% of holdings of that type produce exclusively for the market). The persistence of these trends would imply the threat of a radical fall of production on such farms, combined with significant deterioration of supply of farm produce to local markets and the depopulation of agricultural regions combined with the degradation of the rural areas.

2. Goals and Results of the State Priority Project: “APK Development”

The “APK Development” project, approved by the end of 2005, is treated as the first stage of the implementation of a strategy targeted at the overcoming

of the agricultural crisis and the granting to farming of the conditions for sustainable development. This plan assumed a number of orientations of the actions taken in order to eliminate the most troublesome barriers to growth of the agricultural sector. The basic orientation of the activity consisted of the "Acceleration of development of animal production". The implementation of this goal was to be supported by the following two activity directions: "Stimulation of development of small forms of farming within the APK" and the "Satisfaction of rural housing needs for young specialists".

Approximately 25.2 billion Roubles were foreseen for the implementation of this project from the state budget (for direct financing and subsidies to credits) and some 80 billion Roubles from private investments.

It is hard to estimate the implementation of the goals of this project unequivocally. The basic goal of the project was to achieve an increase of the production of beef and poultry meat by 7% in relation to 2005, of milk by 4.5% (with the headage of cows not lesser than in 2005) and of fish by 4%. The target figures were indeed achieved. The output of meat grew by as much as 14.4%, but as a result of the growth of pork and poultry production. The stock of cattle and the output of beef, however, slightly declined (by about 1%). In spite of the growth of output of milk, the imbalance on the market for milk, due to the reduction of milk powder imports, increased even further, resulting in a strong growth of milk prices (by as much as 50%) in 2007. The ultimate target of the second line of measures, consisting of the "Stimulation of development of small farming business forms in the APK" was to consist of the growth of production in farmer type holdings and household allotments over the years 2005-2007 by 6%. It was planned to implement this by means of soft loans being provided to 6,000 farmer type holdings and up to 200,000 household allotments, as well as by additionally stimulating the organisation of cooperatives that provide them with services (1,000 – for handling supplies and sales, 1,000 – for agricultural credit, and 550 – for processing agricultural raw materials. The financial base for this orientation was to be developed by a specialised state-owned bank - "Rosselhozbank" and mortgage system covering at least 5,000 holdings with average acreage of 100 ha. This plan was actually realised. As much as 45% more cooperatives of all types were organised than what had been foreseen. Thanks from financing from the state budget "Rossselhozbank" became the 6-th largest Russian bank in terms of volume of assets and 8-th in terms of owners' equity, and so it granted farmer type holdings 2 times more loans and to household allotments – 6 times more than what had been planned. Nevertheless, after assessment by experts, only half of the new cooperatives actually operate, and soft loans were granted only to 1.5-2% small farms. The growth of

production amounted to 15%, but the stabilisation of this growth depends on maintaining the support from the budget for such forms of farm operation. As part of the third line of activities it was assumed that 31,600 dwellings would be prepared for young specialists. Also in this regard the plan was not only carried through, but it was even exceeded in terms of the number of housing units by 3% and in terms of the inhabitable floor-space – by 15%.

The period of the years 2005-2007, and therefore the period of implementation of the above described programme turned out to be very favourable for the rural areas and for agriculture. In those years agricultural production grew at the rate of 3.4% per year on average (2.1% over the years 2002-2005), the profitability of farm production reached 15% (7% in 2005), and the share of loss-making enterprises fell down to 27% (40% in 2005). Nevertheless, these good results did not yet lead to any quality change in farming. Wages in agriculture are still much lower (almost twice) than the national average. At the same time, the growth of profitability of agricultural business enterprises and the reduction of the loss-making enterprises was largely the result of a favourable business cycle period for agriculture. The growth of prices in the period from October 2006 to October 2007 amounted to 53-160% for cereals and sunflower, 5-21% for beef and poultry meat, 15% for eggs and 50% for milk. There was also no breakthrough in investing activities. In spite of record high investment in the period after 1992 their level, according to experts, is about 1.2-1.5 times lower than what is necessary to create the conditions for sustainable APK development. Some progress was also made in the stabilisation of the agricultural market and improvement of self-sufficiency of food supply within the country. The share of agricultural and food products in imports decreased from 18% in 2005 to 14% in 2007, but the value of such imports increased to USD 24 billion, which corresponds to 36% of total agricultural output in Russia.

Regardless of the above comments, in the opinions assessing the implementation of the above described project by the managers of enterprises and owners of farm type holdings and household plots prudent optimism prevails. It follows from available research that over 47% of them is of the opinion that the implementation of this plan will accelerate APK development.

Considering the results of two years of implementation of the above described project, the Russian farmers expect the continuation and expansion of state support for APK. Above all, they point at the need to design and implement a long-term strategy for agriculture (taking into account the concept of food supply self-sufficiency of the country) and the resulting current agricultural policy. They expect the creation of financial-economic and legal-organisational

conditions for APK development that would not be inferior to the average for the whole national economy. They also perceive the necessity to streamline the whole institutional environment of farming and the creation of an agricultural market monitoring system, and extension services for farmers, and above all the owners of farmer type holdings and household plots, financed from the state budget.

3. The State Programme for the Development of Agriculture in Russia

The expectations of farmers are largely taken into account in the state programme: "Development of agriculture and regulation of markets for agricultural products, inputs and food for the years 2008-2012". The legal basis for this programme consists of the Federal Law "On the development of agriculture", adopted in October 2006, determining five-year APK development plan as the basic instrument for the implementation of agricultural policy of the state.

The above indicated programme has the task to assure the continuation of positive changes in agriculture, initiated by the implementation of the state APK development programme of APK for the years 2006-2007. It is supposed to assure and reinforce the conviction that this project marked the start of a state strategy assuming priority state support of the agricultural development programme. The basic goals of that Programme are:

- creation of conditions for sustainable development of rural areas;
- growth of employment improvement of standards of living in rural areas;
- improvement of competitiveness of Russian agriculture;
- protection and recovery of land together with conservation of the natural environment.

The orientations for the achievement of these goals have been set in particular sections of the programme, concerning:

1) the creation of conditions for the sustainable development of rural areas (including the development of technical and social infrastructure in the countryside);
2) the comprehensive improvement of the conditions for the operation of agriculture (sustaining agricultural soil fertility, creation and development of extension services for the benefit of farming);
3) the creation of conditions for accelerated growth of priority sectors of agriculture: animal husbandry, including creative animal breeding; creative development of basic reproductive plant species;

4) achievement of financial stability in agriculture, above all by increasing accessibility of credit; development of cooperative credit institutions; refunding of a part of the cost of insurance of agricultural production;
5) government regulation of the markets for meat, cereals, sugar, including intervention purchasing, customs tariff regulations; support for investment in selected farming sectors).

The following outcomes are anticipated as a result of implementation of this programme over the years 2008-2012:

- increase of total output of agriculture by 24.1%, including animal production by 32.9%, beef and poultry meat by 42.9%, milk by 17.8%;
- increase of the share of local production in the home market for meat and processed meat products to 70%, and for milk and dairy products to 81%;
- increase of profitability of agricultural production to 10% and reduction of the proportion of loss-making enterprises down to 30%;
- investment in agricultural fixed assets of approximately 950 billion Roubles;
- increase of per capita household incomes in the rural areas by over 60%;
- increase of the number of housing units delivered yearly in the rural areas 3.7 times in relation to the figures of 2006;
- increase of the share of the rural population having access to the use of water supply systems to 66%, and to the supply of gas to 60%.

It is anticipated that the financing of this Programme will draw 551.3 billion Roubles from the federal budget, 544.3 billion roubles from the budgets of the member states of the Federation and over 500 billion Roubles from private investors.

For the first time it is foreseen to engage the participation of agricultural unions and associations in the preparation of specific solutions concerning the mechanisms for the implementation of the Programme and supervision of the progress of its roll out.

It may be claimed that the development and adoption of this Programme is a practical step towards the implementation of modern agricultural policy in Russia. Nevertheless, the analysis of this Programme gives rise to several questions and comments:

1) The Programme correctly treats agriculture as a comprehensive social and ecological system. Yet, it is still difficult to assess, whether this approach is truly realised, as the basic part of the Programme consists of two already approved and implemented federal programmes (the first one concerning social development of rural areas; the second one concerning the conservation and improvement of soil fertility) and five sectoral

programmes of the Ministry of Agriculture, which do not comprise any mutually linked integral system;

2) The emphasis in the premises of the Programme is laid on agricultural business enterprises and farmer type holdings. In a number of its undertakings the household allotment plots are not taken into account. Even for the year 2012 it is planned to cover only 5-7% farmers' holdings and 4-5% of household allotment plots with subsidized credit support;
3) The Programme practically does not foresee any direct, clearly addressed subsidies (with the exception of covering a part of the cost of artificial fertilizers);
4) Market intervention by the state does not cover such important products as milk, fruit and vegetables, high-protein fodder plants and fish;
5) The Programme is very modest in financial terms in comparison to foreign programmes of its kind. The expenditure for its financing, both from government and private sources over the whole five-year period covered (at the official exchange rate of the Rouble) is smaller than the annual expenditure of the European Union's Common Agricultural Policy budget in the years 2007-2013.

The failure to resolve these problems is already painfully felt by Russian agriculture. In the middle of 2007 and early in 2008 the lack of regulation of input-output relations between the different sectors involved (rapid growth prices of energy sources and industrial inputs for agriculture, deficit of logistic and processing capacities with regards to raw materials sourced from farming, under-pricing at farm gate in purchasing by large processing companies and retail distribution chains), the weakness of regulation of the home food market by the state, combined with further liberalisation of imports, gave rise to two mini-crises in pork sales and one such crisis in milk sales, the production of which had increased as a result of the implementation of the programme dealing with the fallout from APK.

The State Programme may cause a turnaround towards the decisive overcoming of the crisis of the system in agriculture provided that it will be part of a long-term strategy and the medium-term effective state support resulting from it being oriented at the development of the agricultural sector, conceived as a multi-functional system, meeting the following functions to the same extent as the production function: the social and demographic function, the ecological function, the spatial and communications function. That system should also play the role of social control over the territory and the social and cultural genotype of Russia. Under the conditions of post-industrial and globalised world economy, only such an approach can assure the sustainable development

(balanced according to production, social and ecological parametres) of the agricultural and food sector, as well as the growth of its international competitiveness. The effect of this will positively enhance the other parts and branches of the national economy.

The strategy for the development of the agri-food sector, as a multifunction system must assume an integral approach to the basic components of its capacity (technological and concerning production: organisational, financial-investment and human). Only such an approach may bring about effects in the very agri-food sector and throughout the whole national economy. In the case of such an approach, priority must be given to human capital, as without overcoming the negative trends occurring there (deterioration of the demographic structure of the rural population, reduction and degradation of labour resources in agriculture, including the decline of the level of professional qualifications, moral-psychological quality and creative capacity of the workforce employed in agriculture), any radical modernisation of this sector and its sustainable development are not possible. In this sense the agricultural strategy of Russia in the 21st century must move towards the direction assumed by the new EU strategy embraced by the CAP for the years 2007-2013 and especially after 2013. The focus of the CAP of the EU is shifted from the development of agriculture to rural development, including above all the way of comprehensive development and utilisation of human capital. This assumption stems above all from the fact that agricultural production has achieved sufficient volume and the task now consists of its stabilisation, and in some cases even of cutting it down.

In Russia stress on development and utilisation of human capital is necessary, as the quality changes in human resources in the countryside are the basic precondition for reaching an adequate level (from the point of view of internal and external conditions) of agricultural production. The basic condition for achieving positive changes of human capital consists of the creation of the technical and social infrastructure in rural areas, meeting at least to a minimum extent the contemporary requirements.

In this context, the following strategic goals of a long-term agricultural policy for Russia should be adopted:

1) To increase the market orientation and competitiveness of the national agricultural and food sector on the home and international agricultural market;
2) To warrant to the population of the country the supply of locally produced food in sufficient volume, observing adequate quality and safety of such food, under the conditions of reducing its imports;

3) To guarantee stable income and acceptable standards of living to farmers and the rural population;
4) To conduct agricultural production using environmentally friendly methods;
5) To expand the options accessible to the rural population of employment outside of agriculture and to increase the role of non-farming sources of income in the structure of farmers' family households' incomes;
6) To assure the conservation of the basic characteristics of rural areas.

The implementation of these goals, as worldwide experience indicates, is feasible only under the conditions of massive and targeted state support for the agricultural and food sector. According to the available estimates, in the medium term, such support should not be less than 3% of annual income of Russia. Under the conditions of the aggravation of the global food crisis and the resulting growth of the impact of agricultural prices upon the rise of worldwide inflation and the stepping up of the new "bio-revolution", the strategic return to effective protectionism to shield agriculture is necessary in Russia. However, the system of important economic, social, legal, organisational and management measures applied by the state should be oriented not at isolating the APK from external impacts, but at delivering priority support for agriculture, focused on the development of the agricultural and food sector, at the enhancement of its competitiveness and at the expansion of its exports of a number of specific goods and services.

References:

1. *Направления, основные мероприятия и параметры приоритетного национального проекта «Развитие агропромышленного комплекса».* Москва, 2005, 5 стр.; www.rost.ru.
2. *Направления, основные мероприятия и параметры приоритетных национальных проектов на 2007 год.* Москва, 2007, 9 стр.; www.rost.ru.
3. *Государственная программа развития сельского хозяйства и регулирования рынков сельскохозяйственной продукции, сырья и продовольствия на 2008 – 2012 годы*. Москва, 2007, 47 стр. www.mcx.ru.
4. *Аграрный протекционизм: научные основы и механизмы осуществления в условиях рыночных отношений. Москва*, ВИАПИ, 2007, 472 стр.

5. Б. Фрумкин. *Национальный проект «Развитие АПК».* В книге «Национальные проекты. Экспертное заключение». Москва, Национальный инвестиционный совет, Институт экономики РАН, 2007, стр. 113- 154.
6. *Российский статистический ежегодник. 2007*. Москва, Федеральная служба государственной статистики России, 2007, стр. 445 – 479.
7. *Пищевая цепочка цен*. «Ведомости», 08.04.2008.
8. Интернет –сайт по приоритетным национальным проектам России - www.rost.ru

Anatoli Saihanau, Aliaksandr Kazakevich
Centre of Agrarian Economics at the Institute of Economics
of the National Academy of Sciences of Belarus
Belarus

Farms of Belarus: Modern Conditions and Development Prospects

Farming is one of the widespread and recognized forms of development of agrarian business in many countries of the world community. In Belarus, farmer movement is a rather new orientation of activities in the agrarian sector, which has been developing since almost 20 years.

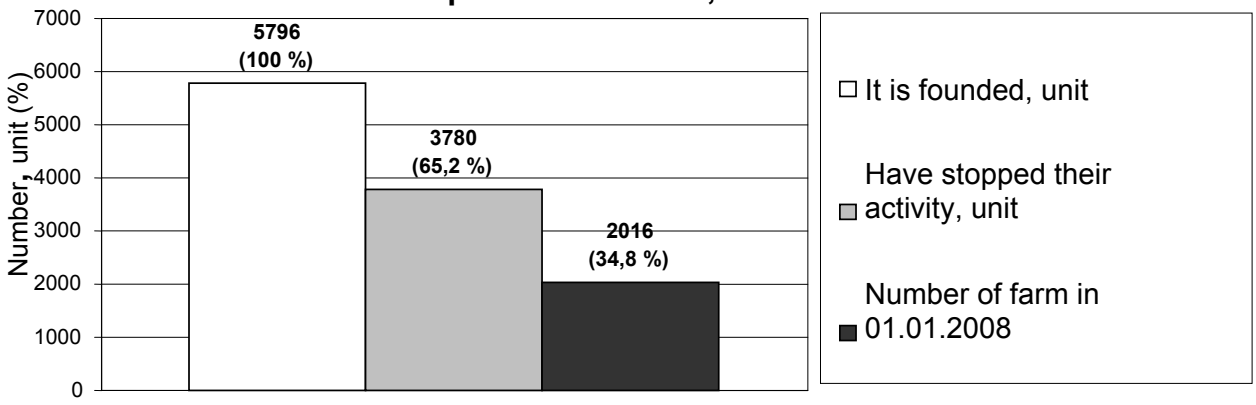
The foundations for the formation and development of farms in the Republic of Belarus were founded during the Soviet period after the March plenum of the Central Committee of the Communist Party of the Soviet Union in 1989, when the decision was taken on the beginning of reorganization of production relations in the rural areas, providing for the restitution of the position of the owner of land to the peasant interested in the results of his work.

In Belarus, at the beginning of 1990 there were 35 farms which people called «free tenants» and by 1991 there were 84 such holdings. In February 1991 the legislation granted them the legal status of «farms».

According to the Law, an independent economic entity, the activity of which is based mainly on the personal work of members of one family that commonly conducts commodity production of agricultural produce, is recognized as a farm. A married couple, their children (or children of one of them), parents, relatives and other persons jointly running such a farm holding can act as members of the farm. In general, the Act of the Republic of Belarus of 18th February 1991, «The Law on farms», has defined the organizational-legal features of the functioning of farms.

From 1991 until 2008, 5796 farms have been registered in the Republic, but 3607 or 63 % have stopped their activity (Figure 1). The termination of activity of farms in the Republic is caused by a variety of objective and subjective reasons. They include the lack of material resources, knowledge and experience of beginning farmers in the questions of technology, economy and organization of the agricultural production; low competitiveness of small-scale farming and failure its adaptation to business conditions; poor quality of land allocated to farms; non-compliance with the current legislation defining the activity of farms, as well as other reasons.

Figure 1. Number of created, stopped activity and functioning of farm in the Republic of Belarus, 1991-2007



At the beginning of the current year there were 2016 farms in the Republic, which held 123,600 hectares of land, including 107,800 hectares of agricultural land or 1.2 % of such land area in the Republic (Table 1).

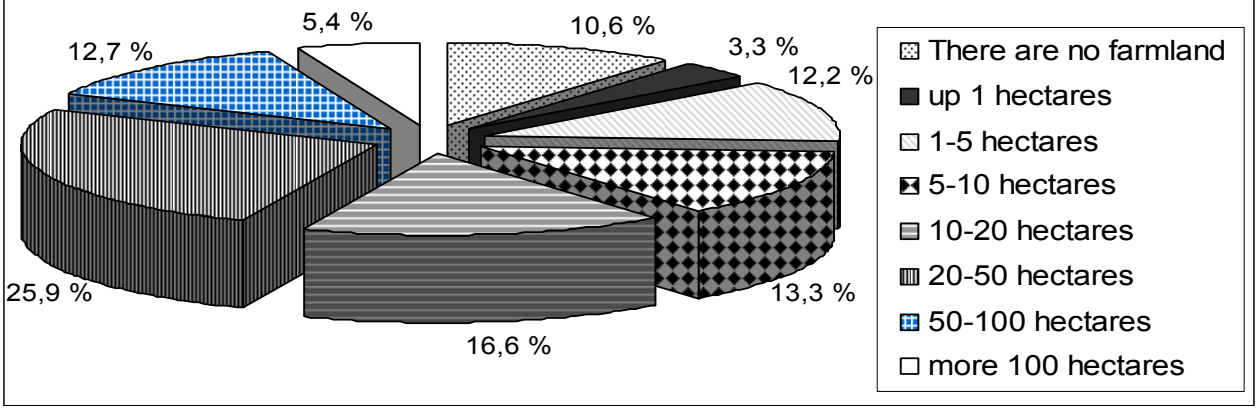
Table 1. Number and area of land tenure of farms in the regions of Belarus as on January 1st, 2008

Region	Number of farms		Total area of land			Including			
						Farmland		Thereof: Arable land	
	In total	In % of total	Ths. ha	In % of total	Average farm size, hectares	Ths. ha	In % of total area	Ths. ha	In % of farmland
Brest	417	20.7	18.4	14.9	44.1	15.8	85.9	9.8	62.0
Vitebsk	348	17.3	33.9	27.4	97.4	26.5	78.2	16.1	60.8
Gomel	243	12.1	15.2	12.3	62.6	13.4	88.2	9.2	68.7
Grodno	284	14.1	13.0	10.5	45.8	12.0	92.3	9.9	82.5
Minsk	449	22.3	18.9	15.3	42.1	17.3	91.5	13.9	80.3
Mogilyov	275	13.6	24.2	19.6	88.0	22.8	94.2	19.5	85.5
Total	**2016**	**100**	**123.6**	**100**	**61.3**	**107.8**	**87.2**	**78.4**	**72.7**

The data in Table 1 show that the largest number of farms is placed in the Brest, Vitebsk and Minsk regions, representing 63 % of their total number in the country. More large-scale enterprises in terms of land tenure size are characteristic for the Vitebsk and Mogilyov regions, with farms averaging 97.4 and 88 hectares respectively, and smaller farms prevail in the regions of Minsk – 42.1 hectares - and Brest – 44.1 hectares per farm.

Significant differentiation is observed in the sizes of agricultural land held by the farms (Figure 2).

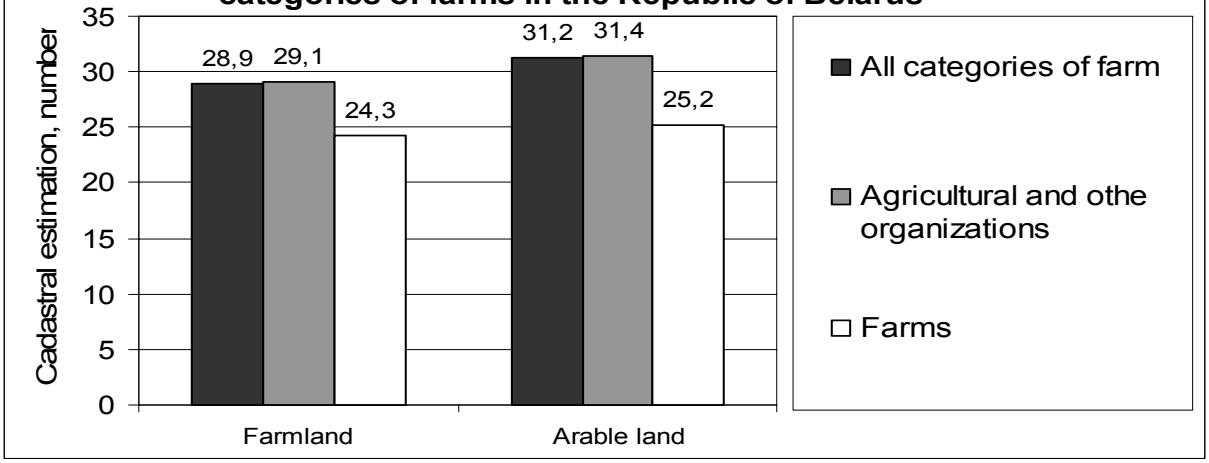
Figure 2. Structure of distribution of farm in the Republic of Belarus in areas of farmland, 2007 r.



The presented data indicate that 10.6 % of the farms in the Republic had no agricultural land at all in 2007. This implies that they did not conduct any traditional agricultural activity. The specific weight of farms with the size of agricultural lands exceeding 100 hectares was 5.4 % of their total number.

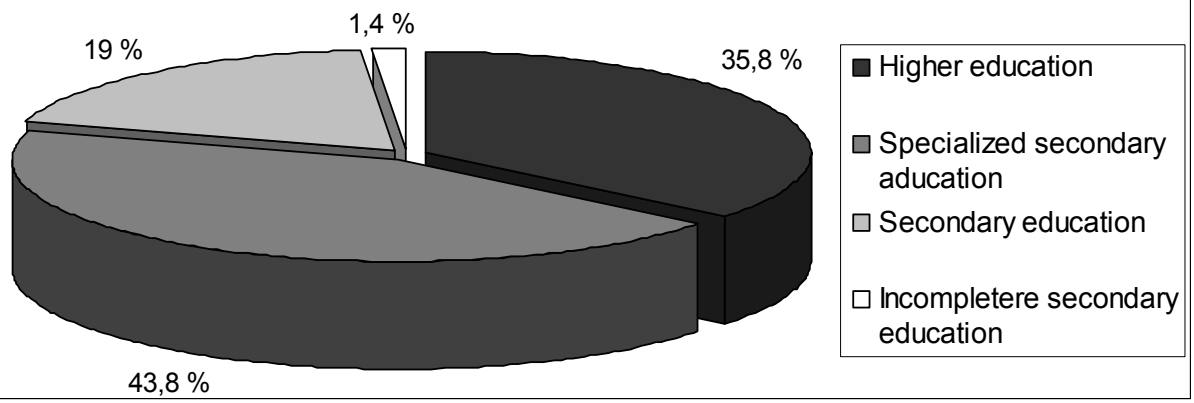
According to the current legislation, farms are allotted lands from the stock of lands with lower fertility and quality of soil. As a result, the cadastral estimation of the land assigned to farms, is 5-6 points below the average index comprising other categories of agricultural goods producers (Figure 3).

Figure 3. Indicators of the cadastral estimation of of lands on categories of farms in the Republic of Belarus



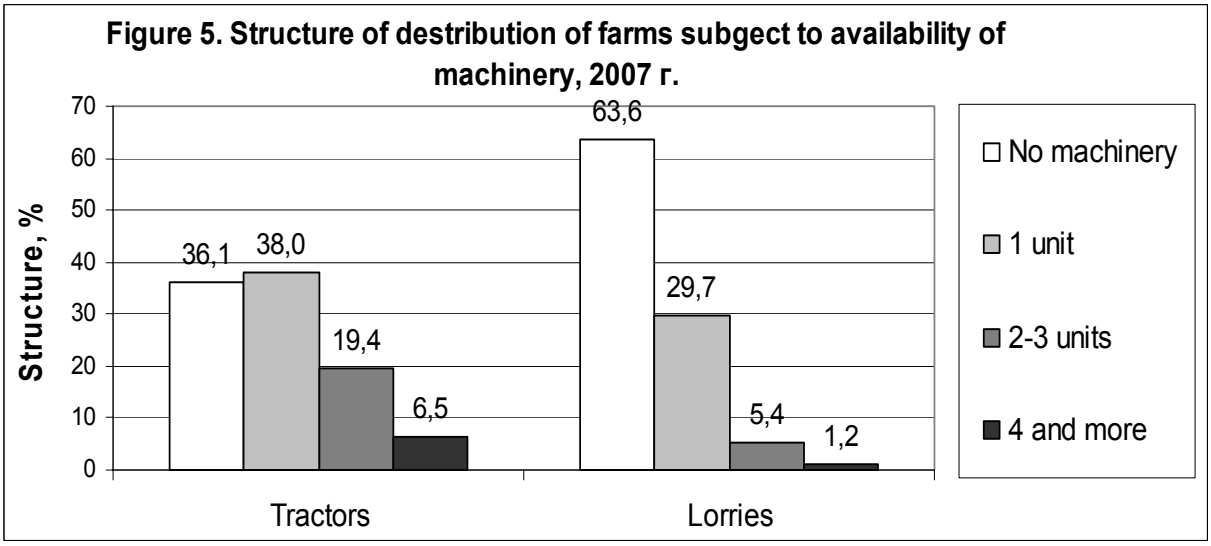
In 2007, about 35.8% of heads of functioning farms had higher education, 43.8% – specialized secondary education, 19% – secondary and 1.4% – incomplete secondary education (Figure 4).

Figure 4. Structure of destribution of heads of farfs on the level of education, 2007 г.



The predominant current problem hampering the development of farming has consisted of the assurance material and technical resources for the farms, and their availability continues to be the main weakness. Presently, 36% of the farms have no tractors and 63.6% – no lorries (Figure 5).

Figure 5. Structure of destribution of farms subgect to availability of machinery, 2007 г.



At the same time, the area of agricultural land possessed by farms in Belarus has increased by 94,300 hectares, areas under crop cultivation – by 70,600 hectares (or 8 times), accordingly, over the period of farming development in the Republic from 1991 till 2007 (Table 2).

Table 2. Dynamics of land tenure size changes, areas under crop cultivation and output of agricultural products on farms from 1991 till 2007

Indicators	Years										2007 to	
	1991	1996	2000	2001	2002	2003	2004	2005	2006	2007	1991 (time)	2006 (%)
Total area of the lands at the end of year - total, thousand in hectares	15.6	61.4	82.8	81.7	130.1	179.7	171.2	148.6	138.3	123.6	+ 7.9	89.3
Including farmland	13.5	52.4	72.1	81.7	113.8	155.9	148.9	130.5	120.4	107.8	+ 8.0	89.5
The average size of the land area, hectares												
- all lands	16.6	20.6	28.9	32.8	38.9	54.2	72.1	73.8	68.6	66.5	+ 3.2	92.2
- farmlands	15.5	17.5	25.0	28.6	34.1	47.4	62.5	64.2	59.2	57.3	+ 3.0	93.4
Areas under crops - total, thousand hectares	10.3	43.2	54.5	58.1	71.5	97.4	97.4	82.0	82.1	80.9	+ 7.9	98.5
Including: cereals	1.0	31.2	30.4	32.8	39.2	46.0	47.6	38.3	34.0	35.2	+35.2	103.5
potato	1.0	3.6	4.9	5.3	4.8	5.7	7.1	6.2	6.1	6.6	+ 6.6	108.2
vegetables	0.04	0.6	2.3	1.6	2.3	4.1	3.8	3.5	5.1	4.5	+ 11.2	88.2
Production volumes, thousand tons												
cereal grain	3.4	56.4	47.4	56.1	79.0	95.7	118.3	87.6	73.5	92.7	+ 27.3	126.1
potato	6.2	39.0	69.3	57.3	54.6	83.1	119.1	79.9	94.8	114.1	+ 18.4	120.3
vegetables	0.4	6.9	32.0	28.8	28.7	72.0	64.1	59.7	85.8	78.9	+ 197	91.9
milk	1.2	8.0	6.0	17.0	14.9	28.3	32.6	26.4	20.8	18.2	+ 15.2	87.5
beef and poultry (output in live weight)	0.8	2.9	2.0	4.1	4.3	6.2	6.7	5.6	4.1	5.3	+ 6.6	129.3

At the same time, production volumes of agricultural goods have considerably increased. In 2007, in relation to the level of 1991, grain production has increased by 89,300 tons or 27 times; potato – by 107,900 tons or 18.4 times; vegetables – by 78,500 tons or 197 times; milk – by 17,000 tons or 15.2 times; beef and poultry meat – by 4,500 tons or 6.6 times. In relation to the previous year, in 2007 growth was observed only in the production of grain, potato, as well as beef and poultry output, at the rate of 26%, 20% and 29% respectively, whereas the production of vegetables was reduced by 8.1% and milk by 12.5%.

Nevertheless, the specific weight of farms in the formation of gross output of the agricultural sector remains insignificant and represents less than 1% of the total of all categories of farms, and just 1.5% of the volumes generated by the producers organized as agricultural production corporations, in spite of significant increase of gross production volumes of agricultural goods in the course of farming development in the Republic (Table 3).

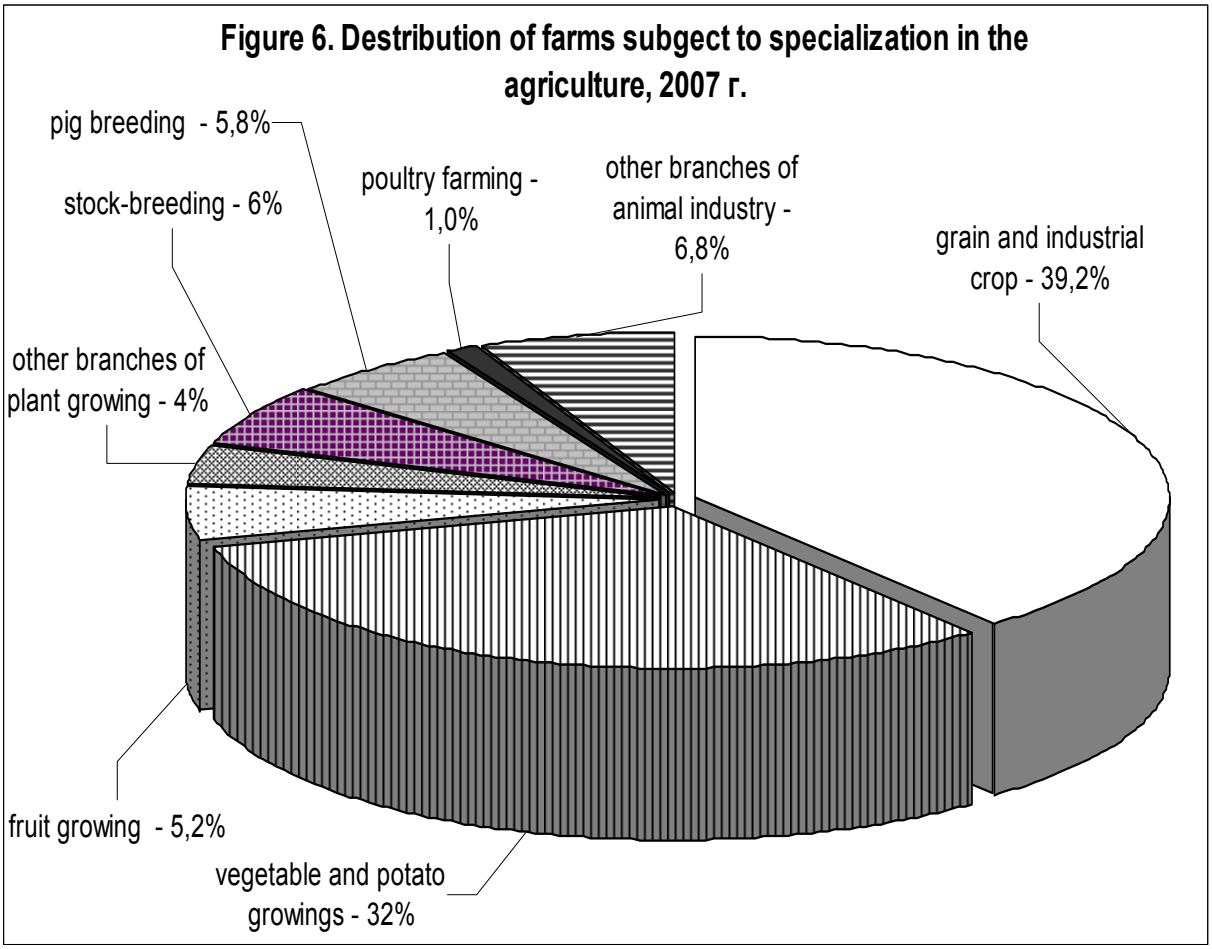
Table 3. Specific weight of farms in land tenure and output of agricultural products in 1991–2007

Indicators	Years					
	1991	1996	2000	2005	2006	2007
In the area of farmland						
All land users	0.15	0.57	0.79	1.47	1.36	1.23
Agricultural and other organizations	0.17	0.68	0.94	1.74	1.60	1.42
In gross agricultural output						
All categories of farms	–	0.40	0.66	1.06	0.99	0.78
Agricultural and other organizations	–	0.78	1.07	1.70	1.58	1.28
In grain production						
All categories of farms	0.05	10.5	0.98	1.36	1.24	1.28
Agricultural and other organizations	0.05	1.13	1.06	1.50	1.35	1.37
In potato production						
All categories of farms	0.07	0.47	0.79	0.98	1.14	1.30
Agricultural and other organizations	0.16	2.84	5.54	11.65	11.58	12.57
In production of vegetables						
All categories of farms	0.04	0.61	2.32	2.98	3.95	3.66
Agricultural and other organizations	0.10	3.07	10.88	21.37	21.11	20.88
In milk production						
All categories of farms	0.02	0.16	0.13	0.47	0.35	0.31
Agricultural and other organizations	0.02	0.27	0.22	0.63	0.46	0.39
In beef and poultry output						
All categories of farms	–	0.20	0.30	0.55	0.37	0.45
Agricultural and other organizations	–	0.23	0.40	0.68	0.45	0.54

It is necessary to underline that in the farms there is a strongly pronounced tendency towards the development of vegetable and potato orientation of their activities over the last few years. In 2007 they produced 1.3% of total potato and about 4% of total vegetable output volume in the country, and in the structure of agricultural producers according to organizational form they accounted for 11.6 and 21.1%, respectively.

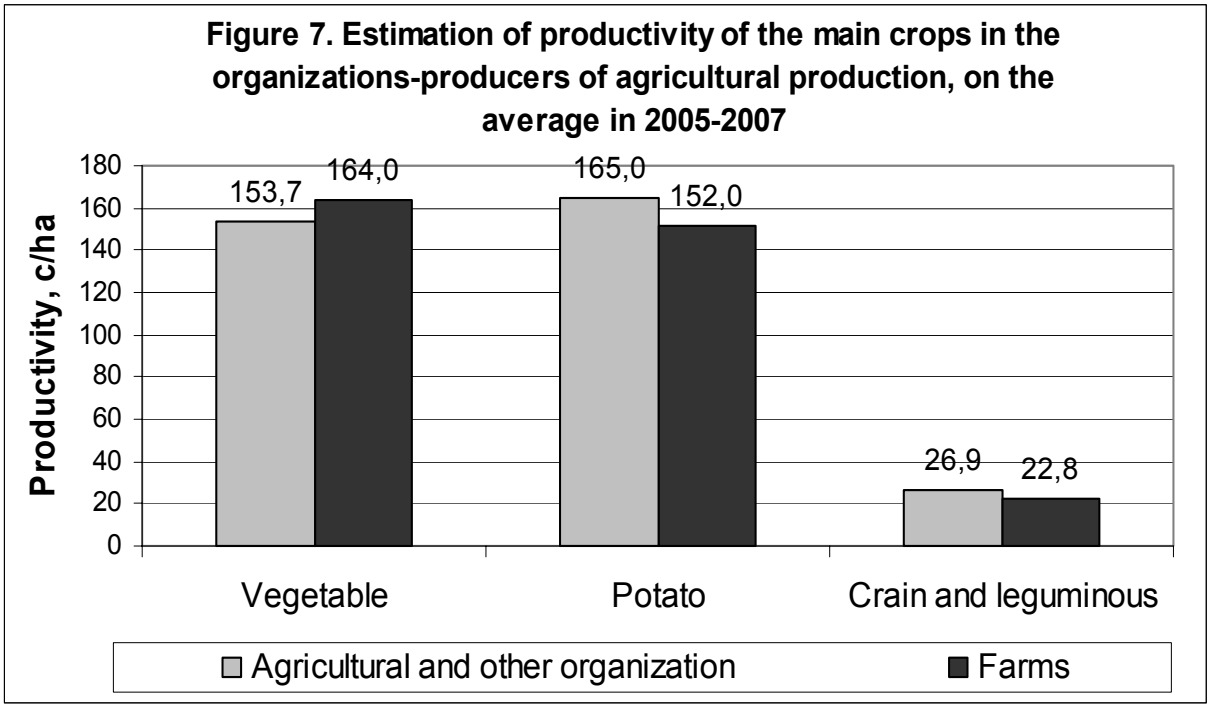
In terms of the structure of distribution of farms according to the specialization directions in agriculture, about 80 % of farms in Belarus specialize mainly in plant growing production and less than 20% of farms combine agriculture with livestock farming (Figure 6).

Figure 6. Destribution of farms subgect to specialization in the agriculture, 2007 r.



The analysis of data from statistical reporting shows that farms do not differ much when measured by indicators of productivity of agricultural crops and efficiency of animal breeding.

On average, in 2005–2007, the productivity of farms in the grain and leguminous crops was 23 c/ha, potato – 152 c/ha, vegetables – 164 c/ha, i.e. 84.7%, 91.2% and 106.7% of the respective indicators achieved by the corporate organizations occupied with production of agricultural products (Figure 7).



At the same time, the farms as a whole use their land more efficiently than most corporate organizations engaged in agricultural production, as the data presented in Table 4 demonstrate.

Table 4. Production of principal kinds of plant products per 1 ballo-hectare in the farms and the corporate agricultural production organizations in 2000-2007

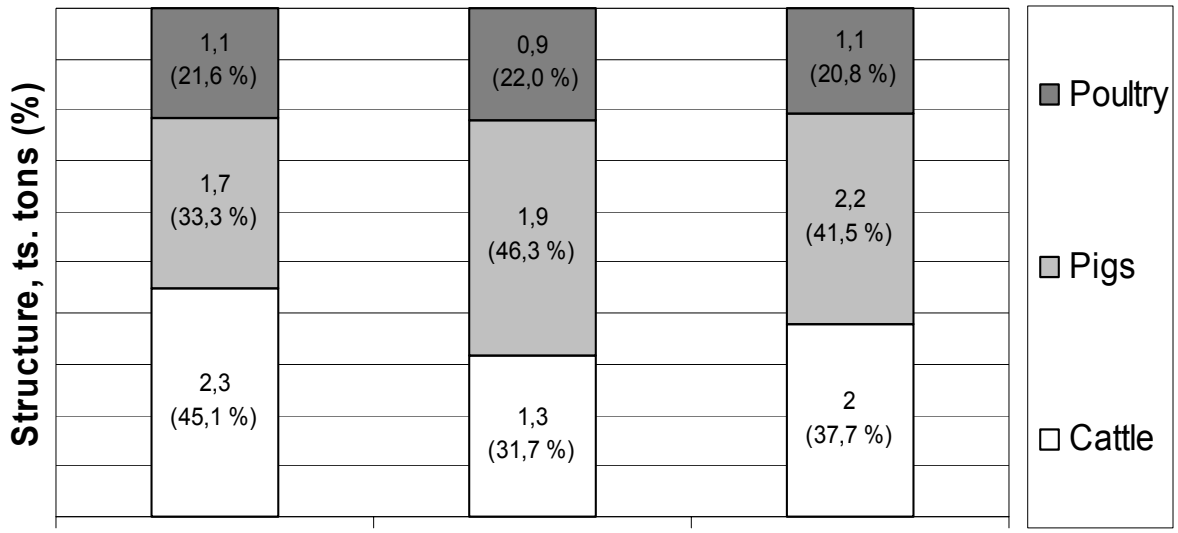
Kinds of production	Categories of the organizations	Years				2007 as % of	
		2000	2005	2006	2007	2000	2006
Grain	Farms	73.0	90.9	80.6	99.6	136.4	123.6
	Agricultural and other organizations	62.1	88.5	78.3	90.4	145.6	115.4
	Farms as % of agricultural and other organizations	117.6	102.6	102.8	110.1	–	–
Potato	Farms	551.6	511.9	615.1	682.5	123.7	111.0
	Agricultural and other organizations	410.8	465.0	525.5	586.0	142.6	111.5
	Farms as % of agricultural and other organizations	134.3	110.1	117.1	116.5	–	–
Vegetables	Farms	575.4	654.8	650.8	646.8	112.4	99.4
	Agricultural and other organizations	465.0	468.2	487.3	512.7	110.3	105.2
	Farms as % of agricultural and other organizations	123.7	139.9	133.6	126.2	–	–

The analysis shows that in 2005-2007 3-10 % more grain, 10-17% more potato and 26-40% more vegetables were produced per 1 ballo-hectare on farms in comparison with other producers (corporate organizations) of agricultural production. In the Republic there are many farms with high standards of farming and plant production.

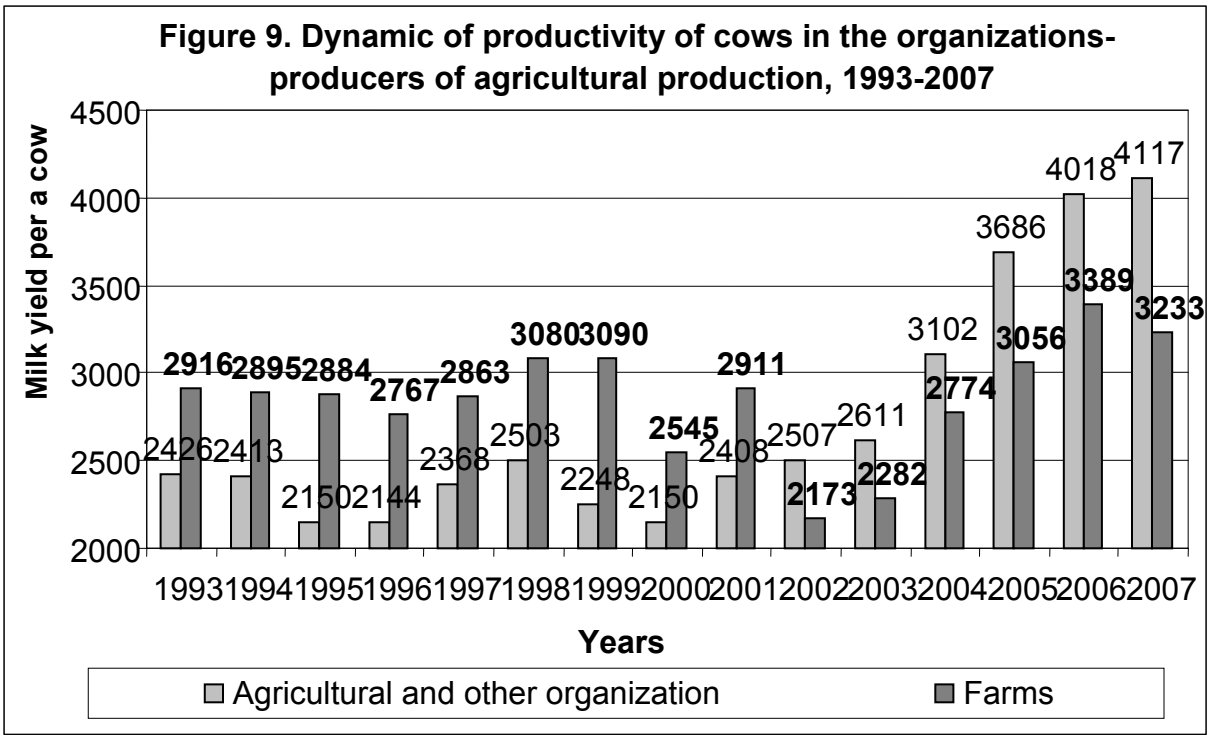
The branch of animal industries in the farmer sector is represented by farms with various specializations and animal industries production. It is necessary to notice that increasing specialization of production is observed in the development of cattle-breeding orientation in the activities of the farms. It is possible to distinguish farms specializing in the production of milk and young cattle breeding (complete herd turnover); pig-breeding (with the closed cycle), poultry-farming, beekeeping, fur-breeding and other farms.

The farms annually produce about 5 thousand tons of meat in live weight (40% – beef and pork, 20% – poultry) (Figure 8).

Figure 8. Structure of meat realization in the farms subgect to kinds (live weight), 2005-2007 гг.



Since 2002, dairy farming on farms is characterized by lower indicators of efficiency in comparison with other organizations occupied with the production of agricultural products (Figure 9). This can be explained by the processes of reforming of the unprofitable corporate enterprises of the agricultural sector and the organization on the basis of separate farm management entities.



In 2007, the average milk yield per a cow in the farmer sector was 3,233 kg, which is 4.5% less than the level of 2006 and 21.5% of the indicator of the corporate agricultural organizations in 2007.

This situation is caused by the termination of milk production in one of the large dairy-commodity farms in the Gomel region because of tuberculosis suffered by their cattle last year.

At the same time, in the farmer sector there are farms where the milk yield of 5,500-6,000 kg per cow has become a stable indicator in the last few years. Among them it is possible to note the farm «Alex» in the Berezovsky district (6,320 kg – 2007), the farm «Pralesak» in the Mogilyov district (6,211 kg), the farm «Progress» in the Dribinskiy district (5,490 kg) and other farms.

Under modern conditions the large farms provide a substantial contribution to the production economy of the farmer sector. They function on the basis of reformed agricultural organizations. In the course of reforms carried out in the years 1998-2007, 29 such farms have been created in the Republic, which have obtained resources from unprofitable and inefficient agricultural organizations by means of mergers and leases. 13 such farms (45%) were operating in the Republic at the beginning of 2008.

The termination of activity of such farms is caused by objective and subjective factors. The essence of the objective reasons is explained by the absence of sufficient organizational-legal framework for the realization of this process. The problem of the subjective factor consists on the whole of the shortage of investment resources, the adverse financial conditions which have

developed in these farms, the residual principle of their financial and material support and other reasons.

The category of farms concerned feature cattle breeding production specialization conditions typical of the Republic. It is focused basically on the production of milk and cattle breeding. They produce about 2/3 of the milk, beef and poultry meet output, having approximately 30% of the land tenure held by farms in the Republic (Table 5).

Table 5. Dynamics of industrial-economic activities of farms which obtained resources from the reformed agricultural organizations in 2002-2006

Indicators	Years				
	2002	2003	2004	2005	2006
Number of farms at year end	14	21	26	19	16
in % of all farms	0.6	0.8	1.2	0.9	0.7
The area of farmlands – total, th. ha	39.1	61.5	74.1	41.7	37.0
in % of all farms	47.9	39.5	46.8	32.4	31.2
Grain production, thousand tons	22.9	32.8	49.9	16.5	13.5
in % of all farms	29.0	34.3	42.2	18.8	18.0
Productivity of grain, c/ha	19.7	24.7	22.3	21.2	21.6
in % of all farms	97.5	118.8	88.8	92.6	106.4
Livestock KPC at the end of year - total, thousand goal	13.8	24.0	27.4	14.1	10.81
in % of all farms	81.1	77.1	80.0	65.9	56.6
Thereof: cows – all	5,920	8,424	9,888	5,956	4,796
in % of all farms	81.0	72.3	79.7	70.1	66.5
Milk production – total, thousand tons	13.0	21.2	26.4	18.2	15.4
in % of all farms	87.4	75.0	84.6	69.0	66.0
Milk yield per cow	2,144	2,210	2,661	3,096	3,131
in % of all farms	98.7	96.8	95.9	101.3	92.4
Beef and poultry meat output, live weight – total, tons	1,308	4,119	3,742	3,691	2,730
in % of all farms	30.4	66.4	55.8	65.9	66.5

In the activity direction the farms founded on the basis of the reformed agricultural enterprises there are typical representatives of the agricultural organizations of the agrarian sector of the Republic. This provides a basis for the comparison of the efficiency of their activity with respect to other forms of organizations engaged in production of agricultural goods (Table 6).

Table 6. Efficiency of activity of various forms of organizations in the agriculture of Belarus, 2006

Forms of the organizations	Quanti ty, unit	Average farmland area per farm, hectares	Profit (loss), million (BY) rbl.		Profitability, %	
			From realization	The balance	From realizat ion	The balance
State-owned unitary enterprises	434	3.955	10.3	514.3	0.3	11.5
Owned by:						
The Republic	115	3.761	575.9	1.163.2	8.2	14.3
Regions	14	4.763	-478.3	66.6	-27.6	1.6
Districts	305	3.991	-180.5	290.1	-7.6	9.3
Agricultural production cooperatives (collective farms)	1.055	3.956	-66.9	369.8	-2.5	6.0
Private unitary enterprises	16	3.164	87.0	507.1	3.6	19.8
Public joint-stock companies	102	4.459	678.5	1.100.2	9.6	13.3
Private joint-stock companies	27	4.370	334.0	786.7	6.2	14
Farms	16	2.312	7.9	147.4	0.7	12.9
Total	**1.650**	**3.970**	**8.3**	**458.9**	**0.3**	**12.1**

From the presented data it is visible that, as a whole, the group of farms which have obtained resources from the reformed agricultural organizations, according to the results of 2006 had smaller sizes of land holdings in comparison with other organizational-legal forms of agricultural organizations in the Republic and different break-even activity [business performance]. At the same time, effective work is achieved at the expense of economically stable households. About half of the entities from this group of farms incurred losses from business activity. The positive result is provided at the expense of state promotion and others incomes.

Prospects for development of farms in the Republic belong to one the actual directions of development of the agricultural sector of the Republic. They are decided in the context of realization by the Government of the

program of revival and village development for 2005– 2010. It is supposed:

- equipped with highly-efficient machinery and the equipment, with a high level of intensity and culture of agricultural production;
- to promote their cooperation with large agricultural commodity and processing organizations;
- to improve the legislation concerning farms and personal subsidiary plots held by citizens, including the domain of property and landholding relations.

Much has already been done towards the realization of these directions. In July 2005 the revised «Law concerning farms» of the Republic of Belarus was passed. The Law defines the legal status, the conditions of establishment and the activities of farms on the territory of Belarus.

The decree of the President of Belarus dated February, 28th, 2007, № 667 «Concerning the withdrawal and granting of land» improves the system of land relations as a whole and for farms in particular. Firstly, for the benefit of farms, it establishes the entitlement for the works connected with preparing the plan of allotment of land for agriculture to be financed from the Republican budget. Secondly, farms, as well as other forms of organizations engaged in production of agricultural products are granted the right to acquire land areas in agricultural use together with the right of lifelong inherited possession and lease.

In the context of realization of the Government program of revival and village development for 2005–2010, financial and material support provided by the state for the farms is introduced on the returnable and the irrevocable basis.

The mechanism of returnable financing is granted in the form of budgetary loans that are allocated for the strengthening of the material-technical base, for financing of target programs and concrete projects. For example, with the statement of the Government program of revival and village development for 2005-2010, in 2005 budgetary loans have been given to farms from the Republican budget for the acquisition of agricultural machinery produced in the country to the tune of 3700 million rbl. (Table 7).

It is necessary to underline that the budgetary loan has been drawn by 131 farms to the tune of 3515.9 millions rbl., averaging 26.8 million rbl. per one farm. 123 tractors of from the Minsk tractor plant and 8 units of agricultural machinery were acquired.

Table 7. Distribution of the budgetary loan given out to farms from the Republican budget for the acquisition of agricultural machinery produced in the country in 2005

Regions	Allocated funds	Funds employed		The number of soft loan beneficiaries		Average loan value per one farm
	Million (BY) rbl.	Million (BY) rbl.	% of the allocated funds	Total	% of the number at 1.01.2005	Million (BY) rbl.
Brest	550	550	100	20	4.1	27.5
Vitebsk	640	457.4	71.5	22	5.2	20.8
Gomel	720	719.1	100	23	8.2	31.3
Grodno	550	550	100	20	6.2	27.5
Minsk	560	558.4	100	20	4.1	27.9
Mogilyov	680	680	100	26	8.3	26.2
Total	**3700**	**3515.9**	**95.0**	**131**	**5.7**	**26.8**

Under the present conditions the mechanism of financial support for farms in this direction is granting long-term loans for the period of 7 years subject to a preferentially soft interest rate of 2 % per annum. For example, in 2007, 106 farms took advantage of these credit conditions. They were provided with 7 billion rbl. of debt financing, that is 66.6 million rbl. per a farm (Table 8).

Table 8. The values of the soft loans granted to farms for the acquisition of technical equipment made in the country in 2007

Regions	Number of beneficiaries of farms-credit		The sum of debt financing granted, million rbl.	
	Total	% of the number at 1.01.2007	Total	Average per one farm
Brest	34	7.6	2475.5	72.8
Vitebsk	9	2.4	394.5	43.8
Gomel	7	2.9	202.5	28.9
Grodno	18	6.2	656.4	36.5
Minsk	11	2.4	1265	115.0
Mogilyov	27	9.3	2061.7	76.4
Total	**106**	**5.0**	**7055.6**	**66.6**

In the context of improvement of the state participation in the development of farms in Belarus, the mechanism of centralized financing of farms is essentially improved at the expense of Republican budgetary funds from section «Farming». Since 2007, the centralized resources from this source will be granted only on the irrevocable basis for priority works: building of roads, radio and an electricity transmission lines, water supply

systems, gas supply, telecommunications and other projects, as well as land improvement works. In 2007, 1580.2 million rbl. were provided for these purposes, taken advantage of by 83. At the same time, in 2008, the same facility offers 2182 million rbl. to be employed by farms, that is nearly 1.4 times more than last year.

Furthermore, the mechanism of centralized financing of farms in this direction refers to «green basket» measures and corresponds to the basic requirements contained in the Agreement on agriculture of WTO member states, allowing not to accept obligations to reduce their budgetary financing.

A recent orientation in the development of farms turns to agri-eco-tourist activity. The decree of the President of Byelorussia of June, 2nd, 2006 № 372 «Concerning measures for the development agri-eco-tourism in the Republic of Belarus» adopts and determines preferential taxation terms for farms developing agri-eco-tourism to the tune of one base number a year. In 2007 the «Program of participation in the development of agri-eco-tourism in Belarus» was adopted and realized by the Board of Directors of the public joint-stock company "Belagroprombank". The main purpose is to grant those farms, which engage in agri-eco-tourist activity, preferential credit terms – the granting of loans for a period of 5 years at the interest rate of 5 % per annum and a grace period of 1 year concerning the repayment of debt principal.

It should be noted that the measures taken, just in 2007, have enabled to increase the number agri-eco-farmsteads in the Republic by 188 units, that is 5.5 times. In the second half of the year, 4 farms benefited from preferential credit. They were granted 62 millions rbl. of credit funds for the period of 5 years, subject to 5 % interest per annum.

It is assumed that by the end of implementation of the Government program of revival and village development for 2005–2010 farms will belong to the recognized and effective forms of management in the agricultural sector of Belarus.

Leonid Matusewicz[1]
Belarus

Transformation of agricultural sector in Belarus

Belarusian agriculture, as in all the "pro-soviet" states, undergoes a system transition. Here, though, in contrast to numerous "pro-soviet" states, the process is gradual. The basic direction is the restructuring and modernisation of agriculture along with assuring the development capacity to all forms of management – national, collective and private. This course of transition is supported by the majority of Belarusians.

In this process, most "kolkhozy" were transformed into production cooperatives (group holdings) and the majority of "sovkhozy" – into commercial companies (mainly companies, where the State is the sole owner). Over 200 unprofitable kolkhozy and sovkhozy were taken over by banks, industrial enterprises, private domestic investors and foreign investors. Currently, as the result of these transitions about 1650 organizational units run agricultural production in Belarus. The structure of these units, based on figures for 2006, shall be as follows:

- 1055 (63.9%)– production cooperatives.
- 434 (26.3%) – state enterprises, of which: 115 managed on a central level, 14 managed on voivodship level, 305 managed on poviat level,
- 16 (1.0%) – private enterprises,
- 102 (6.2%) – public stock companies,
- 27 (1.6%) – private stock companies,
- 16 (1%) – big "farming" holdings created by taking over the unprofitable kolkhozy and sovkhozy.

As the result of these transformations, the number of production units in agriculture (agricultural enterprises) decreased from just over 2.55 thousand in 1990 (exclusively kolkhozy and sovkhozy) to about 1.65 thousand, diversified in their organisational, legal and proprietary forms.

The development of family agricultural holdings (the term farming–personal is used in Belarus) was also enabled. The status and the organisational and legal frame of such agricultural holdings were laid down in the "Agricultural Holdings Act" of 19 February 1991. The act provides that an independent operator who runs marketable agricultural production and whose

[1] An owner of farmers' holding, vice-chairman of "Belarusian Agricultural Council" associating over 3 thousand managers of agricultural farms of different proprietary forms.

activity is based on the labour of family members shall be considered as agricultural holding (farming–personal). Spouses, their children, parents, relatives and other persons jointly running such family agricultural holding may act as members of such holding. Although this form of management has been functioning for more than 7 years, it is still developing. In 1991–2008 almost 5.8 thousand holdings of this kind were registered, yet at the same time as much as 3.6 thousand of them ceased activity. There are just over 2 thousand family agricultural holdings functioning at present. The average size of such holding is around 61 ha, of which around 53 ha of agricultural area. In 1998–2007 also 29 big farmers' holdings were created, basing (through a merger or tenancy) on ineffective and unprofitable former kolkhozy and sovkhozy. However, at the beginning of 2008 only 13 such holdings remained.

In Belarus, as in other "pro-soviet" countries, the sector of homestead adjacent lands plays a significant role in the structure of agriculture. This form of management was developing particularly rapidly at the beginning of 1990s, thus in the period of greatest disturbances on the food market, resulting from intensive system transformations in kolkhozy and sovkhozy, as well as in the units of agricultural services and processing. In 1990–1995 there was a slight diminution of the number of agricultural holdings with homestead adjacent lands (from 1.4 to 1.36 million), yet their share in the use of agricultural land increased from 6.4% to 15.5%. More or less since the middle of the 1990s a slight decrease has been observed as regards the sector's share in the use of agricultural land and in agricultural processing. In 2007 the number of agricultural holdings with homestead adjacent lands decreased to 1.16 million and their share in the use of agricultural land decreased to 15%.

These transformations in the structure of business units involved in agricultural production were reflected in the structure of agricultural area utilisation. It should first be noted that in the process of the discussed transformations, the area of agricultural land in the use of the total agricultural holdings decreased substantially. Whereas, in the structure of agricultural land used, the share of agricultural enterprises (agricultural organisations) decreased significantly from almost 94% to just over 83%. In particular, the share of state and cooperative agricultural holdings decreased (to about 75%), since in this period the share of other enterprises owned by natural and legal persons increased from zero to around 8%. There was also an increase in the share of agricultural land utilisation of family (farmers') holdings – from around zero to 1.5% and agricultural holdings with homestead adjacent lands – from 6.3 to around 15% (Table 1). Nevertheless, the major agricultural land users in Belarus are still farming cooperatives (restructured kolkhozy).

Table 1. The structure of agricultural area according to the users

Specification	Years			
	1990	1995	2000	2007
Utilised agricultural area in holdings (ths. ha) of which in:	9343.5	9254.6	9174.7	7808.6 *
- enterprises (agricultural organisations) (ths.ha)	8753.9	7768.5	7697.6	6515.9
% of total	93.7	83.9	83.9	83.4
- in family (farmers') holdings (ths.ha)	_	52.1	66.4	120.4
% of total	_	0.6	0.7	1.5
- utilised by the population (homestead adjacent lands and recreation allotment) (ths.ha)	589.6	1434.0	1410.7	1174.7
% of total	6.3	15.5	15.4	15.0

* the area of utilised agricultural area amounts to 8821.6, the structure did not include 1013.0 thousand ha of agricultural land not used for agricultural purposes.

Despite the aspirations for system transformations in agriculture, including restructuring and modernisation of agricultural holdings, to happen in Belarus with only minimal disturbance, the agricultural production was decreasing until the middle of 1990s. In the second half of the decade the diminution of total agricultural production was halted, yet the attempts to increase it failed. The indicator of the value of agricultural production in comparable prices in 1997 and 2000, assuming 1990 as 100, amounted to 71.4. Particularly big decrease in production volume concerned the kolkhozy and sovkhozy undergoing restructuring. While in 1990 the share of holdings with homestead adjacent land in the structure of agricultural production amounted to 23.7%, in 1995 it was 48%. Additionally, it should be taken into consideration that there was an increase, although yet still very meagre, in the share of the forming family (farmers') holdings – 0.4% in 1996. In the following years a significant increase in agricultural production was visible. In 2000–2007 the production value in comparable prices increased by 38% and reached approximately the level from 1990. This increase was achieved mainly in farm enterprises and family (farmers') holdings. However the share of holdings with homestead adjacent land in agricultural production structure decreased substantially and in 2000–2007 stabilised at the level of around 38%.

Particularly significant was the decrease in animal production. While in 1990 animal production constituted as much as 64% of agricultural production (this large share resulted from the fact that under the USSR Belarus specialised in animal production), in 1995 it was only 43% and in 2000-2006 it stabilised at the level of around 38%. Animal production decreased particularly in holdings with homestead adjacent land. In these holdings, the share of animal production in the structure of their agricultural

production decreased from 55 to 25.5% and, after a temporary increase, it shows a tendency for further decline (22.7% in 2006).

In the process of system transformation, the agricultural production decline was to a large extent the effect of major problems in supplying agriculture with fixed and current assets, as well as in labour resources. With regard to the decreasing capital expenditures, fixed assets utilisation rate in agriculture increased from around 21.5% in 1990 to 55% in 2000, including: machines and equipment up to almost 81% and means of transport up to 75%. Only in the recent years a significant improvement in supplying agriculture with machines, equipment and means of transport took place. That period witnessed also major problems in restructuring employment in agriculture. Initially, those were the issues with eliminating the excess employment, whereas in the following years problems were encountered as regards depopulation of villages and finding workers with appropriate qualifications for restructuring farm enterprises. Altogether, in this period the number of employed in agriculture decreased from 915 to 330 thousand.

The basic factors halting the growth of agricultural production are its low profitability and the related uncompetitiveness of work in agriculture. Despite significant subsidies for the agricultural production, the profitability of farm enterprises amounts to around 13%. Although there are few enterprises with losses (0.8% in 2006), the major part balances on the verge of profitability.

The difficulties in transformation of agriculture, resulting in achieving the level of agricultural production from 1990 only in the recent years, with comparably dynamic development of non-agricultural departments, caused the decline in the share of agriculture in the whole national economy production from 22.7% in 1990 to 7.5% in 2006. Nevertheless, it should be emphasised that the level of production from 1990 was achieved with 2.5 times smaller number of employed in agriculture and without a substantial progress in supplying agricultural holdings with fixed assets, which indicates a significant improvement in the effectiveness of utilising the labour factor. The increase in agricultural production took place in the less labour-intensive production types of plant, along with the decline in animal production, requiring definitely higher workload.

In order to accelerate the process of modernisation of Belarusian agriculture, 60 farm enterprises were selected as model examples for other agricultural holdings, popularising the progress in science and technology in their surroundings. Most of them are large enterprises. They have received appropriate government subsidies. The effectiveness of production and the implementation of modern techniques and technologies of production is

particularly stressed in these enterprises. These enterprises achieve high economic and production results, utilising 4.8% of agricultural land and producing 9.8% of the country's agricultural production. The German "Sztoc Agro-Serwis", which came into operation in Belarus basing on tenancy of Niementowy kolkhoz, is a very interesting example of popularising good agricultural practices and modern technology of production. This fact raised various reactions in Belarusian society: from protests against "another plundering of kolkhozniks" to the contentment of those who claimed that the German entrepreneur would finally assure the effective use of the kolkhoz property. The latter were right. The German entrepreneur brought the holding into order, created good employment conditions for specialists and qualified workers. As early as after the first year of functioning the enterprise began yielding profits. Additionally, "Sztoc Agro-Serwis" is a dealer of recognised agricultural machinery producers and successfully supplies Belarusian farm enterprises with modern machinery. Since the start of its activity in Belarus, the company has supplied Belarusian farm enterprises with over 2000 units of modern agricultural technology. Recently, the company has purchased the second kolkhoz and it is managing over 10 thousand ha arable land at present.

In recent years the restructuring and modernisation of agriculture is implemented under the governmental programme of rural regeneration and development for 2005–2010. As the wording of the programme title indicates, the problem of agricultural development is connected with the problem of development of rural areas. It is expected that within the framework of the implementation of this programme the equivalent of around USD 30 billion from all sources will be spent. Thus this will be the largest socio-economic undertaking in the history of independent Belarus.

The hitherto implementation of the programme of restructuring and modernisation of agriculture can be evaluated positively. It may here be indicated that only in 2002–2007:

- 751 large milk farms were built or reconstructed, in 206 of them modern milking plants with computer control were installed;
- 60 large, comprehensive pig farms, 58 large cattle farms and 52 poultry farms were reconstructed.

Within the last three years (2005-2007) the number of new high power tractors in farm enterprises increased by 7 thousand items and the number of combine harvesters for cereals and oilseed rape increased by 44 thousand items.

At the same time, the programme of rural regeneration and development in Belarus is being successfully implemented. Thus, within the last three years (2005–2007):

- 25,900 houses (flats) of the total area of 2 million square meters and the average area of around 77 square meters were built in the rural areas;
- 25,700 flats were supplied with natural gas;
- 540 kilometres of water supply network were built, thus completely satisfying the needs of rural population in terms of potable water;
- the area of fixed telephone public communication network range was expanded to cover 96% of the inhabited rural areas;
- 8000 kilometres of roads were renovated;
- 460 nursery schools and 67 secondary schools of a new type were created in the rural areas;
- welfare centres were established in 199 hospitals;
- 118 new rural community centres and 178 facilities were opened; in 496 villages shops were restored.

Resulting from the fact that in the recent years the process of restructuring and modernisation of agriculture brings positive effects in the form of a rapid increase in production, Belarus gains an active balance the foreign trade of agri-food products. Nevertheless, the level of trade is low. In 2007 the net export of these products calculated in USD were almost 920 million and the import just over 736 million. However, it should be noted that the majority of export is sent to Russia (over 90%), while the import comes mainly from other countries (almost 80%). Consequently, Belarus has an active balance with Russia (USD 690 million) and an adverse balance with other countries (almost USD 510 million).

In the coming years the development of agriculture and rural areas in Belarus will be based on:

- accelerating and intensifying the process of concentration and specialisation of agricultural production;
- improving the effectiveness and profitability of agricultural production;
- increasing the interest in work and life in rural areas among the Belarusian society.

It is assumed that before 2010:

- the number of farm plants in Belarus should increase up to around 1000, they should use 9–12 thousand ha of agricultural land each;
- the production of the basic agricultural products per year should amount to:
  - cereals – 8.4 million tons (in 2006–2007 it was on average 6.6 million tons);
  - sugar beet – 3.8 million tons (as much as the average in 2006–2007);
  - potatoes – 9.0 million tons (in 2006–2007 8.5 million tons on average);

- meat of bovine animals and poultry (livestock) 1.44 million tons (in 2006–2007 it was almost 0.8 million tons on average);
- milk – 6.5 million tons (in 2006–2007 it was 5.8 million tons on average).

In the social sphere the basic aim is a significant improvement of the rural life conditions. It is to be realised mainly through establishing agrotowns in the central quarters of farm plants. To implement this aim there are plans to:

- build a minimum of 50 thousand houses (flats) with a complete welfare infrastructure;
- modernise 4 thousand km of roads; provide 85% of children in rural areas with pre-school education;
- create a network of health centres with the service perimeter of 10–15 km;
- create 186 new rural community centres;
- restore the activity of shops in 800 villages.

For the programme implementation it is planned to create 16.2 thousand additional jobs in rural areas.

In the process of creating programmes of agricultural and rural development and in monitoring their implementation, an important role should be played by various types of organisations, associations of farmers and workers of agri-industrial complex. The Social Association "Belarusian Agricultural Council" is such an organisation. The Association was established on 14 March 2005. Its primary objective is the protection of rights and interests of the members of the association, as well as satisfying their material and immaterial needs. In view of the above, the association's activity involves mainly uniting the efforts of its members for the increase in effectiveness of agricultural production and improvement of working and life conditions of farmers. An important part of the Association's activity is the cooperation with foreign agricultural organisations, especially with the EU and the CIS. This cooperation consists mainly of exchanging experience in the field of agricultural and rural development through training meetings, seminars, attending agricultural expositions etc. Only last year 250 members of the Association took part in various undertakings connected with exchanging the abovementioned experience in Germany, the Netherlands, Belgium, France, Austria and China. The Association is open to exchange of experience and extensive cooperation with all countries, particularly those of Central and Eastern Europe.

Georgij Czerewko
Lviv National Agricultural University in Dublany
Ukraine

Dynamics and Development Prospects of Ukrainian Farms

Introduction

Agriculture and the whole food sector as the main provider of materials for the production of food belong to very important areas of economic life. In Ukraine, however, the economic and social significance of agriculture is much greater than in most countries, as it disposes of very favourable natural conditions. In the process of reform and transformation of the economic system of Ukraine it was therefore necessary to take into account the rapid development of the agricultural and food sector. In spite of that, if the period of the past seventeen years is scrutinized carefully, it turns out that Ukraine had no specific plan concerning the orientation, the way and the mode of development, and in fact such plans and programmes were too numerous, as every political party had its own ideas that it put forward in this regard. That is why various erroneous economic decisions were made, leading to unfortunate outcomes that we suffer until this day.

Dynamics of Change in the Structure of Ukrainian Agriculture in the Period of its Independence

The structural transformations, which have taken place in the agricultural and food sector of the Ukrainian economy comprise changes in different organizational and legal forms of conducting business activities in the agricultural and food sector, which concern their structure, the structure of resources and of the produced output.

The beginnings of the transition processes in Ukraine were associated with great hopes, focused on privatisation as a method of implementation in the practice of economic operation of new organisational and organisational-legal forms, as well as new economic relations. The object of privatisation consisted of state-owned and collectively owned assets (the kolkhoz) used for agricultural production and processing – mainly land, buildings and machinery, which were in use by state-owned farms and agricultural production cooperatives. Rural inhabitants were given the ownership or granted the use of 36.2 million ha of arable land, including 12.8 million ha – to individual farmers' holdings. Almost 12,000 kolkhoz and state-owned farms were liquidated. On the other hand, about 22,000 new holdings in various organizational and legal forms emerged, including: 34% limited liability companies, 21% private enterprises, 20% large

farmers' holdings, 9% agricultural production cooperatives and 4% public joint stock companies. Over the past three years (2004-2006) the number of businesses operating in Ukrainian agriculture decreased from 58,500 to 57,800, whereby the number of business societies came down from 8,100 to 7,500, of production cooperatives from 1,700 to 1,300, of state-owned enterprises from 395 to 371, whereas the number of private enterprises increased from 4,054,000 to 4,112,000, and of farmers' holdings from 42,500 to 42,900. It might seem that the objectives of reforming the food industry in Ukraine have been achieved: most of the land is in private hands, and amongst the organisational forms in agriculture it is private entities that dominate. Yet, the quality indicators of the effects of the reforms are not so good at all.

In the structure of overall production of agriculture in Ukraine the share of enterprises fell from 69.4% in 1990 to 34% in the year 2000 and to 30.3% in 2003 (including animal production, accordingly: from 64.8% to 25.2% and 26.3%). Beginning from 2004 it is possible to observe a slow pace of growth of such contribution up to 39% in the year 2006 (in animal production to 34.5%). The volume of agricultural output decreased over that period from 145.9 billion HRN to 77271 billion HRN in 2003, whereby it increased to 94895 billion HRN in the year 2006 (in 2005 prices), amounting to 35% less than in the year 1990 and 23% more than in the year 2003. The volume of output from farms over that period decreased from 101299 billion HRN to 23438 billion HRN, and subsequently i grew up to 37008 billion HRN, which in percentage terms amounts to 63% less than in 1990 and 58% contribute twice per year, more than in 2003.

The trends of changes in the volume of output on private farms are exactly opposite to the presented tendencies in the production of enterprises.

The value of agricultural production of the country per 100 ha of farmland has fallen from 350,000 HRN to 204,000 HRN, whereby it has increased to 255 HRN in the year 2006 (in 2005 prices).

The acreage of land in agricultural use by agricultural enterprises in the years 1990-2006 has gradually decreased from 38.7 million ha to 21.2 million ha, and in the case of private farms it increased from 2.5 million ha to 4.8 million ha. This implies that the share of agricultural enterprises in the acreage of land used for farming has declined from 94% in 1990 to 77% in 2006.

The number of tractors in farming enterprises has fallen from 497,000 to 201,000, i.e. 2.5 times, combine harvesters – from 105,000 to 44,000 units (2.4 times). In private farms the number of tractors increased from 10,000 to 143,000 units, i.e. by 42%, and combine harvesters – from 2,0000 to 15,000 (7.5 times).

It may be concluded from the above presented trends that over the period from 1990 to 2003 the development of agriculture in Ukraine progressed towards the reduction of the share of agricultural enterprises in the structure of production and in the employed resources. Beginning from the year 2004, the trend of an increase of the share of agricultural enterprises in production and in the employed resources emerges, although even the level of the year 1990 has not been attained as yet.

In most cases, when implementing the programme of privatisation (if it can be called in this way at all), it was treated very literally: people were handed out doors, windows, bricks, etc., as their due shares in the privatised assets. Such and other economically unjustified operations, reflecting the catastrophically inadequate degree of scientific underpinning of the processes of transition and their excessive politicisation, caused a huge fall in animal breeding and crop cultivation, the ruin of large enterprises, the destruction of selection of seed material, the decline of incomes and bankruptcy of many producers.

The process of introduction of market driven agriculture in Ukraine has caused the establishment of such form of economic enterprise as private farming. However, this model of economic activity in agriculture did not stand the test of practice. The lack of expected results stemmed from the absence of assurance of material support and other conditions necessary for economic development. Moreover, the emergence of private farming ruined the large agricultural enterprises, which had functioned before. The fragmentation of farms in Ukraine, especially in its western part, is very large. Another problem resulting from the agrarian structure consists of the small scale of production. As a consequence of this state of affairs the disposable incomes of the population dependent on agriculture are drastically low. In summary, the prospects of private farming in Ukraine are very “obscure”.

Assessment of the Current Situation in Ukrainian Agriculture

The conducted research indicates that the assessment of the current situation is not and cannot be unequivocal. The above described effects of reforming the agricultural economy in Ukraine may basically be divided into two main groups – the direct results of the reforms and the factors affecting them. Two categories are those determinants, which have to be taken into account when assessing the current changes in the food economy: the *social-political* (essential phenomena and processes) and the *social-economic* ones (their effectiveness). It is true that in Ukraine the social-political component

developed faster in conjunction with a terrible decline of effectiveness. This does not imply, however, that such a situation is proper – political slogans concerning privatisation, and even their implementation, will never resolve the problems of economic self-reliance.

Privatisation in the processing industry took place in an uncontrolled manner to the extent that today it is hard to determine, who is the real owner of this or that enterprise, and people are unable to comprehend, why such a good company, which until recently produced food products of very good quality, is now closed, while on the market there are many products of the same kind, but sourced from imports. Such indeed are the effects of the process of penetration of the country by foreign capital, which is not controlled by the state or is controlled inadequately.

Over the whole period of declared independence, agriculture in Ukraine persists on the very low level of economic development. Production is mostly just hardly profitable or outright unprofitable. This is one of the main causes of the low attractiveness of Ukrainian agriculture for foreign investors.

Therefore, the period of intensive preparations for accession to the WTO and the future integration with the EU, unfortunately coincides with a very bad condition of Ukrainian agriculture, illustrated both by economic indicators (incomes, profitability, investments, etc.), as well as social ones (universal disillusionment with the effects of transformation, the preponderance of poverty, unemployment, more difficult access to social services, etc.).

In 2006 as many as 57,800 agricultural enterprises were in existence, including 13.1% consisting of business companies (of the limited liability company type), 7.1% - private business enterprises, 2.4% - production cooperatives, 74.2% - farmer type holdings, 0.6% - state owned enterprises. In terms of the acreage of land used by agricultural corporate business enterprises, the most numerous are farms disposing of 20-50 ha – 25.6% of land and also 100-500 ha – 13.1%. Only 10.9% of the farms have more than 1,000 ha of land, 22.4% of the land is in the hands of farms disposing of 1,000-2,000 ha, 17.3% - 2,000 ha,1-3,000 ha, 12.6% - 3,000 ha, 1-4,000 ha. Only 52 farms in the country have acreages of more than 10,000 per farm (3.3% of the land formerly belonging to agricultural enterprises).

Agricultural enterprises produce 39% of agricultural output, including 3.5% of that output being produced by state-owned enterprises, and 96.5% by enterprises not owned by the state (including 11.1% by farmers' holdings).

The largest farming enterprises are in the East and South of the country, from where most of the agricultural output originates – the district of Kiev (6.7%), Dnepropetrovsk (6.3%), Vinnytsia (5.7%), Kharkov (5.3%), Cherkasy

(5.3%), Poltava (5.2%). The largest share in plant crop production belongs to the following districts: Vinnytsia (6.4%), Dnepropetrovsk (6.4%) and Poltava (6.0%), whereas in animal production to: Kiev (8.2%), Dnepropetrovsk (6.1%), Donetsk (5.7%). All seven western provinces of Ukraine – Volhynia, Lviv, Ivano-Frankovsk, Rivne, Zakarpattia, Ternopil and Chernivtsi – produce 20.2% of the agricultural output of the country (in total: 24 districts), including 17.5 % of plant crop production, 27.1% of animal production.

The 43,100 farmers' holdings produce only 4.3% of the agricultural output of the country (animal production – 1.1%, plant crop production – 6.7%), cultivating 9.5% of the acreage of land in agricultural use in the country. They produce: 12.3% of cereals, 10.5% of sugar beet, 16% of sunflower. The next groups in line are: farmers' holdings with acreages of arable land from 1 to 20 ha (35.3%), 20-50 ha (32.75%), 100-500 ha (10.5%), over 500 ha (3.7%). The largest part of the arable land of farmers' holdings is to be found in agricultural holdings of 100-500 ha (25.8%) and 20-50 ha (13.6%).

Yet, 61% of the agricultural output in Ukraine is generated on household plots, including 57.7 – of plant crop production and 65.5 – of animal production. From the legal point of view, such farms have the status of "private peasant holdings"). The largest share in the agricultural output of Western Ukraine is generated on such farms in the Zakarpattia (95.6%), Chernivitsi (87%), Lviv (87.1%), Ivano-Frankowsk (86.7%), and in plant crop production – Zakarpattia (94.1%), Lviv (88.2%), Chernivitsi (89.2%), Rivne (81.1%), animal output – in Zakarpattia (96.9%), Ternopil (86%), Lviv (86.0%).

The total number of such farms in 2006 in Ukraine amounted to 4,817,800 holdings (2005 – 4,915,300), including 3,699,700 (2005 – 3,824,200) farms with animal production. Households use 6,700,500 ha of land, including 3,015,300 ha for farming purposes (12.8% is leased) and 3,258,200 heads of cattle, including 2,20400 cows, and also 3,790,500 pigs. This implies that the average acreage of agricultural land per one household plot amounts to 1.39 ha, the number of cows– 0.46 animals, swine – 0.79 animals. Cows are kept on only 50.9% of household plots (2004 – 53.4%), swine – 50.9% (2004 – 48.3%). Households disposing of agricultural land plots of up to 0.5 ha constitute 51% of their total number, 0.51-1.00 ha – 30.3 %. Therefore, 70.3% of the agricultural land area held by household plots belongs to holdings of more than 1 ha, which represent only 18.9% (17.2% - 1.1-5.0 ha). Only 18% of the household plots have their own tractor, 2% - a combine harvester, 48% - a plough. Hired labour is regularly employed by only 5% of the household holdings, seasonally – 56,2%.

This type of agricultural holding has no prospects under the present modern conditions, of course, as their output, owing to low quality, cannot be used as raw material for processing. Already starting from the year 2004 there is a tendency to gradually erode the role of this sector of agricultural economics within the country.

The weakness of contemporary Ukrainian agriculture and the entire food economics consists of the low level of development of integration processes, horizontal and vertical cooperation. There is practically no existing trading infrastructure – officially there are almost 800 exchanges in the country, including 48 agricultural commodities exchanges, and approximately 100 exchanges more broadly connected with agriculture. However, they do not handle exchange traded transactions such as *futures* and *forward* contracts.

The problem of food supplies has become more acute in the country, and the structure of nutrition of an average Ukrainian resident has become significantly worse than before. But this is an effect both of the reduction of the volume of the output produced, as well as the reduction of real incomes of the population. In 2004 agricultural production in comparative prices per one person constituted 69% of the level of the same indicator from the year 1990, and the average monthly wage throughout the whole national economy was 62%. The consumption of the main food products, especially of animal origin, has decreased to a level exposing human health. If in 1990 the degree of realisation of the norms of rational feeding, amounted for meat and processed meat to 82%, milk and milk products – 98%, fruit, grapes and berries – 52%, in the year 2006 only (accordingly:) 46, 59 and 34%.

These data give evidence of the insufficient level of development and functioning of the food sector of the economy of Ukraine. Food production does not assure the achievement of previously determined norms or minimum needs of food both in terms of quantity and quality. The average daily energy ration at the disposal of the organism of an average inhabitant of Ukraine today is at the marginal level of the respective indicator adopted by FAO: in the year 1990 it amounted to 2,800 kcal in Ukraine, while in the EU-25 countries it was 3,485 kcal. According to this criterion Ukraine belongs to the group of countries at a mediocre level of development: it does not suffer hunger, but it is significantly behind the European standards.

Ukraine also has a much lower index of consumption of meat products (2.5 times lower) and fruit (3.5 times lower) than the average level prevailing in the European countries. At the same time, the population of Ukraine devotes about 57.7% of the family budgets to the purposes of purchasing food products (61.5% in the rural environment). That is a characteristic feature of poor

countries – the nutrition of the population is insufficient, but it consumes most of the disposable income.

The aggravation of the food problems gives rise to doubts as to the ability to sustain a healthy genetic base of the nation, which is a matter of importance for its statehood. Without an adequate reaction to the existing situation and active counter measures, the negative changes and trends that already take place may assume pathological, irreversible dimensions, not to speak of the absolute loss of economic independence, and therefore also political sovereignty.

Under such circumstances, the general efficiency of land use persists at a very low key level. The acreage of farmland in Ukraine is 60.4 million ha, including 41.8 million ha of land under cultivation, with 32.5 million ha of arable land, 7.9 million ha permanent grassland and 5.5 million ha of pastures. The ratio of arable land to land under cultivation is 77.8% and is one of the highest in the world. Close to half of the arable land (19.3 million ha) is exposed to the risk of wind erosion, and 1/3 of its area (13.2 million ha) to that of water erosion. The annual losses of humus due to the mineralisation and erosion of soil amount to 32-33 million tonnes, which is equivalent to 320-330 million tonnes of organic fertilizers. The productivity of the land is very low: in the last few years the yield from agriculture per 1 ha of cultivated land in Ukraine amounted to approximately EUR 270, while in the EU countries it was over EUR 2,000. This implies that the land use factor in Ukrainian agriculture is eight times higher than in the EU countries.

In addition to these problems let us add the lack of a market for land, which is a very complex and multi-aspect problem, both in economic and political terms, as well as social ones.

As never before, Ukrainian agriculture suffers from a deficit of financial resources. Over half of the existing agricultural enterprises are unprofitable, and the small private holdings of the population are unable to raise the amounts of money required to organise production based on modern technology.

The results of the conducted analysis indicate that one of the main causes of such weakness of agriculture and of the farmers in the course of the process of market reforms and preparations for EU membership consists of the very weak role of institutions. Exposed to the impacts of the global market forces, the Ukrainian farmer, similarly as until recently was the case of Polish farmers, feels disoriented, deprived of protection and organizational support. On top of that there is the inconvenient disparity between the prices of farm products, their processing and of the food industries. Apart from that there is a lack of adequate market infrastructure, of bank services systems, of extending credit and taxation

which are absolutely not aligned to the needs of agriculture and the related areas of the economic system.

The insufficient institutional backbone for the food industry of the Ukraine operates under the conditions of a very weakly developed state system of regulation of the economy. Moreover, Ukraine still practically does not have any public economic policy until this day. It is still essentially unclear, how the country is to be developed in economic and social aspects.

Opportunities and Threats with Regards to the Functioning of Ukrainian Agriculture in the Context of its WTO and EU Membership

Ukraine started its preparation to WTO accession immediately following the attainment of its independence. It would seem that 16 years is a long enough time, but for us it still seems insufficient. As the situation existing in the food industry is unsatisfactory and dopes not quite meet the necessary level of financial stability and economic strength required under the WTO regime, the accession to the WTO will be a hard test of economic maturity for Ukrainian agriculture.

As any phenomenon, especially in economics, has its two sides: the positive and the negative aspects, this implies, on the one hand, opportunities to improve the situation, but on the other hand, also threats that might lead to its deterioration. Such moments provide the basis for SWOT analysis, which may also be applied with good results to the fact of Ukraine's WTO accession.

So what positive gains does that step grant to Ukrainian agriculture and the whole food industry? (strengths): the freedom of entry to the European market, the possibility to compete on such a market; the stepping up of exports of Ukrainian products; the elimination of international, inter-state bureaucratic and customs barriers to trade (in accordance with the Contract concerning agriculture, which regulates international trade in agricultural products under the auspices of the WTO, it is foreseen to transform all non-tariff barriers to agricultural products into tariffs and to determine their top limit, the gradual reduction of import tariffs, the reduction of internal and exports subsidies to agricultural output); external stimulation of economic activity.

The negative (weak) sides of this step are the following: exposure of the home market; greater intensity of competition from European producers; the lack of competitive advantages on the part of Ukrainian producers (the lack of necessary infrastructure; a much higher energy and labour intensity of production than in the rest of Europe; low degree of technological and technical sophistication of production and its innovativeness).

The implementation of the step under discussion offers Ukraine the following opportunities and chances: mobilisation of intrinsic resources and reserves in order to increase the level of competitiveness of production and products; the improvement of production quality; the transfer and use of new technologies; the attraction of foreign investments, in the form of loans and that of foreign direct investment, including above all those in the agri-food industry; the increase of monetary income from the operation of production activities abroad. According to the view of the Minister of the Economy of Ukraine, after the WTO accession the output of agriculture will increase by 2%, and the facilitation of access to markets will significantly drive the growth of exports (+43.5%).

At the same time there is a real threat that the Ukrainian market will soon begin to be saturated by food products of foreign origin and low nutritional quality, which are also harmful for the environment, which thanks to better publicity, packaging and lower price will force out the safer and qualitatively better Ukrainian products from the market. Rectifying a little bit the myths concerning the possible flooding of the Ukrainian market by imported food it should be noted that today there is no cheap food in Europe, cheap food is worthless, so attempts are made to "dump" it on just any accessible market. Here the question concerning the competitiveness of Ukrainian food is linked with the question concerning necessity to improve the Ukrainian law, which ought to help protect our market from worthless products.

Some features and aspects of this process may be recognised already now. It is highly doubtful, however, whether the result of the growth of competition will lead to the fall of the food industry, including farming. After all, despite the full freedom of trade in agri-food products existing already since a long time between the member states of the EU, in France it is still above all French products that are sold, in Germany – German ones, in Italy – Italian. This situation results from the nature of the food markets, which are mostly local markets. Their local character is above all driven by the nutritional customs – although these have recently been changing very rapidly. Even if hamburgers or chips taste the same or at least similarly everywhere, the basic products, such as bread, cured meat or cheese still differ in Poland or Ukraine from those originating from France or Germany. Apart from that, the rule consists of the location of certain important branches of the agri-food industry in those regions, where the respective raw materials are produced. The transportation of many food products across large distances is expensive and makes sense only if there is a deficit of materials or processing plants locally. Examples of this regularity may be provided by milk, beer, eggs, meat, soft drinks, as well as such products

as fruit and vegetables, or oil plant seeds. In some branches the building of processing plants beyond the regions furnishing the materials, owing to the costs of transport, simply does not make any sense at all; a good example in this regard is provided by the sugar industry. In consequence, Ukrainian agriculture will always remain the basic supplier of food to the Ukrainian market and will not be excessively exposed to direct confrontation with competition from the EU. Under the conditions of liberalisation of the market the opportunities for sales of individual farms will indeed deteriorate. After all their production is absolutely not competitive in terms of its production costs, quality, technology, mechanisation of production processes, etc.

WTO accession obliges Ukraine to change their policy of support for agriculture towards separating the assistance to producers from support for regions and to anticipate the transition from production subsidies to decoupled direct payments, dissociated from the volume and type of production. A favourable factor consists of the fact that after entry to WTO, Ukraine will not have to reduce the already agreed level of cumulative assistance to agriculture (over 5 billion HRN per year), which offers additional opportunities and advantages to Ukrainian agriculture.

This is not to say that Ukrainian agriculture will cope without any problems with the initial period of years of EU membership, but it is a much more complicated process. It is often claimed that the Ukrainian farms, which are on average much smaller than in the EU countries, and in consequence generate much lower incomes, will not be able to face up to competition from the Western-European agriculture. Therefore, according to the authors of such views, the precondition for EU membership consists of change in the structure of Ukrainian agriculture. It is supposed to consist of radical reduction of the number of farms combined with the concurrent increase of their "economic power". Such views are above all formulated in the EU, but also quite frequently also in Ukraine.

Such views may also find certain justification, because, as presented in this paper, most of the plant and animal production of Ukraine is made on the individual private farms. The structures of agriculture, in turn (this term is often incorrectly regarded as referring to acreage structures of the farms) are extremely differentiated in the EU, even if one excludes the agriculture of the Mediterranean zone: Greece, Portugal, Southern Italy and Spain, the Northern regions of the Scandinavian countries. At one end of the spectrum there are the large area and usually extensively managed farms in the United Kingdom, although there is also no shortage of very intensively managed farms specialised in the production of milk, poultry or swine. At the other end there are the

relatively small but extremely intensive farms in the Netherlands. A separate problem consists of agriculture in mountainous and sub-mountainous regions (Austria, France, Spain, Italy), or in northerly ones (Finland, Sweden).

The transformation of the agrarian structure of Ukrainian agriculture is a process, which will proceed at a pace resulting from the general situation of the Ukrainian economy, regardless of whether Ukraine will arrive at EU membership or whether it will remain outside of its structures. However, several difficult problems are directly linked with EU membership. Undoubtedly the most important one is the so called right to produce. This notion is practically unknown to Ukrainian farmers, although in one branch of agricultural and food industry – the sugar industry – the production quotas already function there. The anticipated coverage of Ukraine by suchlike programmes designed to stabilise production, will constitute a serious constraint on the development of Ukrainian agriculture, as it will prevent or at least hamper the development of some of its fundamental branches (i.a. the dairy and slaughter cattle breeding, the cultivation of cereals) above the pre-determined level.

A threat might also be consist of high unit costs of production of certain agricultural products in Ukraine, most frequently caused by two causes, frequently appearing together. The first is the small scale of production, the second – the generally low effectiveness of the input outlays.

As a rule, the high unit costs lead to low remuneration for the farmers' labour. With low income a farmer has no money for investments, sometimes not even for replacement outlays, and as a result of that the farms become run down. The small scale of production generates also another threat. In the coming years the hitherto sporadically appearing phenomenon of difficulties with sales of products in small batches becomes more frequent. It did not yet occur in the nineteen-eighties, as under the conditions of a too low volume of agricultural production the agri-food industry did not attach importance to the scale of supplies from any particular farm. Currently, in the face of abundant supply of many agricultural products, the small farm becomes increasingly frequently a reluctantly treated partner, also for technical reasons.

Ukraine's EU membership will also exert a positive impact upon the development of rural regions. These opportunities result from the general assumptions of the Common Agricultural Policy of the EU countries. From the very beginnings it was friendly to agriculture and to rural areas in the sense that it created more favourable conditions for development than those, which would have existed under the conditions of unregulated market economy. Whereas in the initial period this friendly character resulted from the intention to assure the member states the self-sufficiency of food supplies, presently it is above all

caused by the awareness that agriculture and the rural setting are necessary in order to provide for the protection of the natural environment and for the conservation of certain broadly conceived cultural values.

Prospects for the Development of Ukraine's Agriculture and the Necessary Conditions for their Implementation in the Context of Future Integration with the European Union

It clearly follows from the stipulations of the Treaty of Rome that its authors were convinced about the impossibility of effective integration of the economies of the member states without the integration of the food industries. Although the scope of integration, for which the countries forming the European Free Trade Zone opted indicates that it was not a universally prevailing view at the time – the food industry was excluded from it. One of the most important sources of the success of the EU (at that time the EEC – the European Economic Communities) was the consistent introduction in the nineteen-sixties of the Common Agricultural Policy (CAP).

The existing situation gives proof that under the present conditions and at the existing level of economic and social development Ukraine is not yet ready to receive and to duly make use of such aid, as for example Poland was granted in the course of raising its economy to the required level in the process of preparation to integration with the EU. Although, of course, any financial support in any country and at any time is well-received.

Ukraine is an agricultural country, in the positive sense of that word, as it has the required natural conditions. Unfortunately, the exploitation of these conditions is not adequate, which stems from economic circumstances. It is on the degree of adaptation of the level of development of agriculture in Ukraine to the level of EU farming that will depend the success of the process of adaptive adjustment of the country to the level of European integration and the time frame of its implementation.

Processes of integration disintegration are permanently recurring in world history. Therefore, regardless of the degree, to which the accession of Ukraine to the European Union might seem virtual, the implementation of objective economic laws will gradually turn its virtual nature into reality. Ukraine must make use of this period of time effectively to the maximum extent, in order to prepare itself as well as possible.

It is also worth noting the very likely thought that Ukraine, similarly as other former socialist states, might become an attractive country for the EU in the sense of tapping such a large new sales market for European produce and a major source of relatively cheap human capital. The effective means allowing

relatively low-key production and a major source of relatively cheap human capital. The effective means of counteraction against such capital of perception of the Ukraine may consist of the growth of such perceptions of its production to the European market by way of adaptation of technology, quality and costs to the level of the EU.

It is hard to foresee, as yet, how the current already excessively prolonged and entrenched stagnation of the food industry will end. But one thing is clear: the prospects for the development of the structure of the agricultural and food sector in Ukraine have to do with integration and cooperation of larger farms with the processing sector. As it follows from the available calculations, most of the output of Ukrainian agriculture is produced on individual private farms. Such a mode of operation of agriculture has no prospects for the future, as it is inefficient, non-technological and does not have the capacity to be mechanised. The main challenge, therefore, is therefore the revival of large agricultural business companies, the development of rural cooperation in the field of services and production, the integration between farming and industry, initially through contracting, and subsequently in its other forms, as well as the necessity to duly care for the sustainable development of rural areas. An important orientation for the further development of agriculture in Ukraine consists also of the extension and development of the sector of organic farming production.

In the most immediate future the most credible and needed organisational and legal forms of operation ought to consist of marketing groups (cooperatives), procurement groups (purchasing cooperatives), sales groups (cooperatives), production cooperatives (producer groups), integrated agricultural and food processing business enterprises.

The development of such forms of organisation, their launching, is a real and effective orientation for foreign investment. As a rule, there is a shortage of start up capital needed to enable a group or cooperative to be formed and to launch its effective operations on any large scale.

It is not without cause that the EU stresses that the admission of any new member depends, i.a., on the assessment, whether its economy is strong enough to face the competition of the economies of other member states. If the activities that enhance competitiveness will be successful, then together with faster growth of the whole economy the possibilities of resolving the most difficult problems of agriculture are also increased.

Entrepreneurial initiatives inject dynamism to the development of rural areas and creates a chance to generate incomes in the domain of farming, gaining core income (earnings), additional proceeds, either in monetary or (and) non-monetary form. The key to utilisation of these opportunities consists of the

creation of the appropriate system of business entrepreneurship, and especially small business enterprise.

Ukraine today has major opportunities for development of enterprise in agri-business. Despite the high degree of fragmentation of Ukrainian agriculture, there is a large number of people prepared to take up work, disposing of housing in the countryside – usually an attractively situated house in a clean natural environment – which favours the multi-functional development of the rural areas and the development of business entrepreneurial initiatives on such areas. The modernisation of rural areas becomes a necessity, the creation of foundations for the development of strong infrastructure and creation of a fashion for entrepreneurial behaviour among the rural population. It should be recognised here that it is particularly important to create an organised agricultural market and to create quality standards not discrepant with the standards of the European Union, which will prevail on our market.

Ukrainian agribusiness is connected with the fact that most farms refrain just to perform almost exclusively agricultural production functions, that of producing raw materials. Business, in turn, and therefore processing and trade, are organised by separate links of the chain, and their economic condition is definitely much better. Non-agricultural activities carried on by some farmers should be perceived as a good example of combining production and processing of materials originating from one's own farm and the closest neighbourhood. Those farmers, who engage in commercial activity, apart from producing raw materials in farming, fully utilise the additional earning opportunities arising from intermediation on the commodity market turnover.

The development of vertical integration animated, which binds the supplier of raw materials to the processor, at the same time initiates the adaptation of agricultural producers to the needs and expectations of the food producers. This requires the farmers to be more active and to undertake actions leading to the formation of producer groups, marketing and farmer groups.

Based on the analysis of existing experiences it may be noted that in the nearest future the following lines of entrepreneurial business can be most likely developed: cottage industry, enabling the combination of one's own hand work with locally available material resources; local small industrial businesses (construction materials, timber mills) making use of local material resources, qualified labour, traditions, infrastructure in the given area, the degree of organisation of the sales market, the ability to gain orders, agro-tourism, rural and "green" tourism, *etc*. The benefits from agro-tourism operation includes on average 30% consisting of increasing the general cultural standing of the family members running an agro-tourist activity, whereas the remaining 70% – consists

of benefits in the form of increasing the level of income. The performance of various types of services: trade, consulting, social services etc., cooperation of farmers with processing companies or trading companies, as well as the emergence of new small companies of this type, will directly and most rapidly enhance changes in agriculture. A slightly more distant perspective for the effective development of agricultural enterprise consists of the formation and development of large farms and large holdings in the form of joint-stock or limited liability companies, as dictated by the conditions arising from the accession of Ukraine to WTO.

Companies operating in the sphere of agribusiness may play a very particular role in the development of rural areas and the social and economic progress of the countryside.

The general conclusion from the practice of reforming the economy of Ukraine, and especially its agri-food sector, consists of the finding that assumption of fictitious premises that the market can itself create the new reality and improve the effects of conducting business. The market mechanism itself requires regulation by the state, which may affect it through its institutions. Concurrently, one should develop horizontal integration between farms and processors, making the market for agricultural materials and those needed for production on the basis of contracting, making the market for agricultural raw materials and the economic relations between all the participants in the food chain production more foreseeable and effective. Ukraine can remain mainly the supplier of raw materials and labour to the global market, if it wishes to arrive at the implementation of its goal, to become a truly European country, both politically and economically.

Jonel Subic, Drago Cvijanovic
Institute of Agricultural Economics,
Belgrade, Serbia

Problems of the improvement of competitiveness of Serbian Agriculture[1]

1. Introduction

As a field of material production, agriculture occupies a very important place in the economic system of Serbia. Considering that every country in the world treats it with great attention, under our conditions, given the existing level of social and economic development of our country, agriculture can deservedly be regarded as a strategic sector[2].

In the process of transition from the intensively commanded system to a market economy, sector changes - as a factor of social and economic progress, point at the necessity of expansion of activities which will lead to the growth of competitiveness. This project of agricultural economic development represents a strategy component, foreseeing not only the goals of medium-term and long-term development, but also the assets, with which the above mentioned goals are going to be accomplished. In the period of approaching to the European Union and its agrarian structures, investment in fixed capital plays a significant role, by providing for the development, modernization and technological progress of each economic branch, as well as the whole national economy.

As one of the basic branches of the national economy, creator of the Gross Domestic Product (GDP) and user of scientific and technological progress, agriculture represents a traditional and significant economic activity for Serbia, which relies on adequate natural conditions, more favourable than in most countries in this part of Europe. Unfortunately, since the beginning of the 90's, the conditions for developing agricultural production have been very unfavourable, especially due to the lack of capital and reduced size of investment in this economic branch. Under the influence of apparent changes, the current level of domestic agriculture development is inferior to the level of

[1] This paper is a part of research project 149007 of the Ministry of Science of the Republic of Serbia, entitled: "Multifunctional agriculture and rural development in function of Republic of Serbia's accession to the European Union".

[2] Subić J. (2003): *Determination of economic effectiveness of investments in agriculture (South Banat – FR Yugoslavia).* Doctoral thesis, Academy of Economic Sciences, Bucharest - Romania

realistic possibilities, provided by the climate, available land, human resources, science, etc.[3]

In the process of reforms and preparations of Serbia for EU accession, the implementation of the goals of the national programme for economic revival and greater respect of market economy postulates is significantly conditioned by the achievement of higher levels of efficiency, production profitability and production factors. In such context, the approach to the complex problem of redefining the strategy of long-term development of national agriculture, in accordance with EU requirements, is necessarily connected with the permanent goals of agricultural and rural development: *food safety, economic, social and ecological efficiency.* Such an approach should inevitably take into account both the external and the internal conditions affecting agriculture and rural development. Therefore, the reform of the *Common Agricultural Policy (CAP)*, in the context of the enlarged EU, can be used as a basic model in promoting a new concept of agricultural and rural development in our country.

Considering the process of EU enlargement and the resulting prospects for Serbia, it is evident that investments in the future development of our agricultural enterprises will play a crucial role. Such investment plays a decisive role in the implementation of goals and priorities of agricultural and rural development, first of all, as a driving instrument of quantitative and qualitative growth of total agricultural productive factors and production, but also providing better living conditions in the villages. In this phase, the growth of investment in agriculture represents the condition for its technical and technological modernization, and ultimately it is one of the conditions for economic stability of the whole national economy. Without adequate size and planned structure of investments, the growth of fixed capital and working assets, increase of the number of jobs, increased efficiency of working tools, better productivity of labour, production variety, etc. can not be provided at the regional agricultural and rural level, nor at the national level[4].

Aiming to induce stable and continuous development of agricultural production and to stimulate the activities that provide for more productive and undisturbed life in the rural communities, the Ministry of Agriculture, Forestry and Water Management of the Republic of Serbia has planned the magnitude of

[3] Subić J., Cvijanović D., Cicea C. (2006): *The Role of Agriculture in the Serbian Economic Development*. Review of International Comparative Management. Director: Marian Nastase, Issue. 7/2006. Published by The Academy of Economic Studies of Bucharest, Romania, pp. 185-192.

[4] Subić J., Cecić Nataša (2007): *Measurements of agrarian politics for improvement of rural communities on marginal and other areas in Serbia. Ekonomika*, Niš, No. 1-2, pp. 75-83.

the necessary funds for the incentives in the field of agriculture, addressing the needs of EU accession policy, of providing those services that the market does not offer or offers them too slowly, for interventions that help to improve the functioning of the market.

Incentive assets are of crucial importance in solving the problems of competitiveness improvement in Serbian agriculture. In the period 2004-2008 numerous measures in support of agricultural husbandries were introduced in order to increase investment in various aspects of production and activities, which furthermore contribute to the development and increase of competitiveness. Considering that investments constitute the driving force of economic development, stress was laid on providing credit for the producers and supporting the development of the credit market.

2. Credit market

One of the most important conditions for successful agriculture is the existence of a developed credit market. It implies that the farmer who regurarly pays his debts, can go to the bank and obtain loans, either in the form of short-term credit for the purchasing of inputs, or of long-term loans for the acquisition of machinery and equipment.

In our country the credit market is not sufficiently developed and should be improved. Therefore, in 2004 the Ministry of Agriculture has started to support the improvement of the credit market, using funds drawn from hte agricultural budget. This action was continuously implemented throughout the period 2005-2008.[5]

The farmers feel the need mostly for two forms of credit, i.e. short-term and long-term loans.

[5] In 2004 the Ministry of Agriculture secured funds for this purpose in its budget amounting to 3.70 billion dinars (1.70 billion dinars for short-term credits and 2.00 billion dinars for long-term loans); in its budget for 2005 it secured 3.50 billion dinars (1.50 billion dinars for short-term credits and 2.00 billion dinars for long-term loans) plus paid out credits from the previous year; in its 2006 budget it secured 3.40 billion dinars (1.40 billion dinars for short-term credits and 2.00 billion dinars for long-term loans) plus paid out credits from the previous year; in 2007, it secured 2.00 billion dinars in its budget (1.50 billion dinars for short-term credits and 0.50 billion dinars for long-term loans) plus paid out credits from the previous year; in the 2008 budget it secured 2.85 billion dinars (1.85 billion dinars for short-term credits and 1.00 billion dinars for long-term loans) plus paid out credits from the previous year.

3. Short term credit

Short-term credits of smaller amounts and with shorter payment term are meant for purchasing seeds, fertilizers, fodder and production activities. These credits are necessary to start producing (before harvest, fertilizing, ...) when there is the biggest need for them, but also the lack of funds in agriculture. The procedure for obtaining short-term credit is very easy. It is enough for the farmer to submit the application for credit and the necessary documentation in one of the banks (signatories of a contract with the Ministry) and the funds will be disbursed to his special purpose account, in a short time. Interest charged for short-term credits is high and these funds are not sufficient to satisfy all the needs, so such credits are approved until the funds allocated from the agricultural budget for these purposes are exhausted.

Short-term credits have been approved only for physical persons – the farmers inscribed in the Register of agricultural holdings, through commercial banks, in which they have opened special purpose current accounts.

In the period 2004-2005, short-term credits to physical persons – farmers, could be approved in accordance with the data entered in the register, under the following conditions:

- if they dispose of agricultural land (surface up to 1 ha), the amount of 10,000 dinars,
- if they dispose of agricultural land (surface of 1 – 5 ha), the amount of 40,000 dinars,
- if they dispose of agricultural land (surface over 5 ha), the amount of 80,000 dinars.

In the period 2006-2007, short-term credits to physical persons - farmers could be approved in accordance with data entered in the register, under the following conditions:

- if they dispose of agricultural land (surface up to 1 ha), the amount of 12,000 dinars,
- if they dispose of agricultural land (surface of 1 - 5 ha), the amount of 60,000 dinars,
- if they dispose of agricultural land (surface of 5 – 10 ha), the amount of 120,000 dinars,
- if they dispose of agricultural land (surface over 10 ha), the amount of 240,000 dinars.

Short-term credits are approved to final users with 12 months payment term and interest rate of 5.5% per annum, without any currency clause. The interest, together with the principal, is repaid after the termination of the credit term.

In 2008 a programme of measures for subsidizing interest charged for short-term crediting of agricultural and food production was set up, owing to the improvement of conditions on the credit market. It applies to credit granted by commercial banks and is intended to serve as an incentive for agricultural development, or, in other words, in support of the realization of current and seasonal activities in the agricultural and food industry.

Funds for subsidizing the interest payments in accordance with this programme are granted to the credit users, after the approval of the respective short-term credits by commercial banks, provided that they were intended for the agricultural purposes, i.e. the production of food:

- with a 12 months payment term;
- with a fixed effective interest rate not higher than 15% per annum, without any currency clause;
- with the payment term of the interest together with the principal falling due after credit maturity.

The approved credit amount is up to 500.000 dinars, depending on the assessment of the applicant's creditworthiness rating.

The interest rate subsidy, approved by this programme, amounts either to 10% of the principal loan amount, applicable to credit charged with interest of 10-15% on an annual basis, or it covers the total interest burden in the case of credits with interest up to 10% per annum.

4. Long-term loans

Long-term loans may be granted to any agricultural enterprise (farms run by physical persons and legal entities) inscribed in the register through commercial banks. Long-term loans are approved for the following purposes:

- constructing and purchasing irrigation systems, as well as irrigation equipment;
- purchasing farm machinery;
- forming perennial newly planted areas;
- constructing greenhouses and cloches;
- financing livestock-breeding production.

In the period 2004-2006, long-term loans were approved on the following terms and conditions:

- 6 years payment term (or up to 5 years, in the period 2005-2006), at the rate of interest of 3% per annum, subject to a currency clause (setting the debt amount in EUR when the loan is contracted and converting it into dinars at

the official middle exchange rate of the National Bank of Serbia, on the accounting day);

- grace period, deferring the payment term by 12 months, or 3 years in case of:
    1. constructing and purchasing irrigation systems and equipment for irrigation;
    2. forming perennial newly planted areas;
    3. financing livestock-breeding production.

The lowest loan amount approved was 5,000 EUR, and the highest was 200,000 EUR. In 2007, the loans were granted on the following terms and conditions:

- payment term of 5 years, except for forming newly planted areas of grapevine and core fruits, in which case the payment term is 10 years;
- effective rate of interest is 2.25% on an annual basis;
- annual charge to the Guarantee Fund is 0.75% of the outstanding principal debt per loan;
- use of the currency clause – the principal loan amounts and interest payments are denominated in EUR, with the obligation of the debtor to pay the interest charges due in dinar equivalent value, determined at the official middle conversion rate of the National Bank of Serbia, valid on the day of payment;
- deferred payment term of the principal amount, which is included in the credit payment term, up to 12 months, except when the loans are approved for the following purposes:
    1. constructing and purchasing irrigation systems, as well as irrigation equipment, in which case the grace period of deferred payment is up to 3 years;
    2. financing of livestock-breeding (the deferred payment term is up to 3 years);
    3. forming of perennial newly planted areas (the deferred payment term is up to 3 years), i.e. forming newly planted areas for grapevine and core fruits cultivation (the deferred payment term is up to 5 years).
- during the grace period of deferred payment of principal debt, interest and charges continue to accrue;
- the repayment of debt is settled in equal six-monthly instalments in EUR, according to the payment schedule that has to be attached to the credit contract and is an integral part thereof, paying the dinar equivalent value of each instalment converted at the official middle exchange rate of the

National Bank of Serbia, valid on the day of payment, within five days after the end of each six-month period;
- the smallest loan amount per credit contract, provided by the Ministry is 5,000 EUR and the highest is 200,000 EUR, in dinar equivalent value according to the official middle conversion rate of the National Bank of Serbia.

In 2008 a program of measures for participating in long-term credit financing of agricultural and food production was set up, due to the improvement of conditions on the credit market. It applies to loans granted by commercial banks and is intended to provide incentives for agricultural development, i.e. for the implementation of investments in agricultural and food industry development.

The funds for participation in accordance with this program have been approved to serve credit users, who were granted approved long-term loans from commercial banks, provided that these loans were intended to finance agricultural and food production. The necessary conditions are as follows:
- the debt payment term must be at least 3 years, but not longer than 5 years, or 10 years if it concerns forming newly planted areas of grapevine and core fruits;
- the effective interest rate cannot be higher than 12.5% per annum;
- if the currency clause was applied – the disbursed loan amounts and the respective debt payment instalments must be determined in dinar equivalent value of EUR, according to the official middle conversion rate of the National Bank of Serbia, valid on the due date of the instalment payment;
- a grace period is foreseen, included in the debt payment terms, the duration of which is at least 12 months or longer, under the following conditions:
    1. in case of constructing and purchasing of irrigation systems and irrigation equipment, the grace period duration of at least two years;
    2. in case of financing of livestock-breeding production, the grace period duration of at least two years;
    3. in case of forming perennial newly planted areas, the grace period duration of at least three years;
    4. in case of forming newly planted areas of grapevine and core fruits, the grace period duration of at least four years.
- debt payments are due in equal three-monthly instalments (which include both principal and interest), in accordance with the payment schedule attached to the credit contract and constituting its integral part;
- the loan amount (principal) is not less than 5,000 EUR, but not higher than 300,000 EUR, in dinar equivalent value according to the middle conversion rate of the National Bank of Serbia.

The Ministry participates in long-term credit financing, approved according to the above programme with 10% of the principal amount on an annual basis, which it pays in the first three year period of loan duration.

Conclusions

Agriculture is one of the basic components of Serbian development, because apart from economic aspects, it is also of exceptional social and ecological significance. Agriculture faces the challenges of increasing competitiveness as well. Therefore, it is necessary to accelerate and adjust the restructuring processes in agriculture by means of state support. Likewise, Serbian agriculture has to increase its competitiveness on the international market in the short term.

In transitional countries, such as Serbia, the question of providing for the survival of viable agriculture is an increasingly current matter, and the significance of improving the competitiveness of production assumes a crucial role in the policy of sustainable development of agriculture. Therefore, one of the most important tasks of the Ministry of Agriculture, Forestry and Water Management is to create more favourable conditions for employment in every sector of agriculture and thereby to increase the competitiveness of production. For this purpose, the activities initiated in 2004 were continued in period 2005-2008, through the support measures for the credit financing of various aspects of agricultural production and forming the credit market.

The goal of incentive providing measures is to form a sustainable and efficient agricultural sector, which can be competitive on the world market, contributing to the growth of the gross domestic product. This implies, furthermore, providing food that satisfies the needs of consumers regarding quality and safety, along with the preservation of the environment, in accordance with the requirements of better preparation of Serbian agriculture for the process of integration with the European Union.

The foreseen means of providing incentives for credit financing of agricultural enterprises (farms operated by physical persons and legal entities), inscribed in the register of producers, include numerous incentive measures for the successful implementation of development projects in the rural development field.

The incentives and additional measures should provide for progressive agricultural enterprises, stable agricultural production and assure the conditions for productive and rewarding standards of living in the rural environment.

The successful and prompt achievement of the planned goals depends on the possibly rapid pace of adoption of new knowledge and application of new

technologies, which implies the need to assure the conditions for providing higher investments intended to improve the competitiveness of Serbian agriculture.

References

1. Subić J. (2003): *Određivanje ekonomske efektivnosti investicija u poljoprivredi (Južni Banat – SR Jugoslavija)*. Doktorska teza, Akademija ekonomskih nauka, Bukurešt - Rumunija.
2. Subić J., Cvijanović D., Cicea C. (2006): *The Role of Agriculture in the Serbian Economic Development*. Review of International Comparative Management. Director: Marian Nastase, Issue. 7/2006. Published by The Academy of Economic Studies of Bucharest, Romania, pp. 185-192.
3. Subić J., Cecić Nataša (2007: *Mere agrarne politike za unapređenje seoskih zajednica na marginalnim i ostalim područjima Srbije*. *Ekonomika*, Niš, br. 1-2, pp. 75-83.
4. *Poljoprivredni informator 2004*. Ministarstvo poljoprivrede, šumarstva i vodoprivrede Republike Srbije, Beograd, 2004.
5. *Poljoprivredni informator 2005*. Ministarstvo poljoprivrede, šumarstva i vodoprivrede Republike Srbije, Beograd, 2005.
6. *Poljoprivredni informator 2006*. Ministarstvo poljoprivrede, šumarstva i vodoprivrede Republike Srbije, Beograd, 2006.
7. *Poljoprivredni informator 2007*. Ministarstvo poljoprivrede, šumarstva i vodoprivrede Republike Srbije, Beograd, 2007.
8. Uredba o utvrđivanju programa mera za subvencionisanje kamate za kratkoročno kreditiranje poljoprivredno-prehrambene proizvodnje za 2008. godinu. Ministarstvo poljoprivrede, šumarstva i vodoprivrede Republike Srbije, Beograd, 2008.
9. Uredba o utvrđivanju programa mera za dugoročno kreditiranje poljoprivredne i prehrambene proizvodnje za 2008. godinu. Ministarstvo poljoprivrede, šumarstva i vodoprivrede Republike Srbije, Beograd, 2008.
10. www.minpolj.sr.gov.yu

Josef Hambrusch
Federal Institute of Agricultural Economics
Viennam Austria

Austrian Agriculture in the Context of the Common Agricultural Policy and EU Enlargement

1. Introduction

The Austrian agricultural policy has been undergoing substantial reforms since the accession to the EU in 1995 starting with the adoption of the Mac Sharry reform, that had been introduced in the Common Agricultural Policy (CAP) in 1992 and that marked the beginning of direct payments in order to compensate for the decrease of price support. An important milestone for Austrian agriculture consisted of the implementation of the second pillar within the Agenda 2000 of the CAP by taking into account the multi-functionality of agriculture. Basically, it was a further development of already existing national support measures. Agro-environment schemes, support to less favoured areas (including mountainous areas) and investment assistance to enhance productivity and competitiveness are still important measures within the present Austrian rural development programme. A further reform was adopted by EU ministers of agriculture in 2003 coinciding with the accession of ten Southern and Eastern European countries. The most important step was the decoupling of direct payments. Based on historical reference payments from the period of 2000-2002 entitlements are allotted to farmers. Under this commonly known Single Farm Payment scheme (SFP) farmers are also obliged to keep their land in good agricultural and environmental condition (cross-compliance). Furthermore, a modulation scheme was introduced with the objective to allocate money from the first to the second pillar of CAP.

Expectations of the agricultural sector concerning the EU accession of Austria were ambiguous, as short-term problems dominated the discussion (e.g. reduction of producer prices, competition on agricultural markets). Despite some positive developments (e.g. increase of agricultural exports) the EU accession is still a matter of critical discussions in the Austrian agricultural sector (Hofreither et al., 2006). The main objective of this paper is to outline the main characteristics of Austrian agriculture since the EU accession in 1995. A review of the development of Austrian agriculture may also provide information for a better understanding of that specific agricultural policy. In this context it should be noted that not only the adoption of the CAP but also other developments (e.g. world market, WTO negotiations, EU enlargement, overall economic and

demographic development) exerted and still exert impacts on Austrian agriculture. This should be considered when interpreting the data presented.

The present study summarizes in detail the most important developments concerning the agricultural sector since the introduction of the CAP in Austria. The data presented refer to the agricultural census, which for the first time took place in conformity with EU requirements in 1995, and to the data of the annual agricultural report (BMLFUW, 2007). The following sections describe changes in the structure of Austrian agriculture exemplified by important key figures. The principal conclusions are outlined in the last section.

2. The Agricultural Sector in Austria

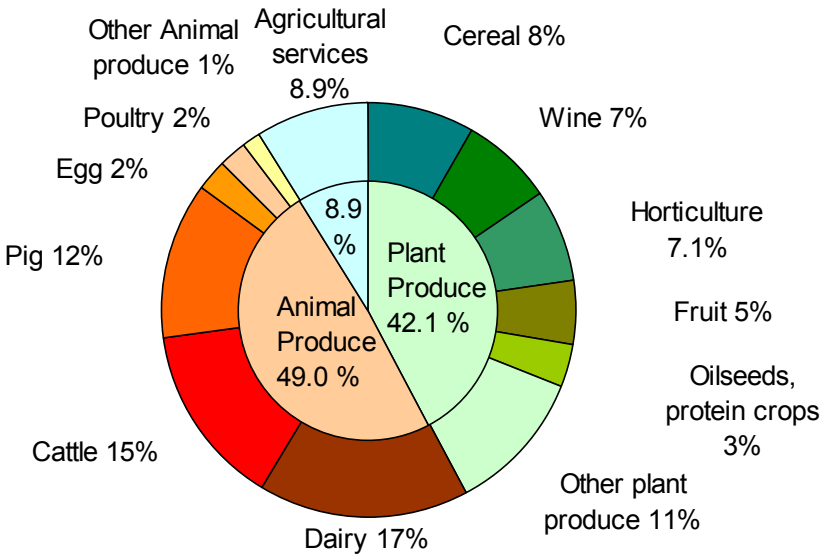
Austrian agriculture is determined by the mountainous character of the country and its comparatively large share of grassland. Cattle farming and production of milk and beef are traditionally the most important sectors in Austrian agriculture. Arable crops as well as the cultivation of wine, fruit and vegetables prevail in the eastern part of Austria. Pig and poultry farms are also located in this area. Like in other Alpine countries, Austrian farms are relatively small and also due to natural conditions in less favoured areas (LFA), production costs of particular farm activities are relatively high in comparison to other countries (Kirner, 2005 and InterPig, 2006).

2.1. Gross Value Added and Gross Domestic Product (GDP)

The contribution of agriculture and forestry to GDP is the value of final production minus intermediate consumption. The resulting Gross Value Added at market prices values products and means of production at farm-gate prices. Adding subsidies and subtracting taxes yields Value Added (GVA) at factor cost or GDP (BMLFUW, 2007). The agricultural contribution to gross domestic product (GDP) has declined during the last decades to less than 2% in 2006, compared to 5.7% in 1980 and to 3.95% in 1990. These figures are much higher, however, when related up- and downstream industries, such as food processing, are also taken into account.

In 2006, 49% of the production value was generated by animal production, 42% by plant production and roughly 9% by agricultural services (Figure 1). As a result of the high proportion of grassland, dairy and cattle farming are the traditional farm activities and contribute to almost one third of the agricultural production value. Pigs, eggs and poultry comprise some 16%. The main components of the production value of plants consist of cereals, wine and the produce of horticulture.

Figure 1: Agricultural Production Value 2006 (total production value: 5.68 bill. €)



Source: BMLFUW, 2007[Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management].

2.2. Regional Aspects

According to Council Regulation (EC) No 1257/99, less-favoured areas (LFA) include mountain areas, other less-favoured areas and areas affected by specific handicaps. They are usually delimited according to political communities. Mountain areas are communities located at no less than 700 metres above sea level and communities located between 500 and 700 metres if their slope gradient is at least 15%. In accordance with the EU classification LFA areas cover 81% of the total Austrian territory and 71% of the utilised agricultural area (UAA). The term UAA comprises the total area used as arable land (including fallows), kitchen gardens, orchards, vineyards, grape and tree nurseries, forest tree nurseries, energy wood areas, Christmas tree plantations, meadows mown once or several times per year, cultivated pastures, rough grazing and mountain meadows (BMLFUW, 2007). Most of it is classified as mountainous area with a small part classified as other less-favoured area. In 2006 about 71,000 registered mountain farms (38%) cultivated some 70% of Austrian territory and 58% of the UAA (960,000 ha). With an average agricultural area of 13.5 ha mountain farms are below the national average of 18.8 ha. Organic farming plays an important role for mountain farms – 75% of all organic farms are located in mountainous areas. Since 2001 financial compensation is based on a point system, the so called Mountain Farm Cadastre (MFC) that accounts for the individual natural disadvantage of each farm.

3. The Structure of Austrian Agriculture

Table 1 provides a summary of important key figures that describe developments in Austrian agriculture since Austria's accession to the EU in 1995. The figures are explained in detail in the sections that follow below.

Table 1: Summary of key figures of Austrian agriculture, 1995, 1999, 2005

	Unit	1995	1999	2005
Total Gross Value Added (GVA), basic prices	Billion Euros	155	179	220
GVA agriculture, basic prices*	Billion Euros	4.2	3.9	3.6
GVA: Share of agriculture*	%	2.69	2.2	1.6
Total number of farms	number	239,099	217,508	189,591
Full-time farms	number	81,171	80,215	74,504
Part-time farms	number	149,954	129,495	106,836
Group holders	number	-	1,141	1,473
Holdings of legal persons	number	7,974	6,657	6,778
Forest area	1,000 ha	3,289	3,260	3,310
Utilised Agricultural Area (UAA)	1,000 ha	3,426	3,389	3,268
Arable area	1,000 ha	1,404	1,395	1,405
Permanent crops	1,000 ha	85	77	74
Grassland	1,000 ha	1,937	1,917	1,789
Average UAA per farm	ha	15.3	16.8	18.8
Agricultural employment	%	6,8	5.8	5.3
Number of organic farms	number	18,542	19,028	20,310
Proportion of farms	%	7.8	8.7	11.6
Organically cultivated area	1,000 ha	198,000	277,729	360,969
Proportion of organically cultivated UAA**	%	7.7	10.9	14.2

* including forestry and fishing; ** without alpine pastures and meadows
Source: BMLFUW, 2007 and Statistics Austria, 2007.

3.1. Agricultural Holdings and Employment

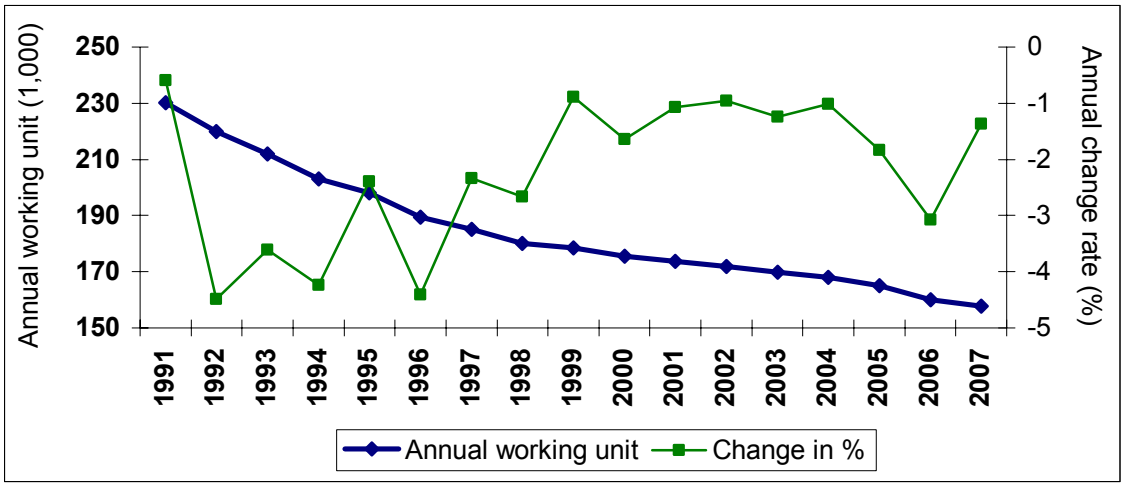
Between Austria's accession to the EU in 1995 and 2005 the number of farms has declined by -20.7% to 189,591, equivalent to an annual drop out rate of 5,000 farms. Concerning the legal form of holdings, individual enterprises prevail with more than 95% of all holdings. Only 6,778 holdings (3.6%) were owned by legal entities and another 1,473 (1.4%) enterprises belonged to associated holdings. However, with an average farm area of 382.3 ha legal farms held 34.1% of the cultivated area (Statistics Austria, 2007).

According to the agricultural accounting, 183,375 people (5.3% of total employment) worked in the agricultural and forestry sector, which is equivalent to a loss of 10% since 1995. Especially in mountainous areas and on smaller farms family labour predominates. The economic viability of many farm households has become more dependent on combinations of different forms of income, due to persistently low profitability of agricultural production,

especially in mountainous areas. In 2005, only 40% of all farm enterprises are classified as full-time occupations. About 59% of the enterprises are part-time farms (i.e. less than half of household labour is devoted to farming or forestry). Part-time farms manage on average a total area of 15.8 ha compared to 40.3 ha managed by an average full-time holding. For most part-time farm owners and workers, non farm income is as important as farm income. On such farms often several members of the family work on the farm. While the number of full-time farms declined by 8% between 1995 and 2005, the loss of part-time farms was significantly higher (29%).

In the pre-accession period it was expected that the accession to the EU would accelerate the decline of agricultural working units. However, a comparison of the annual working units (AWU) in Austria before and after 1995 shows no significant downturn. The decreasing annual change rates indicate even an opposite development (see Figure 2). But these figures have to be interpreted with care. Hoppichler (2007) assumes that many farmers, predominantly part-time farmers and older farmers, anticipated their decision to leave production to avoid additional adoption pressure. AWU defines the working time of persons employed in agriculture expressed in full-time equivalents. Part-time and seasonal work is converted into AWU. The number of hours per full-time employment differs in the individual EU Member States. In Austria one AWU is defined as 2,160 hours per year.

Figure 2: Annual working units in Austrian agriculture



Source: Federal Institute of Agricultural Economics, 2007.

3.2. Area Management and Livestock Husbandry

In 2005, approximately 54% of Austria's utilised agricultural area was permanent grassland. An Austrian farmer managed on average 35 hectares of

cultivated area (utilised agricultural and forestry area), thereof 19 hectares of UAA.

Compared to other European countries the structure of Austrian agriculture and forestry is still small-scale (BMLFUW, 2007). There is, however, a continuing trend towards larger holdings. In 2005 the majority of holdings (about 60%) managed less than 20 ha of total area, however, 15 years earlier that share was almost 73%. About 8,000 holdings (4.2%) managed more than 100 ha, accounting for more than 50% of total area in 2005. As shown in

Table 2, a general decrease in the number of holdings and relative shares of total area was recorded in the categories below 50 ha. Similar trends have been noted for utilised agricultural area, with an increase from 9.4 ha to 18.8 ha per farm.

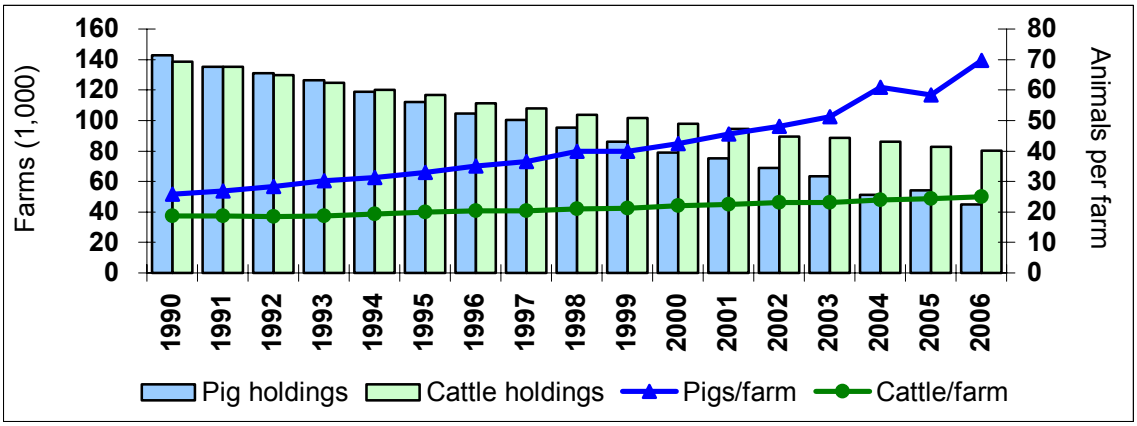
Table 2: Changing farm sizes

Classification Total area	1990	1995	1999	2005	1990	1995	1999	2005
	holdings				% total area			
Without area	3,910	2,407	2,284	291	-	-	-	-
Less than 5 ha	97,480	66,233	52,663	39,664	3.22	2.37	1.96	1.54
5 to less than 10 ha	49,063	43,884	40,538	34,108	4.66	4.20	3.89	3.25
10 to less than 20 ha	54,951	49,369	45,704	39,376	10.60	9.57	8.87	7.65
20 to less than 30 ha	33,414	30,992	29,079	25,699	10.82	10.10	9.51	8.33
30 to less than 50 ha	26,047	27,219	27,021	26,363	13.03	13.74	13.72	13.37
50 to less than 100 ha	10,566	12,078	13,032	16,073	9.16	10.51	11.41	14.09
100 to less than 200 ha	3,431	3,706	3,916	4,752	6.33	6.83	7.20	8.54
More than 200 ha	3,048	3,211	3,271	3,265	42.19	42.67	43.43	43.23
Number of holdings/ Area in 1,000 ha	281,910	239,099	217,508	189,591	7,554	7,531	7,518	7,569

Source: BMLFUW, 2007.

Cattle and dairy farming are the most important activities of animal husbandry in Austria. Like in other European countries the structure of livestock husbandry has been characterised by a trend towards greater entities showing a continuing specialisation process during the last decades, as depicted in Figure 3.

Figure 3: Development of animal husbandry in Austria, 1990-2006



Source: Statistics Austria, 2007.

However, specialisation processes concerning individual farm activities existed already before the EU accession. Table 3 shows that in the mid-20th century most Austrian farms cultivated a great variety of different arable crops and kept various animal species. As the century advanced, the number of varieties included in crop rotations became increasingly limited and the number of animal species on the farms decreased as well. The development indicates that many small farms, which formerly cultivated many different crops and kept animals for self-supply purposes, ceased production. The percentage figures in the table below give an impression of the trends that shaped the historical development of agriculture in Austria.

Table 3: Crop cultivation and livestock husbandry of Austrian farms between 1951 and 1999 (figures in % of the total number of farms)

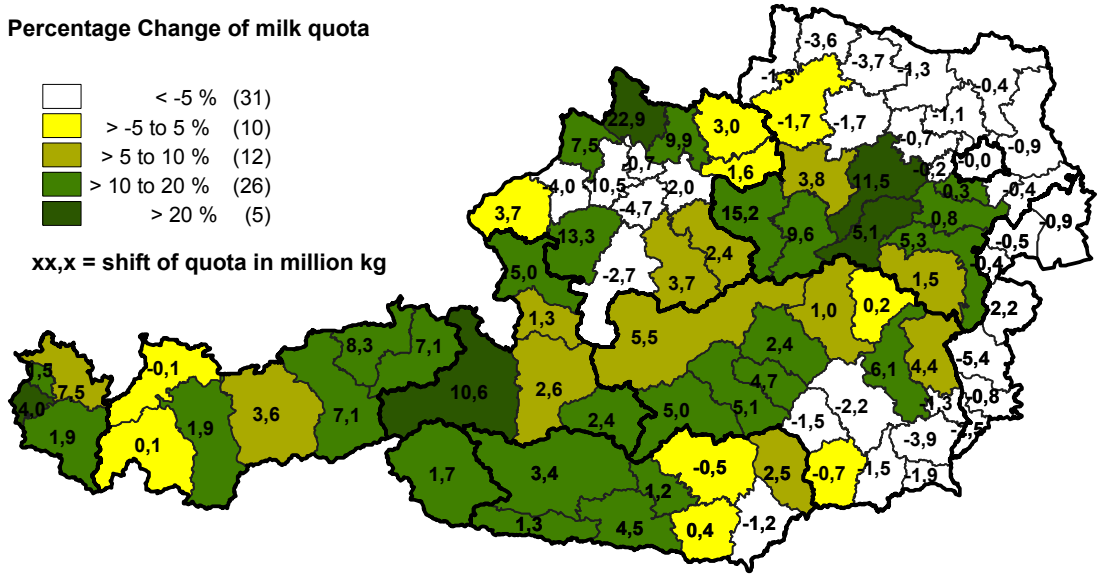
	1951	1960	1970	1980	1990*	1999*
Wheat	**57**	**51**	41	33	31	25
Rye	**62**	43	29	18	15	10
Barley	47	45	46	43	44	38
Oats	**54**	46	31	24	18	13
Potatoes	**88**	**81**	**69**	44	25	16
Sugar Beet	9	10	7	5	5	5
Permanent Pastures and Meadows (mown only once)	36	29	20	15	12	12
Permanent Pastures and Meadows (mown several times)	**67**	**67**	**71**	**65**	**63**	**68**
Permanent Grazing Pastures	31	34	32	23	19	23
Horses	32	27	10	6	5	8
Cattle	**79**	**75**	**71**	**58**	**50**	46
Dairy Cows	**78**	**73**	**70**	**55**	47	43
Pigs	**86**	**80**	**77**	**63**	**50**	38
Sheep	20	8	5	6	8	8
Goats	24	14	6	3	3	5
Chicken	**90**	**86**	**82**	**64**	48	37

Bold type indicates >= 50% of all farms.
* Direct comparisons are only possible to a limited degree, due to the different limits of determination that apply.
Source: Hambrusch, 2007.

Accounting for more than 30% of the agricultural production value dairy and cattle farming play an extraordinary role in Austrian agriculture. Therefore it is worth taking a closer look at the structural change of this sector, using a study by Kirner (2007) based on Integrated Administration and Control System (IACS) data. Between 1995 and 2006 about 32,800 dairy farmers quit production. Given a slight increase in the total milk quota during the same period, the milk quota per farm rose by 79%. As shown in Figure 4, the milk quota was transferred between regions. On the one hand, the quota declined in northern and eastern parts of Austria, on the other hand, quotas increased in

Alpine regions. The reasons behind this development consist of the fact that the natural production conditions in most mountainous areas often limit agricultural activities to grassland management and cattle farming. Furthermore, these regions tend to be located in remote areas, where non-farming jobs are scarce.

Figure 4: Transfer of milk quotas between Austrian districts between 1995/96 and 2005/06



Source: Kirner, 2007 based on IACS Data 1995/2006.

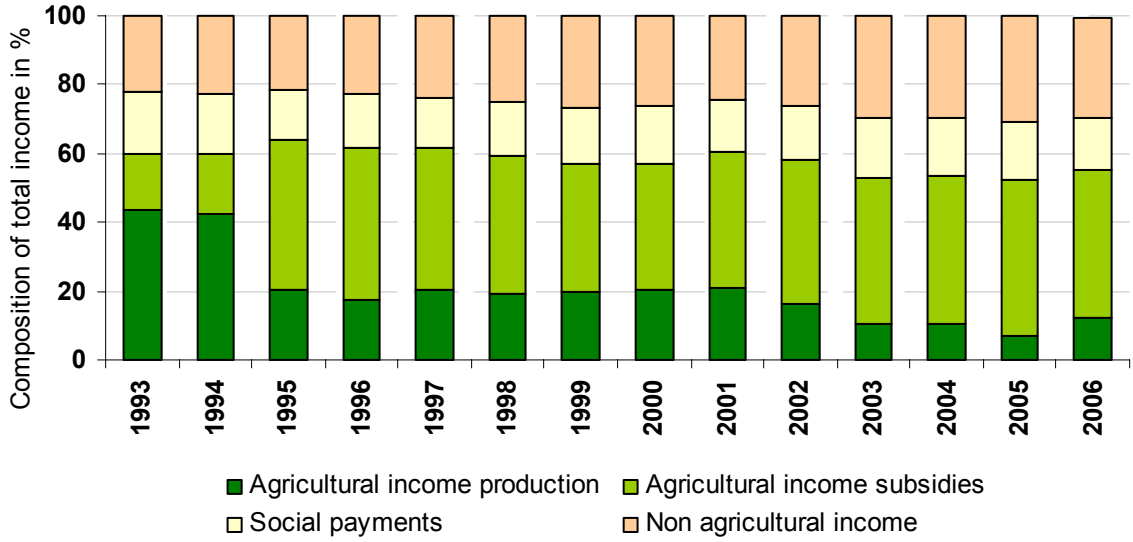
Kirner and Krammer (2007) surveyed 505 Austrian dairy farmers in 2007 and found that roughly 10% of the respondents were willing to phase out or at least to reduce their production of milk within the next five years. The workload (79%), the lack of successors (70%), economic reasons (62%) and bureaucracy (57%) were identified as the main reasons.

3.3 Farm Income

According to the Farm Accountancy Data Network (FADN), the structure of total income of agricultural households has changed considerably during the last 15 years (see Figure 5). Income directly generated from agricultural and forest production decreased from over 40% to some 10%, showing a significant downturn in 1995 when Austria acceded to the EU. The decrease in 1996 was mainly due to the adoption of lower EU market prices, which dropped on average by 21% compared with the previous year and varied between individual product categories (Hofreither et al, 2006). With the introduction of the CAP the share of subsidies (first and second pillar) increased to about 40%, resulting in an agricultural and forestry income (production and agricultural subsidies) that remained on a stagnant level. To summarise, agricultural and forestry income contribute relatively little to total household incomes. Off-farm wages and

salaries together with family support transfers contributed 45% to the total farm household income in 2006. Overall, CAP payments have the largest share of total farm household incomes on average. But it should be mentioned, that only a small share of the total agricultural revenue (roughly 25%) was derived from agricultural subsidies, as the majority originated from arable and animal husbandry revenues. Especially in regions with tourism or in regions close to urban centres diversification of income plays an important role as a result of alternative income options on or off farm.

Figure 5: Composition of total income of agricultural farms, 1993-2006



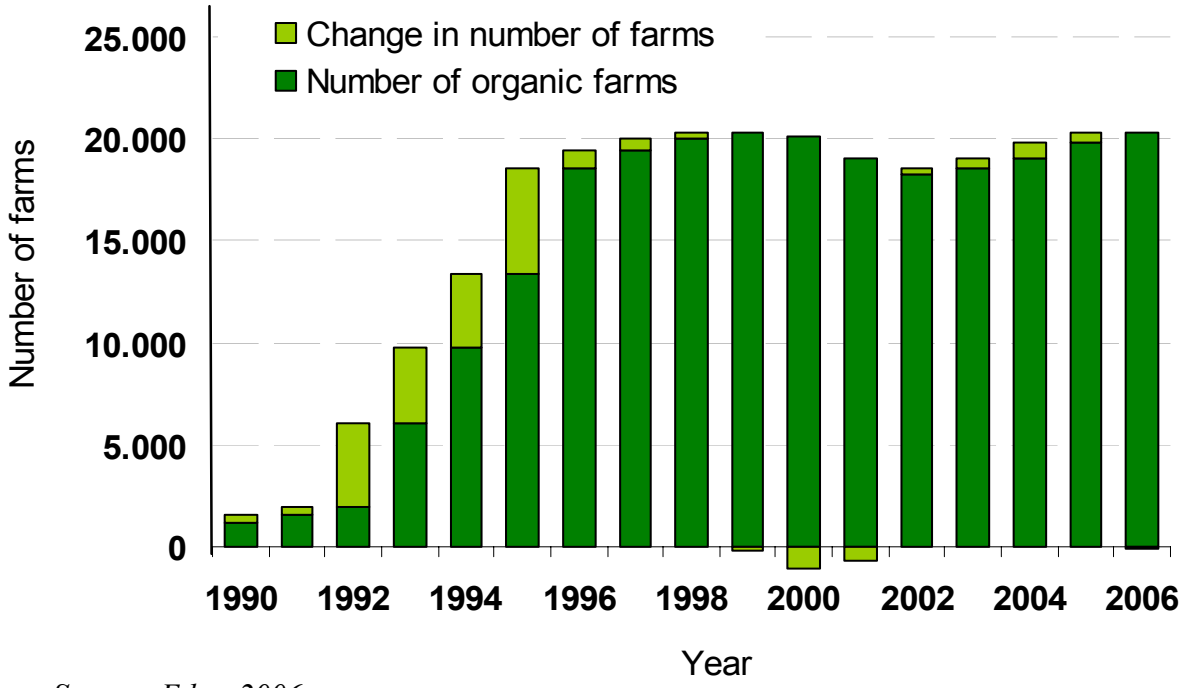
Source: Green Report, several years.

4. Organic Farming

With about 11.6% certified organic farms in 2006, Austria has one of the highest shares of organic farms in the European Union. Since the first national governmental support for conversion to organic farming in the early 1990s, the number of certified organic farms has increased rapidly. The development of organic farming in Austria is also closely linked to the Austrian agro-environmental programme (ÖPUL), which was introduced for the first time in 1995 (EU accession). The biggest growth in the number of organic farms took place in the pre-accession period, as policy debates gave strong indications that organic farming would be supported by the agricultural policy (see Figure 6). After this period of expansion the number of organic farms remained relatively constant, with decreases in 1999, 2000 and 2001. According to Eder (2006), two reasons were responsible for this development. On the one hand, the new agro-environmental programme offered alternative measures with less stringent obligations for farmers. On the other hand, the rapid increase of organic farms caused problems in the marketing of organic products.

Especially for family farms, the conversion to organic farming offered a new strategy to cope with the challenges of the new EU market. Changes in the number of organic farms are linked to regional and sectoral dynamics. While some farms in the Alpine areas, which focus mainly on dairy and beef production, have reverted back to conventional farming, there has been a slow but steady increase in arable farms converting to organic farming. Despite this development the majority of organic farms is still located in grassland areas. In 2006, about 20,160 farmers produced organically, i.e. 11.6% of all farms or 14.2% of the UAA.

Figure 6: Numbers of organic farms in Austria, 1990-2006

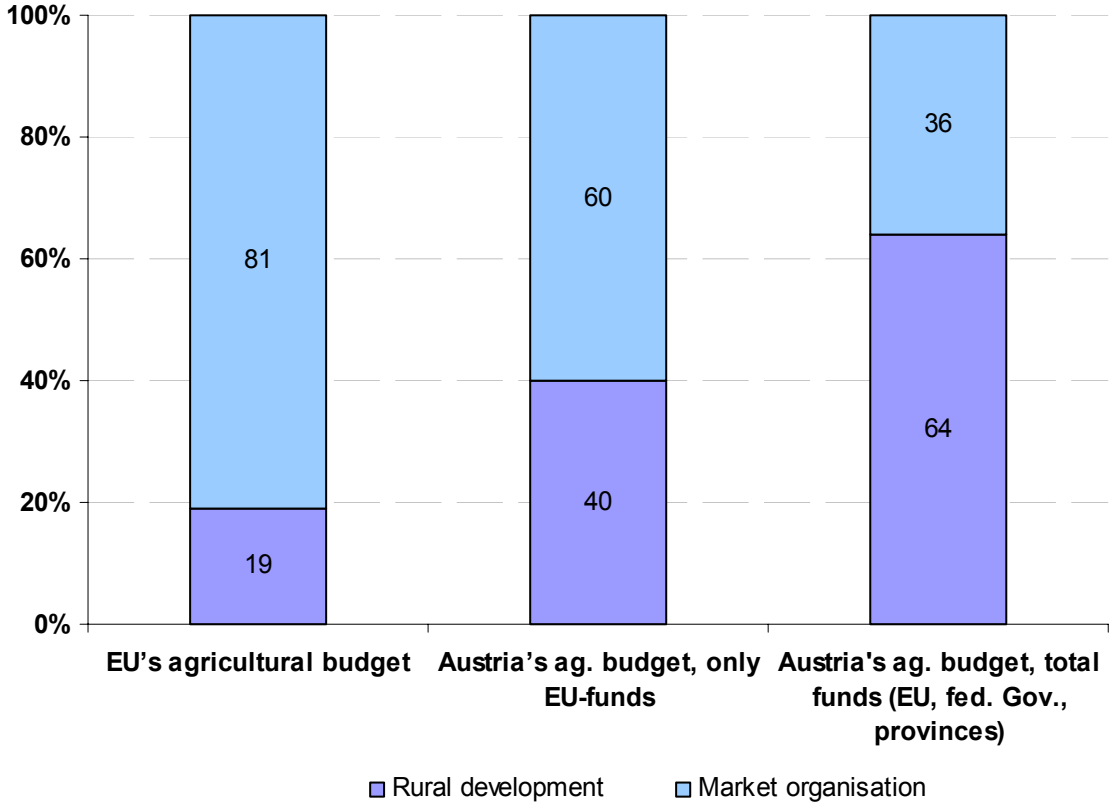


Source: Eder, 2006.

5. Budgeting of Agricultural Policy in Austria

Given the natural production conditions and the fact that more than one third of the farms are located in less-favoured areas, Austria placed a strong emphasis on rural development, the "second pillar" of the CAP. By doing so, it was recognised that farms in less-favoured areas are inherent for the preservation of cultural landscape, which is important for other industries (e.g. tourism). This is illustrated in Figure 7 by the share of each pillar in the budget: some 19% of the overall EU agricultural budget for the year 2007 was allocated to the 'second pillar', whereas in Austria 64% of the budget was allocated to rural development (Darnhofer, 2006).

Figure 7: Relative composition of the agricultural budget in Austria in 2006



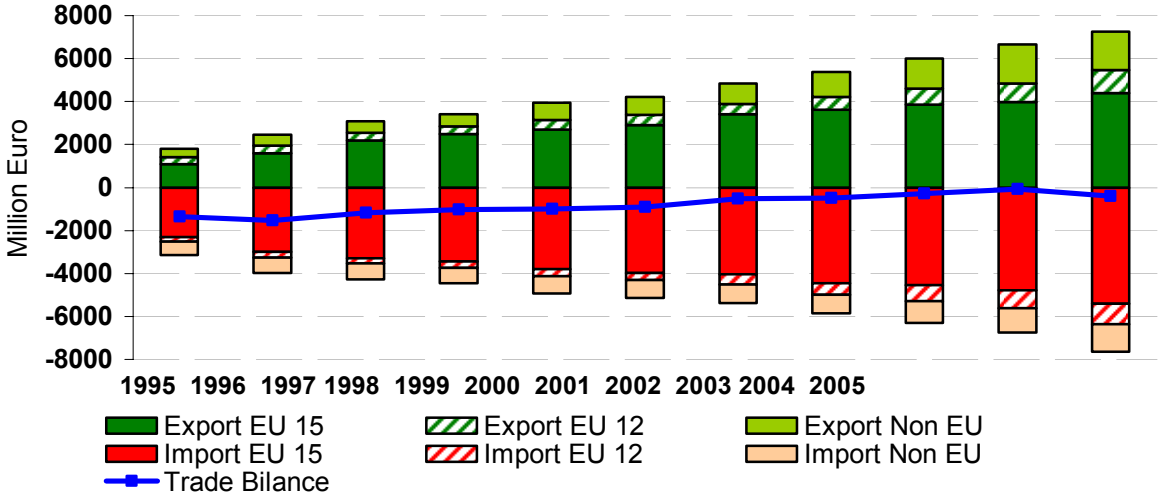
Source: BMLFUW, 2007.

6. Agricultural Trade

The development of agricultural trade is used in this study as an indicator of the competitiveness of Austrian agriculture on international markets. In 2006, about 6.5% of the total trade value in Austria was generated from agricultural trade (Combined Nomenclature, CN 1-24) and contributed to positive overall economic development. The CN is the goods classification used within the EU for the purposes of foreign trade statistics and its classification is based on the Harmonized System (HS) which is sub-divided in different product groups (Eurostat, 2007). Numbers classified from 1 to 24 relate to agricultural products.

Since the accession of Austria to the EU, import values have increased by 140%, whereas export values have risen by more than 300%, resulting in a decrease of the agricultural trade deficit, as shown in Figure 8. Traditionally, the EU-15 countries are the most important trading partners, with a share of about 70% of agricultural trade value. But since the accession of twelve new member states starting in 2004, trade values with these countries have more than doubled and represented 14.8% of all agricultural exports and 12.6% of all agricultural imports in 2007.

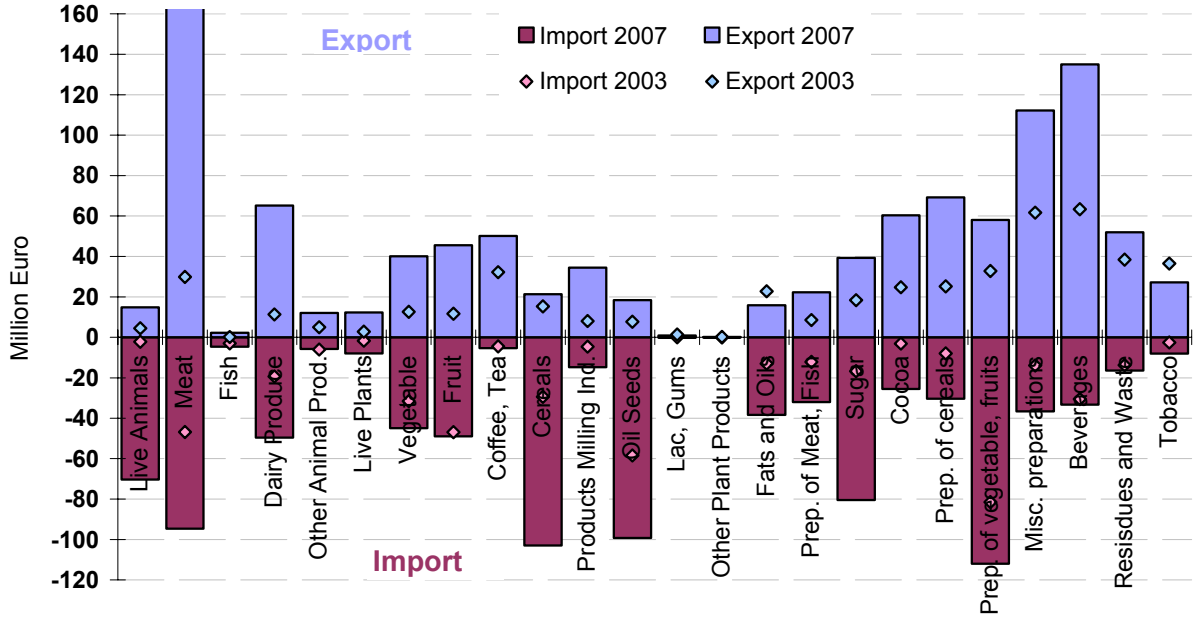
Figure 8: Austrian agricultural trade since 1995 by country groups



Source: Agrarmarkt Austria, 2007.

A closer look at the development of agricultural trade with EU-12 reveals that the increasing demand for imported commodities in Austria was to a certain extent export induced. This means that imported products are used as raw materials for further processing. For instance, cereals are imported to and processed in Austria into flour and other products of the milling industry. Some of these products are re-exported to the EU-12. Figure 9 shows that exports comprise predominantly processed products, such as various preparations, with the exception of meat. On the import side, less processed products dominate, such as cereals, oil seed or meat, but also preparations of vegetables and fruit are included.

Figure 9: Agricultural Trade (CN 1-24) with EU-12, 2003 and 2007



Source: Statistics Austria, 2007.

7. Summary

Before 1995, many farmers in Austria expected negative impacts on agricultural structures and on agricultural income from the EU accession. The provision of compensatory payments by the EU led to less dramatic development, but changed the structure of total farm income. In comparison to the pre-accession period, when a national market price support system was in place, the contribution of income directly generated from agricultural production to the total income per farm fell to less than 20%. Between 1995 and 2005, about 21% of all farms in Austria ceased production. But there are also some indications that Austria dealt with the challenge "EU accession" in a positive manner. On the one hand, the movement of labour out of the agricultural sector showed a slightly decreasing pattern and agricultural trade revealed positive dynamics. On the other hand, almost positive balance of trade was achieved for the first time, increasing unit values of exports.

The future development of farm structure and employment in agriculture is dependent on many factors. One of them consists of the expected earnings in agriculture, which are influenced by agricultural policy. However, the opportunity costs of labour of those engaged in agriculture are even more important for deciding to stay in agriculture or to leave the sector. They are dependent on the availability of off-farm income opportunities, the age structure and the endowment with human capital. Due to the decreasing importance of agriculture, off-farm employment and income sources will become more and more decisive for the socio-economic well-being in rural areas.

Agriculture in Austria is increasingly affected by changing needs of society concerning work, mobility, housing, and recreation. Rural areas, in most cases closely interrelated with agriculture, are often associated with high environmental values, which are a precious capital for ecology, recreation and tourism. Hence, expectations concerning the provision of general services, such as so called green services (environment and landscape), blue services (water management and flood control) and yellow services (social care and cohesion), are increasingly expressed by society. But also the production of agricultural commodities is faced with new challenges (e.g. food safety and quality, standards, provision of biomass for energy generation use). Mirroring these processes of change in agriculture, policy makers will have to deal with a number of different issues in the future, amongst others comprising CAP budgeting, the key role of the two CAP pillars, as well as the adaptability and competitiveness of agriculture.

References

1) BMLFUW (2007): *Bericht über die Lage der österreichischen Landwirtschaft* 2006. Wien. [Report on the condition of Austrian Agriculture]
2) Darnhofer, I. (2006): *Organic farming at the heart of the rural development policy. The example of Austria*. Proceedings of the European Joint Organic Congress; held 30-31 May 2006 in Odense, Denmark; pp. 712-713.
3) Eder, M. (2006): *Organic farming in Austria: A success story*. In: Darnhofer, I.,Walla, C. und Wytrzens H.K. (Ed.). *Alternative Strategien für die Landwirtschaft.* Wien: Facultas, pp. 89-100.
4) Eurostat, 2007: RAMON – Eurostat's Meta Data Server. http://ec.europa.eu/eurostat/ramon/index.cfm?TargetUrl=DSP_PUB_WELC (07.08.2007).
5) Federal Institute of Agricultural Economics (2007): Online data pool http://www.awi.bmlfuw.gv.at/framesets/datenpoolframeset.html (08.04.2008)
6) Hambrusch, J. (2007): *The diversity of crop varieties in Austrian agriculture*. In: Neunteufel, M. (2007): Agrodiversity, adaptiveness and innovation capability. Report on the research project http://www.agraroekonomik.at (08.04.2008).
7) Hofreither, M., Kniepert, M., Schmid, E., Sinabell, F. and Weiss, F. (2006): *Die Konsequenzen des EU-Beitritts im Agrarbereich* [The consequences of EU accession in agriculture]. In: BMLFUW: Ländlicher Raum – Online Fachzeitschrift, Jg. 2006.
8) Hoppichler (2007): *Was brachte der EU-Beitritt der österreichischen Landwirtschaft?* [What did EU accessession bring to Austrian agriculture?], Facts & Feature 39 - November 2007. Bundesanstalt für Agrarwirtschaft.
9) InterPig (2006): *Ergebnisse der InterPIG zu den Produktionskosten für Schweinefleisch 2006* [InterPIG results concerning pork production costs in 2006]. http://www.schweine.net/isn_scripte (08.04.2008).
10) Kirner, L. (2005): *Competitiveness of Austrian dairy farms in the context of the International Farm Comparison Network*. In: Kirner, L.: Sozioökonomische Aspekte der Milchviehhaltung in Österreich. Schriftenreihe Nr. 95 der Bundesanstalt für Agrarwirtschaft.
11) Kirner, L. and Krammer, M. (2007): *Strategien zur Betriebsentwicklung nach Umsetzung der GAP-Reform 2003* [Farm development strategies following the CAP reform implementation in 2003]. Arbeitsbehelf Nr. 26 der Bundesanstalt für Agrarwirtschaft.
12) *Statistics Austria* (2007): Online database. http://www.statistik.at (25.03.2008).

Csaba Jansik
MTT Economic Research
Helsinki, Finland

Comparison of the Finnish and Baltic Dairy Sectors

Introduction

The dairy industry has been globalising fast for the past ten years. Globalisation has been arising through the increasing foreign trade of dairy goods and capital, which process is also apparent in Northern Europe, among the Baltic Sea countries.

Accession to the EU in 2004 has accelerated the development in the Baltic dairy sectors. Hygienic conditions, raw material quality, processing technologies have improved rapidly. All three Baltic countries have strengthened their dairy supply chains and are by now producing well over their domestic needs. They have managed to channel their excess production to the EU common market and to third country markets. This paper compares their performance to that of a neighbouring old EU member state, Finland, including milk production, processing and foreign trade.

Productivity has increased in both the Finnish and the Baltic dairy sectors and they are all strongly export oriented. Yet, the four countries differ from each other in a number of ways reflected in structural indicators. The set of indicators used in order to highlight the differences and similarities include milk productivity, milk production, dairy farms structure development as well as revenues and profitability, and the structure of the dairy industry.

The dairy supply chain has traditionally been the most significant field in the agri-food sectors of both Finland and the Baltic countries. Although in Finland the meat industry has recently overtaken the dairy industry in terms of sales revenues, milk is still the largest single commodity in agricultural production. In the Baltic countries, the entire dairy supply chain has clearly been the flagship of the agri-food sector for the past 20 years.

Milk Production

Tendencies in the dairy farm structure differed notably among the four countries in the 1990s, although it equally turned in the same direction in recent years, that is towards concentration.

At present, milk production in the four countries can be classified into three typical groups as far as the dairy farm structure is concerned:

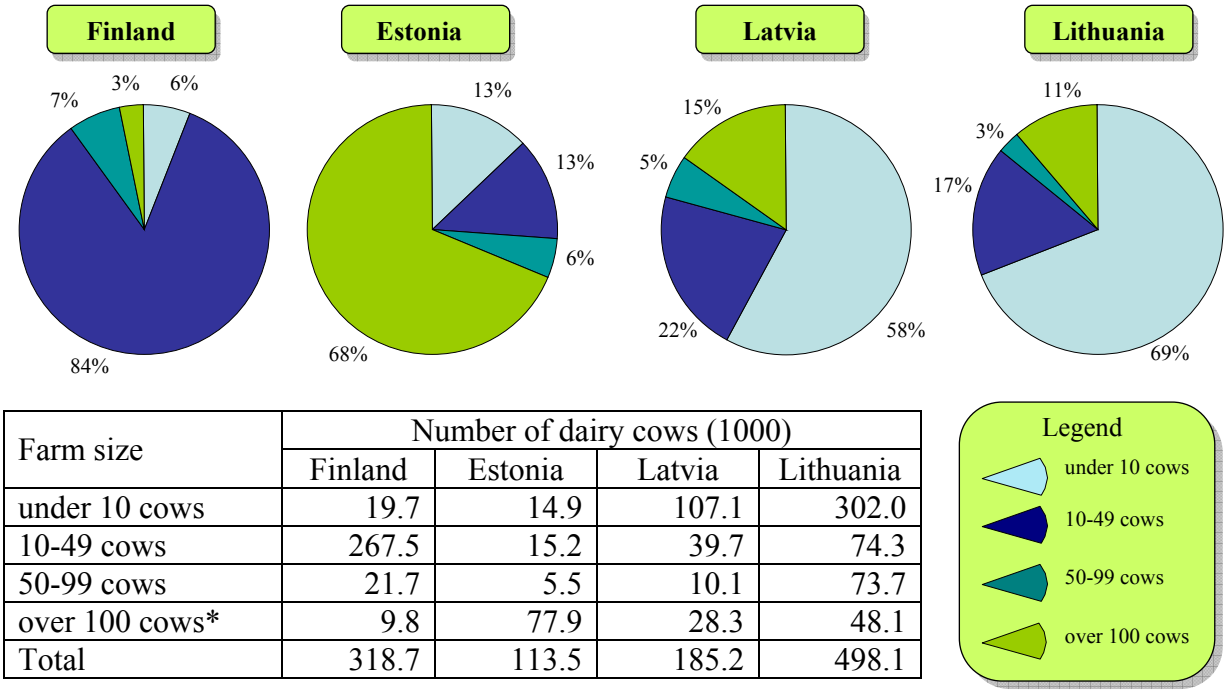
(1) dominance of large-scale farms (Estonia);

(2) dominance of medium-scale farms (Finland);
(3) dominance of small-scale farms (Latvia and Lithuania).

The dairy farm structure in Finland is dominated by medium-scale farms, 84% of the dairy cows belonged to farms with 10-49 cows in 2005. At the same time, over two-thirds of the cows in Estonia were located in large-scale farms with over 100 cows, whereas in Latvia and Lithuania farms with under 10 cows had 58% and 69% of the dairy cows stock (Figure 1).

The current composition of the dairy farm structure can be explained by the nature and direction of recent developments in each country. In Finland, a gradual shift occurred from the dominance of small-scale farms to a more medium-size farm dominated structure, a process, which took several decades.

Figure 1. Dairy farm structure in Finland and in the Baltic countries



Farm size	Number of dairy cows (1000)			
	Finland	Estonia	Latvia	Lithuania
under 10 cows	19.7	14.9	107.1	302.0
10-49 cows	267.5	15.2	39.7	74.3
50-99 cows	21.7	5.5	10.1	73.7
over 100 cows*	9.8	77.9	28.3	48.1
Total	318.7	113.5	185.2	498.1

*Sources: Information Centre of the Ministry of Agriculture and Forestry in Finland (TIKE), Statistics Estonia, Central Statistical Bureau of Latvia and Statistics Lithuania. *Note: Farms with over 75 cows for Finland.*

The Baltic countries inherited a large-scale farm structure from the previous regime, at the turn of the 1980s and 1990s over two-thirds of the milk output originated from large state-owned or cooperative farms. In Estonia, the majority of large farms were not split up and they were directly transferred into private ownership, so only very few such farms were divided into smaller units. In Latvia and Lithuania the land restitution reforms provided for a preference for the emergence and strengthening of small-scale family farms, leading to

a fragmented farm structure. The majority of dairy farms had 1-2 cows. Less than 50% of these subsistence farms delivered some milk to dairy processing companies.

Dairy farms have concentrated into increasingly large units both in Finland and in the Baltic countries. The growth of farms has been fast primarily in Latvia and Lithuania, where the farm structure used to be rather fragmented. As late as in 1999, farms with over 10 cows accounted for only 13% of the dairy cows in Lithuania and 27% in Latvia. By 2005, the share of these large and medium-size farms in the total number of cows rose to 31% in Lithuania and 42% in Latvia. Expanding and increasingly viable medium- and large-scale farms are taking over the market shares from the myriad of farms that used to keep 1 or 2 cows and now pull out from this business every year by the thousands.

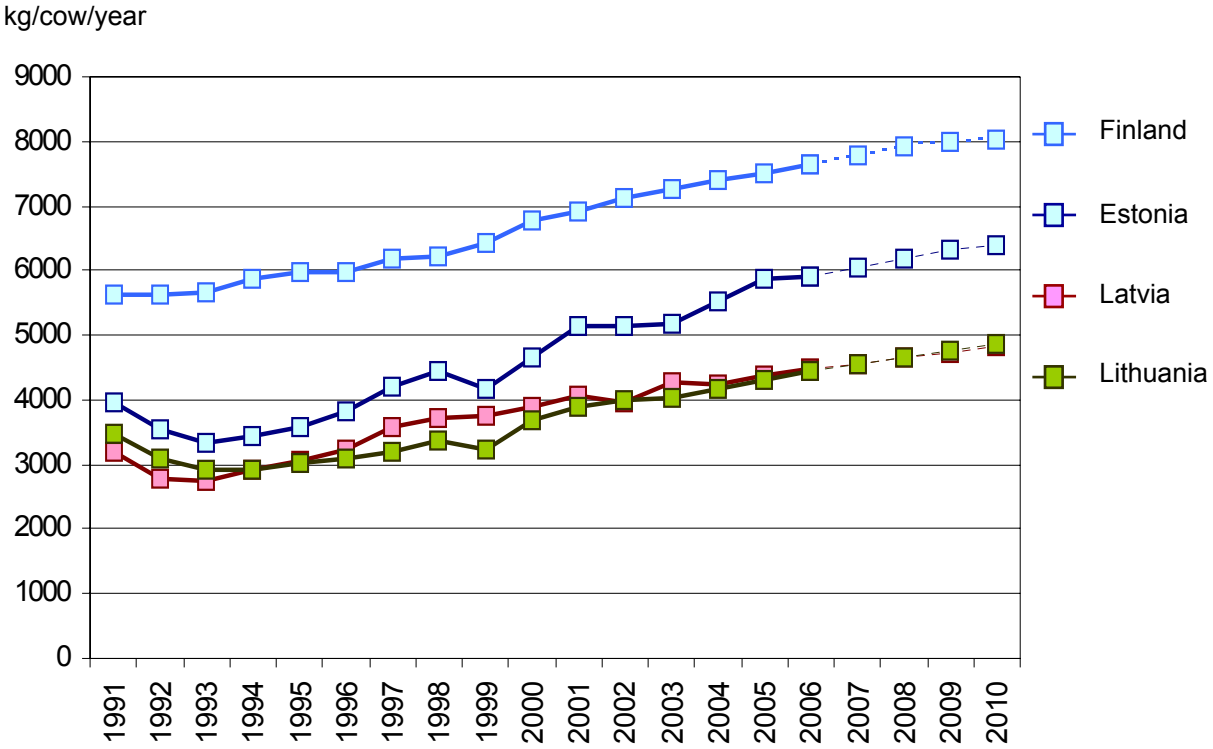
The volume of milk production dropped in all Baltic countries by 50-60% from the end of the 1980s to the beginning of 1990s. The decrease was attributed to the reforms, the uncertainty, the deep structural crisis in agriculture, and the sudden detachment from the vast internal markets of the Soviet Union. The problems experienced in milk production created sales difficulties for actors throughout the entire dairy supply chain, both in the domestic and export markets. The new private farms suffered from shortage of capital and even more so from the cost-price squeeze effect. The average quality of raw milk declined and quality also varied notably across the farms.

The technology applied on the dairy farms, however, has been modernised over the last ten years and quality has improved substantially. Thousands of dairy farms have invested in modern milking and cooling equipment with the support of EU or national subsidies, and also of dairy manufacturing companies. Well over 90% of the milk delivered for processing was high quality – first or elite grade – by the accession to the EU in 2004.

Average milk productivity per cow also declined alarmingly during the first years of the reforms and the agricultural crisis. However, productivity turned to growth in the mid-1990s and continued to rise year by year since then due to the upgraded milk production technology, to an improved market situation, and to the increase of the average farm size and total amount of milk.

Last year, average milk productivity was about 4500 kg/cow in Latvia and Lithuania, nearly 6000 kg/cow in Estonia and over 7700 kg/cow in Finland. The increase is predicted to continue in the future, however a gap between the countries is expected to prevail at least for the next few years.

Figure 2. Average milk productivity in Finland and in the Baltic countries in 1991-2010.



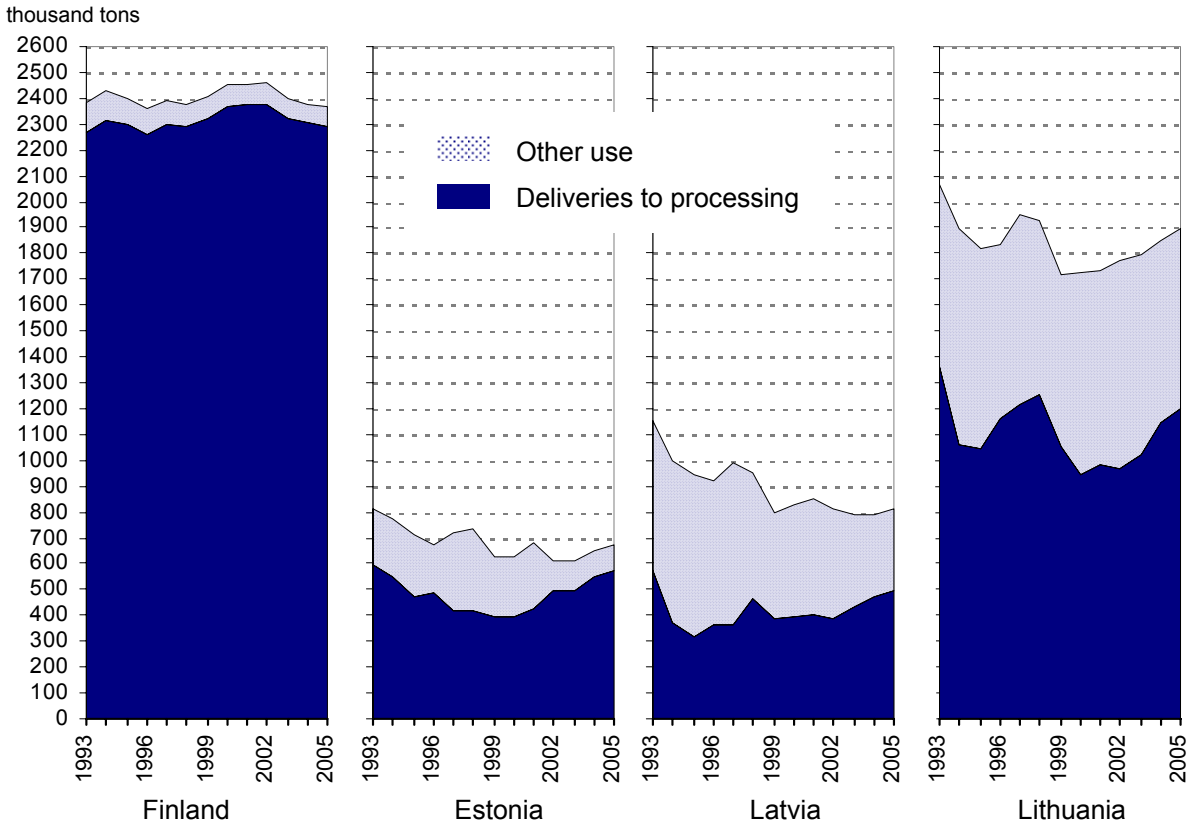
Sources: Information Centre of the Ministry of Agriculture and Forestry in Finland (TIKE,) Statistics Finland, Statistics Estonia, Central Statistical Bureau of Latvia and Statistics Lithuania.

Milk Procurement

The share of milk delivered to processing companies varies considerably among the four countries. In Finland it has exceeded 95% all the way since the beginning of 1990s, unlike in the Baltic countries, where it dropped to 55-70% in Estonia, 35-45% in Latvia and 55-65% in Lithuania by the middle of the 1990s. The amount of milk purchased by dairy processing companies decreased in all Baltic countries after the crisis on the Russian market in 1998, but turned again to growth in the beginning of the 2000s.

The decline of other milk use – farm use, feed use and sales on the local markets – has been strongly connected to the recent tendencies in the farm structure: the elimination of the smallest subsistence farms and the concurrent growth of medium- and large-scale farms. Out of the three Baltic countries, the Estonian structure of milk use is closest to its Western-European proportions, which is explained by the big weight of large-scale farms.

Figure 3. Milk use structure in Finland and the Baltic countries in 1993-2005.



Sources: Information Centre of the Ministry of Agriculture and Forestry in Finland (TIKE), Statistics Finland, Statistics Estonia, Central Statistical Bureau of Latvia and Statistics Lithuania.

The amounts of deliveries to processing companies have increased throughout the Baltic milk sector steadily since 2002, which is attributed to the improved market situation both on domestic and foreign markets:

(1) On the domestic markets, the GDP in the Baltic countries increased rapidly in the 2000s, favourably affecting food consumption. Rising incomes also induced increasing demand for dairy products.

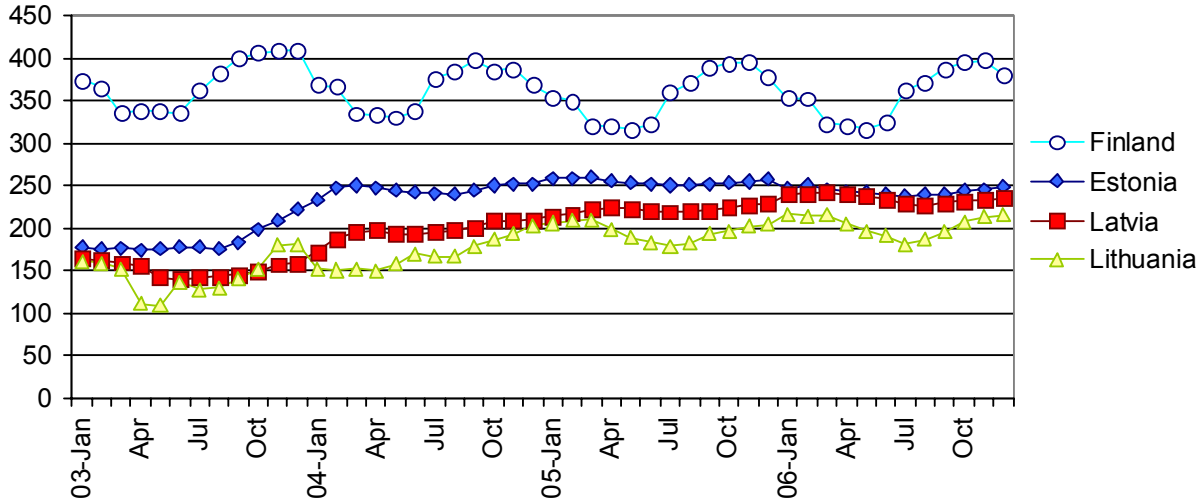
(2) The Baltic dairy companies have already had access to the EU markets as early as the beginning of the 2000s, but their rapid modernisation and the 2004 accession to the common market opened up even more export opportunities.

(3) The demand from third country markets has also increased over the recent years.

The price levels that prevail in the new member states (NMS) differed both from each other and from prices in EU-15 countries. Hence, the eastern enlargement of the EU induced substantial changes in the raw milk markets in Europe; an instant trade of raw milk emerged across the borders. Several

hundred thousands tons of milk have been sold in Central-Europe both amongst the newly acceded countries and from them to the EU-15, such as to Italy and Germany. The trading of raw milk has brought about the convergence of price levels within the entire EU and the earlier price gaps have narrowed in the recent years.

Figure 4. Monthly prices of milk in 2003-2006.



Sources: Information Centre of the Ministry of Agriculture and Forestry in Finland (TIKE), Estonian Institute of Economic Research, Latvian State Institute of Agrarian Economics, Lithuanian Dairy Association.

The same tendencies can be perceived in the Baltic countries. Sound markets and improving prospects for the dairy sector generated higher demand for dairy products. The processing companies entered into a fierce competition for raw milk and procured milk even from the neighbouring countries. In 2006 Latvian companies purchased 55 thousand tons of milk from Estonia and similarly, Lithuanian manufacturers bought 130 thousand tons from Latvia. The raw milk trade has narrowed the price gaps and made prices converge to each other and to the average EU price.

The cross-border trade in raw milk did not concern Finland, despite its expensive milk producer prices. There are several reasons for this: (1) Finnish milk production has so far met the demand of processing companies; (2) the vast majority of Finnish milk processing capacity is operated by cooperative based processors, buying raw material from their owner-members; and (3) transportation over the sea is a natural barrier to large-scale imports of unprocessed bulk milk.

Due to the different milk farm structures in the four countries, the dairy processing companies have ended up establishing largely differing milk procurement mechanisms and logistics systems. The amount of milk produced

by large- and medium-scale farms in Estonia and Finland facilitates the direct transportation of milk from farms to the processing plants. Direct transportation can not be possible to the same extent in Latvia and Lithuania, where several thousands of small farms are scattered in the countryside. Dairy companies, therefore, have established milk collection points in villages and municipal centres. Small farms take their milk to these collection points, from which dairy companies can pick up the milk in larger quantity.

The Latvian and Lithuanian dairy companies tend to make small farms pay for the additional logistics and transportation costs. In practice, this is done by paying lower prices to small milk suppliers. For instance, in Lithuania, the price paid to small producers can be as much as 20-30% lower than average, while the price paid to large-scale producers can be notably higher than average. In Finland, there are almost no differences in pricing based on farm size, mainly because the leading – cooperative based – dairy company pays the same price to all producers and it has a price-setting role due to its dominance on the market. Nevertheless, minor variances in milk producer prices can also occur in Finland; prices provided by smaller dairy processors or in certain regions may deviate from the mainstream.

Dairy Industry

The structure of Finnish dairy industry has been stable over the past 15-20 years. Although the last decade has witnessed numerous mergers and structural changes in the field of cooperative dairy associations, they did not affect the structure of dairy industry. The leading dairy is owned by cooperative dairy associations, which in turn are owned by milk producers. This dominant concern is followed by a medium-sized privately owned dairy and nearly 50 small-scale milk processors. The small dairies specialise in certain product groups, such as fresh cheese or other fresh products or they only provide milk. In 2005, small dairies contributed less than 10% to the total sales revenues of the Finnish dairy industry.

Compared to Finland, the structural development of the Baltic dairy industries was a stormy process especially in the first years of independence in the 1990s. The giant dairy processing companies inherited from the previous economic system were split up into several smaller production units, which were privatised separately. In Estonia, 11 large dairy companies were divided into 36 smaller units and at the same time 60% of processing capacity was transferred into the ownership of milk producers or their cooperatives. The remaining processing capacity was sold to domestic private investors. Milk producers were also favoured in Latvia and Lithuania, so the privatisation process resulted in

a similar ownership structure throughout the Baltic countries by the end of the 1990s.

Market difficulties put dairy companies to a serious test through the 1990s and dozens of them quit or were squeezed out of the market, most recently by the bankruptcy wave caused by the Russian crisis in 1998. This set the stage for a development period characterised by strong concentration, i.e. mergers and acquisitions. The CR4 (concentration ratio 4; the share of the four largest companies in the total sales of the industry) increased e.g. in Lithuania from 29% in 1994 to 56% in 1998. Concentration has now finally resulted in a structure dominated by 2-3 strong dairy companies in each Baltic country today. The rest of the dairy manufacturers are medium-sized companies or small specialised processors which target small market segments.

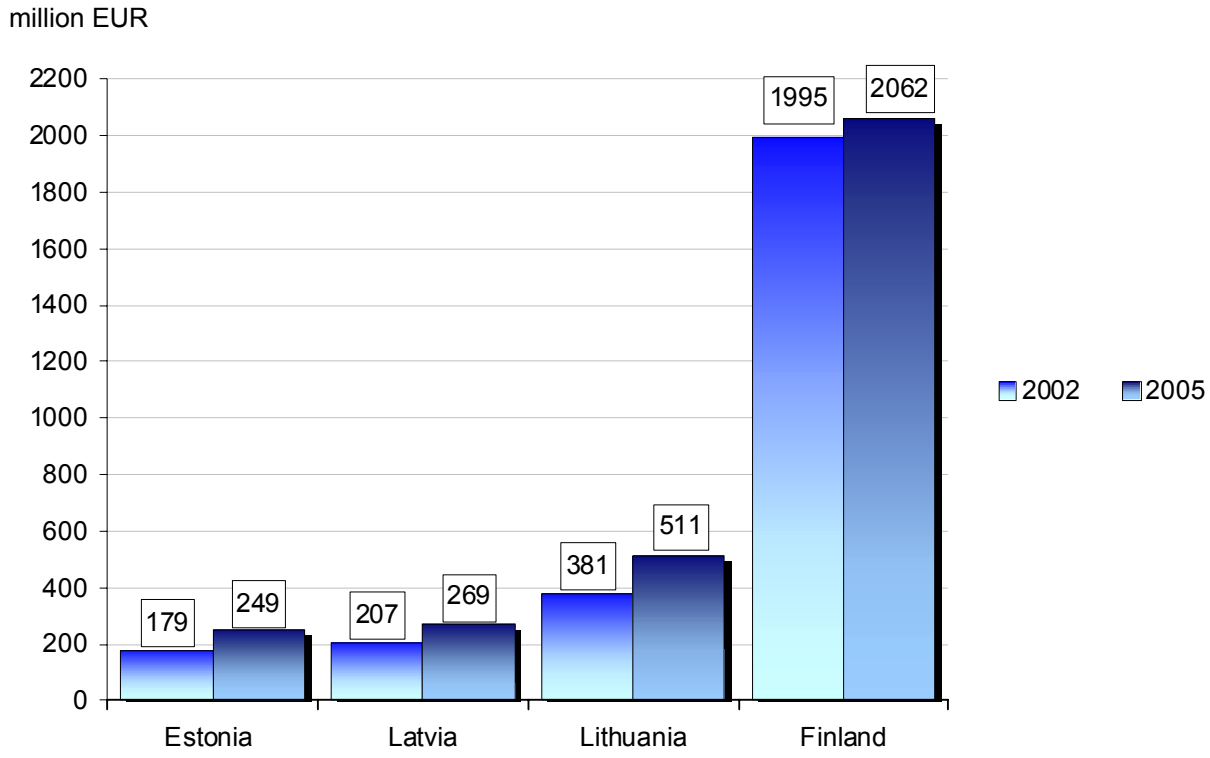
The first foreign investors arrived to the Baltic dairy industry at the end of the 1990s. Estonia has been the most popular target country, where the share of foreign ownership in the aggregate company capital of the dairy industry amounts to nearly 40%. The share of foreign ownership is 15% in Lithuania and 8% in Latvia. The shares of foreigners were even slightly higher prior to the EU accession, but domestic investors have bought out some of the foreign-owned capital in Estonia and Lithuania. Due to recent transactions, the share of foreign ownership has also increased in Finland, reaching about 5-6% in the aggregate company capital of the dairy industry.

The sales revenues of the dairy industry increased between 2002 and 2005 in each of the four countries. The pace of growth, however, differs between Finland and the Baltic countries. During those four years the sales revenues in Finland grew 3.4%, while the growth rate was much sharper in Estonia (39%), Latvia (30%) and Lithuania (34%). A parallel difference can be observed in the growth rates of sales revenues per employee, which figure increased in Finland 4% between 2002 and 2005, while it jumped up notably in Estonia (43%), Latvia (40%) and Lithuania (26%) from 2002 to 2005. The absolute levels are obviously much lower in the Baltic countries than in Finland. Dairy processing is still generally a more labour-intensive field in the Baltic countries.

Profitability in dairy processing has varied by countries and especially by companies. The average profit to sales ratio in the Finnish dairy industry has remained under one per cent over the last two years. EU membership has increased the differences in profitability among the Baltic dairy industries. The average profit to sales ratio slipped into the red in Estonia in 2004 and 2005. The most important reason for that was probably the sudden, almost 50% price rise of raw milk, which occurred already at the end of 2003 as a result of EU membership expectations. Within the Baltic countries, the Estonian dairy

companies apparently paid the highest prices for milk during the initial years of EU membership. This fact adversely affected their profitability. The average profit to sales ratio was around 2-3% in Latvia and even higher, 3-4% in Lithuania.

Figure 5. Sales revenues of the dairy industry.



Source: Statistics Finland, Statistics Estonia, Central Statistical Bureau of Latvia and Statistics Lithuania.

In each country, there is at least one manufacturer that clearly stands out of the average with much higher profitability. On the other hand, there are several companies with practically zero profitability or even loss-makers e.g. in Estonia. The favourable price developments experienced on the European and world markets over the recent months are expected to improve the profitability in the dairy industry in most of the EU countries.

Foreign Trade

The natural conditions for agricultural production in the northern countries are very suitable for the dairy sector. The production of milk and dairy products largely exceeds domestic demand in all four countries. Their self-sufficiency ratio stayed well over 100% even during the crises in the 1990s i.e. the

economic and structural reforms in the Baltic countries, the economic recession in Finland, or the set-back in the Russian markets.

Production and processing capacity was modernised rapidly in the Baltic milk supply chains and the product-mix was shifted from conventional bulk products to more differentiated and higher value added products, such as fresh products, yoghurts and cheese. Income growth has induced increasing consumption of branded dairy products in the Baltic markets, where domestic dairy companies have managed to maintain their market positions in the initial years of EU membership. While the imports of dairy products increased sharply in several Central-European NMS, the development in the Baltic countries has been much more moderate. The share of domestic manufacturers in the Baltic dairy markets remained high, between 86-92%, or even rose slightly e.g. in Estonia, compared to the years prior to EU membership. In the Finnish market, the long-lasting share of domestic manufacturers of over 93% went down slightly to 91% over the years 2004 and 2005.

Table 1. The value of foreign trade in milk and dairy products in Finland and in the Baltic countries (million €).

	Finland			Estonia			Latvia			Lithuania		
	Impor	Expor	Balanc	Impor	Expor	Balanc	Impor	Expor	Balanc	Impor	Expor	Balanc
2000	90	195	105	12	38	26	6	17	11	9	103	94
2001	93	259	166	15	49	34	12	21	9	37	148	111
2002	97	274	177	16	60	44	17	23	6	36	169	132
2003	102	275	173	20	63	42	19	20	1	14	152	138
2004	115	266	151	39	58	20	20	22	2	11	152	141
2005	136	275	139	21	76	55	23	40	18	13	220	207
2006	150	298	147	16	83	67	31	63	32	35	246	211

Source: Eurostat foreign trade database.

The trade balance of milk and dairy products has been positive, i.e. exports have surpassed imports in all four countries in the 2000s. In Finland the positive dairy trade balance has slightly declined primarily due to the expanding imports. In the Baltic countries EU membership has brought about rapidly growing exports, and consequently constantly improving dairy trade balance, which has been increasing even if the raw milk trade is left out of the calculations. A shift towards highly processed and higher value added or special products can be perceived in the exports structure.

Conclusions

The milk supply chain has long been the flagship of the Finnish and Baltic agri-food sectors for obvious reasons. In the northern latitude it would be unrealistic to specialise in crop products such as grain or fruit and vegetables, so the

climate conditions and fertile pasture areas determine the orientation focused on milk production.

The foreign trade performance and statistics confirm that Finnish and Baltic dairy sectors have comparative advantages on export markets. Although the dairy sectors in these countries differ from each other with respect to the structure of milk producing farms, dairy companies and ownership relations, they all have achieved strong positions – compared to their size – in the foreign trade of dairy products.

On the other hand, dairy exports also make up a field in which these countries show structural differences; they specialise in different product groups and target countries. The exports of the Finnish and Lithuanian dairy sectors resemble each other as far as the product-mix and volumes are concerned. They also compete mostly on the same markets. The largest impediment in Latvia and Lithuania has been their fragmented farm structure, so farm concentration is crucial for improving competitiveness. Competitiveness has improved considerably in the Baltic dairy sectors before and after the EU accession due to hygienic developments, investments, modernisation and productivity growth.

Besides the expanding foreign trade in goods, the globalising environment has facilitated the increase of trade in capital. Foreign investors showed the highest interest quite interestingly in the smallest milk supply chain out of the four countries; Estonia has attracted foreign investments both to dairy processing and milk production from several countries. Finland and Lithuania have also received notable foreign investments into their dairy industry.

It is anticipated that all four dairy sectors will take part in the foreign direct investment (FDI) flows in the coming years. The Baltic countries are expected to be mostly recipients of foreign capital, while Finland can participate in the internationalisation process either as an investing or as a host country.

References

1. Hein P. (2006): *Competitiveness and Comparative Advantage in the Estonian Milk Sector – A PAM analysis of different farm types and processing enterprises,* PhD dissertation, Humboldt Universität, Shaker Verlag, Aachen.
2. Jansik C. (2008): *Suomen ja Baltian maitosektorien vertailu. Paper presented in Maataloustieteen päivät*, Helsinki.
3. Niemi J. & Ahlstedt J. (2007): *Finnish Agriculture and Rural Industries 2007*. MTT Agrifood Research Finland, Economic Research, Helsinki.
4. Lithuanian Institute of Agrarian Economics*: Rinkotyra. Žemės ūkio ir maisto produktai,* Vilnius. Various issues from 2004-2007.

5. Saron T. (2006): *Estonian Dairy Sector in 2005*. Eesti Piimaliit, Tallinn, mimeo.
6. Pyykkönen P. & Virolainen M. (2007): *Osuusmeijerit myötätuulessa*. Osuustoiminta 4/2007, pp. 36-38.
7. Data bases and publications of the national statistical institutes: Statistics Finland, Statistics Estonia, Central Statistical Bureau of Latvia and Statistics Lithuania.
8. Interviews with researchers and official and business representatives of the Finnish, Estonian, Latvian and Lithuanian dairy supply chains.

Wiesław Zapędowski
Permanent Representation of the Republic of Poland in Geneva
Poland

Liberalisation of Agricultural Trade within the WTO: A Challenge for European Agriculture

WTO Doha Round Negotiations concern the liberalisation of the markets for agricultural goods, industrial products and services. Nevertheless, they will cause the greatest changes in the agricultural sector. They will lead to the reduction of customs protection in the developed countries and to the elimination of export subsidies. The greatest changes in the conditions of imports to the EU will concern the sectors of meat, sugar, cheese, fruit and vegetables. The disparities between customs duties on primary and processed products will be reduced. The EU will maintain the ability to sustain the current programmes of support for agricultural producers.

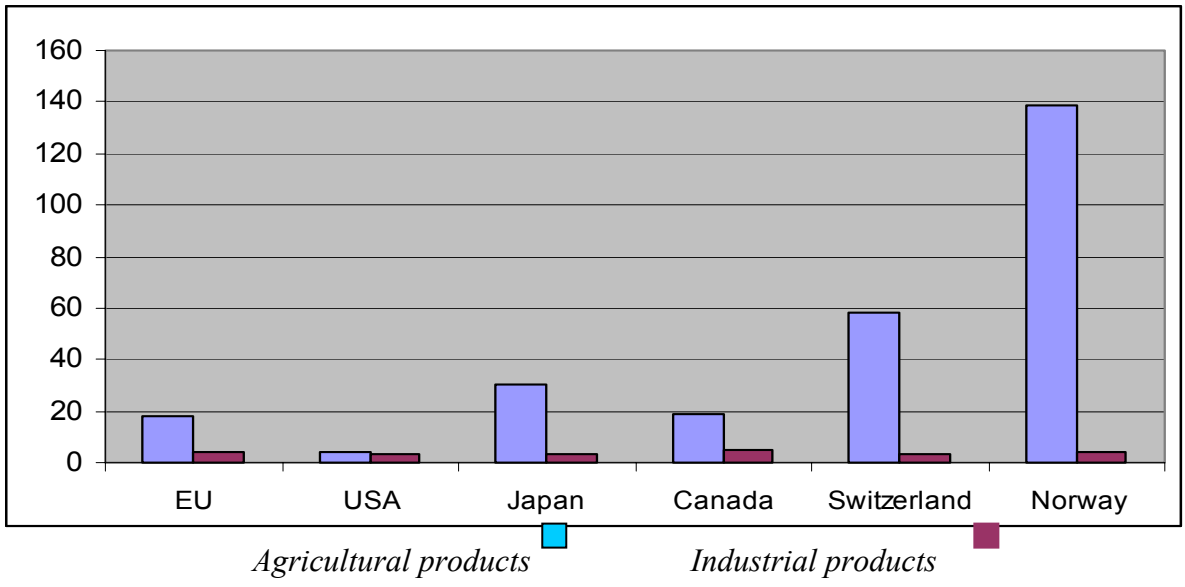
1. The Basis and Conditions of the Process of Liberalisation of Trade in Agricultural Goods

Although the phenomenon of contemporary globalisation could be observed already since 20 years, any discussion on this subject matter provokes extreme value judgements and rarely provides any unequivocal answer to the question concerning its consequences. The difficulty of the analysis of present and future outcomes of this process is connected with its scale and its impact exerted upon all the sectors of economic and social life. Usually, any description of the development of globalisation comprises some reference to the liberalisation of trade in goods and services, regarded as one of its necessary conditions. For the same reason the World Trade Organisation (WTO) is perceived as an institution that promotes and that is largely responsible for the shape and pace of globalisation. Indeed, the WTO – as an organisation comprising 151 members[1] – provides a forum, at which the rules of global trade and measures toward its liberalisation are decided. Nevertheless, it should be noted that the purpose of this organisation as such is just to enable the conduct of multilateral negotiations, the outcome of which is entirely dependent on the decisions of the member states. WTO's strength as and organisation is manifested only in the oversight of compliance with the negotiated rules, by means of a system of dispute resolution and the decisions of arbitration panels

[1] As of April 2008. Accession procedures are currently opened with regards to 28 countries, including the Russian Federation, Iran, Iraq, Kazakhstan, Serbia, Algeria and Azerbaijan.

and appellate bodies. Therefore, the origins of the current round of negotiations should be sought in the sovereign decisions of the states involved. The initiation of negotiations, the determination of their goals and the agreements at the various stages are not imposed by the WTO. The Doha Round negotiations concern trade in agricultural goods, industrial products and services, and they cover horizontal issues: of trade and the protection of the environment, administrative measures serving to facilitate trade, rules concerning protection measures and the ways, in which the particular situation of the developing countries should be taken into account.[2] When launching the negotiations, it was agreed that future obligations of the developed countries would be much more extensive than those of the developing countries. Another agreement of significance for the current course of the negotiations consisted of the linkage between the level of ambitions in agricultural and industrial negotiations.[3] The consequence of such agreements consists of greater pressure to open up the agricultural markets in the highly developed countries, as it is indeed in this area that, the greatest customs barriers exist, on the one hand, and the export capabilities of the developing countries are concentrated indeed on this area, on the other hand.

Figure 1. Average customs duties on agricultural and industrial products, %



Source: WTO.

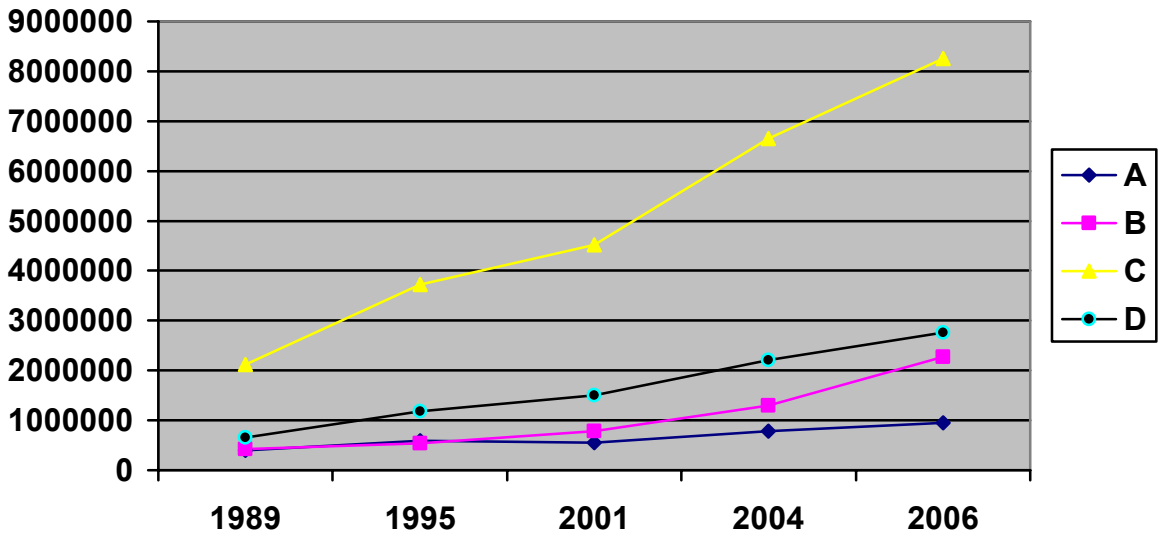
Although agriculture is just one element of this picture, one cannot disregard its impact upon the evaluation of the whole. Such impact certainly does not result from the scale of trade in world trade with agricultural goods, but

[2] *Ministerial Declaration from Doha*, November 2001. Source: WTO
[3] *Ministerial Declaration from Hong-Kong*, December 2005. Source: WTO

from the high rank of the functions fulfilled by agriculture in any society, and its significant political significance in many countries. In the initial phase of negotiations some developed countries, such as Switzerland, Norway, Japan and the EU tried to promote the consideration in the negotiations of two elements: non-trade concerns and the multifunctional role of agriculture in the economy. The discussion concerning these matters gave rise to many emotions and resulted in the emergence of a track record of major accomplishments in the form of scientific research work conducted also at the OECD.[4]

As a result of the opposition of the countries that are agricultural produce exporters, these problems are currently not included in the scope of the negotiations. Nevertheless, they are still present in the internal discussions in the different countries and will certainly be taken into account when assessing the final negotiation package.

Figure 2. Global exports of agricultural products, fuels and mined minerals, industrial products and services, USD millions, current prices



A - agricultural products, B – fuels and mined minerals, C – industrial products, D - services. Source: WTO.

The negotiations are continuing for the seventh year now, none of the deadlines agreed in that period have been observed. The talks have also undergone periods of intensive work and periods of crisis. The different stages of the negotiations were usually connected with the political agenda in the major countries and with the situation on the agricultural markets. Presently, the most serious limitation has to do with the presidential elections in the USA and with the possible difficulties that might be encountered by the present administration

[4] *Multifunctionality- Towards an Analytical Framework*, OECD, 2001

when presenting the results of the negotiations in Congress. The element that favours this process, in turn, consists of the strong business cycle trend on the agricultural markets, which enables to reduce the concerns attached to the reduction of the market protection measures in the highly developed countries.

2. Objectives of the Main Participants of the Doha Round Negotiations and the Role of EU Member States in the WTO Negotiations

Any negotiations on such scale depend on the initiative of the leaders. In the Doha Round this role is fulfilled by the EU, USA and Brazil. Especially at the last and very difficult moment the cooperation between these countries enables the continuation of the negotiations. The second, also very important group consists of approximately 30 countries; apart from the EU, USA and Brazil, it includes China, Japan, Canada, India, Switzerland, Norway, Argentina, Uruguay, Australia, South Africa. Negotiations in this group are conducted on an informal basis, and only later on, as particular problems are resolved, they are transferred to the formal level with the participation of all the members. Such structure of negotiations is dictated by practical considerations, but it also stems from the fact, that any agreement, in order to make sense, must cover the countries with the greatest share in world trade.

Generally speaking, the objective of the EU in the agricultural negotiations is to assure the maintenance of the conditions defined by the framework of the Common Agricultural Policy of the EU, reformed in 2003. The EU also seeks to maintain a balance between its own concessions, and the concessions of the USA and other partners from the group of highly developed countries. For these reasons, in the area of market access, the EU negotiators are trying to gain acceptance for the concept of smaller reductions of customs duties on sensitive products in several sectors: meat, dairy products, fruit and vegetables. On the other hand, they expect a real reduction of support to agricultural producers in the USA and the opening of agricultural markets in the highly developed countries, including Japan, Canada, Switzerland and Norway. The EU is also very strongly committed to the gaining of improved protection of geographic origin indications.

The main objective for the USA is to attain improved access to the EU market and to the markets of a number of developing countries. The defensive objective is to gain flexibility for the programmes of support for agriculture. However, differently than in the case of the EU, the USA does not have as yet any specific long-term policy in this regard. Work on the legal act concerning support for agriculture (Farm Bill) is still in progress, which constitutes a major disruption of the negotiations.

Brazil is an exporter of farm products with the greatest growth potential. For obvious reasons it is most interested in the access to markets in many sectors, i.a.: meat, sugar, soybean, fruit and vegetables. In the negotiations Brazil often represents the group of developing countries, which are agricultural exporters, and at the same time are afraid of granting concessions in the industrial and services sectors. The necessity to balance these positions limits the possibility to achieve offensive objectives in agriculture.

The negotiating capabilities of India are limited by its defensive attitude, as far as the opening of the agricultural market and the market for industrial goods is concerned. In the services sector, in turn, the objective of India is to gain access to the market for services provided by physical persons in the highly developed countries.

The general picture of countervailing negotiation interests may be supplemented by the very defensive position of Japan, Korea, Switzerland and Norway in the agricultural negotiations and equally cautious position with regards to any opening of their markets of the group of developing countries (G-33 group, i.a.: Indonesia, China, Philippines, Pakistan, Egypt).

The EU member states are represented at the WTO by the European Commission. Negotiators from the European Commission are responsible for the preparation of the negotiating position, its presentation together with its justification to the member states, and subsequently for the progress and results of the negotiations. Ultimate decisions are made by the General Affairs and External Relations Council of the EU (GAERC). At particular moments, the Council adopts conclusions, which, at the same time, constitute recommendations concerning the direction of the conduct of further negotiations by the European Commission. In the course of the negotiations, their various particular elements are discussed with the member states in the framework of the Article 133 Committee.

The role of the members states consists of monitoring the negotiating process, supporting the activities of the European Commission by communicating their own comments and judgements, as well as informing the European Commission about the negotiation objectives specific for the given country. The European Commission always faces the difficult task of balancing often very diverse negotiation objectives of the EU member states, but in return it receives a very strong negotiating mandate, which permits it to present a strong position vis-à-vis the other partners.

3. The Main Elements of the Doha Round Agricultural Negotiations

At the present stage the negotiations are leading up to the determination of modalities for the preparation of future lists of concessions. The talks are conducted on the basis of the proposal prepared by Ambassador C. Falconer,[5] who is the Chairman of the Agricultural Committee, which constitutes the forum for these negotiations. The respective proposals concern the conditions of liberalisation of access to agricultural markets, the limitations and explanation of the rules governing the application of instruments of support for the agricultural producers, as well as the limitations and elimination of support for exports.

All of these elements are of very essential significance for the EU. Owing to the general principle of conducting the WTO negotiations, which is that nothing is agreed until the moment, when everything is agreed, at present one can only surmise what will be the final solutions adopted. Therefore, the parameters indicated below are the result of averaging the present negotiating positions and do not present the end results of the negotiations. It should also be remembered that most obligations will be spread over a five-year implementation period. Hence, for example, the possible 50% reduction of customs duties for a given tariff line will be achieved only by the end of that period.

3.1. Negotiations in the Area of Market Access

For defensive reasons the most essential are the agreements concerning market access.

For the developed countries the reduction of customs tariffs will take place according to the following rule: the higher customs tariff, the greater its reduction. A maximum customs tariff threshold will also come into force, probably at the level of 100%. There will be some exceptions to this rule, both reducing and increasing the reduction of customs tariffs.

For particularly sensitive products it will be possible to apply for a reduction diminished by 1/3, 1/2 or 2/3. Each country will have the right to determine, which products will be regarded as sensitive, but they will be subject to a limit set as 4% to 6% of all the tariff lines of agricultural products.

Table 1. Customs tariffs reduction formula for the developed countries

Present customs tariff	0% - 20%	20% – 50%	50% - 75%	> 75%
Foreseen reduction	50%	57.5%	63.5%	69.5%

[5] *Revised Draft Modalities For Agriculture*, WTO, 2008

The compensation for the exporters for the designation of specific products as being sensitive, will consist of the requirement to open tariff rate quotas (TRQ) serving to ensure market access. The customs tariffs applicable to these quotas will have to be lower than the customs duties applied outside the quota system.

The volume of consumption will be calculated for the different tariff lines and such data will also be part of the package being agreed on. The point is to make sure that when the decision on the acceptance or rejection of the results of the negotiations will be made, the consequences of recognition of specified products as being sensitive should be known. This approach should help to avoid the situation, which occurred in the course of negotiations of the Uruguay Round, when it came to divergences in the interpretation of the practical application of the agreed rules.

Table 2. EU customs tariffs in selected sectors

	Average customs tariff [%]	Maximum customs tariff [%]
Products of animal origin	26.7	219
Dairy products	56.9	264
Fruit and vegetables	10.7	199
Sugar and sugar confectionery	32.6	134

For the EU, sensitive products will probably consist of selected tariff lines from the sectors of meat, milk, sugar, fruit and vegetables. The decisions concerning the selection of specific tariff lines will probably be influenced by a number of factors. Regardless of the already political reasons behind the positions of the EU member states, it may be presumed that the decisions will be based on price projections and on the assessment of competitiveness of the agricultural producers from the EU, taking into account the magnitude of the WTO quotas.

Presently, the imports of many agricultural products to the EU take place on preferential principles determined by bilateral or regional free trade agreements. In the course of the Doha Round negotiations a number of developing countries have voiced their concerns that the reduction of most favoured nation (m.f.n.) customs tariffs will naturally cause the limitation of such preferences. It has been argued that this can lead to the loss of advantage on the market and to exposure to the risk of losing the market. As for many of these countries the EU market is the most important destination of their exports, the resulting consequence could consist of major deterioration of their economic situation. This problem was investigated, i.a., by the OECD, and although the

respective research results[6] did not confirm any grounds for these concerns, it was nevertheless decided that for any specific group of products the duration of the period foreseen for customs tariff reduction could be much longer than that foreseen according to the implementation schedule.

Another element of the negotiations, which might in turn accelerate and increase the reduction of tariffs, consists of the discussion on additional liberalisation of trade in tropical products. The list of potential products, submitted by the exporters, is very extensive and includes, i.a.: sugar, rice, citrus fruit, apples, strawberries, tomatoes and potatoes. The EU is trying to obtain a solution, which would enable to eliminate from that list those products, which are also produced in the temperate climate zone.

It should also be expected that it will come to significant limitation of tariff escalation, which implies a reduction of disparities of customs tariffs between to primary and processed products.

3.2. Support for Agricultural Producers

The main objective of the negotiations consists of the limitation of the support described by the WTO as the "amber box" and the "blue box" category, namely the support attached to production and directly influencing the prices obtained by the producers.

Obligations requiring even a substantial reduction of subsidies of that kind will not constitute any major problem for the EU. Both the predominant majority of the support granted from the first pillar of the CAP (Single Payment Scheme /SPS/ – for the old EU members, and Single Area Payment Scheme /SAPS/ – for the new members) and the second pillar support (rural development) belong to the third category – the "green box". It comprises support not coupled with production (it has no bearing upon the decisions made by the producer). Presently it is not subject to any restrictions. However, the Doha Round might result in changes of the criteria applicable to "green box" support, and thereby it might make it more difficult in the future to possibly modify the SAPS and SPS. For the position of the EU, the internal discussion taking place in the "health check" context on the future model of support in the EU, is also of essential significance.

According to the current rules, new EU members have the right to apply the SAPS (payments determined on the whole country basis, at the same rate per 1 hectare for all farmers) on the basis of rules applicable to the period of

[6] D. Lippoltd, P. Kowalski – *Trade Preference Erosion: Expanded Assessment of Countries at Risk of Welfare Losses*, OECD, 2005.

transition until the end of the year 2010 (Bulgaria and Romania until the end of 2011). After this period it will be required to switch over from SAPS to the regionally determined SPS model. Regardless of the results of the "health check", the EU negotiators are trying to assure the possibility of such transfer for the EU. The problem consists of the fact that the current Doha Round negotiations will probably result in changes of the criteria applicable to SPS type programmes, structural aid programmes (through investment support) and to support measures provided as part of regional development support. The changes will consist of the introduction of the requirement of a fixed and unchangeable reference basis period, which will serve for the determination of the magnitude of provided support.

It should be noted that with regards to this element of the negotiations the European Commission also has its offensive objectives, consisting of efforts to block the possibility of correction of the basic reference value of the support granted to farmers in the USA.

3.3 Competition in Exports

The third of the main pillars of the agricultural negotiations consists of competition in exports. The obligations of the EU will consist of the gradual elimination of subsidies to exports. The existing list of concessions provides for the possibility of extensive support of agricultural exports in almost all of the most important sectors. Decisions in this regard are taken by committees managing the particular markets. The last such decision concerned the reintroduction of subsidy payments attached to pork exports. In the past, the EU supported, i.a., the exports of wheat, rice, rape, sugar, butter, milk powder, cheese, beef, pork, poultry meat, eggs, wine, and a number of fruits and vegetables. The recently observed growth of prices on world markets causes the reduction of the role of subsidies to exports. Nevertheless, in the case of price adjustments or large production surpluses, the lack of a possibility to grant subsidies (probably starting from the year 2013) might constitute a serious obstacle hampering the exports of some products.

In return, the EU expects the restriction and elimination of other forms of support, which are applied, i.a., in the USA, Canada, Australia and New Zealand. Among other things, this applies to food aid granted in kind with the possibility of subsequent sale on a different market, the subsidising of loans and insurance against risk in exports, and also the activities of export monopolies.

3. Assessment of Potential Impact of the Negotiations upon the Situation of Central and Eastern European Producers

If the forecasts concerning the growth of world prices of agricultural products are confirmed and if the European Commission succeeds in achieving its objective – the continuation of support for agricultural producers by means of measures belonging to the "green box" category, the most significant changes will occur in the conditions of market access. When considering the potential effects of new EU obligations it may be presumed that the scale of opening of the agricultural market of the EU will be much greater than the one that took place as a result of the Uruguay Round. The changes will most strongly affect the sectors of meat, milk, sugar, fruit and vegetables.

Market opening will assume both the form of reduced m.f.n. tariffs (imports from any direction with no quantitative limits) and the form of tariff rate quotas at much lower tariff levels than those of the m.f.n. customs rates. The option to apply the special safeguard clause (SSG) will probably also disappear. The SSG clause currently allows to increase the m.f.n. customs rate in the case of excessive imports or in the case of imports of low customs value.

Table 3 shows how a different end effect may be achieved, depending on whether the given commodity will be designated as being sensitive and what variance from the formula will be applied. The EU agricultural tariff comprises 2213 tariff lines. It may be assumed, therefore, that as a result of the negotiations a limit on sensitive products numbering between 88 and 132 tariff lines will be adopted, which will not be sufficient to grant protection for all the products requested by the EU member states. Therefore, the first task will be to arrive at an agreement within the EU on the list of products eligible to be classified as sensitive products. The choice will not be easy, owing to the necessity to open TRQ quotas for all such products. The customs rate within the scope of these TRQ quotas may be even lower than the one resulting from the maximum reduction, and the volume of the quotas may be set at the level of 4% to 6% of the respective consumption. The objective of TRQ is to assure the best possible conditions of market access, therefore it ought to be presumed that such imports will indeed occur in reality. The determination of a single quota for several tariff lines (e.g. meat) may cause the occurrence of a situation, where the entire quota might be exhausted by imports of just one most valuable product from the respective group. Therefore, a key issue consists in the question concerning the method of determining the TRQ magnitude. Quotas measured in terms of a percentage of total consumption in a given sector would be ample, therefore one of the most important determinants will consist in the possibility

of designation of only some tariff lines from a given sector as sensitive ones and of the determination of consumption corresponding only to those lines.

There will also be the possibility to split a sector into categories. Thanks to this, in the case of fruit and vegetables it will be possible to determine consumption separately for fresh fruit, dried fruit, processed fruit products and juices, whereas in the case of meat to separate the consumption of deep-frozen meat from that of fresh or cooled meat, or to separate meat from processed meat products.

Table 3. Anticipated EU customs tariffs and the magnitude of consumption in selected sectors

Product description	Current duty [%]	Duty after maximum reduction [%]	Duty after minimum reduction [%]	Consumption volume in the sector [tonnes'000]
Beef, fresh or cooled	85.2	26.0	65.6	8155
Beef, deep-frozen	141.8	43.2	100	8155
Pork, without bones, fresh or cooled	25.4	10.8	20	7200
Pork, without bones, deep-frozen	26.4	11.1	21.4	7200
Poultry meat, Without bones, deep-frozen	87.9	26.8	67.7	10400
Milk SMP	80.3	24.5	61.8	950*
Butter	89.8	27.4	69.1	1909
Tomatoes	53.8	19.6	42.5	16268
Apples	38.6	16.7	31.3	11780
Cane sugar, for refining	130.3	39.7	100	17430
White sugar	168.7	51.5	100	17430

*consumption SMP.

Source: WTO.

The magnitude of TRQ, however, cannot be limited everywhere. The most difficult situation may concern sugar, due to its large consumption, the lack of the possibility of its partition and the possibility of elimination of the SSG special safeguard mechanism.

4. The Landscape after the Battle – the Shape World Trade in Agricultural Commodities after the Doha Round Negotiations

WTO negotiations constitute the greatest, but not the only challenge for European agriculture. The view has prevailed for some time that a conflict existed between regional and multilateral agreements. Presently it may be claimed that both these processes support one another and progress in parallel. For the EU, the most important aspect will consist in the future of the agreement

with MERCOSUR countries.[7] The talks to date have shown that these countries expect clear improvement of access to the agricultural market of the EU and particularly for such goods, the production of which in the EU is most protected.

New opening of markets combined with the elimination of the possibility to subsidise EU exports may cause difficulties for the management of surpluses, which will lead to falling prices and the decline of production. Such concerns are not universally prevalent, owing to forecasts indicating the persistence of high prices of agricultural products and the growth of demand for food.

Stronger reservations are aroused by the lack of agreed arrangements concerning the elimination or limitation of the possibilities of introducing export restrictions. Such instruments are being increasingly used and they undermine the stability of supplies of primary products. Difficulties with the assurance of supplies might in turn lead to the necessity to revise the hitherto existing approach to various methods of boosting production, e.g. GMO or the use of hormones to feed animals.

The EU may also have greater problems with the maintenance of high health standards and animal welfare standards. The developing countries argue that the EU replaces customs barriers with sanitary barriers and they demand the relaxation of existing rules in this regard. They also point at the fact, that without technical and financial support for the development of their own inspection services, they will not be able to take advantage of the newly opening up export opportunities. The problem of animal welfare was not upheld in the negotiations. It was originally discussed in the context of support for producers and market access. The European Commission failed to convince its partners, however, that the additional costs incurred by the EU producers should be compensated for as part of the "green box" support framework. This puts the EU producers in an unfavourable situation, and at the same time does not provide for guarantees to consumers that they are buying products made in compliance with the principles of decent treatment of animals.

European agriculture will also have to face the debate on the future of energy crops production. The basic question will have to do with the issue of the opening of the EU market for bio-fuels. There are disparate views within the EU in this regard, whereas bio-fuels are on the list put forward for trade liberalisation both within WTO and in relations with MERCOSUR.

One of the main objectives of the Doha Round is to create the conditions for the growth of exports of developing countries, and especially the poorest states. The question should therefore be raised, whether the results of the

[7] Mercosur (Mercado Común del Sur – Common Market of the South) comprises: Argentina, Brazil, Paraguay and Uruguay.

negotiations will really meet the expectations. The conclusions drawn from the survey by the WTO Secretariat concerning the effects of the Uruguay Round[8] point at the fact that not all the developing countries were able to take advantage of the opportunities that were opened for them. Three causes of this are usually put forward: insufficient opening of the markets of the developed countries; insufficient scale of the liberalisation among the developing countries, which prevents the development of regional trade; and insufficient technical and financial capabilities for the implementation of any exports offensive. A comparison of export performance of key products[9] indicates that exports are slowly being concentrated in the hands of the group of leading exporters. For example, the six larges exporters have approximately 80% share of global exports of sugar, cheese, milk powder, beef; approximately 90% of poultry and oil plants, as well as some.70% of fruit and vegetables exports.

In the course of the Doha Round clear emphasis was put on the liberalisation of the markets of the developed countries. The expected concessions on the part of the developing countries will be small, and even some of the presently negotiated new mechanisms (Special Safeguard Mechanism – SSM) might cause the increase of customs tariff protection of selected products. Therefore, it should be presumed that the new trade conditions without support measures will not suffice to improve the situation of many developing countries. Hence, additional initiatives are being undertaken. One of them consists of the Aid-for-Trade programme, the objective of which is to enhance the export capabilities of the weakest developing countries. Great hope is also attached to the negotiations on "Trade Facilitation", which are supposed to bring major savings by simplifying the technical-formal trading conditions.

[8] Studies on the Implementation and Impact of the Agreement on Agriculture - A Compilation by the Secretariat WTO, 2000.
[9] Member's participation in the normal growth of world trade in agricultural products, WTO, 2007.

"Common Agricultural Policy after 2013 – expectations, suggestions, proposals" – the opinions of participants of the discussion in Białowieża, 6 June 2008

Prof. W. Józwiak (Poland):

I take a position towards four issues, in my opinion important to Poland. The first one concerns the change in the agrarian structure. Generally, the SAPS system may be positively evaluated – it gave the opportunity to increase the incomes for numerous small agricultural producers; although it did not generate a chance for their further development, it helped them safely survive the time before some type of retirement though. Instead, the present system created a chance for bigger agricultural holdings, i.e. every tenth holding (there are other estimations, indicating that only 4% of holdings are large agricultural holdings). Nevertheless, the current system of subsidies generated barriers in land trading, thus the pace of agrarian changes decreased as compared to pre-accession period. Therefore, the newly discussed SPS system, or one of the two forms of the system, should, from our point of view, take into consideration the most important premise, i.e. that the changed system permits an increase in land trading. It is the basic premise for the change in agrarian structure. Best-managed holdings will be able to develop if the land market begins functioning without substantial barriers. Thus the issue of activating the agricultural land market should be underlined in the negotiations.

The second issue, maybe even more important than the previous, involves water management. As we know, water balance in Poland resembles the one of Egypt, neighbouring Sahara. Soon, agriculture in Poland shall most probably be a large water consumer, which is due to climate change. Not only public units and industry, but also agriculture, will be a major water consumer, which will increase the shortage of this good. Meanwhile, the small retention in Poland either does not function or does not exist; large reservoirs, collecting temporary water surpluses, are devastated, silted up. Therefore, water shortage may be one of the major problems hindering further functioning of agriculture. In my opinion the way of solving this issue is through closely binding the Common Agricultural Policy with the Cohesion Policy. In the framework of cohesion policy there are resources for mitigating climate change, funds from which may be used on ameliorating the water balance in our country.

The third important issue concerns the demographics. A rapid increase of wages in the whole Union should be expected, as we are faced with the fact that the number of deaths exceeds the number of births. The population of the EU will decrease, while the aging of society will progress. There is a resistance to an increase in the number of immigrants from outside the EU, because their

numerous presence generates particular social issues. This will be the cause of subtracting a large group of people from the agricultural sector in Poland. Similar situation will apply to small towns, where the use of human resources and their effectiveness is minimal. The future of Polish countryside will be as follows: we will have a few or a dozen large urban complexes with high population density and some "appendices" with higher population density along the roads, whereas the rest of the country will become depopulated. Therefore the second pillar and the resources which will help preventing depopulation of large rural areas will be important.

And the fourth, last issue, i.e. environmental protection. We cannot pride ourselves on any major achievements in this matter after 2004. Yet we have much to protect, the proof for which are the three days spent in Białowieża. More attention should be payed to this Polish resource, where the environment is contaminated still only to a small degree.

In my opinion the four issues indicated are the priorities for Poland and should be raised in the discussion on the further directions of the common agricultural policy for 2014–2020.

Prof. F. Tomczak (Poland):

While analysing the regulations, history and implementation, i.e. the practical results of the CAP in a longer period of time, as well as while formulating various conclusions and emphasising the set of issues emerging from this analysis, we notice that the discussions on that matters, in connection with the present stage of the CAP implementation, are gaining momentum, and the further development of the CAP will involve intensifying the roles and functions presently played and their changes in the future. In the following remarks, referring to the previous statements, only several most vital issues are stressed; they will undoubtedly soon require special attention in all the Member States of the EU-27.

The first remark concerns the issues and the proposals aiming at a substantial restriction of the resources spent on the implementation of the CAP aims in all the EU Member States in the nearest future, most probably before 2013. It may be stated that if the restriction of the EU's agricultural budget and of the non-budgetary instruments of agricultural support, which are used in practice, is concerned, this part of the agricultural policy tools is highly criticised. It may be assumed that our environment, regardless of what is happening in the scope of general economical policy, may have a voice in this matter where the ways of more rational support for these opinions and decisions are involved, that indicate the already signalled need for maintaining the previous and the reformed rules of the CAP by a large group of Member States. It is especially vital to Poland that,

regardless of what is happening in the current economical policy, the agrarian transformations and the change of agrarian structure in Poland aiming at its modernisation must be supported by the EU or the state budget.

The second remark concerns the thesis (principle) that it is not in the interest of Poland or any new Member State, for which financial considerations and the needs of internal financial policy are most vital, to stress the necessity or the possibility of renationalisation of the CAP. Polish experience indicates that the developmental character of the CAP is one of the important features which should, for us, be maintained, even in such difficult circumstances as are signalled in some new Member States in the EU before 2013.

The third one demonstrates that Poland should opt for, in connection with our understanding of this matter, the balance between the financing of the agricultural pillar I and the rural pillar II, due to the need for agrarian transformations and the increase of production potential of agriculture, despite the fact that its financing under pillar II may influence more rapid transformations of agrarian structure and the economical benefits resulting from it. The agrarian structure and the limits to its transformation constitute the basic restraint on the modern development of agricultural economy in Poland. The present urgent and vital need for modernisation of agriculture indicates that Poland should continue efforts to maintain and expand the future-oriented economical and legal instruments of the CAP and the development of rural areas (e.g. environment-oriented instruments).

The fourth conclusion indicates that it would be beneficial to maintain, for some of the least developed states in the EU, certain instruments, which support accelerating the development of rural areas. The major problem is that the EU-15 states realised the basic aims of the CAP in the first stage of development and moved to a higher stage of economical development, while the less developed states could not realise these aims, had a different situation, respectively difficult, because the transformation process was too short for the complete realisation of similar aims, regardless the financing from the EU. The possible restriction of the resources under the CAP for the group of new Member States, especially for Poland, would have an adverse influence on achieving a higher stage of agriculture and reaching the conditions which existed and still exist in the higher developed EU states (according to the data published by the World Bank in 2007, the GNP PPP per capita in Denmark, Austria, Great Britain, Belgium, Sweden, Finland and France was over USD 30 thousand per capita, while in Poland it was only USD 13.5 thousand per capita).

For Poland, some of the measures proposed will generate problems in the relations between the CAP and the national agricultural policy, being a very

important constituent of economic policy, convergence and cohesion policy in the whole EU. It is also a condition for realising the idea of European economical solidarity. It should be reminded again that while the Western states reconstructed the agricultural and rural economy during the period of post-war rapid acceleration of development in the Western Europe, Poland still faces the need of intensified general restructuring of economy and infrastructure, which cannot be realised without strong financial support from the EU. It means that Poland should maintain the right for the EU CAP on the prognosed level of 2013 for at least the next period to implement the changes in agrarian structures and accelerate the economical processes of compensation and unification in the European Union.

Prof. I. Benet (Hungary):

Ladies and Gentlemen, let me raise three groups of matters.

The first one: the funds today and tomorrow. It is a vital issue. There are numerous problems concerning family farms (private agricultural holdings). The definition is mere a beginning, as there are different forms of farmers' employment in the holdings: full employment, partial employment; yet I think that one of the conclusions of this conference may be that the role of family farms (private agricultural holdings) in the 21st–century agriculture has changed and will be changing as compared to the one it played in the 20th century.

Sicco Mansholt in 1958 stated clearly that family farms (private agricultural holdings) must be the base for European agriculture. European agriculture must be built on these holdings.

Changes have taken and will take place; family farms sector is only one of the numerous sectors in the 21st–century agriculture and this is appropriate, yet we must not forget that other types of holdings exist, there are collective farms, which are also indispensable, and hobby farms, which are not as vital from the point of view of agriculture, yet are much needed if market economy is concerned. Therefore the variety of types of holdings is necessary and the family farms sector is only one of the sectors. This statement may be a message of this conference.

Another issue is the future structure of CAP.

Since Sicco Mansholt the CAP is subject to changes or attempts of changes, thus from 2013 the reforms of McSharry will be continued in order to adjust the prices of food in the EU to those on the world markets. It is closely connected with the policy of compensation.

I recommend the first and the second pillar, although I believe that the role of the second pillar should increase and we should be prepared for the increasing importance of this pillar of the CAP.

Another issue is the future simplification of the CAP. The issue of improving competitiveness of European agriculture has also appeared at the beginning, i.e. in the Treaties of Rome. Improving competitiveness of European agriculture is still a vital issue, however this competitiveness should be improved only in a sustainable manner.

The conference confirmed that the CAP development is closely connected to the negotiations under the WTO.

Another issue is the message for each Member State that the CAP and the national agricultural policies should be coordinated in the future more intensively. I am sure that the problems concerning natural environment will still be very important and possibly their significance will increase.

The issue of decoupling direct payments and production. The decoupling advances, which is highly problematic for animal rearing. I do not know how it is in the other new EU Member States, yet animal rearing in Hungary is in a very sophisticated situation. Hungary is a very small state, however, if this issue is more general and international, then it is difficult and the persons responsible for shaping the CAP should take care of that. Maybe in connection with that the direct payments and production should not be decoupled. This should be discussed.

There is another, most important matter, upon which I wish to touch with a great pleasure. I wish to thank sincerely the Institute of Agricultural and Food Economics – National Research Institute and Professor Kowalski for organising this conference.

Prof. B. Frumkin (Russia):

Russia is not a member of the EU, therefore the perspectives for the CAP interest Russia only in the aspect of the export of food from the EU to Russia and the import of these products from Russia to the EU, maybe also the cooperation on investments. This seems to be the continuation of the basic directions of the CAP reform and what was proposed in the "health check", i.e. putting additional environmental, social, safety and other duties on farmers.

If, what is more, in the perspective of 2015 the EU abolishes milk quotas, it will hardly be plausible to expect major supplies of animal products to the Russian market.

There is also the issue of Russian export, e.g. rapeseed oil and cereals. I do not share Minister Zapędowski's certainty that the European Union will not use ecological barriers hindering the import of agricultural products. In the beginning of the year France issued a proposal of establishing a special environmental tax on the import from third countries, by now not yet the agricultural, yet in the future maybe also agricultural.

Further development of cooperation on investments will be an important issue. The biggest EU food companies are already in Russia. About 40% of dairy products market in Russia is controlled by companies from e.g. France, Germany and Netherlands. As regards the production of preserved vegetables it is already about 60% and beer – even 100%. In some districts an interesting phenomenon may be observed: the whole production cycle is controlled by companies from the EU. In one district English farmers leased 10 thousand ha of land, they produce brewing barley and sugar beet, the barley is sold to a malt-house controlled by Belgians and the beets to a factory controlled by a French company. Today they produce for the Russian market, but in the future this production may (as a Russian production) be sent to the EU market.

Director B. Domaszewicz (Poland):

I represent the Agricultural and Food Economy Division of the CSO. It is known that the task of statistics is not to create agricultural policy, but only to observe the processes and provide the data to both decision-makers and scientists. The subject of this conference is today and tomorrow of agricultural holdings, yet what holdings are we talking about?

Listening to the speeches I counted 15 adjectives describing agricultural holdings. In Polish statistics, an agricultural holding is clearly defined, and this definition is consistent with the EU definition. The main criterion which we apply is the spatial one: thus the area exceeding 1 ha of agricultural land, however there is also the criterion of the so-called physical thresholds. It is valid when a holding does not comply with the criterion of 1 ha of agricultural land, yet it conducts an intensive animal production, or the sectors specific in the plant production. In such case it is also taken into consideration in statistical research and treated as a holding. Off course various institutions define the notion of a holding differently.

Due to the fact that the universal agricultural census is planned for 2010, a discussion on the definition of agricultural holding should be raised, so that it will be common to the statistics, as well as the administration and the scientists. It is to eliminate the problem of a difference between a family farm and a holding with homestead adjacent land or any other.

I shall add that the EU has already taken first measures to change a legal act, which in the future will enable the scientist an access to individual data from agricultural holdings, which is collected by the EUROSTAT in the EUROFARM database. Presently, the data is used by the European Commission for analyses, but in the future the scientists will use the data as well.

Dr A. Hałasiewicz (Poland):

The development of rural areas is the chance for the vision of depopulated rural areas never to realise. However we must remember that the increasing importance of the second pillar may change the procedure of dividing the resources.

So far the division has been determined historically or dependent on the absorption capacity. Nevertheless, we must know what is important to us, so that the new division of funds takes into account our specific character.

I appeal for thinking about such division of funds even now, to provide the politicians with appropriate arguments and instruments.

Dr M. Wigier (Poland):

I would like to emphasise a topic that has not been raised during this conference. Our eastern neighbours mentioned an issue of the possible expansion of agricultural and food products from Russia, Ukraine and Belarus to the EU markets. Therefore this will be our real competitor on the agricultural and food markets in several years. Thus, I believe that the essence of the CAP reform should be aimed at improving competitiveness of EU agricultural holdings.

European states – the holdings in France, Great Britain, Denmark and other states are well subsidised, the question is: are they competitive? The papers presented by colleagues from Austria or Finland indicate that the holdings function and bring profits, but only because they have a very strong support in the form of different types of subventions. With regard to this I believe that the instruments of improving the competitiveness of agricultural holdings should involve the possibility of supporting holdings with funds for investments. I do not mean an easy support, which leads to upsetting the economical account in an agricultural holding; as the previous polish experience indicate that many holdings purchase expensive machines only because they cost half the price due to the co-financing. In the aid schemes we should pay attention to the vitality of the holdings, the possibility for their real competitiveness on the market.

Apart from the aid for rural areas, which should be the second line of public support for food economics and agricultural sector, we should mention the unification of tax and social insurance systems; then the equal conditions for competitiveness will be maintained. Above all, we should aspire to the situation when the EU holdings can compete without an upset economical account.

Prof. Georgij Czerewko (Ukraine):

The preceding changes in the EU agricultural policy resulted in the present implementation, partially from the resources different than in the previous decades. However the question arises: will maintaining the present common agricultural policy be possible after the accession of at least some of the states from Central and Eastern Europe?

The present economical and production situation of the food economy in the EU is characterised by a surplus production of almost every agricultural good of the temperate climatic zone. It is thus understandable that the Western European farmers, still protected by the common agricultural policy, are reluctant to enlargement of the EU with states which have a big production potential in agriculture. It is so because they are afraid that the agricultural and food articles produced in these states may (in the conditions of free goods traffic) effectively compete with the production of the present Member States.

Ukrainian farmers, after the accession to the EU, will naturally be much more serious competitors on the markers of the enlarged EU, than presently. Nevertheless, the concerns that this will lead to upsetting the EU agricultural markets, stated in some of the rapports, are undoubtedly exaggerated. They result mainly from erroneous methodological premises. In some reports it is claimed that the crops and animal production in Ukraine are on the same level as in the EU, which is an obvious nonsense. Also a very rapid increase in the agricultural production in a state after the accession to the EU, accepted in some reports, is an unrealistic assumption.

After including new states from Central and Eastern Europe into the common agricultural policy, the processes of adjustment will be indispensable on some of the EU agricultural and food markets. It is possible that in some cases the farmers from the present Member States will be defeated in the competition with Ukrainian farmers and as a result will encounter difficulties in selling some products. However those will be only local issues, which will not influence the general situation of agriculture in the present Member States. Any market disaster is out of the question.

With respect to that, Ukraine may pose a serious threat to the Western European farmers. Yet we are more interested in this integration not for the EU itself, but rather for ourselves. European integration is definitely the priority direction for further socio-economical development of Ukraine. What should be done to realise the Ukrainian choice for Europe?

Because Ukraine is a farming country, in the positive sense, the success of its accession to the European Union to a high degree depends on the capacity of

Ukrainian agriculture and the whole food economy for adjusting to the level, requirements and standards of the European agricultural sector.

The present condition of Ukrainian agriculture is highly dissatisfying. The ways out of this grave situation involve concentrating production, specialisation, development of cooperation and integration, improving economical relations, introducing land market. Implementation of tasks in this scope is impossible without proper national agricultural policy. Therefore Ukraine should finalise its administrative and economical reforms, especially in agriculture and the whole food economy. The agriculture should become a productive and competitive sector of the state's economical system. Achieving this goal is possible through:

- stabilising the economy,
- decreasing the limitations on import,
- limiting the extent of corruption,
- decreasing the number of taxes and lowering the tax rates,
- abolishing special privileges for some companies,
- transforming the black economy into official one.

On the other hand the European Union can help Ukraine mobilise social energy needed for finalising the transformation process and leading the country towards the integration with the EU. The European Union can:

- extend technical aid facilitating synchronisation of laws and procedures; facilitating the access to all forms of this technical aid, especially to grants;
- advocate the implementation of the Partnership and Cooperation Agreement;
- help Ukraine gain the status of the EU Associate;
- favour the process of Ukraine's adaptation to the operating conditions within the WTO;
- enable finalising the agreement on the European Free Trade Area.

Ukraine will be initially, to some extent, a burden to the EU, however it should soon begin to be its asset, because:

- Ukrainian population is relatively well educated,
- There is a network of research institutes, presently dilapidated, yet they may be easily brought back to life,
- Ukraine has the arable lands of the best quality,
- Ukraine is in friendly relationships with all its neighbours,
- There are no ethnic conflicts, which, taking into consideration the historical background, is an exceptional achievement.

It should be emphasised that Ukrainian economical system may undergo the reforms of the initial phase of preparations to the integration even more smoothly than Poland. The majority if ineffective enterprises were either closed down, or they have a low level of activity. Therefore the social costs should be small and impact on the pace of the increase of GNP will be significant.

The bonds between Ukraine and West have existed for a long time. The need only a reconstruction. For Ukraine the matter of integration with the EU is a matter of life and death. There is no alternative. Nevertheless we should work very hard so that these dreams may come true. Ukraine has already made many decisions and taken some steps in this direction. Since 1 March 1998 the Partnership and Cooperation Agreement between the EU and Ukraine, ratified with 15 EU Member States, is operative. It is a firm basis for a wide economical, financial, social and cultural cooperation. If the developmental potential of the Agreement is fully exercised, it may easily transform into membership agreement.

The fact that the EU does not have to "save" Ukraine should also be taken into account. Ukraine is a large country, with large-scale economy and large population. It should "save" itself.

Prof. G. Blass (Slovakia):

I understand that our discussion should focus on the current and future development of the CAP in a short perspective, that means discussion about the topic of Health Check, and in a further perspective - the CAP after 2013. Basically, our position in the question of further reforms of the CAP is based on two ideas. The first one is that our primary objective is promotion or enhancement of competitiveness of the Slovak agriculture. The second objective is enhancement of performance of agriculture in the sense of its multifunctional role in the society, which means that maintaining a sustainable agriculture which would produce public goods like environmental values, natural resource protection and so on and so on. For the second one is important for Slovakia given the natural preconditions for agricultural production, we have a very high portion of less favored areas and a lot of environmental values, which have also a role in other industries first of all in the tourist industry and recreation industry. To the immediate close issues, first I mentioned that in this category I am sorting topics which are dealt with under the process of Health Check.

In general we support a better adjustment of the CAP to the reality that means that the response of the CAP in the area of market price support to the changing global agricultural market situation we find correct that means that we also expect that this segment of the CAP which is dealing with market regulation in the future will become less important and maybe gradually is going to be phased out. Nevertheless, we are now facing an extreme fluctuation of the world market situation and it is evoking the issue of food security. The food security has become recently a topic also for the European Union and for the European Commission better to say, and we think that there is time for putting on the table new ideas how the food security in the conditions of instable market

situation could be maintained. This is one thing. The second thing is that all new challenges which we have to meet now, that means: the climate change, the problem of risk management, which is again linked to the problem not only of climate change that means that natural condition for agriculture but also to the economic environment of agriculture, (which) should be solved. Further topic, which is very up to date is the question of modulation and the question of decoupling.

I have to admit that we have some problems with the holly cow of the CAP reform with the CAP reform with the modulation. More or less we have concerns that totally modulated CAP support or the direct payment support would be harmful, especially for regions and areas where conditions for agricultural production are not favorable and would lead at the end also to abandonment of those regions and areas that means that this is not a desirable trend of changes and development. So then decoupling should be handled with caution and in our view the Member States should get more to say about which sectors should be decoupled and which sectors should be not. As for the change from SAPS to SPS we are completely comfortable with this switch if with the system of SPS with a regional flat rate.

Another issue is II pillar. As I mentioned II pillar we consider to be very important to our agriculture not only because II pillar comprises the measures supporting environmental and other non-production functions of agriculture but also II pillar's first axis is a very important tool for enhancing competitiveness of agriculture and the Slovak agriculture has a very high absorption capacity mainly due to its farm structure to absorb funds from the first axis, especially important are investment into agricultural enterprises.

We would not like this already mentioned re-nationalization of the CAP, we would not like a loss of the principles of equity and cohesion in the policy. From this point of view we see also the question of modulation. The Commission in the recent legal proposal joint two problems. One problem of modulation and the second problem of progressive gaping of direct payments. In these forms we are a bit cautious because the progressive modulation would touch a very high share of farms in our country. According to our calculations we would lose indeed about 10% the volume of direct payments. Actually it is not losing because the payments would be shifted to II pillar, but the second thing is that about 80% of farms would be touched by this measure. In general in the agriculture axis that means that among farmers there are real concerns concerning this mode of progressive modulation. We are very happy that the recent proposals of the Commission are promising that the graduated money is not going to be redistributed, which means it remains in the countries which the

cuts in I pillar have done. Nevertheless we think that the principle of the modulation might be linked also to other criteria as it is now. Now the only criteria is the amount of received support which is closely related to the size of the farm. But we could think about also other modes of criteria formulation like support per farm working unit in the farm or other principles which would not be to the detriment of the most efficient and largest farms with higher competitiveness. Thank you very much.

Dr M. Stolbova (Czech Republic):

On behalf of the Czech delegation I would like to thank organizers for opportunity to be here. Only short comments to the topic of conference "Farms in Central and Eastern Europe – today and tomorrow". We can see very wide variation of farm structure among the Europe countries which was presented here.

The opinion of researchers from RIAE Prague is that CAP II pillar support would better cope with this differences. Every EU country would have more space to adjust support given by II pillar CAP to their specific situation (stress to investment, to the environment, and to rural development).

For the future there is necessary to balance of the complex role of agriculture:

1. Food production
2. Energy production
3. Environment, water management and maintaining countryside.

There is also important issue to solve – risk management. Concerning foreign trade –the position of Czech government is – the EU should be more opened to third countries.

J. Hambrusch (Austria):

During a lot of discussions some issues came in my mind, and I want to deal with them very quickly. For me one of the most crucial question will be the energy topic because we are talking about crude oil prices for about 200 dollars per barrel and more, and as we know we have the discussion on bio-fuels and we already know that they are also controversial due to food competition and environmental problems so I think it will be a big issue in the future and we have to cope with it. It's also this issue that we are subject to different obligations, for instance Kyoto protocol caused that it become quite expensive if we have to pay or buy emission certificates.

Then the second point was already mentioned is always the question of distribution. We have just limited resources, in this case: money, and how to deal with this question? So we have different systems in place now: historic

model, flat rate system and SAPS and it will be also after 2013 a very important question how to distribute the money amongst regions and between countries.

And the last point that I want to mention is that at least in Austria we observe that consumers become aware of agricultural production and demand new products like "green services" and "blue services" we call them environmental products and water management, but also in the production functions are health standards, quality standards and it should all be taken into account in the future.

Additional comments:

1. For 2010, the EU biofuels directive has set an indicative target of 5.75%. However, with the increasing growth rates and ambition levels, the societal debate on biofuels is also becoming increasingly strong. Issues like feedstock availability, competition with food, environmental impacts and implementa-tion issues are extensively discussed. These issues are highly important for the bio-fuels sector since negative new findings may reduce public support, change policy preferences and thereby deprive the sector of its licence to produce. In this context the role of the 2nd generation of biofuels should be mentioned (e.g. agri/forestry residues, lingo crops (wood, grass),…). What about the policy objectives especially in respect to international obligations (e.g. Kyoto protocol)? For more information on this topic see for example www.refuel.eu.
2. A short comment on the distribution of the Austrian agricultural budget. As presented during the conference Austria placed a strong emphasis on the second pillar (about 63 % of the agricultural budget were allocated to the second pillar in 2006). But it has to be stressed that these payments are compensations for services provided by the Austrian agriculture (e.g. preservation of cultural landscape in mountainous areas – keeping open of cultural landscape, breeding of endangered animal varieties, renunciation of yield enhancing inputs like fertilizers and herbicides, winter cover of crop land, projects on water protection, contracted nature conservation,…). These measures and its linked production limitations result in a benefit for the society (e.g. water and soil protection, preservation of bio- and agro diversity,…).
3. Increasing consumer awareness leads to expectations concerning the provision o general services like green services (environment and landscape), blue services (water management and flood control). But also the production of agricultural products is faced with increasing expectations of consumers (e.g. food safety and quality, production standards, traceability of products,…).

Prof. D. Cvijanovic (Serbia):

Serbian agriculture is characterized by big number of rural households (about 778 ths.). Concerning data from the Ministry of Agriculture, Forestry and Water Management, there is only 300 ths. registered agricultural households in Serbia, and the actions of Ministry are concerning only on those. Even before the process of privatization, private sector was dominated concerning land ownership, animal husbandry, agricultural machinery, equipment, etc. But, the productivity was much bigger on the so called „social sector". There are many reasons but three are most important: big area of land, presence of experts and care from the site of the government.

Serbian agricultural sector was not prepared for privatization. The first, the historical experiences were not good. Mistake was privatization of process industry which caused the cut of food chains. Second, new owners of agro plant were not from agro industry, and only small numbers of agro complexes were not privatized (for example: PKB – Padinska Skela, "Dragan markovic"-Obrenovac and PIK "Zemun" – Zemun).

From the other hand, there is very nip differentiation of rural households. It is very clear that number of households which are dealing with agricultural production is increasing from one side, and from the other, there is a disappearing of old households. Those big production oriented are using large land area and also they are renting huge area from those which are not able to cultivate it themselves. Unfortunately, large areas are staying not cultivated and they are usually lost for agricultural production.

What is the optimal size of farms in Serbia? This is very dificult question, because it is not the same to produce cereals, industrial plants, fruit, grapevine or vegetable. Taking all of this in consideration, market from the one side and government from the other with active participation of agricultural producers, regulations and EU directives will crystallized the size of farms in Serbia concerning each production line or sector of agriculture.

Dr L. Melece (Latvia):

If we talk about Latvia's position for CAP, I would like to say that it is not my topic of researches, but I would like to say to present briefly the position of Latvia's Ministry of Agriculture. There are several aspects in this topic, for instance: Ministry doesn't agree with the "health check" because it does not take into account some of the most important problems for Latvia's agriculture. Secondly, on the equality if payments for EU-15 or "old-members states" and "new-members states". We are asking Commission for equal payments.

The next thing is decoupling. Latvia agrees for decoupling of payments. And something about milk quotes: Latvia is not interested in increasing milk

quotas but in abolishing them. We are not asking for increasing milk quotas every year but for their abolition.

And a brief remark concerning the definition of the term “family farms” or “farms”. I do not know how it is in your country, but in Latvia sometimes we talk about “farms with a person not-employed” – person with agriculture area but not-market orientated. When we talk about decreasing or increasing of the number of farmers, then it is very difficult to say: what we have in mind: an unemployed person or a pensioner with one cow and two pigs or a market orientated farm. It is only my remark and maybe a topic for further discussion, because now it is very difficult to compare statistical figures between countries as we are not sure what we refer to when talking about ”farms”?

Print run: 250 copies
Printing and binding: QUICK-DRUK s.c.