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# **Agricultural policies and their impacts upon agricultural trade liberalisation<sup>1</sup>**

József Popp<sup>2</sup>

## **Abstract**

This study analyses agricultural policies, including agricultural trade liberalisation. The paper takes into account both the WTO Agreement, signed in 1994, and the current WTO negotiations, which will have an impact upon the level of agricultural support. This study recognises the importance of multifunctionality in agriculture. It considers non-trade concerns and provides an explanation of the duality of production and the provision of public goods. The net costs of inefficient domestic policies spill over and are magnified on international markets. Trade reform is thus essential, while multilateral negotiations may have an important role to play in promoting domestic reforms. This paper concludes that agricultural policy reform and Hungary's accession to the EU will primarily determine the domestic agricultural policy.

## **Key words**

Agricultural policy, trade liberalisation, EU accession, CAP reform, multifunctionality

## **Introduction**

**By shedding light on the various agricultural policies, this study provides a better understanding of Common Agricultural Policy (CAP) developments, including farm trade liberalisation.** Conclusions made will further assist in developing objectives when considering the make-up of **Hungarian agricultural policy.**

## **1. Reform of the CAP**

**Europe has a long history of farm protectionism dating at least from the 16<sup>th</sup> century.** It could be stated that agricultural tariffs distorted less international trade than import tariffs imposed by the Common Agricultural Policy (Table 1).

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Table 1

**Average tariff levels for foodstuffs, as a percent of export prices in European countries, 1913**

Country	Percent tariff
France	29
Germany	22
Italy	22
Belgium	26
Switzerland	15
Sweden	24
Finland	49

Source: Tracy, 1964

At any rate the CAP must be judged by the global requirements of the twenty-first century rather than by the European standards of 1945. Following CAP reform in 1992, a policy alignment to substantially decrease agricultural support (both domestic and export support) can be noted, which is similar to the objectives of the Uruguay Round Agreement that was conducted under the GATT in 1986 (Szabó, 2001). **Agricultural policy (CAP) was not linked to the protection of the environment, and price supports have not preserved rural landscape or traditions.** On the one hand, high price supports have actually encouraged rapid commercialisation of farming, and encouraged farmers to enlarge fields with little regard for the impact on the environment.

In the EU, larger commercial farms play an important role in satisfying the increasing demands for food products world-wide, and their economic role in rural development is also important as well as their effort to protect tropical forests. **The future of these commercial farms is highly dependent on the liberalisation of agricultural trade. Rural development subsidies provided for small farms – farming that contributes to the landscape, rural environment and rural amenities in disadvantaged regions, especially those with special beauty and tradition – will not impact upon farm trade liberalisation** (Halmai, 2002). Agenda 2000 was also designed to increasingly support the rural economy, however it cannot prevent – only slow down – the process of rural out-migration.

The development of land prices in the EU has greatly impacted upon commercial farms, where high **agricultural subsidies have become farmland values, resulting in high land prices** (Table 2). **With trade liberalisation land prices will decrease as a result of agricultural trade.** The first and foremost impact of moving to liberalised trade is that the value of the EU farmer's land will decrease. Those who have mortgages will have less collateral value, but their payments will remain as high as before. Those who have inherited land will have less value than they expected and perhaps less than their siblings received. As a matter of fact, direct payments offered by the EU is offsetting for farmers who have been asked to give up a valuable set of entitlements under the CAP reform in 1992 and Agenda 2000. **Transitional offsetting compensation for decreasing land prices seems a rational policy in order to facilitate liberalisation of agricultural trade.**

Table 2

**Land values around the World**  
(in the 1990s)

Country	Cropland value per hectar (U.S. dollars)
Japan	250 000
Netherlands	23 500
Germany	19 800
New Zealand (pasture)	16 100
United Kingdom	11 400
USA	6 200
Australia	4 200
Canada	3 000
Argentina	2 100

Source: Knight-Frank Property Management. United Kingdom, 1996

In terms of production methods used in agriculture there is **increasing social pressure** and an outcry **for implementing food safety measures and socially acceptable production methods**. Customers expect a guarantee from every player in the agricultural supply chain. The new CAP reform has already incorporated the demands of consumers into its policy design.

## 2. International trade liberalisation

**Trade liberalisation has occurred over decades**. To be able to match increasing economic efficiency (output), it is necessary to continuously restructure and harmonise the institutional systems. Thus, at the same time as creating the single market in the EU, suitable institutions were introduced as well. Currently we can also observe a similar process worldwide through the **globalisation of international trade, which is due to rapid technological developments**. This will require additional rules and institutions.

**Negative attitudes and an outcry against globalisation and free trade liberalisation are understandable, if the globalisation of regulations and institutional systems themselves are neglected or restricted in any way**. In order to avoid or counter-balance the negative side effects of trade liberalisation, it is necessary to develop and employ special measures that can facilitate the globalisation process itself. Consequently, we could say that measures employed by the **WTO need fine-tuning and improvement as well and have to be harmonised with other international policy measures**.

**The biggest danger presented by global trade is that the US has an increasingly negative foreign trade balance**. The carefully balanced system of international trade will collapse if a number of countries spend on imports only a proportion of their income earned from exports. In the case of the US, this problem is hidden behind the huge negative trade balance. Indicators such as the slowing economy, declining exchange rates (at the same time increased export competitiveness) and the stagnant foreign trade deficit show that the **above trend will not continue in the US for long**. It is in the interest of all WTO member countries to create a well-balanced and sustainable international environment for free trade. **If the high dependency on the US market does not lessen, then it is likely to bring increasing political tensions and finally a decline in economic growth**.

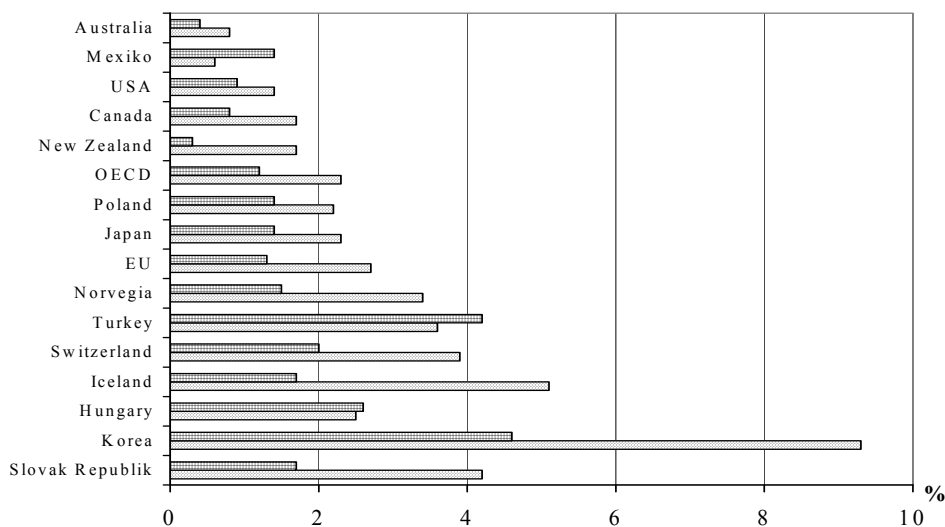
The truth is, the international trade system is not a complete cycle as not all exporters will become automatically importers as well. Primarily a number of Asian countries (such as Japan, China, Hong Kong, Taiwan, South Korea and Indonesia) usually invest heavily for example in US government securities from money they earn in international trade. But, if income from exports are well balanced against expenditures for imports, international trade flow will not continue destroying jobs (by reallocating unemployment abroad).

### 3. The impact of subsidies upon profitability

Despite of the liberalisation efforts of agricultural trade in OECD countries which generate two-thirds of the world’s agricultural output, the level of agricultural subsidies is still high. However, during the examined period (as the average 1986-1988 and 2000-2002) the Total Support Estimate (TSE) as the percentage of GDP decreased from 2,3% to 1,2%. In summary, we can conclude that support for the agricultural sector in OECD member states has moved towards less market and trade distorting forms of assistance (Figure 1).

Figure 1

Total support estimate by OECD member countries  
(% of a GDP)



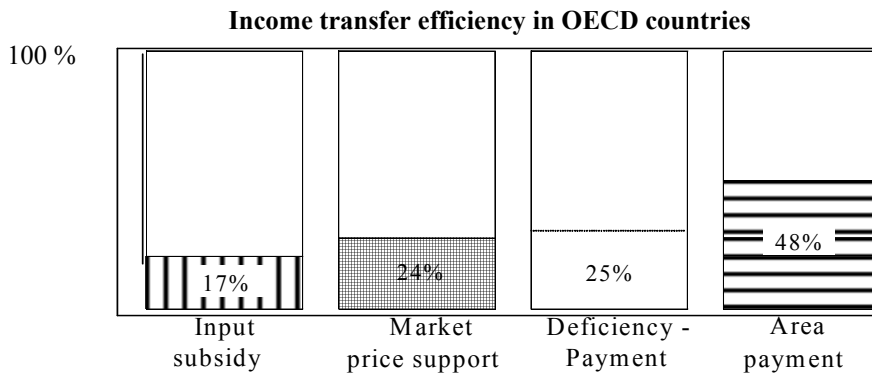
Source: OECD, PSE/CSE database, 2003    1986-1988    2000-2002

It is important that income support be pursued in an effective and efficient way. The performance of policies intended to raise the incomes of agricultural households can be measured in terms of an “income transfer efficiency” calculation. The ratio captures the share of support that actually raises the net income of farm households. According to analyses, no support policy for agricultural activity succeeds in delivering more than 50 % the monetary transfers from consumers and taxpayers as additional income to farm households (Jankuné Kürthy et al, 2001). In the case of area payments, the share is 50 %; for market price support and deficiency payments 25 % or less, and for input subsidies it is less than 20 % (Figure 2).



The analysis of the relationship between income transfer efficiency and the level of trade distortion indicates that **if the proportions of subsidies not linked to production are higher, a higher income transfer efficiency can be observed and a higher share of the money would be retained by the farmer.** At the same time, these forms of subsidies have less impact upon production and trade. **We are, however, lacking in correct and detailed data on farm households and unable to fully understand the income structures of agricultural households.** The level of income could be better managed through risk management strategies, production contracts, insurance, future markets, integration and co-ordination.

Figure 2



Source: Popp, 2002

**According to the new CAP reform**, a single farm payment scheme will replace most of the payments to farmers between 2005 and 2007. **The single farm payment scheme is separated from production; thus it is likely that income transfer efficiency will increase.**

#### 4. GATT/WTO

**Following the GATT Agreement, which came into force on January 1 1948, the mercantilist theory was finally replaced by the theory of competitive advantages**, and international trade became less distorting. **The GATT Agreement however did not take into consideration that comparative advantages are substantially higher in agriculture than in other industries.**

The biggest achievement of the GATT/WTO Agreement signed in 1994 was that the tariffs became the corner stone of agricultural trade in WTO member states. **For OECD countries, the average fixed tariff for agricultural products is 60 %, compared with an average fixed rate of 5 % for industrial products.**

In contrast to the industrial sector, all agricultural tariffs are subject to upper (fixed) limits. However, many OECD countries fixed tariffs at rates above the equivalent rate of protection in the 1986-88 base period from which reductions were mandated. In some cases, this meant that countries could meet their commitments while actually increasing protection. The setting of fixed rates that were higher than applied tariffs has opened the door to a reversal of reforms because a high fixed rate can become a target for protectionists pressure. **The chairman's proposal at the current WTO negotiations is based on the Swiss and Uruguay formulas aiming at differential tariff rate cut – between 40 % and 60 % – over**

**5 years** (while the Swiss formula proposes cutting tariffs which are above average, resulting in an average tariff level of 25 %, the Uruguay proposal seeks a 36 % tariff reduction over a 6 year period). For developing countries a lower level of tariff reduction applies compared to developed countries (Table 3 and Table 4). **Agricultural products produced in the EU will be influenced in different ways by the tariff reduction proposals.** For example, while the competitiveness of sugar will diminish in the unified market as a result of tariff reductions, there will be hardly any change in the competitiveness of wheat.

Table 3

**Harbinson proposal on import tariffs**

Tariff size (ad valorem)	Average % cut	Minimum % cut
> 90 %	60	45
15% - 90 %	50	35
≤15 %	40	25

Source: Stuart Harbinson, Chairman, Committee on Agriculture, First Draft of Modalities for the further commitments, 2003. WTO. Geneva

Table 4

**Harbinson proposal on import tariffs (developing countries)**

Tariff size (ad valorem)	Average % cut	Minimum % cut
>120 %	40	30
60-120 %	35	25
< 20-60 %	30	20
≤20 %	25	15

Source: Stuart Harbinson Chairman, Committee on Agriculture, First Draft of Modalities for the further commitments, 2003. WTO. Geneva.

Developing countries are entitled to Special and Differential Treatments, which means that average tariff reduction of the Special products would reach 10% and at least a 5% reduction applies to product groups.

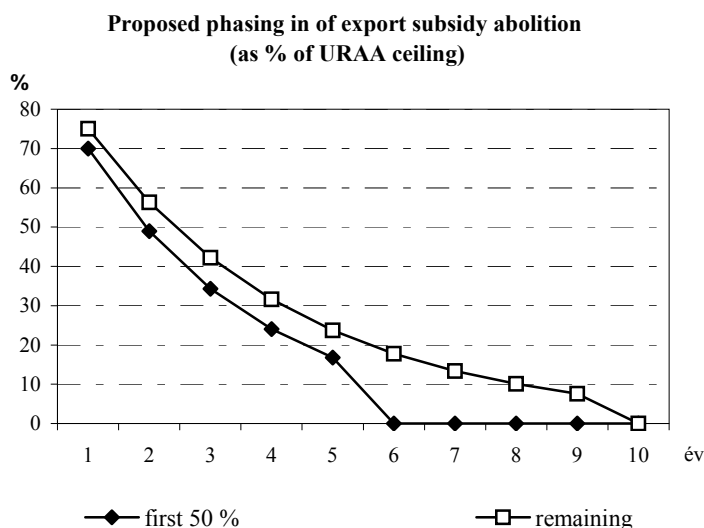
In many cases, a two-tier tariff rate quota (TRQ) system has been necessary to administer the Agreement’s minimum and current access requirements. About 65 % of TRQ are unfulfilled, with more than one-quarter less than 20 % fulfilled. Thus, according to the new WTO proposal, the basis for **current access** would be **calculated on the average consumption between 1999 and 2001, and within quota volumes would increase from 5% to 10% of domestic consumption** in 5 years. For developing countries **within quota volumes** should be increased to 6,6 % of domestic consumption.

**Imports can also be constrained by state trading enterprises**, if, for example, the government does not purchase the totality of the quota, or if the primary objective of imported products not competing with domestic produce is to complement domestic products. However, such distortions are not limited to state trading enterprises.

**For the EU it is hard to get the majority of the WTO member states on its side regarding the introduction of the Protection of Designation of Origin (PDO) and the Protection of Geographic Indicator (PGI).** According to a number of WTO member states, these policies would cause additional trade barriers.

Despite the fact that export subsidies have been prohibited for non-agricultural products since the GATT Agreement was signed in 1947, twenty-five member states still use export subsidies in agriculture (the EU accounts for 90 % of export subsidies, the upper limit is approximately \$14 billion). **The chairman's proposal for the current WTO round of negotiations is the phasing out of export subsidies, while putting strict rules and discipline upon other subsidies related to export competition** like export credits, credit guarantees and insurance programmes, food aid and state trade (Figure 3).

Figure 3



Source: Stuart Harbinson, Chairman, Committee on Agriculture, First Draft of Modalities for the further commitments, 2003. WTO. Geneva

Note:

Harbinson proposal (phasing in of export subsidy abolition):

- 50 % of products in 5 years
- all remaining products in 9 years

Domestic support was placed into “Green”, “Blue” and “Amber” boxes, with “Amber” box instruments deemed to be the most trade-distorting form of support and “Green” box support instruments the least (minimally) trade distorting.

**The Aggregate Measurement of Support (AMS) is a cornerstone of domestic support commitments.** Blue box direct payments are also included in the basis of AMS calculations but are not subject to reduction commitments (similar to the “Green” box support). **In practice, fulfilling AMS commitments have not caused substantial problems in most of the member states, due to a number of compromises reached during the Uruguay Round Agreement.**

Although, shifting different forms of supports from the most distorting forms of assistance (from “Amber” to “Green” box) has been an established practice, **the general level of support measured by the Producer Support Estimate (PSE) has not substantially decreased.** Agreements reached **during the latest WTO negotiations are**

aimed at reducing domestic support by 60 % and “Blue” box supports (1999-2001 base period) by 50 % over five years. “Blue” box support is also included in the AMS calculations (Table 5).

Table 5

EU’s reliance on blue box

EUR (billion)	Current	Harbinson	Harbinson + EU decoupling
Amber box (ceiling)	67	27	27
Amber box (actual)	35	27	27
Blue box	30	15	0
Green box	19	19	49 (19+30)
Total (actual)	84	61	76

Source: Stuart Harbinson, Chairman, Committee on Agriculture, First Draft of Modalities for the further Note.

Note:

Domestic support

- Harbinson proposal (60 % cut in 5 years)
- EU proposal (55 % cut in 6 years)
- Harbinson proposal for blue box subsidy (50 % cut)

In the case of developing countries, a smaller scale of reduction in domestic support (33 %) and in “Blue” box supports (40 %) applies over a ten year period (“Blue” box support is to be included in the AMS calculations from the beginning of the 5<sup>th</sup> year of the implementation period).

While the US is interested in the elimination of “Blue” box support, the Cairns group is fighting for the elimination of both “Amber” and “Blue” box supports as well. The EU, however, strongly stands by both of “Amber” and “Blue” box supports, making a clear difference between them.

The importance of “Green” box supports has substantially increased since the WTO agreement was signed. Thus, many WTO member states demand restrictions on the use of “Green” box instruments in order to limit subsidies under this category. This will affect the single farm payment scheme of the new CAP reform, which focuses on shifting “Blue” box supports into “Green” box support instruments (some direct payments will be coupled to production, mandatory set-aside programmes are notified under the “Blue” box).

A proposal made by the chairman suggests a 50% cut in *de minimis* support (from 5% to 2,5%) over 5 years. There is no change in the case of developing countries, where the level of *de minimis* support remains 10%. Furthermore, they have the opportunity to include non-production specific supports into the negative production specific AMS calculations until the maximum of 10 % of the gross agricultural production value. The EU does not agree with the proposal while the US supports the proposal on *de minimis* as it has little impact upon international trade.

**The WTO agreement played an important role in CAP reform.** Besides international commitments, there were internal tensions regarding **quality and food safety issues of agricultural products** demanded by consumers led to new CAP reform.

### *Non-trade concerns (NTC)*

Society is worried about the impact of trade on the environment. These problems are addressed under the **non-trade concerns and the EU insists that NTCs be given a prominent role in the WTO negotiations. Multifunctionality is one of the key areas of non-trade concerns** in the EU which is closely linked with the opportunity of shifting most of the agricultural supports from the “Blue” to the “Green” box.

**In rich countries the share of agricultural output in GDP is not substantial.** However, as the competition for the use of land and other natural resources increases between agriculture and other industries, the role of agriculture becomes more and more significant (Edmondson, 2001). Since the profit elasticity of the non-commodity output is high, the value of non-commodity outputs associated with land and other natural resources is likely to increase.

**Agriculture has several functions**, but they are not fully evident in the agricultural sector itself (Budai-Sántha, 2002). While the primary purpose of agriculture is the production of food, it also plays an increasing important role in the production of industrial products (such as medicines, bio-fuel and fibre). Agriculture has additional functions as well, meaning the **generation of negative and/or positive outputs that have an impact upon the whole economy as well as policies**. Amongst the positive externalities are landscape protection, bio-diversification, protection of cultural heritage, rural development and food safety. On the other hand, land and water pollution as well as soil erosion are considered negative externalities.

**The issue of the non-commodity output of agriculture has not been fully addressed yet.** Producers do not always take into consideration such externalities in production decisions. It is our concern to **increase the amount of non-commodity outputs** (landscape and environmental conservation) by internalising and shifting such externalities in the direction of the greater interest of society. This means that without making producers conscious of additional expenditures and benefits, non-commodity outputs will be provided at the optimal level.

We can conclude that with the lack of internalising externalities (positive attributes) we may face under supply while negative externalities result in over supply compared with social demand. Agricultural policies in a number of countries do not address such externalities and the common good. Even the majority of economic models examine the problem of providing such externalities separately, making the assumption that most such externalities are fixed and do not have an impact upon the model itself. A variety of **externalities and their effects upon public goods and products need to be also analysed.**

### *Market failure*

Agriculture is perceived to be more prone to market failure than other sectors. Market failures in areas like public goods and externalities provide a possible, but not inevitable,

reason for intervention. Agricultural policies that are in place are often assumed to provide close to the optimal amount of public goods and net positive externalities.

Agricultural output must not be confused with the support of non-commodity output. The problem of lower agricultural output cannot be addressed by tackling market failure or the other way round. Furthermore, it must be considered that income transfer of agricultural support in most cases will not provide the optimal amounts of public goods. For example, if we project the real output of market price support to different farm sizes, we observe that bigger farms receive higher support, compared with smaller farms, which also participated in the provision of public good.

Clearly, there are **many unanswered questions about what the role of agricultural policy should be in correcting market failure**. The use of market-orientated and specifically designed instruments are highly dependent upon economic efficiency of different policy options and the size of transaction costs associated with each alternative instrument. Reorientation of agricultural policies not only promises cost savings; it also opens the door to diversification of policy objectives, including those related to the environment and rural communities.

**The relationship between agricultural production and other functions is an important aspect. If there it is not clearly established that other functions are not dependent of production, then support is not justified.** Only a weak relationship can be recognised between agricultural production and some other functions such as the protection of cultural heritage and rural employment. Little relationship exists between the non-commodity output (and other functions of agriculture) and the intensification of production. Even if there is some relationship above a certain level of production, the effectiveness of other functions does not require intensive production (a specified level of production is satisfactory). **In the case of a strong parallel, however, government intervention seems reasonable**, particularly when production is closely associated with a specific non-commodity output. Often **the positive externalities of agriculture are locally defined** (location specific externalities). Hence, supporting other functions of agriculture must be location specific (in terms of function, location and/or the region).

A better understanding of market solutions would enhance location specific functions. While government interventions could diminish unwanted externalities, we must not forget about the sustainability of related agricultural costs. It is not enough to take into account a specific location, region or country's characteristics when designing agricultural policies. **Other domestic and international opportunities and threats (positive and negative externalities) need also to be considered.** In some particular cases, the transaction costs could be higher when it is compared with similar policy instruments implemented earlier. Therefore **scenario assessment is necessary in order to minimise the cost of government intervention and maximise the possible benefits**, (OECD, 2002).

## 5. Opportunities and Threats

**The biggest challenge for governments is to find ways of balancing their right to redistribute incomes and wealth, and to ensure a suitable provision of** (regional and global) **public goods within their global responsibility** (avoiding actions that impose an unfair burden on other countries). **Domestic reform is the key.** It is easier for politicians to say that they understand the problems agricultural producers face they cannot due to lack of comparative advantages the national economy would be better off without agricultural

producers. It is the implications of domestic policies for trade and trade policies that dominate international concerns. However, there would be hardly any trade conflicts if WTO member states designed their own domestic agricultural policies according to already accepted international commitments. In particular, domestic support policies need to have clearly defined objectives, which can be measured against other alternative policies as well as against the *status quo*.

Market-oriented production supports the national economy if market indices are used for resource allocation, and other rational objectives, and of course the efficiency of agricultural policies must also be taken into account. Based on the analysis of income transfer efficiency, we can conclude that **market-orientated support instruments** – if the support is separated from production or consumption decisions – **represent a more efficient, tailored and targeted instrument compared to government intervention**. A great number of market-orientated solutions exist even in the case of tackling market failure through government intervention (for example, public goods and public welfare). In principle, it is best to tackle market failure at its source.

Costly inefficient domestic policies spill over and are magnified on international markets. Trade policies may also be the only instrument used to protect domestic producers in import-competing sectors. Domestic reform is therefore important in its own right, while multilateral negotiations may have a vital role to play in promoting domestic reforms. The freeing up of resources could give the opportunity for governments to invest in areas, including expenditures on infrastructure, training, research, development, and food safety systems. A number of general investment projects can be easily identified, however, translating these general recommendations into concrete proposals for effective policies will require additional analysis.

In this regard, transparent agricultural policies (taxpayer/financed transfer) are more efficient than oblique ones (such as price support); they are also likely to increase overall awareness of who pays for, and who benefits from, specific policies. **Agricultural policies in OECD member states play a central role in providing a fair, competitive and sustainable global food and agricultural system.**

**In the EU agricultural sectors will be affected by trade liberalisation, environmental protection issues and animal welfare requirements. The position of agricultural sectors with market regulations will worsen** as a result of farm trade liberalisation (Massink et al, 2002). Sheep and beef sectors would struggle to survive in the case of full trade liberalisation including the elimination of direct payments. Keeping direct payments (see the new CAP reform) together with additional support instruments (wildlife protection, conservation of habitats), could make beef production profitable.

**Decreasing production will occur** in pig and poultry sectors **primarily due to higher environmental standards and animal welfare, rather than to trade liberalisation**. At the same time, further liberalisation of international trade could also benefit – thanks to **lower expenditure on quotas and feed**, increasing export opportunities to developing countries with decreasing tariffs – these sectors and milk production. It is likely that milk production will become more intensive and specialised.

**Horticulture** could benefit from trade liberalisation through the increasing export opportunities to developing countries; however import tariffs cut will **increase competition as well**.

Production methods supported by consumers, including organic farming will be affected negatively in the liberalised world market. The price gap is expected to decrease between high standard products (high quality meat) and special quality products (such as organic products) at the latter's expense. As a consequence of this larger farms will replace small farms with intensive production methods.

**Trade liberalisation could contribute to the regionalisation of agricultural production.** Crop producers could produce feed for their own livestock, or for other farms located in their neighbourhood. There will be given increasing opportunities for a number of contracts between crop and livestock producers.

**Income losses could be compensated by the introduction of special support instruments for the improvement of animal welfare, food safety, and environmental protection and landscape management.** With support instruments linked to special requirements, consumers' demand for a sustainable agriculture could be met as well.

For farmers in the future, off-farm income will play a greater role than income generated from agriculture. Producers may take an innovative approach of making use of niche markets in the new international market environment. The same applies to **the food processing industry, where the advantage of a higher concentration of production and the increasing imports from third countries can be used for higher value added production.**

While the Total Support Estimate (TSE), measured as the percentage of the GDP was **1.2 % in the OECD region** (based on the average of 2000 and 2002), it was 2.6 % in Hungary. **The level of support to producers, as indicated by PSE, varies widely across countries and commodities. PSE calculated per full-time farmer and per hectare of agricultural land, however, was in Hungary under the OECD average.**

**Farms and agricultural households are special** in terms of working hours and the allocation of resources (producing for the market, off-farm income, leisure time and household work). **We need to obtain additional data on agricultural households' income to be able to analyse the income position of Hungarian farms.**

**Hungary has received criticism** from some of the member states of the WTO regarding its quota administration practices, partly because tariff rate quotas are unfulfilled. **In the case of sugar, Hungary has introduced Special Safeguard measures** to protect domestic production. **Hungary's reporting to the WTO** is similarly delayed to other member states, so the monitoring of the WTO is delayed as well. **Hungary supports the "preventive" adoption of food safety** – primarily in the case of epidemic affecting countries and regions – however **we must not forget** that despite Hungary's derogation laid down in the accession treaty, **Hungary will not be able to comply with food safety requirements for a while.**

**Hungary's accession to the EU itself will have an impact upon the income position of the different agriculture sectors, which will be further affected by farm trade liberalisation as well.** The estimated average level of tariffs on agricultural products in the EU is approximately 20 %, while it is much higher in Hungary. In this regard, it can be said that the income position of sectors with large subsidies (milk, pig and poultry) will be worse off after Hungary's accession to the EU and as a result of farm trade liberalisation.



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## The challenge of integrating CEEC agriculture into the EU<sup>3</sup>

Csaba Forgács<sup>4</sup>

### Abstract

Eastern enlargement will be a challenge for both the EU and the candidate countries. The paper focuses on the following areas: macroeconomic background, dual farm structure, competitiveness, and the current agricultural development in CEECs. Applying the CAP to the CEECs will also be discussed. Finally, it underlines the challenge the agricultural economics profession faces. Eastern enlargement of the EU brings mutual benefits for both current and new members, demands substantial efforts from CEECs, and a better understanding of the Eastern situation by EU and western professionals. The responsibility of the agricultural profession to make this 'experiment' a success has to also be underlined.

### Key words

EU enlargement, integration, transition, CEECs.

### Introduction

The special character of the coming Eastern EU enlargement will be of historical importance. Not only will the dream of many CEECs' joining the EU come true, but it is the largest group of countries ever joining the EU at the same time. The move will increase the EU's agricultural area by 50% and double its agricultural labour force.

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Candidate countries have gained significant experience in the market economy by moving from a centrally planned system to a market based one, going through a number of crucial changes during the last 12 years. The next step is integration into the EU, which will be a real challenge. Taking into account the per capita GDP and the economic growth in these countries in the last ten years – as well as the differences in history and culture, plus their dual farm structure – Eastern enlargement will be demanding for the EU. Integration will bring stiffer competition to the agriculture and food markets in the enlarged EU at a time when competition on international markets is forcing the EU to adjust.

The main theme of our congress is ‘Exploring diversity in the European Agri-Food System’. As the first president of the European Association of Agricultural Economists from Central and Eastern Europe, I should like to make my contribution to this by focusing on the Eastern enlargement of the EU.

I will discuss five issues. In Section 2, I will make a macroeconomic analysis of current agricultural development in CEECs. This will be followed, in Section 3, by an analysis of the dual farm structure that has emerged in entrant countries. Section 4 will be devoted to the competitiveness of the candidate countries, and Section 5 will deal with applying the CAP to the CEECs. Finally, I will discuss the challenge our profession faces and draw some conclusions.

## **1. The current state of CEECs’ agriculture and perspectives**

Eastern enlargement will offer new opportunities for farmers both in the current EU Member States and in the candidate countries, as well as for the European consumer. The accession, however, is generating tensions among farmers in the EU because they will be facing more competitors and the loss of budget support, while farmers in the candidate countries will lose part of what is already a low income or even be forced to cease farming. Having a stable national economic foundation is of vital importance for entrants to overcome possible social and economic difficulties in the agriculture sector, and to make farm restructuring and adjustment smoother for rural society.

### **1.1 Macroeconomic background**

#### ***a. Sharp decline in GDP followed by a divergent, mostly stabilized recovery in CEECs***

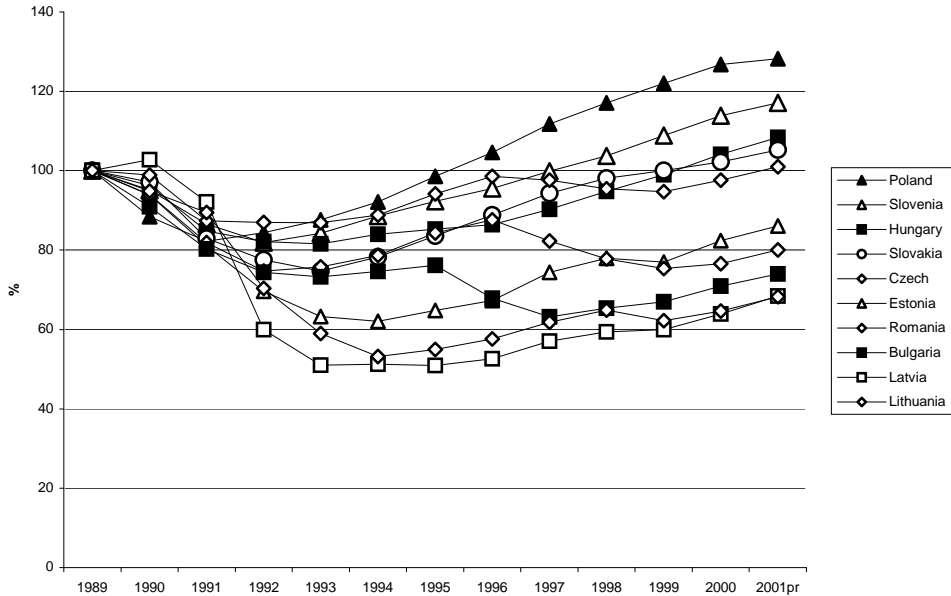
At our congress three years ago, a comprehensive analysis covering ten years of transition, describing the most important developments in CEECs during the period 1989-1998, was conducted (Trzciak-Duval, 1999). At the time, Poland and Slovenia had already achieved a higher GDP than they had in 1989 (Poland in 1996 and Slovenia in 1998), and in 2001 three more countries (Hungary, Slovakia, the Czech Republic) did so. As far as GDP growth is concerned, the years since 1997 have been rather successful for most of the candidate countries (Figure 1). The overall economic growth of these countries has been above the EU average, which established a more solid foundation for accession of CEE economies as a whole and for agriculture in particular. However, the GDP of some countries is still 15-30 per cent below that in 1989, and the differences are quite substantial.

GDP per capita in purchasing power parity varies from country to country. In 2000, it was three times higher in Slovenia (EUR 16,085) than in Bulgaria (EUR 5,403), with an

average of candidate countries equal to one third of that of EU countries (EC Agriculture, 2001). Such a variance in GDP among CEECs, as well as specificities in agriculture, might justify the need to apply differentiated treatment for those joining the EU.

Figure 1

GDP in CEECs in real terms (1989=100)



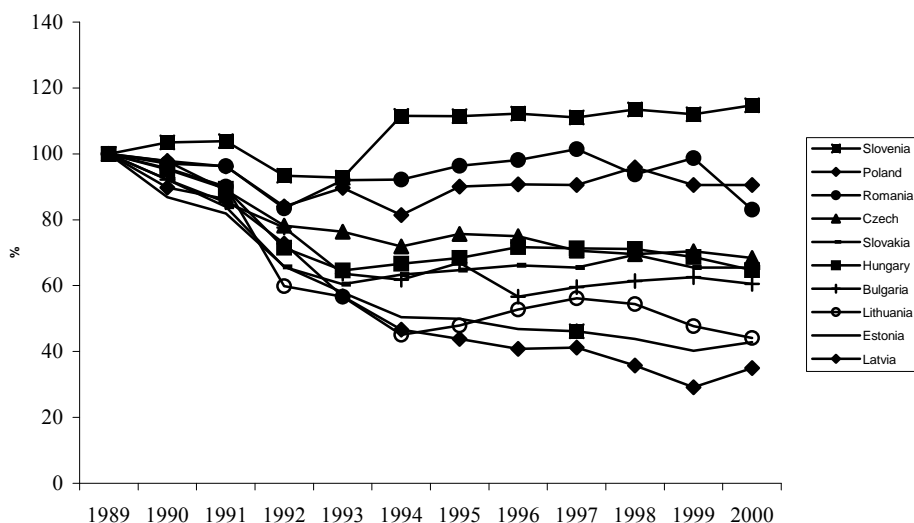
Source: EBRD Annual Report, 2000, 2001

***b. More extended decline in gross agricultural output (GAO) - stabilization at lower level with a gentle but differentiated increase***

Agriculture in CEECs had high potential in the pre-reform period and remained an important sector of the national economy even after the political changes (Ferenczi, 1994; Csaki, 1995); however, its share substantially fell in the early 1990s. The decline was slowed because of the tremendous efforts made by farms and farmers living under enormous psychological and social pressure (Tangermann, 1994). However, the ratio of GAO in GDP is still higher in CEECs than in the EU. Apart from Slovenia, where there is heavy budgetary support, the only country where the agricultural sector approached its pre-reform level in GAO until 1999 is Romania (Figure 2). Politicians and specialists from CEECs often used the argument that the pre-reform level of production should be regarded as the reference period for them when joining the CAP because these countries have the necessary potential. How should one evaluate the decline in GAO in the region? Is it realistic to expect them to achieve the production figures of the late 1980s after accession?

Figure 2

GAO in CEECs in real terms (1989=100)



Source: Gimes, A. Burgerné, 2001. Pouliquen, A., 2001. Czech Statistical Office, Prague. 2/2002. Hungarian Central Statistical Office. Bulletin Statistic Lunar. INSSE. 2001. No. 1. Bucharest. Data for 2000 are projections (except for the Czech Republic, Hungary and Romania).

In general, evidence indicates that GDP growth exceeds that of GAO. However, we have to look at what the main reasons behind the substantial reduction in CEECs were. In pre-reform days, the agricultural system was based on quantity rather than quality and was not linked to international markets. Production was based on large-scale farming. Major factors which affected GAO are the following: First, large-scale farming had to be adjusted to market systems. Second, PSEs in CEECs underwent a considerable decline in agricultural support between 1989 and 1993, followed by a period of more stable support, with a slight increase in the second half of the 1990s amounting to half to one third of EU average in different CEECs in 1998 (Rabinowicz, 2000). Thirdly, input and output prices were adjusted to international markets, and during the first post-reform years input prices rose considerably more than output prices. Between 1986-1997 the terms of trade deteriorated in all CEECs, with the exception of Latvia and Slovenia (Davidova, Buckwell, 2000), and resulted in a substantial decline in such inputs as fertilizer, good quality seeds, chemicals, etc. ultimately causing lower yields. Fourthly, as a result of the collapse of the Council for Mutual Economic Assistance, CEECs have lost substantial foreign markets, in addition to seeing a considerable drop in domestic food consumption. The surplus could not be shifted to international markets. Furthermore, due to these problems the profitability of production has been low, interests on loans were above profitability and rationalization of production started to evolve slowly. Agricultural subsidies focused mainly on increasing the income of the farms rather than forcing them to increase efficiency and productivity and to go ahead with farm restructuring. Most of the additional income from gradually increased market prices was eaten up by maintaining expensive production technologies, old management style and supporting wages.

One of the crucial issues was, however, that at the beginning of the transition these countries had no clear, long-term agricultural strategy based on a political consensus, focusing on appropriate preparation for EU accession and international competition. The latter could have been a foundation for successful agricultural policies. Instead, the high subsidization level of the CAP was emphasized from time to time, meaning that accession would solve most of the problems in the sector as a result of higher farm-gate prices and subsidization. Although it was expected that the CAP would be reformed before the enlargement, setting up a strategy and working out how to shoot a moving target proved too difficult to be managed by national governments in the region. Political groups in the countries mostly agreed on the importance of the agriculture sector; however, there was no clear, long-term strategy for the sector.

*c. Modernizing agriculture demands improved productivity and efficiency*

In 1989 the share of agriculture in total employment in CEECs varied from 8.4 to 27.5 per cent (Table 1). Establishing competitive agriculture needs less labour. CEECs did their best to find their own way to make progress. Four countries (the Czech Republic, Estonia, Hungary, Slovakia) with 3.6-7.4 per cent of agricultural labour, gradually approached the EU average in 2000. Because production was stabilized it has resulted in a significant increase in labour productivity (measured by value added per worker). Unfortunately, yields in CEECs have remained at a lower level (an average of 50-60 per cent of yields in the EU), while area efficiency has lagged behind labour productivity.

Table 1

**Share of agriculture in employment and in GVA in CEEC (%)**

	Share of agriculture in total employment					Share of agriculture in GVA		
	1989	1997	1998	1999	2000	1998	1999	2000
Bulgaria	18,1	23,3	25,7	25,9	26,2	21,1	17,3	14,5
Czech Republic	9,9	4,3	4,2	3,8	3,6	4,9	4,1	4,1
Estonia	12,0	8	6,2	N/A	7,4	9,4 <sup>a)</sup>	6,7	6,3
Hungary	17,9	8,1	7,5	7,1	6,5	5,9 <sup>a)</sup>	4,8	3,9
Latvia	14,6	17,2	18,8	15,3	13,5	4,7	4,5	4,5
Lithuania	17,6	21,5	21,0	20,2	18,0	10,1	8,4	7,6
Poland	26,4	25,7 <sup>b)</sup>	19,1	18,8	18,8	4,8	4	3,3
Romania	27,5	39,7	40,0	40,6	42,8	17,6	14,8	12,6
Slovakia	12,1	8,9	8,2	7,4	6,7	4,6	4,5	4,5
Slovenia	8,4	5,6	11,5	10,2	9,9	3,9	3,6	3,2

a) 1997; b) 1996.

Sources: Trzeciak-Duval, A., 1999; European Commission; Bulgarian Statistical Yearbook, 2001; Czech Statistical Office.

In Bulgaria, Romania, Lithuania and Poland, the sector has provided jobs and a safety net for a significantly high percentage of the population, with an increase in Bulgaria and Romania. The cheap but numerically considerable agricultural labour has impeded a rise in productivity, efficiency and competitiveness in the region. Because of having a high percentage of labour engaged in agriculture, capitalizing farms in a shorter period of time might create severe social tensions by pushing a lot of labour out of the sector and which

would demand a lot more capital. After accession, these countries may need a CAP with special measures to avoid a social explosion.

Countries with a low percentage of agricultural labour can more easily cope with the migration issue, because such countries have better economic conditions to provide jobless people with new employment mainly in the rural and urban areas. The share of subsistence and semi-subsistence farms is significant in practically all CEECs. Although their role in product markets is limited, their role as a social safety net – in providing food and generating some income – is important.

Latest GDP figures in CEECs show the previous distance toward economic recovery has been narrowed and that the Baltic countries are steadily continuing to catch up. However, significant differentiation in economic growth will affect the speed of future restructuring. Firstly, further reform will increase the productivity of agriculture and reduce the need for labour in that sector. The migration of agricultural labour to other sectors of the rural economy or to urban areas can be handled more easily if special programmes are launched to absorb these jobless people. Secondly, after accession current candidate countries will be allowed, if necessary, to give additional support to their producers up to a certain limit. However, the latter needs budgetary sources. Thirdly, for new entrants with significantly more labour this challenge has a long-term character. The Czech Republic, Hungary and, to a lesser extent, Slovakia, Estonia and Slovenia have good macroeconomic conditions for finding appropriate solutions to the migration issue, while Latvia, Lithuania, Poland, Bulgaria and Romania have to face a longer farm restructuring period.

Appropriate agricultural policies have to be implemented in CEECs before accession, which may prevent their societies from avoiding big cycles with less progress and more social tensions.

## **1.2 Market opportunities dependent on competitiveness**

Farmers allocate resources for production in order to meet consumer needs. After price liberalization, domestic demand for food dropped considerably in CEECs. In order to sell more agricultural products on domestic markets, consumers must have greater purchasing power, which requires economic growth. Selling more abroad is also possible, if quality and price requirements can be met. The EU 15 play an important role in CEECs' food exports and imports. Thus the question is the extent to which CEECs' will be able to keep or even increase their market share (if at all) within the enlarged EU.

### ***a. Significant drop in domestic demand***

After the liberalization of energy prices, the cost of insurance and services as well as other costs constituted a bigger share of the family budget in CEECs resulting in a considerable decline in domestic food consumption – although there has been a moderate increase in the last few years. According to 1999 statistics, the share of household income spent on food (including beverages and tobacco) was 50 per cent in Bulgaria, 44 per cent in Lithuania and 42.4 per cent in Romania, while it was 23.5 per cent in Slovenia, 26.6 per cent in the Czech Republic, 30.1 per cent in Hungary and 31 per cent in Slovakia (Statistical Yearbook, 2001). The current low consumption means there is a good potential for the future, due to high income elasticity of food demand, if economic growth is maintained. However, after accession CEE producers will have to compete on domestic markets as well. Those who want to keep their previous markets will be forced to improve the quality of their



products, maintain a safe environment, implement a quality assurance system and identify the origin of their products. Otherwise farmers may lose part or all of their traditional markets. All this demands a new approach on the producers' side focusing on innovation rather than just producing more output. It was made clear in the CAP midterm review that there are consumer concerns— such as having access to healthy, good quality food and a healthy environment – which are not answered by the market and that the CAP has to bridge this gap (Fishler, 2002). The time left until accession is limited, so CEE governments and producers must do their best to figure out what the message for them is.

***b. Increasing foreign trade with EU, but a negative tendency in balance***

In the 1990s food industries in CEECs improved product structure and product quality level. At the same time, chain store multinationals, when they appeared, forced food industries to reduce their prices. Agricultural producers came under pressure to provide cheaper raw materials for industries and to meet scheduled deliveries to chain stores. After restructuring the entire vertical chains, the total efficiency of the latter increased resulting in a better position in international competition.

Three countries (Poland, Hungary, the Czech Republic) have made considerable exports to the EU (EC Country Reports, 2001). EU exports to CEECs have undergone extremely high expansion during the past decade, and exports from CEECs to the EU have doubled. The net exports of the EU to the region sharply increased from a negative balance of EUR 1 billion in 1992 to EUR 2 billion in 2000 (Csaki and Nucifora, 2002), with EUR 500 million surplus in 2000 compared to the previous year (EC CEE, 2001). The EU had a positive agricultural trade balance with all CEECs (except Bulgaria and Hungary) in 1999, and with Hungary only in 2000. Besides, trade between CEFTA countries has also developed through conflicts of interests. For traditional reasons, agricultural foreign trade within the region is of great importance and is expected to remain important after enlargement (Gimes, Burgerné, 2001). The agricultural trade of CEECs has already been integrated into international trade, and will become integrated into the EU even faster. The structure of foreign trade in agricultural products between the EU and CEECs is country specific; however, meat, oilseeds, dairy products, live animals, vegetable and feed are the most important import goods from CEECs to EU, while prepared feed, tobacco, fruit and meat are the major products traded to CEECs from the EU.

The level of food exports to and imports from the EU stabilized in the late 1990s; however, figures on development provide evidence that CEECs' agriculture and food industries need significant progress to improve product quality, marketing, productivity and efficiency in order to exploit the advantages of their natural resources by selling more on future domestic and EU markets after accession.

**2. Dual farm structure: an advantage or a disadvantage?**

Agriculture in all pre-reform CEECs was an important sector and had a multifaceted character. In the early 1990s, the restitution and redistribution of land to its former owners radically changed the land ownership and land use patterns in the region. In some countries, statistics on land use are not easily available and are inconsistent. It is a fact, however, that a mixed dual farm structure exists in most of the candidate countries. A huge number of producers have only a small piece of agricultural land, and a small number of large farm operations/incorporated farms (cooperatives, partnerships, agricultural companies) have a

substantial share in land use, while – except in Poland and Slovenia – the number of medium-size family farms is insufficient.

***a. Inefficient large farms have disappeared***

Land belonging to cooperatives and state farms has been restituted or redistributed. Inefficient large farms became bankrupt and were liquidated or privatized. In the case of state farms, privatization has mostly been completed. The average size of land of incorporated farms compared with the pre-reform level of state farms and cooperatives has decreased substantially, and they mostly lease the land. Among them are number of emerging efficient farms.

***b. Large number of individual farms with mixed development patterns***

Farm structure, the performance of individual farms, and their production structure changed in the mid-1990s (Sarris et al., 1999). There was a huge number of individual farms with a low average size of land (except in the Czech Republic and Slovakia) in candidate countries (Swinnen, 2000). Although the number of individual farms has declined since then, the number is still very high. The question is, how many will register? For instance, in Hungary only a fifth of the 958,000 individual farms (in 2000) are registered so far, while others are not registered due mainly to tax preferences.

In 2000 the average size of individual farms varied from country to country. It was highest in the Czech Republic, followed by Latvia and Slovenia. The number of such farms increased in Romania while sharply declining in both Bulgaria and Hungary. Although progress in farm restructuring has been made in CEECs, it is still not completed. Farms can be categorized into three groups: family farms, small individual farms (subsistence, semi-subsistence and small farms) and incorporated farms (cooperatives, agricultural companies, partnerships). Farms may move between categories; for example, cooperatives may break up if they cannot compete. Small farms which become successful by investing more capital and leasing or buying more land can turn into family farms. Family farms can establish partnerships etc. However, when the main restructuring process has been finished, such mobility will slow down.

***c. Increasing average family farm size***

Concerning average family farm size with more than one hectare in 2000, the Czech Republic (27.4 ha) and Estonia (20.8) were in the forefront with holdings of around or above the EU average (Table 2). In countries where incorporated farms have more than a 50 per cent share in land use, the average individual farm size with more than one hectare is also higher, except in Bulgaria. The concentration process toward family farms has been moderate in Poland and in Slovenia and slightly decreased in Lithuania. In Romania, individual farms had an average size of 2.36 ha in 2000; in 1995, 360,000 farms already had more than 10 ha – which can be regarded as good potential in terms of competitive family farms (Sarris et al., 1999).

Growth in the number of viable family farms with more than 30 ha of land has been moderate in CEECs. Low profitability of farming, increasing quality requirements, lack of markets and high interest rates on bank loans are still obstacles to increasing the family farm size.

Table 2

**Farm structure by farm land use in CEECs, 2000**

	Share in land area (%)				Average farm size (ha)			
	Individual farms		Individual farms		Incorp. farms	Incorp. farms	Individual farms	
	Above 1 ha	Below 1 ha	1996-98	2000			Above 1 ha	Below 1 ha
Slovakia <sup>a)</sup>	8,9	2,5	5(96/97)	11	77	1,360	10,6	0,21
Bulgaria <sup>c)</sup>	5,7	17,3	52(95/96)	23	77	535	6,2	0,9 <sup>b)</sup>
Czech Rep.	25,7	0,7	24(1998)	26	74	998	27,4	1,5 <sup>b)</sup>
Hungary	53,2	3,8	60(1998)	57	43	960	8,6	0,26
Estonia	68,9	10,4	63(1997)	79	21	470	20,8	0,5
Romania	81,8 <sup>d)</sup>		65(1998)	82	18	212	2,36 <sup>d)</sup>	
Poland	84 <sup>d)</sup>		82(1996)	84	16	440	7,2	0,38
Lithuania	71,0	22,0 <sup>b)</sup>	67(1996)	93	7	223	4,8 <sup>d)</sup>	
Slovenia	93,9	-	96(1997)	94	6	288	5,3	-
Latvia <sup>e)</sup>	57,5	37,5	95(1997)	95	5	1,135	13,7	4,9 <sup>b)</sup>

a) 11.3% of farm land is not classified; b) defined as household farms; c) cultivated agricultural land out of total 5,582,100 ha; d) family and household farms together; e) 1997 data. Some 10% of agricultural land is not classified. Lithuania: household farms: 22% of total farm land with an average of 2.2 ha.

Sources: Agricultural statistics. Bulgarian Ministry of Agriculture; European Commission; Hungarian Central Statistical Office. Agricultural Census (AMÖ), 2000; Individual farming in transition economics: issues and policies. FAO workshop; Country reports. Budapest, September, 2001; Swinnen, J., 2000.

A vital question is the productivity and efficiency of family farms in general, and in particular how they compare with cooperatives, companies and partnership farming. To what extent medium-size family farms will emerge and how they will be able to improve technology and the quality of inputs and outputs prior to the accession are still open issues. How to establish a land market when personal capital is in short supply and the interest on bank loans is above the profitability level? It is a challenge for policy makers in candidate countries to facilitate the further concentration of family farms prior to accession.

***d. Household farms having social safety net function for longer period***

Quite a large number of household plots (subsistence and semi-subsistence farms) can still be found in CEECs. Farms with less than one ha of land or named as such are regarded as a household farm.

Household farms serve as a source of income. For two-thirds of the heads of household farms in Slovakia, agriculture is the main source of income, while in the group of retired persons receiving a pension, one third of the heads of farms regard agriculture as the main income generator (Blaas, 2001). In Hungary, 89 per cent of small farms cultivated less than one hectare of land in 1994; this figure dropped to 70 per cent in 2000 (AMÖ, 2000); also the number of individual farms had fallen. Romania has gone in the opposite direction, having 200,000 more household farms in 2000 than in 1996. Household farms' share in land use in countries where incorporated farms (including cooperatives) dominate the sector, apart from Bulgaria, is rather low in Slovakia, the Czech Republic and Hungary. In contrast, not only is their ratio in land use very high in the Baltic countries, but also the average size of this type of farm is higher in Latvia and Lithuania.

Except in the Czech Republic, the number of household farms is high in all CEECs; however, they are less important in countries with incorporated farms dominance with rapid economic growth. Nevertheless, even in high income countries there are hundreds of thousands of people who need to run a household farm to support their family. Such a need is much stronger in candidate countries with low economic development. Household farms perform an important social safety net function which will continue even in the years after accession.

***e. Incorporated farm sector development and the adjustment phenomenon***

Statistics on land use by incorporated farms have changed during recent years. In the period 1996-98, individual farms entailed more than 50 per cent in agricultural land use in all CEECs except Slovakia and the Czech Republic. Since then the share of incorporated farms in land use has increased little in Hungary and more in Bulgaria. There are countries where the share of individual farms in land use amounts to 80 per cent or more, while there are also countries where incorporated farming dominance (Table 2).

Although these figures may change before accession and especially after enlargement, the tendency shows certain structural movements. The higher the share in land use of incorporated farms, the higher the average size of incorporated farms in the country (with the exception of Latvia and Bulgaria).

***f. Productivity and efficiency of various types and size of farms***

Productivity and efficiency are related to farm type, farm size, production structure and the managerial skills of the farm. Structural changes affected productivity in CEECs substantially (Tangermann and Swinnen, 2000), especially due to the outflow of great numbers of workers from previous state farms and their successors as well as from cooperatives. When looking at farm productivity and efficiency, one has to keep in mind that the economic success or failure of particular types of farms must be understood in terms of their origins, the wider economic environment, and factors which are unique to different countries and regions (Hughes, 2000). Examples from empirical work provide evidence indicating that the same size of farm does not necessarily result in the same level of productivity in different countries and in different regions, even within the same farm type. The question is: what size of farm of different farm types results in the highest productivity in one or another branch?

Research carried out in different CEECs and different regions using the same methodology and having a dynamic character help to clarify the tendencies and determine the factors behind them. Individual and especially family farms compete against incorporated farms. However, they are also vulnerable and more time is needed to see which of them have a competitive advantage. The picture in CEECs is far from clear. A study using a data analysis model based on data on 600 farm types including 214 from East Germany, focused on farm efficiency (overall, technical and scale). According to the results, a fifth of the East German farms (a larger share than West German farms) are more than 95 per cent efficient. At the same time Eastern farms could reduce inputs by 21 per cent without change in output if optimum management practices were applied. However, 73 per cent of individual farms are too small as are 76 per cent of partnerships, and 79 per cent of companies/cooperatives are too large to reach overall efficiency. (Thiele and Brodersen, 1999).

Research into the performance of the same organizations over time reveals how these organizations have adjusted – or have tried to adjust – to new economic circumstances. Tóth (2000) surveyed 104 cooperatives in Hungary for the period 1989-93; this period was extended to 1995 and 1998 for the 75 cooperatives that had survived (the others in the sample had disappeared or been broken up). The study discusses all the difficulties the cooperatives had to face and points out how they did their best to adjust to downsizing, to a change in production structure, and to offering their members fewer jobs, while having to deal with low profitability. It was concluded that a more stable economic environment and a neutral agricultural policy was needed in order to plan future activities and follow a long-term strategy.

Based on previous studies it was pointed out that there is no cross-country optimal size of corporate farming as far as cooperatives in the Czech Republic, Hungary and Slovakia are concerned (Gorton and Davidova, 2001a).

Concerning total factor productivity in the Czech Republic, individual farms score below the average. As far as profitability is concerned, using cost-revenue plus subsidies two-thirds of individual farms were profitable. However, the labour-intensive production with factors all valued at opportunity costs, individual farms in the sample were found unprofitable but with large differences in performance (Davidova et al., 2001).

Examples show that there is lot to do in increasing efficiency and productivity in different farm types in CEECs.

***g. Is dual farm structure an advantage or a disadvantage?***

This question is also of great importance from an enlargement point of view. Without considering all aspects of the question, a few remarks can be made. The current dual farm structure of CEECs partly dates back to the days when command economies preferred and subsidized large-scale farming. Most discussion focused on the disadvantages of incorporated farms and the advantages of family farms, and less attention was paid to identifying the potential strengths incorporated farms may have. It is a fairly important issue as the mixed and still not stabilized CEECs' farm structure has to compete with well-capitalized and more greatly subsidized family farms of the EU 15. Will the CEECs' incorporated farms with all their weaknesses be more competitive than family farms in the region? Furthermore, what is the minimum size a family farm in a CEEC will have to be in order to have a chance to survive after accession? How many of such viable family farms in entrant countries can emerge prior to the accession? How can one encourage the latter by means of agricultural policy? Which are the subsectors where family farms may have comparative advantages, and which are those where incorporated farms have advantages? Finally, how fast can family farms be integrated into the food chains, compared to large farms?

There are many questions and the possible answers depend on many factors. However, from the latest developments some points should be underlined:

- The farm structure development of CEECs will not be as uniform as it was before the reforms;
- Certain candidate countries will implement farm restructuring which differs from that of others;
- Farming in CEECs has a social safety net function and this is of greater importance in countries with a high share of agricultural labour.

Although more time is needed for farms to prove their viability, accession will give different farm types a chance to adjust. Head-to-head competition with domestic and foreign family farms, cooperatives, partnerships and agricultural companies may demonstrate their ability to compete; if not, the further breakdown of incorporated farms will occur. A bottom-up approach to concentration of emerging family farms and a top-down-type adjustment of large size farms can be expected. The competitiveness of incorporated farms in different CEECs will vary depending on economic background, management skills, past experience, financial situation, level of capitalization, natural endowments, bargaining power, etc. Farms will do their best to find the most profitable product structure under the CAP. In crop production it is expected that new policies will create an incentive to modify land utilization in favour of directly supported crops (Csaki, 2002).

Undoubtedly, the adjustment after accession will demand a lot from both family farms and corporate farms in CEECs. However, the dual farm structure can be regarded as an advantage rather than a disadvantage, and may provide empirical evidence after the accession with which to identify the direction for future reform of the CAP.

### 3. Competitiveness of CEECs' agriculture

The competitiveness of CEECs agriculture has led – not surprisingly – to wide-scale discussion and a great deal of research. Farmers on both the EU and the CEEC side complain that the other side gets most of the advantages. The EU farmers are afraid of their new competitors demanding their own share of the slightly bigger pie, while having access to abundant cheap labour. In candidate countries farmers emphasize their disadvantages in having much less personal capital, paying higher interest rates for bank loans, and suffering from weak marketing performance and infrastructure which, they say, cannot be offset by their cheap labour. However, the issue is more complex. Although the results of a number of studies based on empirical research or using different models have been published<sup>5</sup>, we must be cautious about drawing general conclusions and interpreting the findings.

No single definition of the concept has been accepted by either economists or management theorists, although there is a need to define it at both farm and national level. At farm level the concept is understood as the ability to supply goods and services in a given location and form and at the time they are sought by buyers, at prices that are as good as or better than those of other potential suppliers, while earning at least the best cost of returns on resources applied (Freebairn, 1986). For farmers it is important to be aware of their competitive advantages and to utilise these advantages on the market. Competitive potential depends not only on the farm level but also on a set of determinants that can occur in the

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<sup>5</sup> The following list of papers is a selection of research dealing with the competitiveness of CEECs and using different methodology.

CEECs: Eiteljörge, U. - Hartmann, M., 1999: Food Chain Competitiveness., Gow, H., 2000: FDI, Gorton, M - Davidova, S. 2001a: Competitiveness at farm level., Davidova, S. et al. 2002: An analysis of competitiveness at the farm level in the CEECs.

Baltic countries: Frohberg, K. and Hartmann, 2000: gross margins II and III.

Bulgaria: Gorton, M. and S. Davidova, 2000: Trade with EU.

Czech Republic: Ratinger, T., 2000: EPC, DRC.

Czech and Slovak Republic: Mathijs, E. et al., 1999: Data Envelopment Analysis (DEA).

Hungary: Banse, M., et al., 1999: PRC, DRC and EU-BRC, Orban Nagy, M., 2002: Comparison of EU and Hungarian producers' prices, Jansik, C., 2001: FDI.

Poland: Gorton, M. et al., 2001: DRC, Piskorz, W., 2000: European Simulation Model (ESIM).

Slovenia: Bojnec, S. and W. Münch, 2000: ESIM.

entire vertical chain. Among these are institutions, policies, input supply, farm structure, natural endowments, social and climate conditions, processing, distribution, quality, size of consumer markets, production structure and farm management. The distinction between competitive potential and competitiveness has to be underlined pointing out that competitiveness includes market distortions while competitive advantage does not (Frohberg and Hartmann, 1997).

Besides the competitiveness of agricultural commodity systems, sectoral and national competitiveness are of great importance. At the national level, one of the most often quoted concepts defines a country as competitive if it is able to increase its share of export markets, and a country has a comparative advantage in product if it can produce at a lower cost than other countries do. Domestic competitiveness can be measured in terms of private profitability, while the term social profitability is more appropriate to international competitiveness (Banse et al., 1999).

Competitiveness based on product differentiation is very much affected by quality. CEECs inherited their food control system from the previous regime, significantly different from EU legislation. These differences are still largely intact.

The results of nine studies using DRC methodology reveal the competitiveness of CEECs in greater detail. The findings are very informative, as illustrated by the following: In CEECs, crop production is more internationally competitive than livestock production, indicating a considerable degree of variation in the region. The livestock sector has severe problems where large herds have been broken up into fragmented units. Using current EU prices in the calculations, CEECs agriculture is more price competitive, but this is not universal (Gorton and Davidova, 2001b).

However, it must be remembered that the macroeconomic capacity of CEECs to support agriculture is very low and that this penalizes the agricultural policies of the CEECs compared to those of the EU 15. In 1999, the EU gave its agricultural sector ‘total support’ (including support for prices and general services) approximately three to four times higher in per capita figures than in Central Europe, Romania and Lithuania, and eight times more than in Estonia and Latvia (Pouliquen, 2001). Determinants of competitive advantages are varied to a wide degree in CEECs, but all candidate countries are interested in recognizing those branches in the sector where they have a comparative advantage.

Concerning the efficiency of corporate versus individual farms, managerial skills and human resource management in incorporated farms may offset the advantages of family farms in lower monitoring costs of labour in CEECs. Furthermore, the advantage of large-scale production (in technology, producing more unified quality, ability for innovation, mass production, bargaining power in the food chain) can be counterbalanced by improving cooperation and bargaining power of family farms in buying inputs, services and marketing outputs. Concerning processed food, CEECs need more capital investments in order to improve quality and reduce production costs and thus improve their competitiveness.

#### **4. Should the CAP be fully implemented for candidate countries?**

As a result of increasing demand (and partly of overproduction), the international trade in agricultural and food products has increased. In some countries and regional markets more protectionist policies have supported exports and put restraints on imports, while in other countries the subsidization (if any) of agricultural production has been moderate. The

CAP is expensive because it provides substantial support to farming. Is it theoretically rational for CEECs to adopt the CAP – a more protectionist agricultural policy – when negotiations on liberalizing the international trade in agricultural products are heading in the opposite direction? The answer is complex. On the one hand, making agricultural production more subsidized by applying the full CAP to CEECs' agriculture will make it less competitive on international markets, and the EU will also need to allocate more from its budget for the CAP after enlargement. However, without having equal conditions for all producers after obtaining full membership, there will be no single market – which will disadvantage CEECs' producers. The long-term goal of an enlarged EU (improving competitiveness on international markets) and the short- and medium-term goal of candidate countries (to become competitive within the EU) are in conflict. This situation needs resolving, but not by disadvantaging entrants.

Furthermore, concerning productivity, efficiency, quality control, restructuring, export orientation, etc., CEECs' agriculture is in a different stage of development and, in general, all farms in the region need to invest a lot to catch up with the EU 15. Adapting the full CAP right after the accession would be a challenge for all CEECs, too, since they are not ready for fierce competition which would bring about the failure of a larger number of farms. At the same time it would generate additional support of 20-25 per cent of the EU 15 (Berkowitz, 2001). On the other hand, WTO negotiations are forcing the EU and other countries to decrease their support of agriculture. Eastern enlargement of the EU brings both the Community and candidate countries to a crossroad of conflicts of interests which offers the possibility for CAP reform, although the latest change in US agricultural policy – increasing subsidization for farmers – gives the EU a more comfortable negotiating position.

The European Commission has suggested for CEECs a transition period concerning the adoption of the full CAP, instead of accepting tough supply control limits as a possible trade-off to be negotiated between the size of the quotas granted and the availability and timing of direct payments, which would be presented as compensation. The decision by the EU Council to pay 25% of direct payments to CEECs' producers after accession in 2004 to be increased by 5% in each of the subsequent two years (EC Enlargement, 2002) was a concession to CEECs' producers compared with the EU's previous standpoint. Furthermore, all types of agricultural land can be taken into account with no obligation concerning production and with a minimum eligible area set at just 0.3 ha. The offer brings additional income support to CEECs; however, the CEECs argue that they do not have a level playing-field for competition because of reduced direct payments. What arguments – if any – can be used to justify CEECs' need?

Although farmers in CEECs have not suffered income losses due to price cuts, they have suffered income losses partly because of a strong decline in PSEs (except in Slovenia) due to deteriorating terms of trade and the farm restructuring since the early 1990s. However, the arguments used in the EU position (Burrell, 2000) have to be considered. Full direct payments for new EU Member States would lead to an increase in the subsidization level of agriculture (which is against WTO goals) and in the amount of capital leaving the sector as a result of increased land prices and a high number of absentee landowners. However, in the longer term land owners would be willing to keep the land until a reasonable price is offered. If direct payments push up land prices, landowners will have various options. Firstly, they will not be interested in selling the land because they will be able to get a higher fee for leasing it out. Secondly, they may start farming. However, for those who are not interested in farming, selling the land will be profitable and the money will leave the sector. So if the land prices become significantly higher, probably more absentee landowner in CEECs will be



ready to sell the land than would otherwise be the case. Higher subsidies, on the other hand, would slow down the rationalization of production because continuing traditional farming might become profitable. For new entrants, however, higher land prices would make farming more expensive and form an obstacle for young people who wish to start farming.

As for making numerous rural people unemployed and stimulating migration to urban areas, if direct payments were fully implemented, this cannot be expected mainly due to housing problems. In some countries (e.g. the Czech Republic, Estonia, Hungary, Slovakia), the labour potential to leave the sector is not too high. In Poland, Bulgaria, Romania and Lithuania the share of agricultural employment is high, which needs special consideration. In Poland, full direct payments would slow down the concentration of family farms and postpone efficient farm restructuring. In Bulgaria and especially in Romania the full direct payments would increase the income of farmers considerably compared to their current low income level and might generate serious social tensions within society.

There are other ways to bridge the gap between the Commission's proposal and that of the candidate countries. Firstly, looking at the long-term goal of improving the competitiveness of the EU and the need to reform the CAP means that eliminating direct payments after enlargement might be a choice for CAP reform. It would provide equal conditions for all Member States while the direct payments could be used to support structural development. Secondly, if offering full direct payments to new Member States is not accepted by the EU either from the date of accession or from 2007 onwards, then rather than paying reduced direct payments (maybe a bit above what the Commission offered in January 2002) a special fund could be established to make up the difference between the latter and full payments, and countries could use the fund to support structural development in the country.

Concerning direct payments, the CAP does not yet distinguish between family and large farms. However, the proposal by EU Commissioner Franz Fischler in his midterm report on Agenda 2000 suggests a subsidy ceiling of EUR 300,000 per farm, which reflects a policy goal to support family farms against improving agricultural competitiveness. Such a limit is against farm concentration, too, because after a certain point, scale economies cannot be realized. It would affect more those CEECs with incorporated farm dominance while, implicitly, helping those with more agricultural labour. It would not provide equal conditions and would handicap incorporated farms, which would reduce their competitive pressure on current EU farmers. Such an upper limit would not only disadvantage East German farms, but also generate negative feedback from CEECs.

Nonetheless, EU membership offers entrants new possibilities. It is up to new members to decide how to take advantage of the situation, but unless they make tremendous efforts the results will be disappointing. CEECs must learn from their experience during the past few years. However, most candidate countries are still not able to fully exploit their tariff-free access quotas to the EU. In addition, despite significant progress, the institutional system of agriculture still demands substantial further transformation in the region (Csaki and Nucifora, 2002).

## **5. The professional challenge of CEECs' agricultural economics societies**

The smooth and successful integration of CEECs' agriculture into the EU demands the deep and active involvement by those in the field of agricultural economics in candidate countries in the reform process.

The agricultural economics profession in CEECs has made substantial progress since the early 1990s. In various topics valuable outcomes have been achieved. However, the gap between the level and performance of the agricultural economics profession in developed countries and in CEECs, although it has shrunk, is still there. Most research works and study papers that have been produced by colleagues in CEECs have been descriptive. Agricultural economics experts in the candidate countries, in a broader sense, have to focus on reducing the existing performance gap. The job is not only to continue the present cooperation between the EU's and the CEECs' institutions and agricultural economics experts, but also to widen the scope and deepen the analysis of the research.

In CEECs researchers have the freedom to research and to publish and teach research findings. But to forget old approaches and to learn the new theory, concepts and methodology demands a lot from agricultural economists. For most of our colleagues – and especially the older generation – a foreign language is still a barrier. In addition, due to budget constraints, it is not easy to access books and periodicals published in developed countries. Differing levels of knowledge on various professional topics are a real obstacle which partly can be offset by using the Internet and e-mail communication channels. However, quality requirements have to be understood.

The focus should be on equipping a new generation of young colleagues with advanced knowledge of our profession. PhD students and younger researchers should participate in joint research programmes and spend sufficient time at one of the centres of excellence in Western Europe or overseas. Granting more scholarships to young researchers from candidate countries to get a PhD degree at one of the renowned EU or USA universities would be a real help. Young colleagues after returning home could share their improved knowledge and act as pillars in international research networks. In addition, there is also a need in CEECs to strengthen the departments of agricultural economics at universities as well as agricultural research centres in the region. The transition is a very complex issue and it is important to take into consideration the social aspects of it. Tens of millions of people reside in the CEECs. They all have to have a chance to survive. This requires more understanding from Western colleagues.

In organizing the EAAE seminars and congresses we recognized these problems and did our best to tackle them. However, research facilities and financial sources have to be improved and strengthened in CEECs. EU accession will give candidate countries new opportunities to gain access to more research grants and to develop a relationship capital that provides support for existing joint East-West research teams to become stronger and for new joint groups to start working together in the interest of establishing a more dynamic, efficient, more people-oriented European agriculture.

## **Conclusions**

Eastern enlargement of EU, with its mutual benefits, demands substantial efforts from both CEECs and the EU focusing on increasing international competitiveness of Europe in the long term. The successful completion of the CEECs accession to the EU very much depends on the extent to which governments and policy makers in CEECs face reality and can distinguish short-term from long-term goals.

After the political changes, there was a delay before starting reforms, and preparation for EU membership was slow because there was no clear agricultural development strategy. Social tensions were contained by agriculture assuming a social safety net function at the expense of forcing an increase in efficiency and competitiveness.

The EU and our Western colleagues have to make more efforts to gain a better understanding of the drama of CEECs' transition. On the other hand, CEECs have to recognize that if significant progress is not achieved in increasing efficiency in the short term, it will be rather difficult to achieve the desired goals.

It is the responsibility of agricultural economics experts in Europe and beyond, and especially in the EU, to make this economic 'experiment' a success. It is a job for the EAAE to aid the EU's eastern enlargement and to successfully integrate European agriculture into the global world economy, while safeguarding our environment and beautiful landscape for future generations.

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## **Land ownership and property relations in the EU-approaching process in Hungary**

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### **Abstract**

Changes happened in every sector of the economy as a result of the transformation that happened in the social system at the beginning of 1990s in the Eastern European countries. Where is Hungary in this respect? Which group does it belong to? How did it change in the last decade and how is land property structure changing nowadays? We tried to find answers to these questions.

These days land ownership is fragmented to the highest degree, and some agricultural entities are barred from land ownership; also land ownership and land use are often distinct and income withdrawal from agriculture is considerable. Land estate policy can set the following goals:

- To promote land ownership and land use for those living from agricultural production;
- To further fusion of land ownership and land use;
- Promoting suitable land property size;
- Promotion and support of a healthy balance between small, medium and large-scale farms;
- To help symbiosis between family farms, co-operatives and corporations.

Without these things neither a competitive agricultural sector nor an acceptable standard of living for the agricultural population can be attained.

### **Key words**

Land property, land estate, compensation, EU integration process

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## Introduction

One of the most important questions regarding efficient agricultural production is attaining the required land size suitable for farming. Big differences have emerged in the course of the historical development in land size all over the world. This means that it is difficult to compare the agricultural sector of any two countries. The United States of America and the European Union member states are good examples of this. The average farm size in the United States of America is 434 acres<sup>8</sup> (176 ha) and only 18 ha in the European Union. There are big differences inside of the European Union member states, too. It may be deduced from data that the average farm size is low in the Southern Member States and high in the Northern member states. The smallest average farm size is 5 hectares and this is in Greece. The UK's average farm size of almost 70 hectares is by far the largest. Farms with a large amount agricultural land existed in agricultural production before changes happened in the Hungarian social system. After "compensation"<sup>9</sup>, a great number of individual owners have acquired small agricultural land estates. Hungary and Eastern European countries would like to develop an efficient land property structure because they would like to become members of the EU as soon as possible. It is the task of national agricultural policies to develop this.

Transformation happened in every area of the economy due to changes that happened in the social system at the beginning of 1990s in the Eastern European countries. These changes have resulted in significant transformation in some countries' agriculture. In some countries, this has resulted in radical changes in land relationships, and it happened in Hungary too. The farm structure is not uniform in the Eastern European countries. For example, there are mainly big farms in the Czech Republic, Slovakia, but there are small farms in Poland, Slovenia. (Kovács, 2001) Where is Hungary in this respect? Which group does it belong to? How did it change in the last decade and how is land property structure changing nowadays? We tried to find answers to these questions writing this paper.

### 1. Transformation in land property and land relation

Social transformation has again set Hungarian land policy at a crossroads, and this of course already occurred many times in the course of history. Keeping big farms is one possibility, and also trying to produce the kind of transformation which accounts for the special development of Hungarian society where the advantage of size effectiveness mixes with the advantage that small and medium farms have. The advantage of family farms results mostly from the owners' special attitude to their property. On the opposite side of the argument, some affirm that Hungarian history was often a dead end, until now refusing the development possibilities of the civil land property relationships in developed European countries. In our opinion "a possibility opened by the de-collectivization on the one hand, so that agricultural producers, like land users, could become material land owners; on the other hand, it presented the possibility to end a thousand year old separation between owners and producers in the property structure step by step" at the beginning of 1990s. In the end, an unmatched situation has formed as a result of political hesitation, or rather from bickering. It means that nowadays large-scale farms (but they do not work their own land) are greatly

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<sup>8</sup> 1 acre = 0.405 hectare

<sup>9</sup> Compensation: this is a partial refunding of the property damage which was caused by social injustice



present and the formation of competitively-sized family farms is now occurring. This is partly due to bourgeois aspirations.

Table 1

**Land area distribution in 1989**

<b>Farming forms</b>	<b>Arable land</b>	<b>Cultivated land by agriculture</b>	<b>Agricultural land</b>	<b>Total land</b>
The State farms and corporations	689839	944716	2120149	26667554
Agricultural co-operatives	3849224	4911183	5468453	5679191
The council and other communal farms	35411	94621	106540	278142
Complementary farms	79874	427733	433159	557538
Individual farms	57485	103093	108507	111778
Other farms	845	2555	2593	8832
<b>Total</b>	<b>4712678</b>	<b>6483901</b>	<b>8239401</b>	<b>9303035</b>

Source: A földtulajdon és a mezőgazdasági struktúra átalakulása III. AKII. 1990 163.o.

According to data in table 1. co-operatives used 66.4% of arable land, co-operatives and state farms combined used 92.1% of arable land in the last year before transformation, in 1989. This proportion determined the basic land use forms unambiguously. 3,471,311 ha of arable land was in co-operatives' hands, 1,911,734 ha arable land was cooperatives' members property (and full-time employees in the same jobs as them) and only the remaining 3.8% was State property of the co-operative land area. Behind this property ownership ratio there was a unique big farm structure, of which the land use and cultivation method were almost unique in the world. On the one hand, the basic agricultural function mixed with different secondary and complementary functions. On the other hand, large-scale farm production mixed with household farming was closely integrated to large-scale farms. This property structure was rapidly destroyed by the quickly created compensation law in the first years of the 1990s. The agricultural land in the compensation package appeared different from the usual process. They did not care about local farmers and their families when identifying those who were entitled to compensation, meaning the potential bidders (customers).

Land property transformation started in 1987 when the Law about cooperatives was passed by the Parliament and on 1<sup>st</sup> June 1989 the Parliament passed the Law on land property in Hungary. In accordance with this:

- Natural private entities could buy lands;
- The plan to prohibit the removal of land was cancelled in cooperatives;
- The "indivisible cooperative property" became divisible up to 50% of the property.

The collectively owned part of the property became freely transferable and it was prescribed that this part of property had to be paid to the members if the co-operative broke up. It seems, the intention to transform the cooperatives became strong, such as leasing and buying of collectively owned property and other property (buildings, machines) for private entity and/or groups, but later this process stopped. Basic changes happened in the transformation process after the 1990s transformation. Complete and rapid privatisation became compulsory in the cooperatives' property, including land property.

This meant that land use was sharply separated from the land ownership. The land rental system came about because of this situation, and the land rental system has made a bridge between property and land structure. In part it is thanks to this that the land structure doesn't show such extreme conditions as we might deduce from property relationships moving towards small-size lands.

## 2. Compensation

The redistribution of land and land purchase were mixed in the process of agricultural land privatization in Hungary. Partly they returned estates from cooperatives but named (it means it was in private property according to land registration) to their real owners. It was about 30% of the cooperative agricultural land. The other compensated group got compensation notes and they could buy agricultural land at land auctions. (Burgerné, 1996)

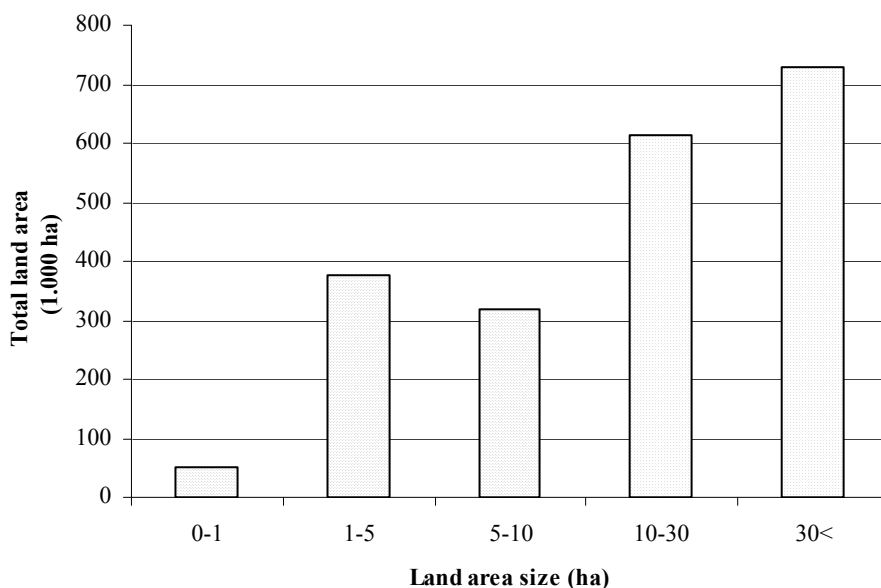
The National Compensation Office (Országos Kárpótlási és Kárrendezési Hivatal – OKKH) was founded in 1992. In the compensation law (1991 Law XXV., so-called I. compensation Act) the Hungarian State and co-operatives needed to designate so-called land on the basis of cultivated land. The people entitled to compensation made claims on big farms, where their original agricultural land was located. The National Compensation Office collected the claims and informed the farms in question, after which they had to appoint the land-fund from their own land and put it into the compensation fund. They had to give this land fund for compensation.

Later these plots could be purchased at auctions. The allocation of the co-operation fund (I. land-fund) started on 15<sup>th</sup> August 1992 and lasted until 1994. The allocation of the state-owned lands (II. land-fund) started only after these events between September 1995 and March 1996. The State determined the auction price in golden crown<sup>10</sup> (in short AK). The recommended price was 3000 HUF per golden crown and the minimum price was 500 HUF per golden crown. Figure 1. shows the distribution of lands bought at auctions according to size.

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<sup>10</sup> **Golden crown:** it was introduced by 1875. VII. Law in Hungary. Its goal is to establish the quality difference between lands in the interest of taxing economically useful lands. Different lands result in different profits with the same expenditure on account of different quality. When establishing plain net profit of the land the basis was the average produce which came from average production level and the normal costs of farmers was taken away from this. The golden crown (cadastral net income) was the basis to calculate the compensation price last time, but the golden crown system is still the basis of the on present regulations (agricultural income regulation, land protective contribution, land protective fine). (OKKH, 1998)

Figure 1

**The distribution of lands bought on auctions according to size**

Source: Országos Kárptótlási és Kárrendezési Hivatal 1998. évi számítógépes feldolgozása alapján a kárptótlási ügyek állásáról.

Tables 2. and 3. shows redistributed lands in golden crown value, according to years and land fund (cooperative fund, state-owned lands). It can be seen from this that co-operatives contributed to land auctions to a much higher degree than the state did.

Table 2

**Redistributed lands in golden crown, according to years and fund**

Sector		AK-intervals per parcel					Total
		0-100	101-500	501-1000	1001-2000	2001 fölött	
I.	total AK	13086698	18236462	4425460	1428940	234276	37411835
	land parcel (db)	743159	92495	6708	1113	96	843571
II.	total AK	1257033	363631	27608	3695		1651968
	land parcel (db)	187669	2170	44	2		189885
Total	total AK	14343731	18600093	4425460	1432635	234276	39063803
	land parcel (db)	930828	94665	6752	1115	96	1033456

Source: Országos Kárptótlási és Kárrendezési Hivatal 1998. évi számítógépes feldolgozása alapján a kárptótlási ügyek állásáról

Table 3

**Land auctions in Hungary**

Land Fund	The number of auctions				Total auctioned AK value	The number of auctioners	The number of owners	The number of agreement
	Advertised	Kept	Unsuccessful	Not happened				
State-owned lands	6551	6431	377	120	5677682	402100	195346	6287
Cooperative fund	20507	20064	1959	443	33490646	714857	511810	13022
Total	27058	26495	2336	563	39168328	1116957	707156	19309

Source: Országos Kárpótlási és Kárrendezési Hivatal 1998. évi számítógépes feldolgozása alapján a kárpótlási ügyek állásáról

### 3. Agricultural by used land by farming forms

“The estate, in legal terms is such a property, which is kept under the owner’s control as private property or because of private interest. The estate means only basic control over the object in question, but the property means the right of disposal over the object. The right to estate includes the right to use and the right of usufruct, but (when the owner is not the proprietor) it does not include the right over the object in question. It means, the estate can exist without property.”

Initially, the aim of agriculture after social system changes was to help the unification of land property and land use. This was side-tracked by compensation, but it was not practical to give up on the attainment of this goal. One of the important aspects of the land policy has to be the promotion of the unity of land property and land use. Whether a piece of land is farmed as somebody’s own property or rented out is important from the point view of income distribution. Property ownership is more advantageous. The renter has limited power to intervene (for example: the desire to speed up land acquisition for some ownership group, or to assert aspects of environment control, social policy etc.).

We can see various contradictions in the relationship between land property and land use nowadays. These keep the need for a land policy pressing. The land policy concept has to be uniform and founded on consensus. We have to achieve well thought-out land market regulation in the next 5-15 years, which considers the interests of agriculture and the national economy. Some factors explain this, for example: the huge changes that happened (lack of capital, experience and skill; non-sustainable farm size etc.). On the one hand, unsatisfactory market income relationships in agriculture, total lack of fundamental development, plus the majority of farmers completely were completely helpless (unemployment, serious cost-of-living problems); on the other hand, speculative (the aim is not agricultural production) investment, gravely lagging behind the land price and agricultural product price in developed countries. Without proper regulation of the land market, which, on the one hand, means the country (the agricultural population) may become dominated by a group of big farmers (large-scale, big entrepreneurs, foreign investors and those investors who keep the land for speculation). On the other hand, creating millions of small owners living hand to mouth and this can hardly be changed (or only with huge sacrifices) in the future.

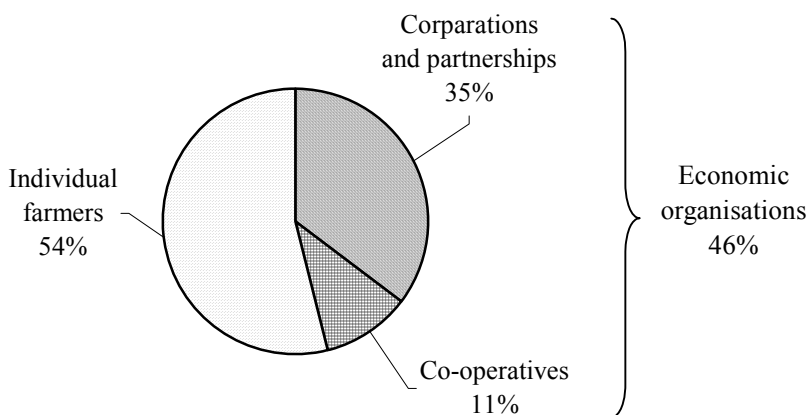
According to the Hungarian Central Statistical Office surveys last year the estate structure and land use significantly changed compared to the year 1989 (above analysed) situation. The following facts are typical for the changes (Table 4.):

- The land cultivated by agriculture stabilised at about 8.8 ha nation-wide, meaning it did not change substantially, except a short land leaving period;
- Distribution of arable land by farming substantially changed.

In the last decades the function of the individual farmer became determined step by step compared to economic structures in the last decade. The land use by individual farmers increased until 1998, decreased in 1999 and 2000. In 2001, the land use by individual farmers is 4,195.6 thousand hectares. The land used by economic organisations decreased continuously.

Figure 2

**The cultivated land by farming forms in 2001**



■ Corporations and partnerships ■ Co-operatives □ Individual farmers

Source: A mezőgazdaság strukturális változásai a kilencvenes években. KSH, 2003. 15.p. adatai alapján.

The economic structures used 67.6% of arable land in 1994, but only that at 46% in 2001. Partnerships entailed 35% of used cultivated land and 26,8% of arable land in 2001.

Table 4

**Total land distribution by farming forms in Hungary**

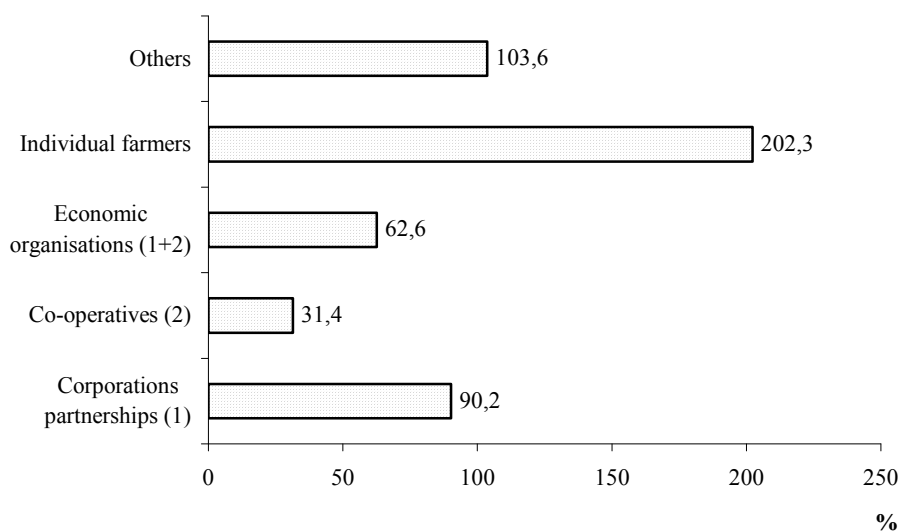
Name	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
	Thousand hectare											
Corporations and partnerships	2867,3	3057,2	3602,2	3106	3086,1	2593,2	2615	2357,9	2409,6	2619,5	2711	2785
Co-operatives	5147,1	4793,4	4223,4	3931,3	2726,4	2208	2009,6	1824,8	1671	1494,5	1160	855
Economic organisations	8014,4	7850,6	7825,6	7037,3	5812,5	4801,2	4624,6	4182,7	4080,6	4114	3871	3640,1
Individual farmers	1288,8	1452,6	1477,5	2204,6	2073,7	4034,7	4191,8	4627,3	4744,9	4689	3902,4	4195,6
Others	...	...	...	61,1	1416,8	467,1	486,6	493	477,6	500,1	1529,3	1467,7
<b>Total</b>	<b>9303,2</b>	<b>9303,2</b>	<b>9303,1</b>	<b>9303</b>	<b>9303</b>	<b>9303</b>	<b>9303</b>	<b>9303</b>	<b>9303,1</b>	<b>9303,1</b>	<b>9302,7</b>	<b>9303</b>

Source: Mezőgazdasági Statisztikai Évkönyv 1999. KSH Budapest, 2000. 35.o.; Magyar Statisztikai Zsebkönyv 2000. KSH, 2001. 230.p.;

A mezőgazdaság strukturális változásai a kilencvenes években. KSH, 2003. 31.p.

Land use by the successors of agricultural co-operatives reduced from 2,726 to 855 thousand hectares between 1994 and 2001, meaning the average reduction is 260,000 ha land area per year. The co-operatives shared 11% of used cultivated land and 15% of arable land in 1999. Figure 3. shows the changes in the proportions of arable land by different farming forms between 1994 and 2001.

Figure 3

**The changes in the proportions of the arable land by the different farming forms between 1994 and 2001.**

Source: Mezőgazdasági Termelés 1999. KSH, 2000. 21.p. Mezőgazdasági termelés 2001. KSH, 2002. 26.p.

The arable land cultivated by individual farmers increased more than 2 times since 1994.

Individual farmers used 45% of the arable land, 4,196,000 ha in 2001. Considering the distribution by size of the farms, large-scale farms used 45% of agricultural land, medium sized farms used 10% of agricultural land and the ratio of small farms was 27%. (The ratio of the agricultural area outside observation is 18%. We haven't any data about the size of these areas.)

96% of the land use by economic entities belonged to the large farm group in 1998. Only 3% of the land use by economic entities was in the medium size farms group. Under 1% of the land use by economic entities was in the small size farm group.

Clearly small size farms dominate the individual farm category. In 1998 these used 74% of the arable land of individual farms. The ratio is 24% for medium size farms, while only 2% of it was used by big farms.

The changing of estate structure shows a growing ratio of medium size farms in the production.

The arable land of the economic entities reduced (by 23%) from 4,615 thousand ha (in 1994) to 3,554 thousand ha (in 1999). In the same period, the average land area of one economic entity changed from 1,794 ha to 960 ha because of the quick increase in the number of economic entities.. (In the same period, the number of enterprises increased by 1,130m, meaning 44%.) The arable land of the economic entitites reduced (by 37%) from 5,812.5 thousand ha (in 1994) to 3,640 thousand ha. In the same period, the average land area of one economic entity changed from 1,794 ha to 657 ha because of a quick increase in the number of economic organisations. The number of economic entitites increased in every size-group to 1,000 ha, expect the group between 401 and 500 ha. In that group the number of entitites reduced by 14 since 1994. The biggest change was in the arable land use group between 11 and 50 ha. In 1999 4 times as many organisations were in this group as in 1994. The next group is between 51 and 100 ha. Here were 2.5 times as many entitites as in 1994. The number of entitites was 2 times as many as in 1994 group using to 101 and 200 ha. The number of entitites reduced in the over 1,000 ha group, which gives food for thought. The biggest change was in the number of entitites in the group between 3,001 and 10,000 ha. Here the number halved between 1994 and 1999. The number of farmers did not change in the group over 10,000 ha. It was the same as in 1994.

Table 5

**Productive and arable area of agricultural enterprises by size group in 2001\***

Size group, hectares	Productive land	Arable land	Productive land	Arable land
	Number of organizations with		Size of land area, of hectares	
10 and below	702	567	2766	2132
11-50	1229	836	35155	24420
51-100	557	244	40039	18162
101-200	569	331	82000	48379
201-300	527	480	137540	128512
301-400	140	53	48323	19000
401-500	126	90	56463	40377
501-1000	405	377	298563	279009
1001-2000	433	415	614648	584666
2001-3000	171	139	407890	330285
3001-4000	66	41	227095	139232
4001-5000	26	16	114305	68601
5001-10000	23	16	141828	106876
10000 fölött	30	2	1127745	32991
<b>Total</b>	<b>5004</b>	<b>3607</b>	<b>3334359</b>	<b>1822643</b>

\*Used land area, only of those organisations are included that answered questionnaire.

Source: Mezőgazdasági Statisztikai Évkönyv 2001. KSH, 2002. 56.o.

Table 5. shows productive and arable area of agricultural enterprises by size group in 2001. The arable land of the economic entities reduced (by 37%) from 5,812.5 thousand ha (in 1994) to 3,640 thousand ha. In the same period, the average land area of one economic entity changed from 1,794 ha to 657 ha because of a quick increase in the number of economic entities. In 2001 the number of entities between 11 and 50 ha were the highest (1,229). The 10 ha and below group is on the second place with 702 entities. Three groups used 65,5% of the total arable land. These are between 501 and 1,000 ha group, between 1,001 and 2,000 ha group and between 2,001 and 3,000 ha group. The biggest group was that between 1,001 and 2,000 ha where entities used 32.1% of the total arable land.

#### 4. Changing in the use of the line of cultivation using

The composition of the nature of cultivation (namely the basic structure of Hungarian agricultural land use) did not change substantially. The plantation area decreased to a certain degree, but it has also done so over the last two years. On the other hand, the rearrangement in farming structures is important.

Agricultural land used by the economic entities reduced from 2,794.3 ha to 1,872.8 ha in the examined period between 1994 and 2001. (This is reduction of 33%.) The size of economic entities increased to 300 ha, but the number of economic entities show a steady decreasing trend over the size of 300 ha.

The economic entities used 12% of under 50 ha agricultural field, 28% of between 51 and 500 ha and they used 60% of over 500 ha agricultural field. These ratios changed in 1999 to 25, 33 and 44% respectively.



The size of vineyards and orchards reduced significantly in terms of economic entities. In 1999 the total size of vineyards' land was under half of that of 1994. The number of vine-growers reduced by 33% in this period. The size of vineyards reduced further in every size category. Considering the number of entities, the biggest reduction is in the group between 201 and 300 ha. In this category, the number of entities was fewer by 77% in 1999 compared to 1994. Regarding the viticultural entities, the least change could be seen in the group between size 51 and 100 ha. They did not register vine over 400 ha in 1999.

The fruit plantation used by the economic entities reduced by one third in 5 years. The farms with fruit plantation reduced to a lesser measure than vineyards, meaning 15%. The number of farms increased further in the group under 10 ha, compared to 1994. (This ratio was 52% in 1999.) The fruit plantations decreased in every size category. The farms with fruit plantations cultivated 31% of over 300 ha land use in 1999.

Table 6  
Vineyard and orchard area of agricultural enterprises by size group in 2001\*

Size group, hectares	Productive land	Arable land	Productive land	Arable land
	Number of organizations with		Size of land area, of hectares	
10 and below	172	295	458	986
11-50	89	167	2076	4046
51-100	28	36	1967	2584
101-200	15	35	2276	5278
201-300	3	10	676	2442
301-400	3	3	935	1044
401-500	1	5	414	2124
501-1000	0	1	0	784
<b>Total</b>	<b>311</b>	<b>552</b>	<b>8802</b>	<b>19287</b>

\*Used land area, only of those organisations are included that answered questionnaire

Source: Mezőgazdasági Statisztikai Évkönyv 2001. KSH, 2002. 56.o.

Table 6. shows vineyard and orchard area of agricultural enterprises by size group in 2001. The biggest group is 10 ha and below by number of vine-growing entities and they use only 5% of the land area. The situation is the same for orchards. Three groups used 72% of the total land on the vineyard and 62% of the total land of the orchard area of the agricultural enterprises. These groups are between 11 and 50 ha, between 51 and 100 ha, and between 101 and 200 ha. .

The most problematic area regarding estate structure is the group of individual farmers. According to the Hungarian Central Statistical Office data published in 1997 1.8 million land owner households had 79.3% of land under 1 ha. Within this, 57% of households did not have more than 0.2 ha land. Table 5. shows land owner households and their area by land size.

From the data it can be seen clearly that the ratio of very small farms is not a determining factor in Hungarian land use (We have already written about it previously.) All the same, it does not mean that things are all right in terms of estate structure and the present situation can be considered settled and finalised.

The forest area is examined separately according to the change of ownership structure in Hungary. It can be stated that 1 million ha of forest area remained under state ownership and about 5 and 6 thousand ha was transferred to private property. The Forest Supervisory Authorities (Erdőfelügyelőség) (after the initial unsettled situation) are now able to keep matters under control in the privately owned forests following work-plans. The main problems are the slow tempo in forest plantation, and the continual slowness to reach targets, which hinder reaching planned forest levels.

## **5. Typical primary and secondary symptoms in the new structure of farm and enterprise**

A large amount of Hungarian literature focuses on this topic and it is approached in many different ways. Kerek Z. summarized opinions in Economic Management (Hungarian scientific journal on agricultural economics) in 1999. These are the following:

- The limited-liability company (Ltd.) is the most important form of economic entity as a result of continual changes. Co-operatives take second place by their number.
- The distribution of agricultural land shows that the medium and big farms remain in the majority and that co-operatives top the list.
- The bulk of livestock is in the so-called other farmers' hands. They are mostly individual farmers. (The situation is similar to the division of labour in the 1980s in spite of the big changes. Private farmers cultivate labour-intensive farms and the bigger farms are well-mechanized. It can also be said that the situation conforms to professional considerations.)
- The full-time family farms are increasing very slowly. What is more, the private farmers are first of all part-time workers, which means subsidiary farms. (According to estimates the number of sustainable individual farms is 10-15 thousand by land category and at the most, 3-5 thousand farms by livestock.)
- The large individual farms have greater opportunities to develop. There are about 600 individual farms devoted to crop cultivation and 400 individual farms to livestock-breeding.

The large-scale reduction of the number of employees has been a typical factor in the farm and enterprise structure change. 1 million employees worked in agriculture at the end of 1980s and this number has reduced to 240 thousand.

Renting farm land became a typical and determining factor in land use, due to the perennial separation of land from land property. The majority of the new and old owners were townsmen and/or pensioners. It meant those who cultivated land began to perennially pay yearly rent and the rent became a stable cost factor in agriculture which has problems in competitiveness. (They can not do much with the land alone, without significant resources, meaning small size, lack of access, machines etc. In spite of this, rural people insist on obtaining more and more land as land is the only possibility for those nearing poverty.)

## **6. Main task for land policy**

The compensation, which took place, did not serve a well thought-out, rational, national goal. (This kind of socially, economically thought-out aim had not been worked out.) Present land ownership and land utilisation were formed by several contrasting approaches. Nobody intended this kind of situation to come about.

Starting a wide-scale land allocation movement that aims to change the present ambiguous, non-progressive ownership system of land ownership and land use without a thought-out land estate policy equals has made the problems even graver.

Land estate policy is long-term in nature and requires a national consensus. Now, with land ownership fragmented to the highest degree, and some agricultural entities barred from land ownership, land ownership and land use diverged and income withdrawal from agriculture is considerable. Land estate policy should set the following goals:

- To promote land ownership and land use for those living from agricultural production;
- To help fuse land ownership and land use;
- Promoting suitable land property size;
- Promotion and support of a healthy balance between small, medium and large-scale farms;
- To help symbiosis between family farms, co-operatives and corporations.

Without these objectives, neither a competitive agriculture nor an acceptable standard of living for the agricultural population can be realized.

The year 2000 closed with two important decisions for Hungarian agriculture. One of them is the law on the National Land Fund, the other is the government decree about the establishment, functioning, and support of family farms. Without a land estate program which covers the entire nation, we can not progress in the land question. The organisation and the work of the National Land Fund institution system can be a means of achieving this. The Parliament accepted the 2001. CXVI. Law about National Land Fund on 18<sup>th</sup> December 2001. The main aims were that the State should manage its arable lands sensibly and it should help the economic and profitable utilization of agricultural land, also keeping ecological production in view, and it should help to form an estate structure based on family farms. The function of agricultural land is multiple: helping operable family farms, influencing land price and farm land rental prices, supporting the land estate structure suitable for economical agricultural production, utilising uncultivated land and we could further list aims, which are drafted in 2001. CXVI. law. The land estate structure is odd in Hungary. The successors of the big farms and family farms are present in the agriculture. According to some opinions this law can solve this odd situation,, because it supports the family farms, but it also creates a disadvantageous situation for the successors of the big farms. The National Land Fund has the pre-emptive right to buy land. It means, that large-scale farms lose their importance.

Moreover, this law presides over the foundation of and the functioning of family farms. A government decree also presides over the foundation, functioning and support of family farms. This decree includes the main rules for family farmers to obtain subsidies. For example, a farmer has to use his/her own agricultural land for 5 years and has to pursue farming personally as a full-time job. Opinions about this decree are different among family farm supporters, too. On the one hand, according to the decree, the family farmer can obtain subsidies if he/she has a maximum 300 ha agricultural land. On the other hand, the person has to be a full-time job worker in the farm. Some questions arise from this; for example, how big a land area is needed for economical farming, and is farming worth doing as a full-time job?; also some very small farmers think the 300 ha limit is too high to get family farm support.

How far can this division benefit family farms? Will the family farms get and will they be able to use advantages provided by government support? Will the National Land Fund fulfil the requirements and will it help to clarify the present land estate situation? How can the big farms adapt to the new situation? And we can continue to raise questions regarding these issues. The answers have yet to be found.

## **7. Land estate structure in EU integration process**

On 13 December 2002, Heads of State and Government from the EU and ten candidate countries reached agreement on a formula for enlarging the EU to encompass ten new member states, and Hungary will join the EU on 1 May 2004. What will the land ownership structure be like at that time? We can endeavour to draw up some main points, indications on how to settle the land estate situation in Hungary.

The land estate structure will develop slowly, not putting at risk profitability of agriculture in the coming years. Changes in the size of the farms show that medium large and medium farms will be founded, because they suit the present (already started) medium farm system for the most part.

The family farms will be the backbone of future agricultural production. The hard work and the will-power of Hungarian families are amazing. If you are familiar with the Hungarian farmers' determination between 1945-1960, you will understand what is meant by this. In spite of failures suffered by families who have been involved in agriculture, they have not given up farming and believe that profitability will return and their life will be better.

Off farm income will be typical in most of the family farms. We think this trend will emerge in the industrialised, developed regions. There will be an obvious relationship between small-medium farm size and off farm income. Large family farms or farms founded on paid work will be predominant and farms between 300 and 600 ha in size will multiply in disadvantaged areas. There may be little possibility to get complementary income.

Probably, the present co-operatives and corporations want to strengthen their farm stability and they want to extend their farm size less. First, they want to organise vertical production and create a secure market. When we examine transformation of co-operatives we have to take into consideration that a lot of co-operatives will work as holding-like organisations.

## **Conclusion**

To sum up, it can be said that a very difficult system of relationships will emerge regarding ownership structure, legal structure of the enterprises, and the various interests inside the cooperatives. The co-operative, the enterprise, the individual farmer and hereditary farmer (őstermelő) are present in agriculture at the same time as other legal structures. The family farms and farmers with small land holdings, who regard agricultural production income-compensatory, will have a safety-net (purchase, sale, technical advice etc.). Their life would be insecure without this safety-net. We have to mention here the special role of the entities, because this increases the producers' bargaining power. (Producers' organisation will play a special role.)

We can say that the production structure will not radically alter in the near future in spite of farming structure transformation. Probably some changes will happen (for example, in the area of oil-plants, and there may be an increase in forest level), but basic structural change is hindered due to lack of capital in Hungarian agriculture. According to our calculations, one thousand million capital investment is needed to make the present technical conditions in Hungarian agriculture competitive with EU countries. For that reason, the main task is solving the problems of Hungarian agricultural production, and from this will come an easing and eventually a solution of the capital problem situation, as well as a rational land estate policy.

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## **Development of the Hungarian agrarian economy and its impact on the environment**

Attila Buday-Sántha<sup>11</sup>

### **Abstract**

In the 20th century, the Hungarian economy and through this the agrarian economy were characterized by backwardness. However, in addition to drawbacks, it had the advantage of not causing such severe environmental damage as in the developed, overindustrialized, and car-ridden countries. In the second half of the century, economic development and industrialisation had already caused significant environmental damage though not to such a degree as in the western countries. This occurred at a time when the western countries were already paying more attention to environmental issues, something which Hungary could not afford as there was an economic crisis at the time. Environmental damage was reduced by the economic crisis that accompanied the regime change, meaning the fall in production in the entire economy and in agriculture too, but the continual lack of capital in agriculture did not make it possible to form new development paths, and in this way it contributed to the development of other types of environmental damage. We can only expect further environmental improvement in the Hungarian agrarian economy if the sector starts growing again, and such production models have been formed to preserve the environment and foster environmental consciousness in farming.

### **Key words**

Economic policy, agricultural policy, backwardness in the economy, environmental protection, agrarian models, traditional and industrialized models, integrated and bioproduction, environmental impact, crisis in agriculture

### **The State of the Environment in Hungary**

In international terms, based on various government indicators, the state of the Hungarian environment can be considered as average. It is certainly not as bad as several western specialists claim (on the basis of their superficial knowledge) and, what is more, it has never been as bad as in many overindustrialized countries in the middle of the 20<sup>th</sup> century. One of the fundamental reasons for that is economic backwardness, which by now – due to the insufficient size of infrastructure – is one of the main causes for environmental problems. During the entire 20<sup>th</sup> century, one of the main goals of Hungarian economic policy was to catch up with the developed western states. However, this could not be achieved due to historical reasons (defeated in two world wars, geographical dismemberment after the 1<sup>st</sup> World War, occupation by the Soviets after the 2<sup>nd</sup> World War). The series of wars and regime changes after the wars used up the country's economic resources and regularly broke the development paths that had developed.

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Figure 1



Source: Hungarian Statistical Pocketbook 1986, 1996, 1999, 2001. Hungarian Central Statistical Office. Budapest, 1987, 1997, 2000, 2002

Between 1950-1970, mainly coal-based forced industrial development removed resources from infrastructural development, caused heavy air pollution in significant areas. At the same time sloppy disposal of increasing hazardous waste materials polluted water and the soil. There were not enough development funds to clean up the growing quantity of industrial and communal sewage, which increased together with growing water use, and this caused pollution of surface and subsoil waters. The environmental impact of industry was limited to certain areas, mainly to places where raw materials were extracted and to industrial zones. Communal sewage, on the contrary, impacted on the entire country, contributing to deterioration of water quality in rivers, lakes, and to a great degree in Lake Balaton. Unlike in western countries, the growing use of automobiles only began to cause problems (mainly in big cities) in the 80s, and its unfavourable environmental impact has increased up to now due to the lack of ring roads and motorways, and the continually growing numbers of vehicles. It became obvious in the 1970s that the environment needed increased protection, but after the oil crisis of 1973 the country's increasing indebtedness made it impossible to rapidly change technologies which were mostly responsible for the damage. The COCOM also played an important role in hindering rapid development in productive and communal infrastructure, and what's more it forced the development of such industries (metallurgy, coal and bauxite mining, heavy chemical industry, aluminium production) whose environmental impact was severe. So, while on the one hand, environmental damage was beginning to be averted (e.g. conversion to gas heating instead of coal and oil, building of hazardous waste incinerators and disposal units, connecting Smaller Balaton to the Balaton water filter system), on the other hand, new environmental impacts appeared, and this made only slow environmental improvement possible. The 1990 political and economic regime



change led to the collapse of uncompetitive heavy industry and mining, which lightened environmental impact and this was coupled with the dramatic price increase of energy and water, subsequently decreasing their use. Of course, this did not eliminate environmental impact due to insufficient infrastructure. In the past decade, partially as a result of foreign capital, the country was put on a new development path, and the old technologies were replaced by more environmentally friendly ones. A problem remains regarding small and middle-sized firms, which were often artificially created during the transition crisis as they have outdated equipment, and pay little attention to environmental protection; monitoring their activities is also very difficult. At the same time, due to the large income differentiation, a third of the country's population has seen its standard of living fall back to the level of the 70s, causing society's environmental sensitivity to weaken. Environmental conciousness cannot be expected from people struggling to make ends meet. We can only hope this will change if living standards are raised. (Industrial production reached its 1990 level only in 1999, the living standard in 2000, but agricultural production stagnation suffers at more than 70% of that).

Table 1

**Changes in Hungary's energy consumption and the structure of energy consumption (1980-2000)**

Denomination	Year				
	1980	1990	2000	2000 as a percentage of 1980	2000 as a percentage of 1990
Energy consumption of Hungary (terrajoule)	1260529	1244201	1036096	82.2	83.3
Structure of energy sources (%)					
All kinds of coal	28.8	19.1	13.9	-	-
Hydrocarbons	63.6	61.2	68.6	-	-
Of which:					
Crude oil and crude oil product	37.4	32.8	32.1	-	-
Natural gas	26.2	28.4	36.5	-	-
Electricity generated by nuclear power station	-	10.3	12.6	-	-
Imported electricity	6.5	8.4	3.1	-	-
Other fuels	1.1	1.0	1.8	-	-
Total	100.0	100.0	100.0	-	-

Source: Statistical Yearbook of Hungary 2000. Hungarian Central Statistical Office. Budapest, 2001. 370 p.

Table 2

**Stock of road vehicles in Hungary**

Item	Years			
	1970	1980	1990	2000
Passenger cars	238563	1013412	1944553	2364706
Buses	9534	22238	26128	17855
Motorcycles	610863	676797	168817	91193
Lorries	84661	123872	224061	342007
Road tractors	64201	16643	38397	24426

Source: Statistical Yearbook of Hungary 2000. Hungarian Central Statistical Office. Budapest, 2001. 485 p.

Now that economic development has begun, the country has to cope with the problems of production technology change and development of previously neglected infrastructure. It also has to cope with general problems (common in developed countries) due to a rapid increase in vehicle related damage (e.g. NO<sub>x</sub>) and waste production. The difficulty is mainly caused by the fact that when joining the European Union a country with a \$6,000 per capita economic output is expected to meet the environmental requirements of countries with over \$20,000 per capita GDP. Considering the country's economic resources, it is, in the short term, an impossible task if the nation relies only on its own resources. External support is needed.

Table 3

**Changes in emissions of air pollutants in Hungary**

Air pollutants	Emission of quantity (thousand tons)				
	1980	1990	1999	1999 as a percentage of 1980	1999 as a percentage of 1990
CO <sub>2</sub>	92.000	72.700	60.702	65.9	83.5
SO <sub>2</sub>	1.633	1.010	590	36.1	58.4
Nox	273	238	221	81.0	92.9
Particulate matter (dust)	577	205	125	21.7	61.0
VOC	-	205	169	-	82.4
Freons and halons	5.2*	5.1	0.0**	0.0	0.0
Lead, Pb	0.7	0.6	0.1	14.3	16.7

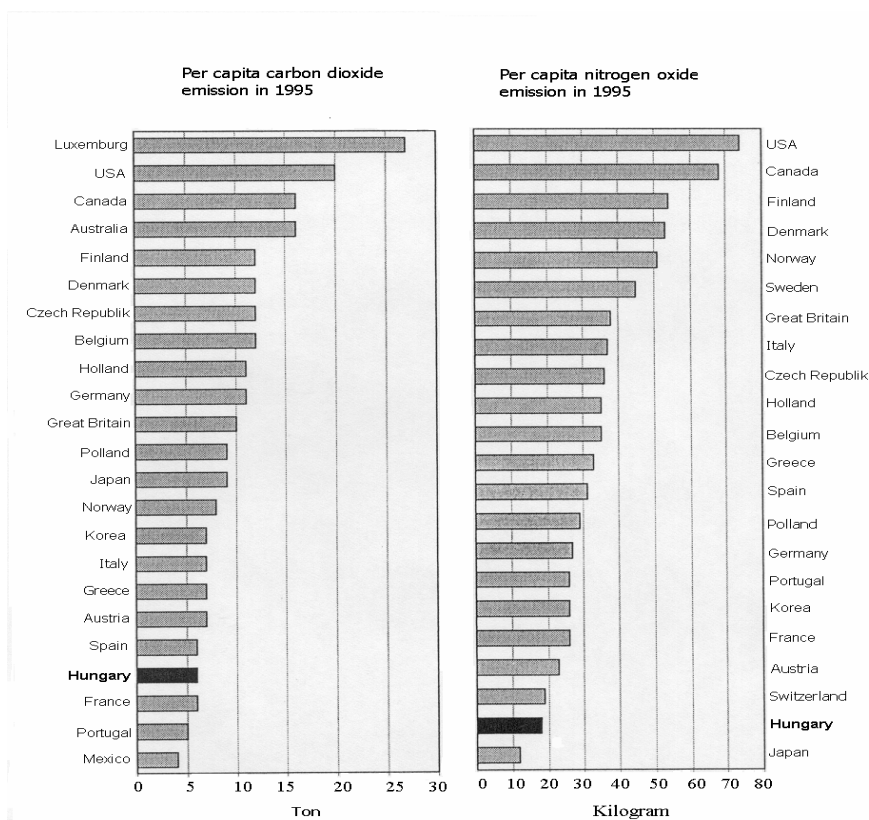
\*1985

\*\*2000

Source: Environmental Statistical Data of Hungary 2000. Hungarian Central Statistical Office. Budapest, 2002. p. 58.

To conclude, it can be stated that the state of Hungary's environment is by no means tragic, and this is also supported by a surprising diversity of European wildlife. Furthermore, it is continually improving in most respects, which has made it so far possible for the country to meet all internationally recognized environmental agreements (e.g. CO<sub>2</sub>, NO<sub>x</sub>, SO<sub>2</sub>, CFC etc.). However the disorder that comes with regime change and infrastructural and technological backwardness have had a bad effect on the country's environment and on the country's image. For the outsider this is most obvious regarding transport and infrastructure.

Figure 2

**Per capita carbon dioxide and nitrogen oxide emission in 1995**

Source: Hungary 1997. Hungarian Central Statistical Office. Budapest, 1998. p. 39.

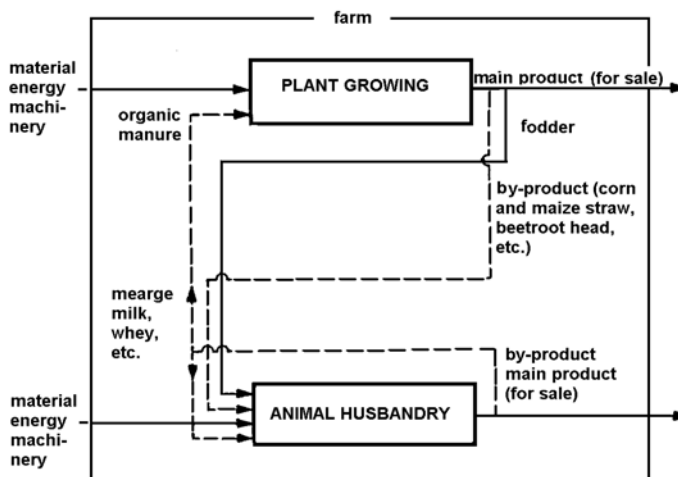
## Development of Hungarian agriculture and its impact on the environment

Both Hungarian agriculture and the entire economy were hindered by backwardness during the 20<sup>th</sup> century. The agricultural model which was to serve the markets of the Austro – Hungarian Monarchy emerged only at the beginning of the 20<sup>th</sup> century, 50-100 years later than in Western Europe. This model relied on human and animal resources, crop rotation, and on the organic/ operational link between crops and animal husbandry, which did relatively little harm to the environment, but it had low productivity which prevailed until the 1960s due to continual disinvestment and insufficient industrial technology. The great environmental advantage of the so-called **traditional agricultural model** was that it could not rely on external resources because of their high cost and low availability, so its success depended on how efficiently it used principal products and by-products (e.g. manure, straw, corn-stalk, sugar beet root, etc.) that emerged during production. In order to do this within the given economic factors (similar to ecological cycles) production was a closed cycle with

soil as the starting and ending point, and there was no waste. However, shortage of external resources hindered production growth, increase in land and labour productivity, and therefore it eventually became unsustainable. (see Figure 3)

Figure 3

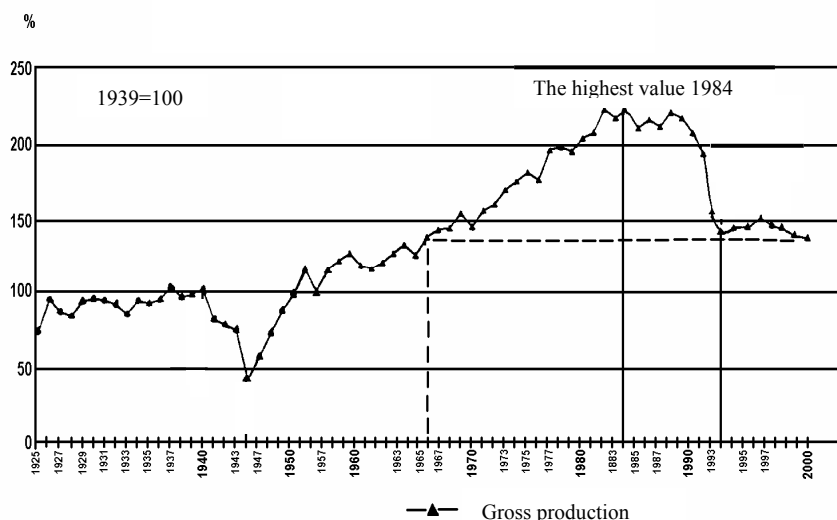
**A simple model of main-sector links in traditional corporate management**



Source: Sántha Attila: A mezőgazdasági melléktermékek hasznosítása és a környezetvédelem. Akadémiai Kiadó. Budapest, 1991. p. 19.

This explains why, in western countries, this model was beginning to be replaced shortly after the 1<sup>st</sup> World War, while in Hungary agricultural development took place only in the 1960s' political consolidation when it was important to improve food supply and to increase exports. However, this was coupled with the political requirement to cease private property, and was thus linked to restructuring agriculture into large entities. Over 90% of the country's agrarian territory was handled by 1400 co-operatives (average size 4000 ha) and 140 state farms (average size 7500 ha). However, the American farm model was largely transformed into a total technological system, made possible because the country was politically relatively open compared to other socialist countries. In this way, the forced large-scale restructuring of agriculture and the introduction of so-called **industrial technology** that was in use for decades in western states took place at the same time. So the historic change in the production model and the shift in technology took place all at the same time, giving the impression that it was a feature of socialist development. Due to greater expertise and resource requirements, the industrialized agricultural model could efficiently be operated in large entities, which made it possible for Hungarian agriculture to develop extremely rapidly, as a result of which it could catch up with the leading countries in most respects in two decades.

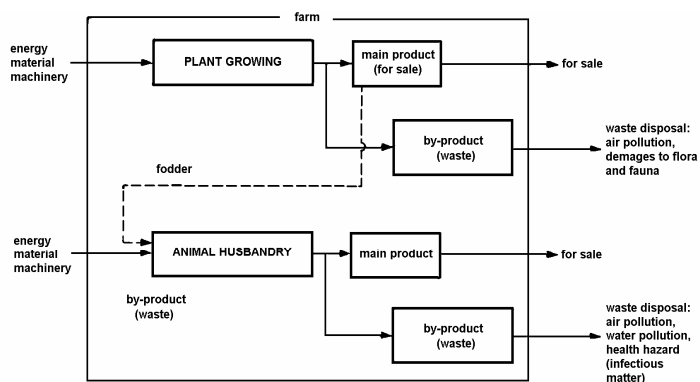
Figure 4

**Gross production of agriculture 1925-2000**

Source: Benet Iván: Rendszerváltás és agrárgazdaság. Magyar Agrárgazdaság. Magyar agrárgazdaság jelene és kilátásai. Magyarország az ezredfordulón. Stratégiai Kutatások a Magyar Tudományos Akadémián. II. Az agrárium helyzete és kilátásai. MTA. Budapest, 1997. p. 167.

However, when industrialized agricultural production became dominant – like elsewhere where it was applied – in addition to positive sides (growing average yields, improving marketability of products, improving labour productivity), harmful side effects also appeared as a result of increasing use of chemicals (wildlife destroyed, soil acidification), over mechanisation of land cultivation (the surface soil becoming pulverised, the subsoil becoming dense), neglect in management of organic matter (fall in humus level) and liquid manure flowing from big farms with thousands of animals, as well as the unprofessional treatment of great numbers of carcasses. Dealing with these (not unavoidable but internationally widespread) side effects would undoubtedly have needed considerable financial resources, great expertise, and professional discipline. In the beginning insufficient attention was paid to environmental damage, only since the late 70s did reduction of environmental damage start in order to eliminate obvious damage. For this purpose regional centres for storing and handling chemicals (artificial fertilizer, insecticide) began to be built. It became practice to use artificial fertilizer every three years based on soil analyses carried out every three years and yearly plant analyses. Plant protection was carried out on the basis of national, regional and local plant protection forecasts. Acid soils were limed, and conversion from liquid manure bedding to straw bedding took place in cattle and swine rearing, etc. These programs, however, were not fully completed due to the deepening economic crisis in the country. Disinvestment resumed at the end of the 1980s and was characterised by growing indebtedness of farms and stagnating production. (see Figure 5)

Figure 5

**A simple model of main-sector links in plants carrying out industrialized production**

Source: Sántha Attila: A mezőgazdasági melléktermékek hasznosítása és a környezetvédelem. Akadémiai Kiadó. Budapest, 1991. p. 21

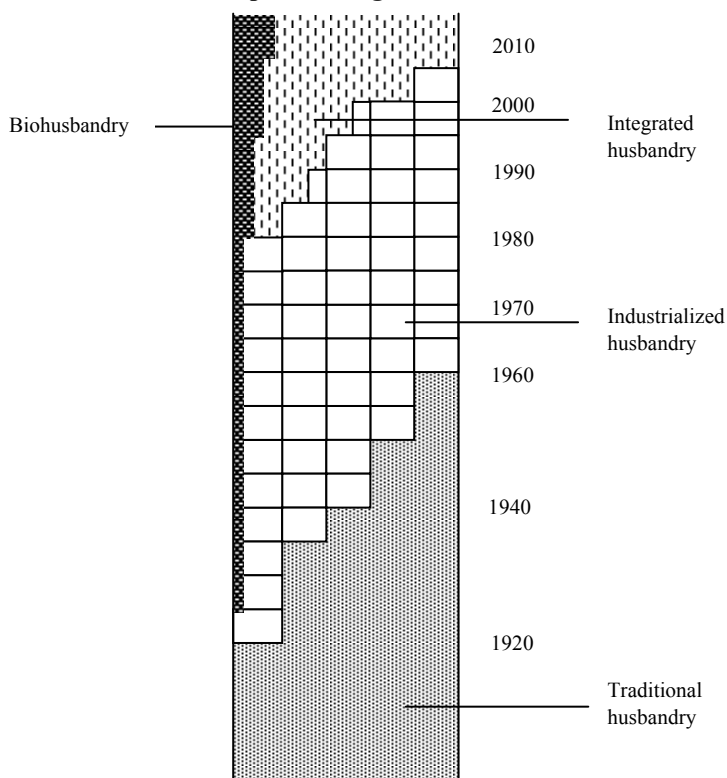
The introduction of the industrialized agrarian model undoubtedly caused significant environmental damage. However, it was considerably less than in the western European countries. The main reasons for that were the following: the period of intensive production was limited to 2.5-3 decades as opposed to the western countries where it took place for 5-6 decades. Trade factors between agricultural and industrial products were always less favourable in Hungary, thus explaining why the use of chemicals never achieved the level in those countries with the given technology. Backwardness had another advantage as well, namely when the technologies were utilised, the hazards they represented were mostly already known. Therefore the use of chemicals in Hungary was controlled and supervised systematically on an internationally recognised level. The first ban on the use of hazardous insecticides (DDT, HCH and Dieldrin) was introduced in Hungary. In animal husbandry, the use of yield-raising hormonal agents were prohibited in order to maintain exports. Actually the reasons listed above make it possible to claim that Hungarian soil is clean, relatively unpoisoned when compared to other countries.

In this period there was an unexpected but favourable long-term side effect due to backwardness. Soon after the large-scale restructuring of agricultural production it became clear that a considerable part of the arable land could not be cultivated with large-scale technology either because it was too steep, too deep, or damp (mainly fields and pastures) and land ceased to be sold, and was abandoned. During the three decades, on these areas which make up nearly 10% of agricultural land, a nature preserve evolved, similar the state prior to cultivation, and it was gradually put under protection because of its extremely valuable flora and fauna. This plays a crucial role in Hungary's large number of nature preserves, which is high when compared to other countries. On an area of 93,000 km<sup>2</sup> there are approximately 3,000 high order plant species and 42,000 animal species. The proportion of protected areas exceeds 9% of the country's land mass, and big game (deer, roe, wild boar) is the best in Europe.

Based on cheap industrial materials and energy, the industrialized production model lost its economic footing due to consecutive oil crises. It became unsustainable not only in economic but also in environmental terms because of tightening environmental requirements. Therefore, from the 80s the task was to develop an agrarian model which saved more material and energy, better suited environmental and nature conservation, and tried to fully utilize by-products, so that the by-product cycles remained (manure, straw, etc.) within the farm. Worldwide, two tendencies have evolved in this respect: **integrated production and bioproduction**. Integrated production is in fact sophisticated industrial production that curbs excesses and appropriately integrates the elements of traditional (e.g. organic matter management), industrial (e.g. mechanisation, use of chemicals) and bioproduction. (Figure 6)

Figure 6

**Formation and development of agrarian models from the 19<sup>th</sup> century**



Source: Buday-Sántha Attila: Környezetgazdálkodás. Nemzeti Tankönyvkiadó. Budapest, 1996. p. 198

As it comprises the main tendency in up-to-date agrarian production, integrated production means quality mass production done at a high technical level and with great expertise which meets economic requirements (market), as well as meeting the requirements of hygiene, of human and animal health care, of environmental and nature protection, and of animal welfare. It is also monitored at every stage from land and stable to the consumer's

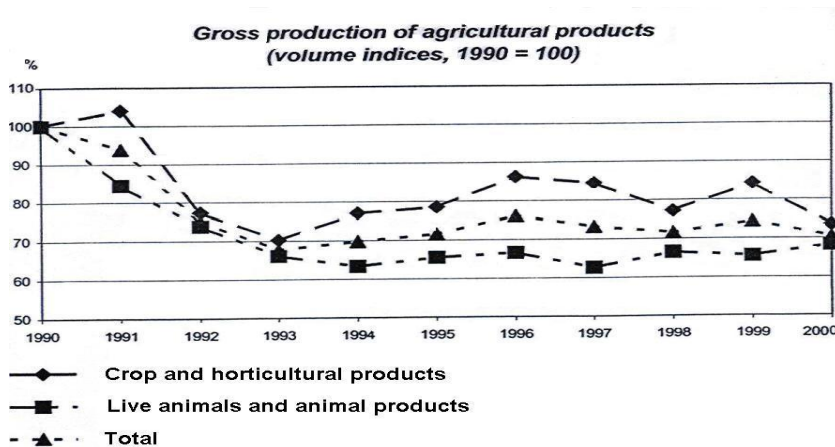
table. The practical realization of this model is facilitated by the introduction of so-called precision technologies.

Though less significant, but also a growing tendency in up-to-date agrarian production, is bioproduction which relies primarily on natural materials and natural processes. It is a production tendency which tries to produce quality products for all those who are willing and can afford to pay the higher prices arising from smaller yields and greater production risks due to the limited use of chemicals.

The main goal of the political changes carried out in the 90s was to eliminate the so-called socialist large-scale farms (state farms, co-operatives) and to restore the family farm model that evolved after the 2<sup>nd</sup> World War. Those working on large farms were unwilling to give up the secure livelihood of the large farms, and they found it risky to start farming on 2-3-hectares which was the average size of farms before restructuring. Therefore 90% of them did not leave the large farms. The disintegration of large-scale farming was accelerated by the following: state farms were privatised; co-operatives were placed into a free compensation fund and because of this land buyers from outside appeared. At the same time state subsidies to agriculture were substantially reduced, large farms were subject to special measures, and secure markets were lost, and disinvestment became common (the entire gross production value of one year was taken away from agriculture in ten years' time) and this resulted in an agrarian crisis. The 2.2 million new landowners had on average 3 to 4 hectares, and either were forced to start farming or leased or sold their acquired lands. The land privatisation carried out in the money losing period in the agrarian sector devalued the lands to such a degree that one hectare of good quality arable land could be bought for as little as 40 euros converted into forints. This opened the way to land speculation, and made it possible to own land of several hundred, even several thousand of hectares. Since 60% of the landowners don't live on agriculture (they are retired or live in cities), use and ownership of lands became separated, and 60% of arable land is leased. The present situation is that 70% of the 965,000 farms are below one ha in size, and 95% cultivate on land smaller than 10 ha (this is 14% of arable land), while the proportion of farms larger than 100 ha is 0.7% but they still use 66% of the arable land.

Figure 7

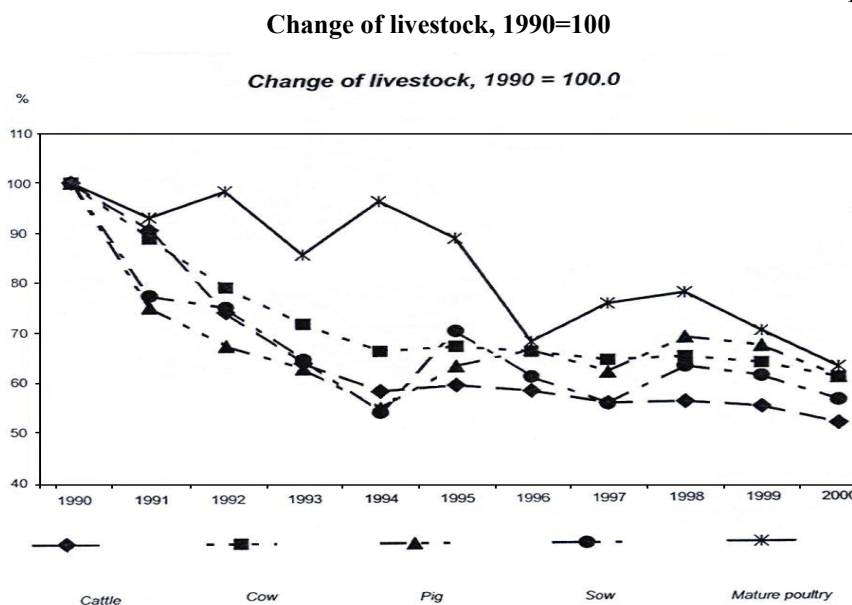
**Gross production of agricultural products (volume indices, 1990=100)**



Source: Statistical Yearbook of Agriculture 2000. Hungarian Central Statistical Office. Budapest, 2001. 16 p.



Figure 8



Statistical Yearbook of Agriculture 2000. Hungarian Central Statistical Office. Budapest, 2001. 41p

Large and small operations were equally struck by the agrarian crisis, which is revealed by the fact that by 1994 agricultural production fell to 65% of its 1990 value, and the number of livestock halved, and nowadays agricultural production is stagnating at 75% of its 1990 value, and 70% of those employed in agriculture have lost their jobs since 1989. Heavy shortages of capital and income exist, and the sector suffers from equipment deterioration. Despite its great assets (land quality, climate) the continual deterioration in the sector's market competitiveness is characteristic throughout agriculture. It is difficult to assess the reason for deteriorating competitiveness: shortage of markets or the low productivity of the sector? The crisis in agriculture, which took place at the same time as industrial restructuring, badly hurt the development of remote regions, meaning small villages where 30 to 70% unemployment was not uncommon. There not only agricultural jobs were lost, but also industrial workers/commuters were laid off.

### **The environmental impact of the agricultural crisis**

One of the main economic reasons behind land privatisation in the regime change period (1989-94) was the fact that on private farms, over time, owners take better care of their farms, and such farmers use less material and energy than before, and organize production in a way that puts less pressure on the environment, paying special attention to land preservation. However, the majority of those who became land owners through privatisation did not have the necessary expertise, equipment, or capital to farm independently, which on 3 to 4 ha average-sized farms was difficult, and 0.5 ha plots was an impossible task. The negative economic consequences of agricultural production largely done by unwilling entrepreneurs are obviously demonstrated by the lasting crisis in the

agrarian sector, sales insecurity, poor profits, low yields, and reduced amount of livestock. Even today nearly 80% of agricultural production value is produced by the big farms' successors, (public limited companies, limited liability companies) as well as the bigger family farms that were launched after privatisation, which entail 10% of the agricultural enterprises, and use 60% of arable land. Among them we find farms which can keep pace with the world's agricultural development in terms of expertise, machinery and equipment, while a crucial part of agricultural production is done in accordance with industrialization principles but with depreciated equipment. The reduction of production input is due to a shortage in funds and capital needed for production, and not due to increased rationalization. In this way the production model shift could not and did not take place, and competitive models which will be characteristic in the 21th century agriculture did not evolve or become dominant. Bioproduction is done on approximately 2% of arable land, and production that is true to the principles of integrated production is done on a small percentage of arable land. Fundamental change in farming, due to lack of capital, undoubtedly brings certain unintended (often only superficial) advantages but the drawbacks are much more significant. To prove this, it is worth listing environmental advantages and drawbacks.

### **Advantages**

#### *Soil*

- Breaking big lands into plots, growing different crops on each plot increased the number of habitats and the variety, biodiversity of species.

- Reduced amount of agrotechnical operations and the increase in the rate of uncultivated lands ensures that habitats are undisturbed.

### **Drawbacks**

-The need for equipment and energy per unit of operation increased because it became harder to cultivate using machines; air pollution, compacting of soils increased, quality of land cultivation deteriorated.

- It is not possible to use anti-erosion technology because of narrow plots on hills and valleys, and this makes it easy for soil erosion to develop.

- Plant protection of small plots is almost unmanageable; it is almost impossible to stop insecticides from drifting onto neighbouring plots. Through this, food health safety deteriorates, and human and animal health care risks are increased.

- The amount of weed, fungi and pests increases on the uncultivated lands, which later can only be eliminated by greater expenditure and increased use of chemicals. The uncultivated plots are continual sources of infection which can only be offset by increased use of chemicals on the neighbouring plots. These areas infect those in nature preserves which can cause the destruction of their valuable flora and fauna.

- The growth of aggressive weeds on uncultivated land causes illness, namely pollen allergy to 30% of the population, which has serious economic consequences (increase in the use of medicines, loss of

### *The use of chemicals*

- Reduction in the use of chemicals (artificial fertilizers, pesticides) decreases the chemical impact on soils, and in this way contributes to producing healthier foods and reducing harm to flora and fauna.

### *Animal husbandry*

- The reduction in the number of animals reduces the environmental impact caused by animal husbandry (smell, fluid manure flowage etc.)

working hours, hospital treatment).

- Insufficient nutrients in the soil cause lowering of the nutritive level of soils, which leads to deterioration of productivity and vital functions of soils. Products produced on such soils are deficient in nutrients (protein, minerals), which can cause deficiency disease in humans and animals too.

- With reduced animal husbandry, the structure of crops shifts toward grain monoculture because there is no need to grow fodder plants which regenerate the soils (e.g. papilionaceae – lucerne, red clover – Gramineae etc.)

- Because there are no animals, hardly used grass plots grow wild, and it contributes to the modification of protected grasses as well.

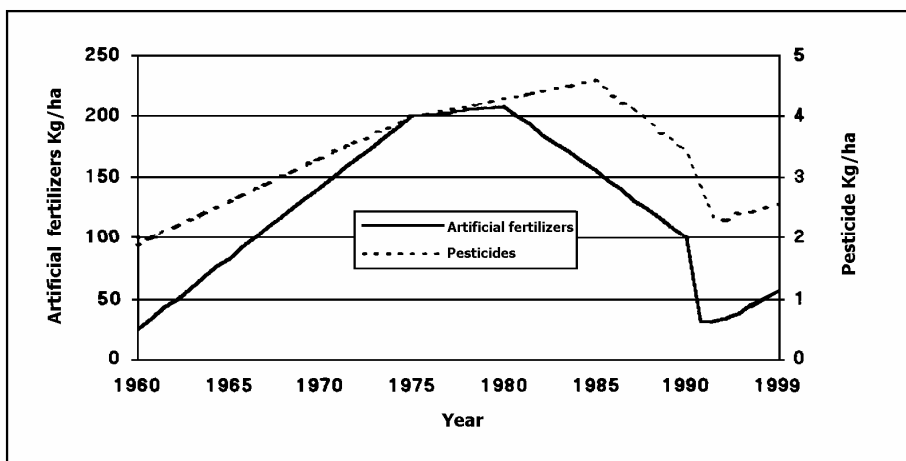
- Because there are no animals, stable litter plays an ever lesser role in soil fertility, and this causes an increased use of chemicals.

These problems are already present in Hungarian agriculture. Due to low productivity there is uncultivated land (7% of ploughed land, 60% of grass plots, 20-30% of vineyards and orchards); these became wild like most ploughed land on which only the most important work is done. The neglect of agricultural land does not only hurt agricultural production, but also contributes to the deterioration of the landscape value of the country and to the development of pollen allergy which is already a widespread disease. Struggling farmers do not pay any attention to the preservation of land quality. With reduced number of animals, the amount of land where stable litter is used annually does not exceed 5% of ploughed land, soil liming to acidulate (2.6 million ha) has almost entirely disappeared. Loosening of compact soils is not carried out, and the maintenance of draining systems is only obligatory on inland waters that have evolved in the past decade.

The nutritive content of soils which were provided, at great cost, with nutrients in the past decades is depleting due to the radically reduced use of chemicals. Inefficient plant protection cannot stop the growth of pests and resulting severe damage. Compared to other countries, the use of chemicals in Hungary has never been high but the level in past decades does not attain the agro/technical minimum. In spite of this, the environmental risk caused by the use of chemicals has not been reduced because it cannot be controlled due to the increased number of farmers and at the same time the decline in well-managed production (expertise, state of machine pools). Agricultural food health safety has deteriorated, and the use of chemicals on small plots has also contributed to this.

Figure 9

### The use of active ingredients of artificial fertilizers and pesticides



Source: Magyar Statisztikai Zsebkönyv 1999. KSH. Budapest. 2000;

Tények és adatok a mezőgazdaságról és a falusi életkörülményekről. KSH. Budapest, 1997.

Due to the unfavourable economic environment, livestock in Hungary has never reached the numbers it did in the western countries, and its nearly 50% reduction over a decade shifted the structure of agricultural production towards crops. Drawbacks appear in soil protection (lack of stable litter that would offset reduction in the humus level and lack of fodder which ensure the protection and regeneration of soils), and in the proper care of agricultural lands (e.g. grasses). 60-70% of production is still carried out on inefficient animal farms built in the 1960s and 70s, inefficiency due to a deteriorating technological level. Environmentally it is a significant improvement that the previous statistic of 28 million m<sup>3</sup> liquid manure has been reduced to half, but the 14 million m<sup>3</sup> fluid manure is still not stored correctly, and it is mostly desiccated in liquid manure ponds, leading to environmental pollution. It is invariably a problem to store carcasses in an environmentally friendly way, but for big farms gathering and extermination is done in regional plants which process animal protein.

On a national level, pollution by small producers' animals is not less significant. For small producers it is more difficult to ensure hygienic treatment of liquid manure because of the higher specific costs, and since these (unlike remotely located big farms) can be found in towns and villages, meaning among houses where odour and fly propagation is hard to accept for neighbours who do not keep animals any more. Because it has high costs to centrally exterminate the carcasses, small producers want to cheaply dispose of the dead animals by burying them or placing them in carrion pits, which is unacceptable today for animal and human health care reasons.

## Conclusions

The decline and crisis in agricultural production in Hungary accompanying the regime change did not eliminate the harmful environmental impact of production, but there has been change primarily in the nature and type of environmental damage. The radical reduction in production input, meaning a decline in the use of chemicals and the reduction in livestock

number has undoubtedly reduced the pressure on the environment, but at the same time it contributed to the development of other forms of environmental damage. Today, most of the damage can be attributed to lack of production capital, worn-out equipment, a halt in technical development, and a privatisation practice that caused significant ownership fragmentation of arable land.

Reducing the harmful environmental impact of agricultural production can, as in other sectors of the national economy, only be done by appropriately concentrating production, by introducing environmentally friendly technologies which are economical in their use of equipment and energy, and by increasing the sophistication of techniques when they are applied. Modern and economical technologies guarantee the elimination of technological errors inherited from industrialized production (burning of straw, stubble, corn-stalk, flowage of liquid manure etc.) and the introduction of closed waste and organic matter management within treatment plants, where organic matter is either manure or fodder or fuel but never untreated waste.

The new Law on the Environment passed in 1995 and the 1st Environmental Action program as well as the National Agrarian Environment Protection Program created in 1999 already stress agrarian environmental protection issues, however we can expect visible results if agricultural production starts developing again, and a complete technological shift occurs in in the sector, which will bring about a change in attitude and the development of environmentally friendly farming practices.

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## **Food consumption and the convergence of consumer prices between Hungary and the EU**

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### **Abstract**

In our article, we will mainly deal with the comparison of food consumption tendencies and food consumer prices between Hungary and the EU. In the majority of EU states food consumption is already saturated, and it has only increased a little in the past ten years. The structure, the level, and the trend of each member state differ significantly. The fact that five to six years after the system changed, the consumption of most of the important food products, (such as meat, eggs, milk and dairy) decreased significantly. The period following should be considered when comparing Hungarian and EU consumption. In the year 2000 the consumption level of most products was still lower than in the year 1990. Even though Hungarian food prices began to edge closer to the average price level of the EU between the years of 1995-2001, they still fell behind by 49 percent. We believe that accession itself will not result in the increase of food prices, because there is no such pressure in terms of adjustment and there is no integrated food price in the EU either. Wages and purchasing power as well as supply mainly influence the convergence of food prices, and the price level of EU member states only affects them to a smaller extent.

### **Key words**

Food consumption, food consumer prices, convergence, EU adhesion

### **Introduction**

The examination of food consumption is a favourite area for both American and European researches. In the year 2001, the seminar in Saragosa, (Spain) EAAE, dealt with food consumption and was also tilted: The Food Consumer of the Early 21<sup>st</sup> Century. Throughout this article, we relied on several presentations out of the twenty that took place. Examples:

(Dagevos- Van Gasbeek, Gracia- Albisu, Petrovici-Ritson.)

We have also used the research of Sanauer (Minnesota University) along with the regularly published North American USDA-ERI.

We have to highlight the achievement of Márton Szabó (1998), Lehota-Horvath (1999), and Hajdu-Lakner (2002), from the wide range of analyses carried out in Hungary.

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Furthermore we have also relied on the publications of Eurostat consumers in Europe, Fact, Figures, Data, which provided us with significant information mainly for the examination of EU prices.

## **1. Equalisation and differentiation in terms of food consumption**

Western European food consumption of the 90s may be characterised by the following **major tendencies**.

- Decreasing share of food and delicacies in total consumption.
- Changing food consumer structures
- Increasing health and quality consciousness among people.
- Gross calories and animal originated calories reached the maximum
- Flexibility of food consumption price and wages was low
- Eating-out was increasing.

It can also be determined, that while the operation of the EU food market in member states is becoming homogeneous, the level and the structure of consumption of certain food products differ because the eating habits and the motivation of certain European consumers vary.

### **1.1 Decreasing share of food and delicacies products in total consumption**

Following the tendencies of the earlier period, throughout the decade of the nineties, the share of *acquired goods* and food products out of the total consumption continued to decrease in Hungary as well as in the EU.

**Within ten years in the EU, the share of food and delicacies decreased by 6.5 percent in the total household consumption.**

By the end of the nineties it was only 18.2 percent versus the 25 percent of Hungary. Even though the share decreased in Hungary as well as in the period analysed, it started from a higher level and decreased to a smaller extent (5 percent). Out of the EU member states Portugal fell closest to the Hungarian share with its (24 percent), while the (12.6 percent) in the Netherlands stood the farthest from it. In spite of the fact that there was a significant approach in common value in terms of food and acquired goods consumption between EU member states the difference between the smallest and the greatest share was still almost twofold.

The most intensive decline, forty percent, took place in the category of delicacies within the EU. The share of expenditures of tobacco and alcoholic beverages decreased by forty percent out of gross consumption and reached 3.2 percent. The same category in Hungary was almost twice as much, 5.7 percent by the end of the nineties, in spite of the decreasing tendency (Table 1).



Table 1

**The share of food products and delicacies in the total household consumption in the EU and in Hungary**

Name	Food products and non alcoholic beverages		Alcoholic beverages and tobacco		Food products and delicacies together	
	1990	1999	1990	1999	1990	1999
EU-12 <sup>1)</sup>	19,3	15,0	5,4	3,2	24,7	18,2
Hungary	22,0	19,4	8,0	5,7	30,0	25,1
Hungary in the 12% of the EU	113,9	140,5	148,1	196,6	121,5	150,2
Relative scattering, EU12	0,360	0,215	0,720	0,409	0,340	0,191

1) We did not have sufficient data for comparison at our disposition regarding the EU-15 for the year 1990 due to lack of data on the member states joining later to the EU. Source: EUROSTAT, KSH and own calculation.

Along with the declining share of food products and delicacies, the structure of consumption modified for the benefit of services. The rate of consumption in terms of heating and energy equipment as well as non-durable products somewhat increased.

## 1.2 The consumption tendencies of major products in Europe from 1990 till the millennium

There were marked differences in the consumption habits and living standards of European countries.

In the past few years, several cluster analyses were made to categorise the European consumption habits according to the consumption level of individual products.

Petrovici and Ritson found in 2001 that, based on similarities in terms of consumption, the following countries could be grouped together. (Based on data of 1997, examining 12 product groups).

1. Greece, Italy, Spain, Portugal (The Mediterranean countries)
2. Benelux states, Germany, **Hungary**, Czech Republic
3. Austria, France, Switzerland
4. Denmark, Finland
5. Norway, Sweden
6. Ireland, Poland (Balkan)

In spite of the relative saturation, the consumption of several product groups continued to rise in the past 10 years, within the EU, even though to a smaller extent. Based on our current knowledge, the structure of consumption has been moving towards healthier eating habits. The growing popularity of poultry versus pork within meat consumption and the rate of milk and dairy consumption as well as of fruits and vegetables indicates this. However the above data grew by 6-6 percent in terms of the last three groups of products in 10 years. At the same time cereal consumption somewhat increased. The consumption of animal- originated fat, fish, egg, and potato consumption also showed signs of saturation, since the same amount was recorded to be consumed in the year 2000 as in 1990 (Figure 1).

Examining only the averages, the level and structure of meat consumption did not change significantly within the EU in the in the past 10 years. Pork still remains to be the most preferred meat (with 51 percent of share).

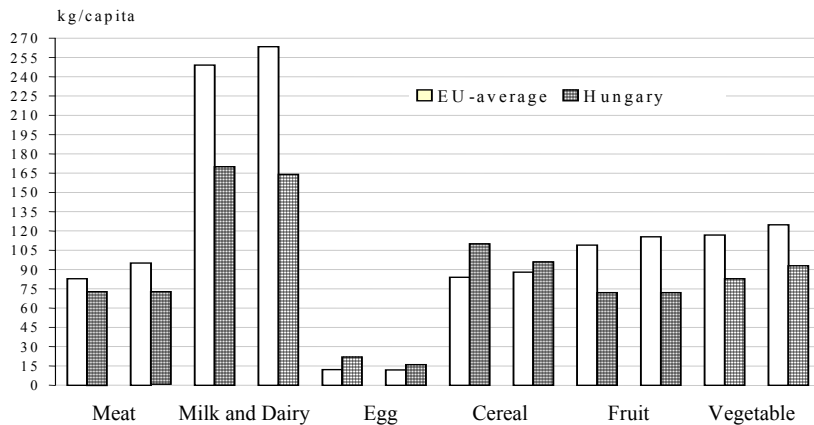
As a result of BSE, the popularity of beef consumption decreased by 4 percent and there was an increase of poultry meat consumption in the year 2000. However the structure and volume of meat consumption was not homogeneous within the individual member states. The level of meat consumption was 64 percent higher in Spain, the greatest meat consumer, than that of Finland, which was the smallest consumer in terms of meat.

There is a wide variation in levels of fat and vegetable consumption within the member states of the EU.

We found about three and four fold differences between the highest and the lowest level of consumption regarding the above group of products, even in the year 2000. The difference in terms of consumption level was somewhat lower, only twofold in the category of milk and dairy products, egg, cereal, and fruit consumption. In spite of this, food consumption became more homogeneous within the EU in the past 10 years. Out of the 10 groups of products, the relative variation increased in 5 cases: (meat, dairy, cereals, vegetable, and fruits), but didn't change in two cases (fish and vegetable oils); however it increased in the case of three product groups: (egg, potatoes, and animal-originated fat). Therefore we may not talk about a fast and significant convergence, however the structure and the level of food consumption in terms of eating habits was not homogeneous at all within the 15 EU member states.

Figure 1

**The change in major food product consumption in the EU and Hungary, 1990-2000**



Source: Based on the data of FAO, Eurostat and KSH

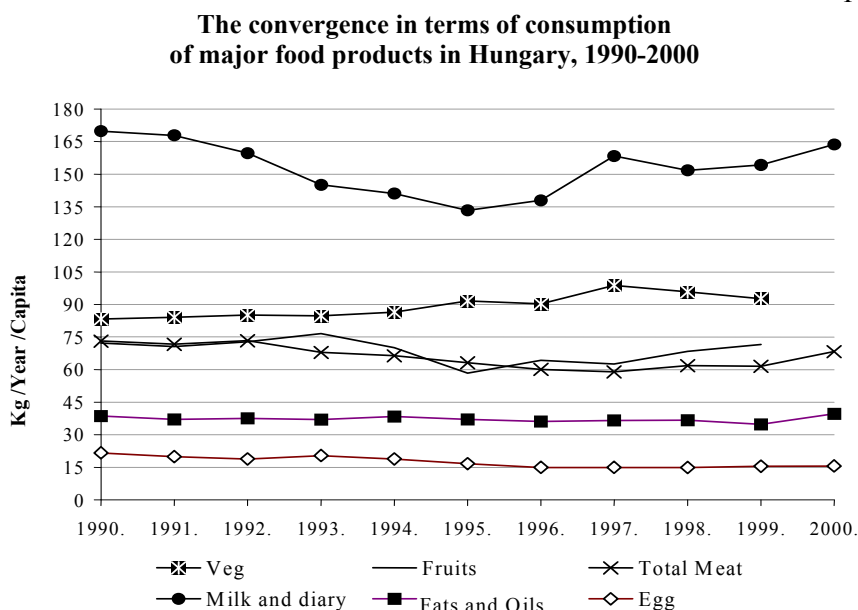
We only analysed the starting and the closing year (1990 and 2000) of the period examined, and **the convergence of Hungarian food consumption was almost the complete opposite of that in the EU.** Compared with the 1990 data, the consumption of animal-originated protein based on products such as meat, dairy, eggs decreased with the

exception of poultry, while fruit consumption stagnated at the turn of the millennium. However fat/oil consumption somewhat continued to increase, including the consumption of vegetable oils which rose to 46 percent in the year 2000 from the 30 percent of 1990. Only vegetable consumption increased by almost 10 kg per capita.

However it would be reasonable **to divide the examined 10 years of food consumption into two parts** because the factors themselves, affecting goods consumption show an ambivalent tendency. During the system change Western European economies showed a continuously growing GDP, but in Hungary GDP decreased for several years due to the change and, as a result of restrictive economic policies, the rate of real-income also decreased. Even at the end of the 1980s some basic products enjoyed consumer subsidies. This kind of subsidy was suspended in the year 1990 following price liberalisation, and severe inflation caused a significant price increase coupled with deteriorating wages and increasing unemployment.

In the second half of the 1990s, the economic indicators improved, which resulted in escalating consumption of several food products. A positive tendency was that milk and dairy consumption as well as the consumption of eggs showed an increasing tendency from 1990, as well as meat consumption in the year 1998 and 2000 even though it still didn't reach the level of 1990 (Figure 2).

Figure 2



Source: Food balance and nutrition consumption, 1970-2000, KSH, 2002.

Studying the entire decade, it becomes obvious that altogether Hungarian food consumption level in the year 1990 was much closer to the average of the EU-15 member states than in the year 2000. The increasing level of food consumption in the second half of the 1990-ies could not make up for the severe decrease of the period between 1990 and 1995. Along with the widening gap in the consumption level of meat, milk, dairy products and fruits there were some positive aspects, which are worthy of mentioning. For instance there was a significant reduction of the gap in terms of consumption in the case of animal-

originated fat and plant oils as well as in the case of cereals. The Hungarian consumption level of vegetables and potato also approached that of the EU (Table 2).

Table 2

**The share of Hungarian food consumption in percentage of the EU-15 member states**

Item	1990	2000	Approximation (+) gap (-)
Total Meat	83	76	-
Broken Down To: Beef	32	23	-
Pork	97	65	-
Poultry	127	135	-
Fish	13	13	0
Milk and Dairy	68	62	-
Egg	181	134	+
Animal Originated Fat	186	151	+
Plant oils	68	97	+
Cereal <sup>1)</sup>	131	109	+
Potato	72	78	+
Vegetable <sup>2)</sup>	71	75	+
Fruit <sup>2)</sup>	66	63	-

<sup>1)</sup> To the EU12

<sup>2)</sup> Hungarian Data: Of the year 1999 instead of 2000

Source: Own calculation based on the data of FAO, EUROSTAT.

## 2. Key factors influencing consumption

Researchers of the Post-industrial countries, in terms of food consumption, have concluded that, based on the classical economic-demographic criteria (income, price, age, region, size of household) the consumption preferences of today's consumers cannot be fully categorised due to the spread of new psychological and cultural factors.

In the nineties several new consumer categories were introduced in Hungary. The Gfk Hungária Market Researching Institution identified the following domestic consumer segments (Szabó, 1998):

- Traditionals (32 percent of consumers)- mainly older people that were uncertain about the advantages of system changes.
- Adaptable people (30%), who place individual achievement at the top of their values, meaning strictly moral and dynamic people.
- Upwardly mobile ambitious people, young and middle-aged (26%).
- People looking for roots (7 %)- older people, especially those living in agriculture areas.
- Winners (5 %) - young and middle-aged people living in the city, without illusion, striving to enjoy life.
- It's obvious that the traditionals are in majority, we can classify the adaptable group in this category also.

We are not about to neglect the classical economic and demographic factors either while studying the factors influencing consumption, since at the current level of economic growth, income, price and demographic factors do play a major role in the structure and quantity of consumption in Hungary.

## 2.1. Income

The indicators regarding Western European price–flexibility mainly remained under one in the nineties.

The lowest values were measured in the case of cereals, butter, milk, sugar and eggs and the highest values, which mainly fell close to one, were in meat, fish, vegetable and fruits.

Wages strongly influence the level of consumption in Hungary.

A characteristic of this phenomenon is that with the exception of cereals, wealthier people consume more of everything than low-wage consumers. With reference to individual food groups, the consumption difference in terms of more expensively processed meat products (salami, sausage, ham), cheese and other dairy products, plant oils, fruits and vegetables is twofold or over twofold between households belonging to the upper and lower fifth of income categories (3<sup>rd</sup> Chart).

If we examine the **amounts** spent on food according to wages, we find that the difference between the upper and the lower fifth is a little larger than it was in the case of consumption quantities. This phenomenon indicates, that people with lower wages intend to satisfy their necessities choosing from cheaper products, in other words those of higher income purchase more things that are expensive. The difference of consumption based on the differences of costs is the same in the case of those products (cooking oil, sugar), where there is no opportunity for this (Table 3).

Table 3

### The differences in terms of food consumption and money spent on food according to wages in Hungary in the year 2000

Item	Food Consumption	Amount of money spent on consumption
	Difference, 5 <sup>th</sup> wage class 1 <sup>st</sup> wage class	
Total meat	1,6	1,8
Broken down to: Pork	1,6	1,8
Poultry	1,4	1,7
Salami, ham, sausage	2,4	2,8
Cheese	3,6	3,8
Butter, margarine	1,8	2,0
Fresh and baked vegetables	2,2	2,4
Preserved vegetables and baked vegetables	2,2	2,4
Fresh fruits	2,9	3,2
Preserved fruits	2,4	2,6

Source: Own calculation based on the family budget of 2000, and the data of the KSH of 2002.

## 2.2. Consumer Price

Contrary to the relatively high level of wages, **the price of the product still plays a major role in the decision making of the Western European consumer.** Based on a study of Eurostat made in 1996, consumer food consumption attitudes are determined by the price, and in second place after quality and the freshness of the product. At the same time the study points out that the price is the only determinant in the case of half of the consumers while the three-quarters of those observed considered quality and the freshness the most important factor. Finnish, Swiss and French shoppers are the most sensitive.

The study of the Gfk Market Research Institution in the year 2001 shows that price and quality play about the same role in decision making of **Hungarian** consumers. The quality and the freshness of the products attained a few more points.

## 2.3. Consumption of self-produced goods

Contrary to the Western European production and consumption habits, the consumption level of self-produced goods is still pretty high in Hungary. **Between the years of 1991 and 2000 the share of self-produced goods out of the gross production practically did not change at all;** it was 17.6% in 1991 and 18.7% in 2000, meaning that it increased a little in spite of the expected decrease. Self-production plays an important role (above average) among purchasing sources in the case of several products that can be prepared at home. Households provided themselves nearly 40 percent of pork-meat, 50 percent of potatoes and vegetables, about 50 percent of eggs, and 30 percent of the fruits consumed from the above source, even in the year 2000 which was an unusually high value (Table 4).

Table 4

### The share of self-produced goods in terms of consumption of some of the more important food products in the year 2000

Item	Wage categories			
	1. fifth	3. fifth	5. fifth	Average
Raw meat and Fish	37,7	42,9	31,7	38,9
Poultry	34,6	43,1	32,7	38,7
Pig-meat, smoked meat, canned meat	14,5	19,7	16,0	17,7
Egg	41,6	54,5	41,1	48,2
Fat	16,3	20,2	15,8	18,0
Potato	29,0	41,5	33,9	38,0
Fresh and preserved vegetables	26,2	41,9	36,1	39,5
Fresh and preserved fruits	25,7	31,5	31,4	30,6
<b>Food products in average</b>	<b>16,2</b>	<b>20,8</b>	<b>16,0</b>	<b>18,7</b>

Source: Family Budget 2000, KSH 2002.

It is obvious that without this source Hungarian food consumption level would be much lower and that the deteriorating income level of the nineties preserved this trend. We should not expect a fast change in the case of the above phenomenon; we should treat it as a distinct consumption trait of Hungary.

## 2.4. Demographic factors

Out of the demographic factors of Western Europe shaping consumption in the nineties, we should point to the aging population, the increase of one or two person households and the growing number of working women in the nineties. These changes were not completely a new phenomenon, but in the nineties they became typical.

With the exception of a few Mediterranean countries (Greece, Spain), and Ireland the **share of working women** rose above 40 percent within the Union (Eurostat 2001). This fact had a significant influence on the consumption habits. As a result of the loss of free time, the amount spent on convenience products, semi-prepared and ready to eat food, as well as the rate of eating out increased. Altogether the demand for products of a greater added value increased.

In the year 2002, the share of working women in **Hungary** was 44 percent, which correlated with that of the EU.

Between the years of 1991 and 2000 the convergence of the rate of **eating out** was contrary to that of the EU in Hungary. While the share of the amount spent on eating out had been 10 percent out of the total amount spent on food in 1991 it decreased to 8.5 percent by the year 2000. The reason for this phenomenon can be explained by the massive decrease of **dining opportunities at work**, and the more expensive restaurants were able to only partially take over the role of this form of eating out.

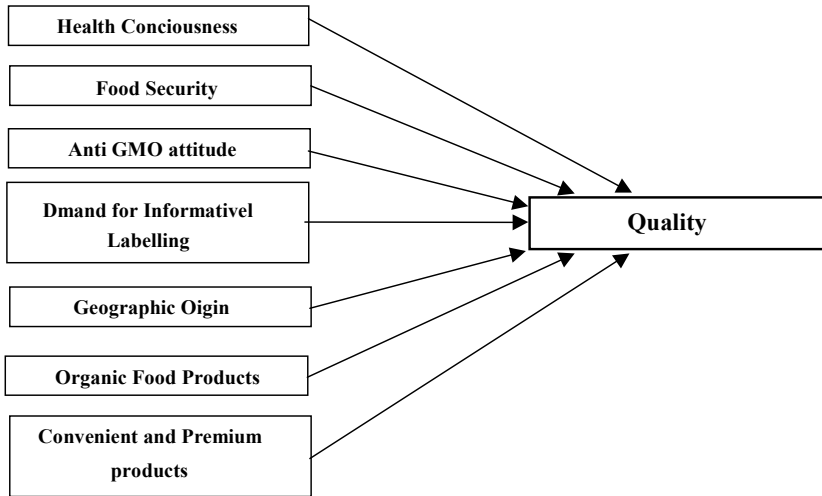
This segment became a good object of studies with the introduction and the quick growth in fast-food restaurants. The study of the GfK Market-Researching Institution points out that 3/10 of those surveyed ate fast food with different frequency, while 7/10 of them did not visit those places. In spite of the growing number of fast-food chains between the years of 1999 and 2001 the number of their visitors seemed to stabilise. A much greater share of students, 70 percent visited these places.

## 2.5. New criteria influencing consumption

What sort of new factors surfaced and strengthened in the nineties?

Figure 3

**New food consumption attitudes in the nineties in the European Union**



Source: Own Data

Each one of the listed factors somehow relates to quality demand. Good quality as the priority of consumer preferences is nowadays a basic demand of selling.

***Food Safety***

The BSE and dioxin scandal, as well as foot and mouth disease, in several member states and the problems related to hormone-treated meat of Bavaria have all strengthened the consumers’ demand for food safety. They demand more information about the possible sources of harm that could be caused by consumption of the product. Many consumers feel unsafe about food consumption but to different extents. They are mostly suspicious of preserved and ready-to-eat products. In an examination of the above phenomenon (European Commission, 1998) 40-49 percent of the questionnaires found that the products mentioned above were unsafe. At the same time only 11-18 percent felt unsafe regarding consumption of bread, baked goods, cheese, vegetables, fruits and milk. It is a warning sign that meat and fast frozen products received a 34 percent “untrustful” index. Most customers fear the residuals of pesticides and hormone-treated products. Additives and preservatives were also highlighted in the European Commission of 2000. A pretty high percentage (54-58) of Hungarian consumers also reject food products containing preservatives, artificial flavouring and colouring, according to GFK Research Institute of Marketing.

Citizens of the EU consider **GM (genetically modified) products** as part of the high risk group. Contrary to American consumers, they are not convinced that these products were safe (in terms of consumption, not the environment). According to the European Commission, over half of EU consumers consider GM products to be a serious source of danger while in the USA only 21 percent of the people consider it hazardous (Senauer, 2002).



In a 1000 person representative sample, they questioned Hungarian citizens about the consumption of GM products, and Hungarians have also shown a very strong attitude towards this process also.

**„Only 2 percent of those surveyed thought this technology to be very useful. 18% considered it useful, meaning that only every fifth person felt favourably toward it.”** (Bánáti-Lakner-N Vajdai, 2003).

### ***Organic Food Products***

Due to the demand for safe and healthy products, part of the consumers turned towards the consumption of organic **products**. Contrary to earlier projections, few customers purchased those organic products that were more expensive than the traditional ones. According to the 1997-99 examination of the International Trading Centre, the share of organic products did not exceed 3 percent of retail trade anywhere within the EU member states. There were member states where it was only 0,5-1,00 percent. Sixty percent of the total consumption of organic products was concentrated to four countries, Germany, Italy, France and the UK (European Agriculture, 2001, Sept).

Hungary mainly produces organic products for export. The consumption of organic products is even lower in Hungary than in the EU.

### ***Geographic Origin***

The demand for special quality and safe consumption is related to products labelled with a geographical indication (PGI: Protection of Geographic Indication) and to the indication of Origin (PDO: Protection of designation of origin). In the month of May 2001 there were 346 PGI and 216 PDO products. Furthermore, 13 products have received TSG labelling, meaning Traditional Speciality Guaranteed. Most PGI and PDO products were in France and Italy. In the above member states the number of the products with the indicated labelling was above 100. Mainly cheese, processed meat products, vegetables and fruit products were on the list.

**The Hungarian** Origin Protection Commission has accepted the preservation of seven alcoholic beverages (Palinka), 2 types of sausages, and three types of vegetables.

### ***Products of Convenience***

Rising living standards, constantly growing employment of women, as well as exotic tastes and the desire to experience new tastes, makes convenience products more and more popular. **Highly processed, ready-to-eat commodities are listed below in the category of convenience products** (certain baked goods, processed meat, yoghurt, frozen commodities, snacks, half and fully prepared foods). Consumption of these products has grown 4 times as fast as the average consumption of food. Between the years of 1997-2002 the rate of consumption of these products decreased but it was still estimated to be twice that of the average consumption. The fastest increase in consumption is expected to take place in the Mediterranean countries (Gracia-Albisu, 2001). The consumption of convenience products *varies* greatly; at the moment. Portugal and Greece consume 4-5 times less and in some cases even 1/10<sup>th</sup> the quantity of people do in the more advanced European countries.

### ***New Directions in Trade***

In the 90s both food-processing (*ABD*) structure and food trade changed, with the main trend being **strong and intensive concentration**. There were EU member states where the first three largest food chains owned 80-95 percent of the food trading sector (Sweden, Netherlands and Finland). With the exception of Greece and Italy, this indicator was above 50 percent in the rest of the EU member states.

No doubt the spread of super and hypermarkets has done a lot in terms of homogenisation of Europe. Hungary has also adopted this trend. In the year 2001, about 56 percent of those surveyed spent the most amount of money in (discounts, supermarkets, hypermarkets and *C+C*). The other 44 percent chose the smaller self-service and non self-service units (GFK, Shopping Monitor, 1999-2001). However the similarity of the stores and shopping circumstances did not mean that the grocery basket was the same.

The advantage of trade versus food processing was also demonstrated by the fact that **different trademarks** now received more attention than the traditional trademarks of food processing.

According to the ACNielsen study of 2000, the share of trademarks reached 24 percent in the EU, while market-leading manufacturers were able to maintain their position (Clark, 2002).

According to ÉFOSZ data, the share of trademarks in food-trade in Hungary is 18 percent. Products with their own trademarks are mainly canned-goods, milk and dairy products.

### **Similarities and Differences in terms of Food Consumption.**

If we compare the consumption habits of the majority of citizens in the EU member states and in Hungary, we will observe similarities and differences.

**Contrary to the wealthy member states**, food consumption is still very income-sensitive in Hungary. The share of self-produced goods is still very high in Hungary. This phenomenon is only true for fruit and vegetable production in post-industrial states and only to a small extent. Due to income limits, a very small percent of consumers have the opportunity of eating out, even though the share of working women is similarly high both in Hungary and in the EU. Hungarian consumers are less health-conscious than Western European ones.

### **What are the similarities between the Hungarian and the Western European consumers?**

One similarity is the consideration of quality as a key factor of shopping. Another important attitude is the fact that shopping circumstances became similar due to the growth super and hypermarkets in Hungary. Last but not least, reluctance toward GM is very high in Hungary.

### 3. Changes in consumption of the main food products in the EU and Hungary until 2004.

According to the long term's projections of the European Commission, there should not be a serious divergence in the consumption of two main food products, meat and dairy on average in the EU until 2004. A measurable change, 9 % was supposed to take place in poultry meat consumption between 2000-2004. A 3 kg per capita increase is projected, which will increase total meat consumption over all (Table 5). The internal structure of milk and dairy products will further modify towards cheese and yoghurts and to the detriment of butter and milk.

Table 5

#### Projected meat and dairy consumption in the EU, kg/year/capita

Name	2000	2001	2002	2003	2004	2004/2000, %
Beef	19,2	17,7	19,5	19,8	19,8	103,1
Pork	43,4	43,7	44,3	44,4	44,7	103,0
Poultry	22,2	23,7	23,9	24,0	24,2	109,0
Total Meat:	84,8	85,1	87,7	88,2	88,7	104,6
Cheese	18,3	18,9	19,0	19,1	19,1	104,4
Butter	4,7	4,7	4,6	4,5	4,5	95,7

Source: Prospects for agricultural markets 2002-2009, EU DG VI 2002.

In Hungary, where consumption level did not reach saturation for most of the products, a continuation was expected of the growth trend that began in the mid 90s, but a great leap forward was not expected until 2004.

With the exception of poultry and fruit, we may only count on a slow increase in terms of consumption. The consumption of milk and dairy products, egg, cereals and vegetables belong to this category. However the consumption of fruit is expected to exceed that of 1990 by 10 kg (Table 6).

Table 6

#### The convergence of the consumption of the major food products in Hungary until 2004, kg/capita

Name	2000 fact	2001 prior data	2004 prognosis	2004/2000, %
Total Meat	68,3	67,5	72,0	105,4
Broken down to : Pork	28,0	25,2	28,0	100,0
Poultry	31,0	34,2	35,0	112,9
Milk, Dairy	160,6	144,2	160,0	99,6
Egg	15,6	15,8	16,5	105,7
Fat/Oils	39,0	37,4	38,0	97,4
Cereals	94,1	95,4	97,0	103,0
Vegetables	92,7 <sup>1)</sup>	...	95,0	102,5
Fruit	71,6 <sup>1)</sup>	...	81,0	113,1

<sup>1)</sup> 1999 data

Source: 2000: KSH, 2004 own estimation based of trend calculation, 17 (Attachment).

With the exception of the Hungarian egg and poultry consumption, the expected consumption (2004) of the rest of animal-originated products was projected to fallway behind the average of EU consumption level of both the year 2000 and the projected period of 2004. The same held true for fruit and vegetable consumption. On the other hand, Hungarian consumption of animal-originated fat and cereals was expected to further exceed that of the EU average. We won't state that the Hungarian level of consumption will reach that of the EU average, which in fact does not reach the consumption level of any of the member states. As we have seen earlier there are not even two member states where the consumption pattern would be the same therefore Hungary does not have to adjust to any EU average either.

#### **4. The convergence of food consumption prices between Hungary and the EU**

It is necessary to indicate that when examining consumption prices, food-price change measured in Euros does not only indicate the convergence of food prices of products in the grocery basket, but the currency exchange rate has an effect on it (HUF/Euro exchange rate). This could be felt pretty strongly during the devaluation of HUF, which happened in May of 2001 for the first time, and has been done several times since than.

##### **4.1. The change of food prices between 1996-2001**

Between the years of 1996 and 2001 the overall increase in food prices (including products and services) was pretty low in the **European Union**. It reached 6.4 percent in five years. Average food price increased even less, by only 3,5 percent, which was lower than 1 percent annually, meaning **that the escalation of food prices was half the rate of average consumption prices**. A much stronger price increase took place in the category of *acquired goods*. Between the years 1996-2000 the price of these products increased by 14 percent. The growing price of delicacies must have been strongly related to the fact that their share significantly decreased out of the total consumption.

However price increase was not equally low in all EU member states. In some member states food prices have barely moved in the last five years; for instance in the UK and Germany, while in Greece and Ireland the increase in food prices exceeded 10 percent.

Examining the price **increase of basic food prices between 1995 and 2002, in Hungary** we may conclude that there were significant differences explaining the average value. While the price of the 17 products involved in the examination increased by 96 percent in the past 7 years, there were products where the rise in prices was much stronger.

Consumption prices of milk and dairy as well as bread and sausage belonged to the **category of products with a fast price increase**. The increase was twice as fast as that of the average. A slower below average tendency, was observed in the price increase of pork, poultry, potatoes, vegetables and a few fruit products.

##### **4.2. Differences and convergence of food consumption prices in EU member states**

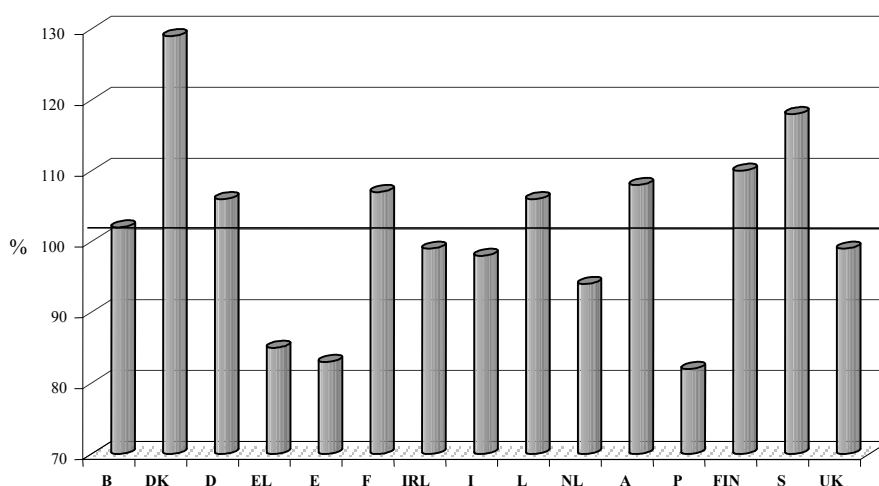
According to an examination by Eurostat the **differences are still** significant in terms of both the grocery basket and the level of main commodity clusters.

Observing the food price average, the three cheapest countries are, Spain, Portugal, and Greece where the average level of food is only 82-85 percent that of the EU. The two countries with the highest average of food prices are Sweden and Denmark where the average level of food prices exceeds the EU average by 18-29 percent (Figure 4).

Looking at the individual food clusters, the price of bread and meat products have the widest variation within the EU, and the price of milk and dairy vary the least. The difference is twofold between the cheapest and the most expensive EU Member States if the consumer of the given country purchases bread, meat, oil, fruit or vegetables.

Figure 4

**Differences between food price levels in the EU member states in 1998**  
EU-15 average=100



Source: Eurostat, Consumer Europe, 2000.

The price differences between the countries are composed of several factors. Since we are talking about food, natural resources play a major role as well as the level of self-production. We may not abstract from the price level of other products. Fresh products perishable and thus are less transportable. Tastes, trademarks and consumer preferences are also different. Even though value added tax is not the same in the member states, the differences in terms of prices cannot be explained by it. In the member states with high food prices like Denmark, Netherlands, France and Sweden, food prices would still exceed the average without the value added taxes and vice versa. Coupled to the above, we must state that **the content of value added taxes differs to a very great extent within the EU. While it's only 6 % in the Netherlands, it reaches a maximum of 25% in Denmark and Sweden.** There are no two countries that would be the same in terms of the VAT.

We might conclude that the prices of the products manufactured by **multinational companies** have the narrowest variation within the EU, but this is not true. Evian mineral water costs four times as much in Finland as in France. The price variations between Barilla Spaghetti, Heinz Catchup and Mars Chocolate are also pretty big, almost twofold. Multinational companies must also adjust to local price levels.

We have prepared a study to examine prices **within the EU between the years of 1995-2000**. We have calculated the relative variations and the average of 14 basic food products.

As the results indicate, only **very little convergence of price levels occurred during the 7 years of the examined period**. The relative variation of 0,27 percent of the year 1995 decreased to 0,24 by the year 2001. The relative variation of 2/3 of the products decreased to some extent, meaning that their price levels were somewhat converging within the EU. The strongest decrease in variation took place in the category of wheat-flour, margarine, and sugar. There were certain food products with price levels that were moving away from the average; for example that of cow milk, beef, egg and apple. The picture therefore was not uniform we may not talk about a strong convergence.

According to Rudi **Dornbush**, the professor of economics at MIT, **integrated currency by itself is not sufficient for integrated prices**. There are many reasons for the presumable subsistence of different prices. First of all the great differences in terms of wages, differences in selling, the competition limiting experience, and the differences in the sizes of the markets. As a result, price differences are going to remain with us, euro is not going to change this very much (Daily Economy, 10<sup>th</sup> of February 2002). We believe that food price convergence is influenced by stronger facts than the presence of a common currency.

### 4.3. Convergence of food prices between Hungary and the EU

In our research we examined the **differences between the food prices of the EU and Hungary**. The average price of the fifteen food products involved in our study approached that of the EU **by 51 percent** by October 2001. This share was smaller in the year of 1995; it had only been 51 percent.

Table 7

**Hungarian food prices as percentages of EU average prices**

Name	1995	2000	2001
Hungarian Price/EU average Price/15 Food Products)	44,7	47,8	50,9

Source: ILO, Genf, monthly publications of statistics, own calculation expressed in national currency, based on the data of KSH.

**The margin exceeds the average between Hungarian and EU prices of beef, eggs, bread, apple, red-onion, and potato. On the other hand, Hungarian prices for chicken, milk, butter, and margarine were somewhat closer to the EU average.**

It's worthwhile to compare Hungarian food prices with those of the EU member states with lower price categories. If happened to compare Hungarian and Portuguese prices, we would see that the difference decreases to 1/3<sup>rd</sup> and the same holds true for Spanish food prices.

**There seems to be a strong correlation between measured GDP and strong purchasing power parity and food prices.** The difference between the GDP expressed on purchasing power parity of Hungary and the EU was almost as much as the difference in

food consumption prices (Table 8). With the exception of a few EU member states (Belgium, Netherlands and Ireland) the above correlation held not only true in terms of the 15 EU member states, but was valid for each member state also.

Table 8

**The share of GDP (PPS)<sup>1</sup> and the food prices in 2001**

Country	GDP (PPS) Hungary/EU	Average Food Price Hungarian/EU
Austria	46,5	50,8
Belgium	48,4	60,6
Denmark	42,5	42,0
Finland	50,6	52,4
France	51,1	48,0
The Netherlands	45,1	63,2
Ireland	42,5	51,8
Great Britain	50,4	51,4
Italy	50,1	49,7
Portugal	69,7	68,1
Spain	61,7	65,1
Sweden	50,9	56,6
<b>EU-average</b>	<b>51,4</b>	<b>50,9</b>

<sup>1)</sup> purchasing power parity

Source: own calculation based on the data of International Statistical Pocket Book, 2001 KSH and ILO, Genf).

Presumably a long period of time, probably longer than a decade will have to pass until Hungarian food prices will be able to reach the average level of those of the EU-15 member states. The intensity of this process will depend mainly on the GDP, and the rate of increase in income and wages (Orb nn  Nagy M ria, 2002).

We believe that accession itself will not result in an increase in food prices, as there is no such pressure for adjustment and there is no integrated EU food price either. There isn't any expected effect that may result in a greater rise of the average food price. However merchants may be tempted to raise prices at accession, using this as a reason to do so. The domestic marketing circumstances will decide whether they can carry this out or not.

**Portugal and Spain joined the EU later and have still been unable to reach the food prices of countries with higher *indexes* such as France and Italy** even though 17 years have passed since their accession.

A faster increase (exceeding the average) of consumption prices is only expected in the case of two products: beef and sugar. The reason for the above will be related to the rise of prices by producers and the introduction of guaranteed prices for some agricultural products.

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## **Possibilities and problems of innovation in the Hungarian food industry**

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Dalma Hajdu<sup>14</sup>

### **Abstract**

Innovation has become a catchword during the last decade, but we have only rather limited information on the practicalities and problems regarding food industry innovation. Based on a direct-question survey, this article analyses the current problems of innovation with a special emphasis on small and mid-sized enterprises. These enterprises stress the regional and healthy nature of their products. The most important limiting factor toward innovation is lack of capital. The shortage of working capital is a serious limiting factor. The respondents often do not yet utilise the various means of marketing their products' image. The idea of collective marketing activity has not become an integral part of the respondents' way of thinking.

### **Key words**

Small and middle-size enterprises, direct-question survey, product-innovation, augmented food industrial products

### **Introduction**

According to the classical categorisation by Schumpeter (1939) there are five types of innovation: (1) new products, (2) new input-resources, (3) new production technologies (4) new markets and (5) a new combination of production factors. IN the literature there are two major approaches to innovation: according to the first one, innovation is regarded as closely linked or even identical with technological change (Trail, 1989); the other view considers innovation as the detection and fulfilment of unfulfilled needs and wants of potential customers, using the skills, resources and competence of the company (Grunert et al. 1996).

Innovation is regarded as a major source of competitive advantage for the food industry (Szabó, 1997). In the Hungarian domestic market, however, there are still considerable drawbacks. The average food consumption in the case of numerous products is nearing biological saturation, but the average per-capita energy intake is decreasing (Lehota, 2001). At the same time Hungarian export-prices are well below the prices of our main competitors in the case of most export products.

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The aim of the research has been the practical analysis of ways and problems of innovation in the food industry with the purpose of contributing to the sophistication and further development of the Hungarian innovation, collective marketing, and food industry policy.

In the business literature, debate has gone on more than fifty years on whether the larger, often monopolistic companies, or the small and middle-sized companies are more innovative. As a consequence of the privatisation and the extremely high share of foreign direct investment in the Hungarian food industry the innovations of the multinational firms are initiated in and diffused from the centres of these firms, which are located in vicinity of their headquarters, and the most important task of the Hungarian filial is the adaptation and local realisation of the original ideas. In case of small and middle-sized food industry enterprises innovation is a question of survival, and that's why our study has concentrated on innovation-related activities and problems of these firms, but, at the same time, we have taken into consideration the experiences and opinion of multinational firms too.

## **Methods**

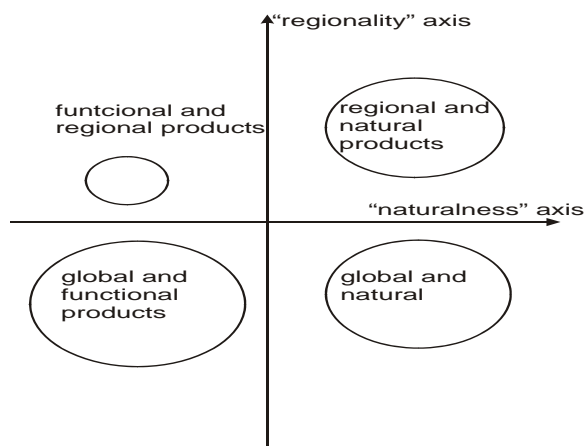
After a critical review of the literature we have conducted three focus-group interviews with Hungarian food industry specialists. The participants of the first interview were 4 delegates from the Alliance of Hungarian Food Processors. In the second, five specialists, representing the multinational, middle or large food industry firms were interviewed. In the third, those interviewed represented small Hungarian enterprises. The first two interviews took place in Budapest, and the third in Győr (Western part of Hungary). From these discussions we have developed a conceptual framework for the most important ways toward food industry innovation. On the basis of these discussions, a conceptual framework of food innovation has been developed. With the goal of enhanced visualisation to promote further discussions, we have depicted this model in a two-dimensional coordinate system.

According to our model, formulated on the basis of interviews with the specialists, the two most important ways of innovation are the "natural" quality of the product versus the functional modification whose goal is greater "healthiness". The other dimension of innovation can be the regional versus the global character of the products.

In the last decades globalisation of the food industry was a general phenomenon, but at the same time the regional character and the place of origin gained in importance. A specific field of product development is the food industry's application of agricultural raw material, containing genetically engineered components. These are a global product, often with an extremely high level of tolerance for climatic conditions, and in a certain sense they are natural, because the cultivation of these products requires fewer chemicals than conventional plant production. The theoretical, two-dimensional model of product development is shown in Figure 1.

Figure 1

**The conceptual framework of the research investigations**  
 (The size of the circles is approximately proportional with the estimated importance of the given direction of development in estimation of specialists interviewed)



Based on focus group interviews, we have developed a questionnaire, consisting mainly of closed-end question. To investigate the opinion of the experts concerned, we have utilised mainly Lykert-type interval scales. The scales consisted of 1-5 points. The intensity of agreement or the evaluation of the factor investigated increases along the scale from 1 to 5. This point system is generally accepted in the Hungarian school system, from elementary schools to universities.

The sample of enterprises was compiled by random sampling methods, based on the registries of the product councils. We sent 380 questionnaires by post to the small and middle-sized firms' top managers, and to the multinationals' middle managers (e.g. chief engineer, product development manager, marketing manager). The letter sent by us consisted of the questionnaire and information on the aims of the research. The date of the research was March-May, 2002.

154 questionnaires were completed. 80% of the of questionnaires returned came from small and middle-sized enterprises. The questionnaires were analysed by SPSS for Windows 11.5 integrated statistical software. The results of analysis were validated by interviews with the researchers and other specialists.

## Results and discussion

In the first phase of the research investigations, we determined how much respondents identified with some statements, formulated on the basis of the conceptual framework of the study.

The results are summarised in Table 1.

Table 1

**The level of agreement with some statements, concerning the innovation of food industrial enterprises on a 1-5 point interval scale, ordered according to the average values**

Statement	Average	Standard deviation
Decreasing of the food additives is gaining in importance in product-and process development	4.765	0.586
The most important way of product development, based on regional traditions is the production of products, free of food additives and preservers and the widening of choice of natural products	4.647	0.716
The production of healthy products, contributing to the healthy condition of the consumer is gaining of importance	4.549	0.757
The consumer expects excellent organoleptic quality from regional products	4.353	0.868
The food industrial application of agricultural raw materials, containing genetically modified parts is important mainly for the multinational biotechnological enterprises	4.275	1.115
The production mechanisation and automation is gaining in importance in the food industry	4.098	0.806
The most important buyers of products with certification of origin will be the consumers with above -average income	3.765	1.088
The consumers will search the products with well established, global brand name, the producers of which emphasise the quality and reliability	3.667	0.973
In case of daily products the regional products will play only a secondary importance in the future, too	3.451	1.316
In the word of automated and mechanised production the importance of hand-made products will gaining in importance	3.235	1.408
The importance of buying of licences and know-how will be increasing in case of technology- and product development	2.960	0.947
There will be an increasing homogenisation and globalisation in the value system and taste of consumers. Standardised and homogenous products will be sought in an increasing way	2.941	1.207
The consumers will search the regional, characteristic to one determined geographic location increasingly	2.840	1.037
In case of product development the food producers should follow the tried and tasted foreign patterns	2.706	1.154
In case of development of functional foods the regional resources should be utilised increasingly	2.628	1.311
After the EU accession the importance of regional brands and collective brand names will be decreasing	2.412	1.080
The small and middle scale enterprises should adapt the product lines of multinational firms.	2.392	1.429
The utilisation of gene technology is especially important in the fight with the malnutrition	2.078	1.278
The utilisation of genetic engineering is important for the development of functional foods, because in this way the nutritive value of the product can be increased	2.020	1.288

In general the majority of respondents accepted the high importance of the “natural” quality of products as a major part of progress. Most of the respondents were rather cautious concerning the food industry’s application of the results of genetic engineering. One of the

key arguments of biotechnological firms is the possibility of increasing food production by genetic engineering (GE), thus becoming an efficient weapon in the fight against hunger, but the respondents did not accept this argument.

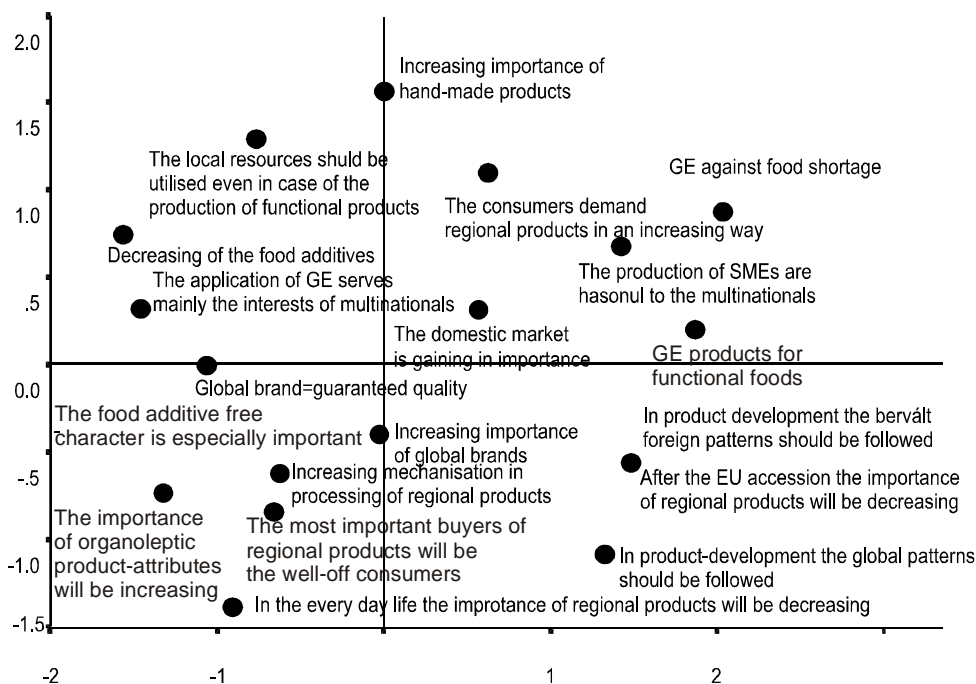
The high values of standard deviation indicate the considerable differences in opinion among respondents. The food industry specialists, employed by the multinational firms, often had different opinions from the respondents from small and middle-sized enterprises, because the employees of multinationals emphasised the importance of global brands more intensively.

The multi-dimensional scaling (MDS) procedure offers a good technique of determining the different position of each of the possible means of development relative to others (Norusis, 1996). The map of the results can be analysed as a tool for the empirical validation of the conceptual model of development.

After analysing the map of the different means of development, it is obvious, that the MDS method could separate the positive opinions concerning the application of GE products, and the opinions emphasising the importance of the “natural” quality along the horizontal axis (Figure 2). The arguments for and against local products could be separated along the vertical axis, but the efficiency of the separation was considerably lower.

Figure 2

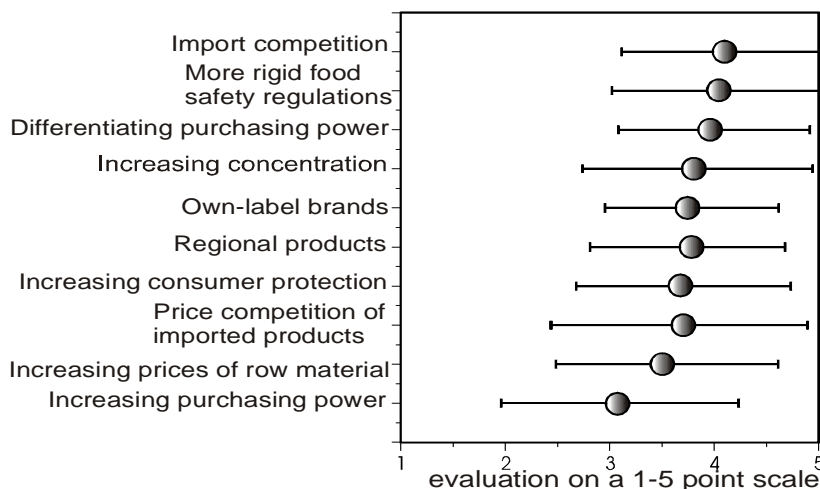
**Results of the multi-dimensional scaling, based on respondents' opinion on different means of development (The axis represent two imaginary dimensions)**



In analysing the future conditions of the Hungarian market, respondents' expectations on market development were rather diverse (Figure 3). As a consequence of EU accession, the development of WTO negotiations, and bilateral agreements with the EU and with third candidate countries (e.g. Romania) the respondents forecast an increase in imports. The expected increases in income differences offer further ground for a focused and varied strategy.

Figure 3

**The expectations of the respondents concerning future development of the Hungarian food market:**



Innovation has been a catchphrase of the Hungarian economy as a whole, but our knowledge is rather limited on the impediments and obstacles in this process (Szerahelyi et al., 2001). That's why the next question of the survey tried to map innovation's most serious impediments. Through analysing the results, it is obvious that the most important problem seems to be lack of capital. This problem was especially important in the case of small and middle-sized enterprises. During the last years there were numerous initiatives by the Hungarian government aiming to partially alleviate this capital shortage, but these measures could not solve the problem. We conducted some interviews with competent specialists from the Ministry of Agriculture and Rural Development and it became obvious that the most serious problems for different projects aiming to increase capital for innovation-related activities are as follows:

- rather rigid and bureaucratic procedure of different application systems;
- different projects do not give any opportunity for the increase of working capital. It is often the case that as a consequence of the lack of working capital there is only limited opportunity to utilise machines and apparatus bought with the help of capital allowance;
- in the economic concourse the multinational enterprises often utilise the deep pocket effect, and they cross-finance their marketing actions. Theoretically, the Hungarian Competition Authority should be fight against this practice, but in reality there are only a few examples of the efficient intervention of this Office in favour of small producers.



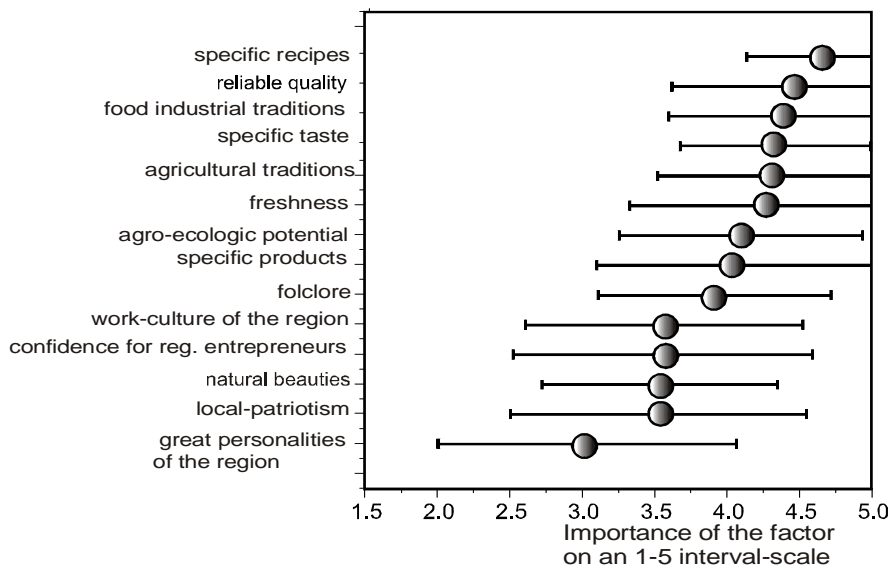
There is a legend among the Hungarian food industrial specialists, that the marketing efforts are in vain, as a consequence of the low purchasing power. Analysing the results of the survey it is obvious, that the relatively low purchasing power is an important, but not a decisive hindrance of food industrial innovations. The low level of consumer pretentious is not considered to be so important factor, than it was some years ago.

It is interesting, that the professional knowledge and the knowledge of international trends is not considered as an important limiting factor. This can be explained by the fact, that during the last decade there was a rapid increasing in qualification of the food industrial specialists. For example at different Hungarian universities yearly 150 MSc and 200 BSc are issued in field of food science and technology. The corresponding numbers in the Netherlands are 15 and 25 respectively. Of course, this quantitative comparison sheds some light on the possible, but by exact tests not proven differences between the quality of qualifications.

Most of respondents evaluated the specific taste and the aesthetic product-appearance as a factor of decisive importance from point of view of the success (Figure 4). This tendency testimonies a shift in the way of thinking of the Hungarian food technologists, because for a long time the low cost-low quality, the cheaper the better slogans were over-emphasised. The increasing importance of organoleptic parameters signifies the end of paper and ink market research and emphasises the importance of the organoleptic evaluation of the product development and testing.

Figure 4

#### The evaluation of importance of different product-attributes



The product safety consideration has not been on the first place. This can be explained by the fact, that the respondents consider this product attribute as a necessary precondition of the food production, and not as a specific differentiating factor of the product. In general, this approach is natural, but in some branches, where the share of illegal product-processing is rather high (under conditions, not satisfying even the basic hygienic preconditions) the strict and rigid quality control and the traceability of products can be an

important marketing argument and an efficient tool in bottle for higher market share with illegal producers, offering their products well below the average prices. According to our interviews with the Hungarian entrepreneurs, this strategy is especially an effective one in case of poultry processing, where the

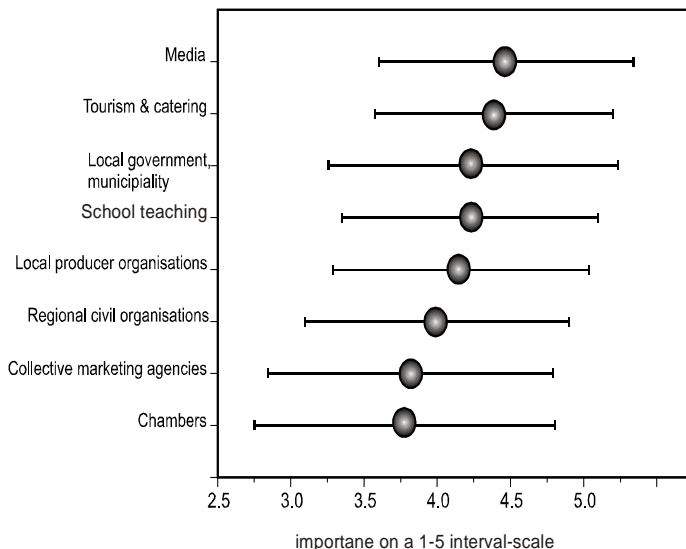
In some cases the food safety can be only a relative one. For example in sauerkraut the traditional technology is based on the application of artificial preservers, for example the utilisation of the copper sulphate (bluestone, copper vitriol). If the producers do not utilise the artificial preservers, in summer the shelf life of product will be extremely low and unpredictable. The pasteurisation is a modern technological solution, but not a traditional one.

It is interesting, that the Hungarian enterprises the focussing production strategy has only a secondary importance yet. It can be explained by this fact, that the evaluation of the importance of the consideration was relatively low, however the satisfaction of some well-defined market segments would be a safe and relatively well predictable way of products selling. Some examples of the specific consumer groups: tourists, pregnant women, consumers suffering in diabetes mellitus, phenilcetonulia, flour-allergic consumers, hyper sensitive consumers for the food additives etc.

The carriers of the high quality product image are not only the organoleptic and objective measurable parameters but such additional product-attributes, as the image of the region of origin. Interestingly, the respondents did not considered the „core product” and the other factors, contributing to the market power of the product as a unity, however the traditions of production as well as some characteristic figures of the region concerned could contribute to the increasing of the marketing value of the product.

Figure 5

**The estimation of importance of the carrier of the product image**



The different ways and means of communication are especially important in the formation of the product-image (Figure 5). We have analysed some communication and

institutes and means of the quality communication. It is worth to mention, that the respondents attached great importance to the factors beyond the scope of their influence and competence, but they attached much more lesser importance to the institutions, which could be influenced by themselves. This fact emphasises, that they consider the collective marketing activity and the regional image building as someone elses' activity, however the chambers could play an important role in this process.

### **Summary**

The majority of the small-and middle-scale Hungarian enterprises consider the development of specific products as an important way of development. The increasing competition of imported products after the EU accession will further enhance the importance of the strategy of product differentiating. The analysis of different ways of development by multidimensional scaling has proven itself as a reliable, suitable tool for the separation of different ways of development. This differentiation should be based primarily on the specific recipes and the utilisation of the local resources of production. The most important obstacle in the realisation of the diversification-oriented strategy in case of small- and medium scale enterprises is the lack of monetary resources. The building of a complex (augmented) product need not only original product-ideas, but also the intensive utilisation of the regional image of products and production. In this field the Hungarian food industrial managers are not prepared enough. The conscious development of the regional image of products needs regional efforts in marketing. The culture of collective marketing efforts and the prestige of the regional organs for the image building is especially low. This is an important hindrance factor of utilisation of resources of local development.

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## **Transaction cost economics considerations regarding the Hungarian fruit and vegetable sector**

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### **Abstract**

The aim of this paper is to investigate the choice of farmers among various supply chains in the Hungarian fruit and vegetable sector employing the framework of transaction cost economics. Our analysis is based on a survey among fruit and vegetable producers in Csongrád county in Hungary. A factor analysis is applied to reveal the determining factors influencing the choice among various supply chains. Then a regression analysis is employed to explain producer behaviour. Finally, a cluster analysis is applied to analysis in order to identify subgroups in accordance to their marketing decision. The results seem to provide some support for the basic propositions of transaction cost economics.

### **Key words**

Transaction cost economics, supply chain, fruit and vegetable sector, Hungary, factor analysis

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## Introduction

Agriculture is traditionally a risky business, but in transition countries agricultural producers face some additional difficulties. Transition can be described as having considerable uncertainties which were caused mainly by agricultural policy and recession of the economy. Furthermore, in these countries public institutions are ineffective in ensuring contract enforcement. The absence of enforceable contracts in order to set up some kind of vertical coordination has made things extremely difficult. Therefore, searching for new partners for long-term, relation-specific investments has been associated with high transaction costs for farmers. In addition, this creates severe barriers for price discovery involving high transaction costs to co-ordinate market exchanges. Under these conditions, it is expected that spot markets dominate over other co-ordinate mechanisms. In those sub-sectors, where any type of production contracts does exist, agricultural producers face delays (e.g. delayed payment for delivered products), which are stressed strongly by Gow and Swinnen (1998). These problems are very severe for those subsectors dominating fragmented and small-scale farms, like the fruit and vegetable sector.

Recently there are some studies focusing on various governance structures of agriculture in transition countries employing different frameworks (e.g. Boger 2001, Rudolph, 1999, Gow et al., 2000, Zaharieva et al. 2001). The aim of the paper is to identify and explain farmers' choice among various supply chains in a transition agriculture employing the case of the Hungarian fruit and vegetable sector. We present an empirical analysis of the key determinants based on transaction cost economics. Our analysis is based on a survey among vegetable producers in one Hungarian county (Csongrád) in respect the choice of marketing channels. The resulting data are applied by various technique, including a factor analysis, a regression analysis, and cluster analysis to test the theoretical prediction.

The remainder of the study is organised as follows. The following part gives an overview of the transaction cost economics as a theoretical framework for the paper. The third section briefly reviews the literature on the vertical co-ordination utilising transaction cost economics, while section 4 gives a short description of the Hungarian fruit and vegetable sector. The survey design and the variables are described in section 5. The results of the empirical analysis are presented in section 6. The last section summarises and offers some conclusions on the implications for the vertical co-ordination mechanisms of Hungary's fruit and vegetable sector.

### 1. Theoretical background

The earlier theory of TCE was based mainly on the works of Coase (1937) and Williamson (1985). In Williamson's theory the governance structure will be chosen in order to minimise the production and transaction cost. However, he supposed that production cost is unchanging during the time and process, while ideal organisational structure will be established. Transaction costs (TCs) are to be considered as the "price of pricing mechanism", e.g. connected to any other movement or action aimed at carrying out transactions (selling, buying, hiring anything) on the market. The main premises (assumptions) of the TCE are *bounded rationality* and *opportunistic decision behaviour* in contractual relations. TCE focuses mainly on the *different forms of asset specificity*, like site specificity, physical asset specificity, dedicated assets, and human asset specificity.

In addition, there are three factors (attributes) that one has to take into account as the key determinants of any of the organisational forms: *uncertainty*, *frequency of transactions* and *externalities*. Generally speaking, in agriculture the uncertainty (sometimes converted into risk) regarding production and marketing activities is high. In most sectors the frequency of transactions is also very high and there are some externalities, which can influence the level of transaction costs as well.

Moreover, considering vertical integration, there exist some other factors in agriculture e.g. *perishable products (physical assets)*, *specificity of production and characteristics of the place of production*, which can influence actors to integrate vertically. The numbers of buyers and suppliers are also very important since it can influence the market power and position of every potential contractor.

Probably the most known example for ex post problem/cost, which is also relevant in agriculture, is the *hold-up problem (delays)* “that arises when one party in a contractual relationship seeks to exploit the other party’s vulnerability due to relationship-specific assets” (Royer, 1999: 49). Because of the above mentioned attributes (like asset specificity, uncertainty etc.) the hold-up problem is really significant in the dairy and fruit-vegetable sectors.

## **2. Studies on transaction costs and vertical co-ordination in agriculture**

The applications of transaction cost economics on problems of the agri-food chain have become increasingly popular in agricultural economics in the nineties. This section provides a selected review about this literature. Frank and Henderson (1992) analysed the influence of transaction costs as determinants of vertical co-ordination in 42 U.S. food industries applying multiple OLS regressions. Empirical analysis supports the hypothesis that transaction costs - uncertainty, input supplier concentration, asset specificity, and scale economies - are a primary motivation for vertical co-ordinating via nonmarket arrangements.

Behner and Bitsch (1995) investigated the existing relations between propagators and vegetable growers in northern Germany. They employed comparative institutional analysis based on secondary and primary data (interviews). The authors found that the information asymmetry problem develops out of a combination of uncertainty, opportunistic behaviour and evaluation difficulties. For a lasting relationship, reputation, “fair dealing” in case of reclaiming and advisory service for the growers provided by the propagators are the most important factors.

Weleschuk and Kerr (1995) examined the market for special crops in western Canada focusing on two existing forms of governance, ex ante contracting and ex post bargaining applying qualitative analysis. The evidence suggests that neither governance structure will lead to an efficient level of investment in the production of special crops. As a result the full potential for diversification into special crops may not have been achieved in western Canada.

Hobbs (1996) analyses the transaction costs as key factors for processors’ selection of supply chains in U.K. meat processing sector. The conjoint analysis based on survey data from 93 meat processors shows that particularly monitoring costs arising from traceability are important to the choice of vertical co-ordination. In addition, pressures for greater

traceability increases the demand from downstream firms to move towards closer forms of vertical co-ordination.

Hobbs (1997) attempts to measure the importance of transaction costs in the cattle sector affecting the choice between live-ring auction and direct-to-packer sales. She employs two-limit tobit model for data from a survey of 100 cattle producers in the U.K. She found that four transaction cost variables were significant, namely grade uncertainty surrounding direct direct-to-packer sales, the risk of non sale at auctions, the time spent at the auction and adequacy of the packer procurement staff.

Poole et al. (1998) try to identify the important factors affecting producers' marketing decisions and to suggest whether a formal contract would facilitate producers' marketing decisions, reduce uncertainty and thus lower transactions costs in the Spanish citrus industry. The evidence, based on a survey of 300 citrus producers, shows that the importance of price uncertainty and payment in producers' marketing decisions. More specifically, the certainty of payment, guaranteed by reputation and by previous experience, and price that is guaranteed not to be reduced during the season.

Zaharieva et al. (2001) investigated the choice of supply chains by Bulgarian wine makers applying a case study approach. They identified four types of channels which differ in the costs of using them and effectiveness of information transmission from processors to growers. The case studies revealed that despite the difficulties created by the underdeveloped market and barriers in finding investment financing, the expected long-term benefits of vertical integration offered sufficient incentives to firms to pursue alternative ways of accomplishing this initiative.

Boger (2001) examined the marketing arrangements between Polish hog producers and buyers in evolving markets. She employs various multivariate techniques based on a sample of 200 Polish hog producers. The multinomial logit analysis suggests that producers' choice between large processors as opposed to traders and local slaughterhouses can be predicted by type of contract. The cluster analysis shows four distinct groups of farmers according to investment in specific assets, ability to safeguards assets, degree of co-ordination with buyers, use of grading and written contracts and extent of bargaining power.

In short, this selected review of recent empirical studies on transaction cost economics in the field of vertical co-ordination in agricultural markets shed light on the usefulness of this framework for analysing economic agents in agri-food systems. These studies attempted to identify factors explaining existence of various vertical co-ordination forms along the agri-food chain, based on different methodological backgrounds from case study to econometric investigation both at the industry and firm level. However, they do not support unambiguously the transaction cost explanations of vertical co-ordination. In this study, after Hobbs (1997) and Boger (2001), we try to identify various factors affecting the supply chain choice of farmers. These variables include different elements of transaction costs arising partly from the theory and the empirical literature.

### **3. Main characteristics of fruit and vegetable sector in Hungary**

Within Hungarian agriculture, the fruit and vegetable sector plays a relatively important role accounting for 12 percent of total agricultural production, and its share varied between 17 and 23 percent of total agri-food exports during the nineties. In addition, recent studies suggest that the fruit and vegetable sector in Hungary has retained a comparative advantage in the last decade (Fertő and Hubbard 2003, Orbánné, 2002).



The share of private farmers is relatively high in Hungary, accounting for above 85 percent of total fruit and vegetable production and above 70 percent in total area used in fruit and vegetable production. Most of them are relatively small farmers, sometimes with only a household plot. It is very important, therefore, that the farmers have to use marketing channels which could give them the strengths of more concentrated organisations (Lehota, 2000, Fertő and Szabó, 2002). It is indispensable for them to know the possibilities of different forms of vertical co-ordination and integration in their sector.

For quality requirements there are alternative quality measurements in Hungary, so it is difficult to compare individual cases. Basically Hungary applies the standards of the European Union; however, only in the case of export, is monitoring taking place of these standards relating to producers, traders and other players in the fruit and vegetable market. However, the increasing influence of the retail chains also lifts the standards to a higher level, since consumers can see the origin, price and class of the product in the retail shops e.g. hyper and supermarkets.

A variety of channels and markets exist for agricultural producers from the spot markets to retailers. We have to underline however, that spot markets and different types of contracts (including in some cases contract production) are common forms of co-ordination. Different retail chains gain a bigger and bigger share of the fresh fruit and vegetable market. However, marketing co-operatives and producers' organisations also can solve the marketing problems of the fruit and vegetable producers to an increasing extent.

#### **4. The sample and the key variables**

The study investigated the choice of farmers among various supply chains in the Hungarian vegetable sector during the 2000-2001 season. The hypothesis that producers' decision among various marketing channels is influenced by transaction costs and asset specificity is tested employing data collection based on a survey of Hungarian vegetable producers drawn from one Hungarian region – Csongrád county. The questionnaire was prepared in consultation with members of a local agricultural extension services. Due to financial constraints, we used postal surveys; 720 surveys were mailed to vegetable producers asking them about their perceptions of four different supply chains. A total of 74 useable surveys returned, but we reduced the number of it in the final model to 64 due to missing values. It should be emphasised that the sample is not random. The survey targeted larger, market-oriented farmers in a traditional vegetable growing region of Hungary.

Table 1 reports key variables. Four marketing channels were identified which differ in the costs of using them: wholesale markets, wholesalers, marketing co-operatives and producer organisations. These channels can be ranked as different stages in governance structures within marketing systems from an open market (wholesale market) to a closer form of vertical co-ordination (producer organisation).

Table 1

**Variables used for the empirical analysis**

<b>Variable</b>	<b>Description</b>	<b>Units</b>
<b>Dependent variable</b>		
CHAIN	Type of supply chains	0-3
<b>Independent variables</b>		
<i>Information costs</i>		
INFAC	Difficulties to access useful information	1-5
INFTIME	Time spent discovering partners by transaction	1-5
INFUNC	Is it problem not knowing what price before selling	1-5
<i>Negotiation costs</i>		
HABIT	Habit is a reason for selling via given marketing channel	1-3
RELIAB	Reliability is a reason for selling via given marketing channel	1-3
CONTACT	Personal contact is a reason for selling via given marketing channel	1-3
BARG	Can you negotiate the transactional terms with the buyer	1-5
PAY	Are you satisfied with conditions of payment	1-5
<i>Monitoring costs</i>		
MONUNC	Is it a problem that product may not graded as expected before selling to buyer	1-5
MONINF	Is not being present when products are graded a problem	1-5
<i>Physical asset specificity</i>		
INVPAST	Have you invested in your business last year	0-1
INVPLAN	Do you plan invest in the future years	0-1
SIZE	Land area	1-5
<i>Human asset specificity</i>		
AGE	Age of farmer	1-5
EDUC	Final level of education	1-9

Williamson (1985) divides transaction costs into three groups: the costs of finding a bargaining partner, negotiating a sale agreement and monitoring and enforcing performance of terms of trade. Hobbs (1997) used a similar classification scheme; she considers three groups of transaction costs for empirical analysis: information costs, negotiation costs, and monitoring costs. Schelanski and Klein (1995) divide transaction costs into uncertainty about future conditions, complexity of the transaction and its frequency. However, these considerations can translate into Hobbs' typology. Information, negotiation, and monitoring costs increase with uncertainty; similarly, complexity raises negotiation and monitoring costs, whilst frequency of transactions decreases information and negotiation costs. In this study we adopt Hobbs (1997) classification scheme for our empirical analysis; in addition, we take into account physical and human asset specificity.

Information costs measure the following variables: 1) difficulties to access useful market information (INFAC); 2) time spent discovering partners by transaction (INFTIME);

3) uncertainty prior the sale about price will be received using a particular supply chain (INFUNC).

Negotiation costs are measured by survey questions as: 1) habit is a reason for selling via given marketing channel (HABIT); 2) reliability is a reason for selling via given marketing channel (RELIAB); 3) personal contact is a reason for selling via given marketing channel (CONTACT); 4) farmers' perception of ability to influence price and other contractual terms (BARG); 5) farmers' perception of satisfaction with condition of payment (PAY).

Monitoring costs are measured as: 1) farmers' perceptions of whether is it a problem not meeting with grading expectation before selling (MONUNC); 2) farmers' perception whether it is a problem not being present when products are graded (MONINF).

The physical asset specificity in fruit and vegetable production is indicated by two variables: 1) investment in production in the last business year (INVPAST); 2) planning of investment in the future years (INPLAN). Human asset specificity measure as: 1) age of farmers (AGE), and 2) farmers' final level of education (EDUC). The size of operation is measured by the size of arable land (SIZE)

## 5. Results of the empirical analyses

In this section, we test the propositions of transaction cost economics relating the choice of various supply chains. Results are presented in three parts: first, factor analysis, and second, the OLS regression, and finally the cluster analyses.

### 5.1. Factor analysis

We employed principal factor analysis with varimax rotation on the survey data to examine the patterns of relationship among the variables, aiming to explore the nature of independent variables that affect them, even though we did not measure them directly. The results of the factor analysis, that satisfied theoretical expectations and yielded reasonable significant results, are reported in Table 2. Our results suggest a solution of three factors with eigen values greater than unity. Inspection of a scree plot of eigen values confirmed that these three factors should be included in the analysis. These three factors, taken together, accounted for almost 60 per cent of cumulative variance.

Table 2

Variance explained by the factors

	Eigen value	% of variance	Cumulative % of variance
Factor I.	1.79	22.32	33.32
Factor II.	1.62	20.28	42.60
Factor III.	1.38	17.23	59.83

Table 3 shows the list of variables which load on the significant factor. In line with the range of applicable criteria levels, a 0.5 has been used to determine the cut-off point assigning variables to factors. Results suggest that transaction cost variables can be grouped and labelled unambiguously. The category of TC factors contains three factors and eight variables which are related to selling behaviour, information and communication dependence, and consideration of market condition.

Table 3

**Factor loadings and variables**

	<b>Factor I.</b>	<b>Factor II.</b>	<b>Factor III.</b>
INFAC			0.73
INFUNC			0.62
HABIT	0.51		
RELIAB	0.76		
CONTACT	0.83		
BARG		0.85	
PAY		0.82	
MONUNC			0.62

***Factor 1: marketing/selling behaviour***

Considering the variance explained by Factor I (22.3 per cent) in latent structure, it can be regarded as the most powerful one; however the distribution of the other factors' (HABIT, RELIAB) contribution to total variance can be considered more or less balanced with low dispersion. This category is dominated by CONTACT (0.83). The outcome is not surprising, taking into account the fragmented and atomised structure in the fruit and vegetable sector. Lack of enforceable contracts and relation-specific investments in the long run it is expected that subjective factors are affecting the marketing channel selection such as personal contacts, reliability and habit, resulting in a very low level of vertical coordination. In other words, the solely existing vertical coordination strategy is spot market transaction influenced by the subjective consideration of transaction partners very strongly. Thus the latent dimension behind channel selection is the vertical coordination strategy with respect to the human factors.

***Factor 2: consideration of condition***

With 20.3 per cent Factor II (consideration of condition) takes the second position in explaining the total variance. This group consists of two, equal-weighted variables (BARG, PAY), they are very strongly correlated with Factor II. The two variables are related to ex ante and ex post consideration of the transaction with respect to the personal judgement of the market player's power. However the result of the transaction is influenced mainly by a wide range of different costs (production, delivery, etc). This factor indicates that these kinds of implicit transaction cost variables have a decisive role in executing the transaction itself. This is consistent with the theoretical presumption that implicit transaction costs play a

fundamental role in market behaviour and there is a latent structure behind the ex ante interest enforcement power and its ex post manifestation.

### ***Factor 3: Dependence/asymmetry***

As we expected, variables relating to information and communication asymmetry could have been brought under one factor that explains 17.2 per cent of the total variance. Factor III labelled “dependence and asymmetry” comprises three variables (INFAC, INFUNC, MONUNC), expressing the individual’s market dependence. This fact demonstrates that price uncertainty is closely related to information possibilities and prejudgement of product qualification. At first glance, it is astonishing that information possibilities as a variable have an extremely high factor loading (0.73). But looking for latent reasons, it is highly important for farmers suffering from shortage of capital to get paid immediately (in other words: to make cash transaction) which is unfeasible in case of non-acceptable ex post qualification (MONUNC).

## **5.2. Regression analysis**

The factors emerging from the analysis were applied as the independent variables of a multiple regression analysis to explore which aspects of transaction cost can explain the farmers’ choice regarding marketing channels. Our results show that Factor II (consideration of condition) and Factor III (dependence/asymmetry) significantly contributed to explaining farmers’ behaviour relating to the choice of marketing channel (Table 4). The probability of choosing to sell to a given marketing channel is negatively influenced by both factors. But, the influence of the Factor I (marketing/selling behaviour) is not significant on the farmers’ decision in choosing of a particular marketing channel. The transaction cost factors explained 34 per cent of the marketing choice variance.

Table 4

**The choice of marketing channel**

<b>Independent variables</b>	<b>Chain</b>
Constant	4.08 (19.88)
Factor I.	-0,07 (-0.34)
Factor II.	-1.16*** (-5.62)
Factor III.	-0.45** (-2.20)
Statistics	
N	64
Adjusted R <sup>2</sup>	0.34
F <sub>3,61</sub>	12.19

Note: Figures in parentheses are t values; significance levels are:\*\*\* = 1%, \*\* = 5%

### 5.3. Cluster analysis

In this phase of the research we employed cluster analysis in order to identify subgroups in data according to marketing decisions. The variables were found to be significant in factor analysis, so it is sure that all of them are relevant to the analysis- and represent implicit and explicit transaction cost variables. There are a large number of clustering algorithm, but the hierarchical method was employed using complete links within groups, groups in order to suggest the appropriate number of clusters. Applying elbow-criterion, three-cluster solution was chosen. The final clustering was conducted using K-means clustering. Table 5 shows the group means of the clusters obtained while Figure 1 displays each group with the choice of the farmers according to the marketing chains.

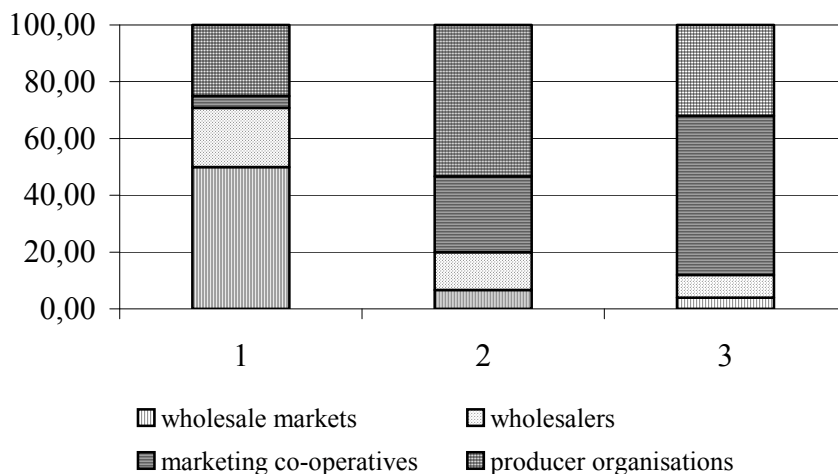
Table 5

**K-means clusters for farmers marketing behaviour**

Variables	Group 1 “Dominators” <i>n</i> =24	Group 2 “Dependants” <i>n</i> =15	Group 3 “Followers” <i>n</i> =25
INFAC (1-5)	2,75	2,45	3,36
INFUNC (1-5)	2,42	1,67	2,84
HABIT (1-3)	2,46	2,73	2,76
RELIAB (1-3)	1,63	1,47	1,44
CONTACT (1-3)	2,17	2,33	2,08
BARG (1-5)	4,17	1,04	2,24
PAY (1-5)	4,71	2,73	3,56
MONUNC (1-5)	3,54	4,27	3,12

Figure 1

**Choice of farmers by clusters**



The most important distinctive feature of *group-1* is the extremely high bargaining power with outstanding enforcement ability which is reflected by their remarkable satisfaction of payment methods. Meeting the expectation concerning grading before selling, or, in other words, ex post qualification identity is of primary importance for this group. Although selling via a certain marketing channel is very strongly based on personal contacts and habit, information costs such as (1) difficulty in accessing useful market information and (2) uncertainty prior to the sale about price are indifferent considerations. This group largely prefers wholesale markets as marketing channel (50%). Summing up the main characteristics of subgroup 1, we can state that transaction cost variables concerning negotiation costs (mainly bargaining power) with strong enforcement possibilities (satisfaction) play a pronounced role in marketing behaviour. This serves as a basis for labelling them as “*dominators*”.

An extremely low level of bargaining power characterises the *smallest group* (n=15), labelled as *dependants*. In spite of their dependence, the satisfaction with payment conditions displays an average level. If their expectation concerning grading before selling is not met, there then seems to be an endemic problem. Most transactions take place via producer organisations (53%), based on personal contacts and habits, similarly as in group 1, hence negotiation power is of great importance. As we expected, due to the very low bargaining power of group 2, information costs variables -namely information accession and price uncertainty- are not and can not be significant in market behaviour. It must be emphasised that reliability as a determining factor toward channel selection is an indifferent one.

The *third group*, as the largest one (n=25), can be described as having considerable difficulties when they want to access useful market information. In spite of this fact, it is surprising, that not knowing price prior to sale is not a definite problem. This group shows a similar marketing pattern as previous groups in terms of negotiation costs, since habit and personal contacts are of great significance when selling via marketing co-operatives (56%). This group shows an average level regarding reliability as a reason for choosing a special marketing channel. Nevertheless their bargaining power can be described with average values, and they are overwhelmingly satisfied with payment methods. It appears an unusual finding, considering that they suffer from unsatisfactory information possibilities, which results in a considerable problem when expectations concerning grading are not met. This group can be labelled as “*followers*” because of their weak bargaining power, difficult access to information, and ex post grading problems.

Putting the results together, these solutions provide interesting outcomes from a TCE point of view. Remarkably, all clusters exhibit the same attitude in case of personal contacts and habit, as transaction cost variables. Bargaining power served as one of the most important characteristic factors when labelling the clusters and interpreting the results. This finding supports the TCE’s explanation for marketing behaviour, because bargaining power as negotiation cost variable has a distinctive role in channel selection just as personal contacts and habit. In addition the importance of a monitoring cost variable (grading expectations) is shown as heavily influencing determinants of supply chain selection.

## 6. Conclusions

The research reported here confirms that transaction costs may have influences on farmers’ decisions in respect to marketing channels. That the paper shed light on the existence of a latent structure beyond explicit and implicit transaction cost variables can be supported by the results of the factor analysis employed. Factor analysis demonstrated that

key transaction variables can be structured and the factors can explain the phenomenon of supply chain selection. Regression analysis reveals a significant relationship between transaction cost variables arising from factor analysis and the choice of marketing chain. We may conclude that there are further latent dimensions beyond the applied variable set affecting the market players when entering into a transaction. Cluster analysis provides some additional insights regarding farmers' marketing choices. Namely, bargaining costs and monitoring costs have an important role in marketing channel selection. Finally, the current study supports the view that farmers' behaviour along the supply chain can be systematically understood and studied within the framework of conceptualisation and analysis provided by the transaction costs economics.



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## **Toward sustainable agriculture in Central and Eastern European countries<sup>18</sup>**

Sándor Mészáros<sup>19</sup>

The SHAKER Verlag from Aachen published a book in 2002 dealing with the issues of sustainable agriculture in Central and Eastern European countries (CEEC). This work constitutes the 10th volume of the series 'Institutional change in Agriculture and Natural Resources'. The book can be considered as a partial result of an EU research program (CEESA-project) containing corrected papers of a seminar organized in September 2001 in Nitra (Slovakia).

Editors of the book were F.W. Gatzweiler, R. Judis and K. Hagedorn, all from Humboldt University of Berlin. The 43 contributions were included in four chapters. The first one serves for clarifying theoretical questions such as transition, agri-environmental challenges and sustainable development while the other three chapters consist rather of case studies. The second chapter focuses on institutions of sustainability, while the third one deals with agri-environmental policies (including their impacts) while the last chapter consists of studies on the impact of farming systems. Among authors of the first chapter, other than colleagues from Humboldt University, there are research workers from EU member countries (United Kingdom, Finland, the Netherlands and colleagues from the United States and the F.A.O. Contributors to the other three chapters tend to come from CEEC-countries and it should be emphasized that altogether 12 countries (including Albania, Bulgaria, Rumania and Ukraine) are represented by individual studies covering the greater part of Central and Eastern Europe.

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<sup>18</sup> *Sustainable Agriculture in Central and Eastern European Countries. The Environmental Effects of Transition and Needs for Change.* Eds. F.W. Gatzweiler, R. Judis and K. Hagedorn. Shaker Verlag, Aachen 2002, 376 p.

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For the concept of sustainability there has not yet emerged a uniform definition. Peterson and Norman (2002) refer to several definitions. According to them the most common definition is that of the World Commission on Environment and Development (1987) which states, that 'a sustainable economy meets the needs of the current generation without preventing future generations from meeting their needs.' Based on a survey in the USA (Kansas) in the year 2000, interviewed farmers felt there were three dimensions to sustainability: economic, ecological and social/institutional. According to Gatzweiler and Hagedorn (2002), sustainability refers to the ways social and ecological systems interact through their institutions. Sustainable social or ecological systems are systems which can persist in their integrity, resilience, and functionality over time, and the establishment of institutions accompanies this dynamic process. Based on the importance of these institutions they have elaborated a framework for the analyses to be done in the participating countries although, as the editors highlight in their preface, 'The findings from the papers presented provide evidence that this process will lead to a diversity of different institutional arrangements, rather than universal concepts.'

Objects of the case studies can be grouped into three categories: water, soil and biodiversity/landscape. Most of the 30 case studies are national-studies focusing on a microregion or a special problem but there are also some comparative papers for the CEEC countries. Policy makers will probably be interested in case studies dealing with the current situation, impacts, and future of SAPARD programs. On the other hand, PhD students will read first of all case studies concerning measurement and indicators of environmental impacts (e.g. Peterson 2002, Wascher and Dixon 2002). Regarding indicators, an interesting contribution was made by Petersen (2002), who is a colleague from the European Environment Agency in Copenhagen. Petersen grouped the proposed 35 agri-environmental indicators according to their possibilities for definition and statistical measurement. Of studies dealing with SAPARD programs, Leiber's paper (2002) is worthy of special attention, and it is entitled: 'Can SAPARD form the foundations for agri-environmental sustainability?'

Among the tools of analyses mathematical methods also play a part. Here the paper of van Kooten, Slangen and Suchanek (2002) from Wageningen should be mentioned. They investigated the agricultural successes of CEEC-countries by regression analysis including variables of institutions and social capital instead of traditional quantitative factors (resources). In another paper from Wageningen, the authors apply factor analysis and consider trust as the most important element of social capital.

With three case studies Hungary is also well-represented in the book. These case studies cover two microregions with the conflicting interests of agriculture and preservation of biodiversity. One of the microregions is Dévaványa, famous for its stand on bustard and which is part of the National Agri-environmental Program while the other one is called Mezőség (Borsod county) which belongs to a SAPARD program. In the third chapter Balázs, Szabó and Podmaniczky (2002) give a situation report of Hungarian agri-environmental policy while in the fourth chapter the same authors discuss the farming practices of the two mentioned microregions (Podmaniczky, Balázs, Szabó 2002). The third Hungarian paper covers social factors determining agri-environmental and rural policy (Nemes 2002).

Summarising the merits of the book, the work of editors should certainly be mentioned. In their introductory paper (Gatzweiler and Hagedorn 2002) they directed the bulk of their research toward institutions of sustainability, the establishment of which also

entail an important task for CEEC candidate countries heading toward EU-accession. Another achievement of theirs is obtaining access to a broad and competent circle of researchers and authors so readers can get an almost complete view of the agri-environmental situation in CEEC countries. I also hope that readers will gain insight into those complex processes which can lead to the achievement of sustainable agriculture in transition countries.

Of course in a book review there is generally some criticism. One criticism may be things which are not found in the book. Regarding the concept of sustainable agriculture, I agree with the opinion of John Ikerd (1998) that 'we may never have a generally accepted definition of sustainability and perhaps, we don't need one.' Therefore those papers included in the book that deal with the concept of sustainability can be considered sufficient (taking also their references into account.) Also perhaps not sufficiently highlighted in the book is that sustainable agriculture involves contradictory goals, fulfillment of which is only partially possible, and involving some compromises. Therefore researchers should also focus on how to define trade-offs, or more simply what should be sacrificed in order to achieve sustainable agriculture? (Pannell and Schilizzi (1999) also emphasize the importance of trade-offs). It is also not clear to the reader how long it will take for sustainable agriculture to become universal and what kind of stages will emerge within this process? (The editors nevertheless emphasized in their preface the need for serious investments in social and human capital in rural areas in order to further sustainable development). It should be noted that attainment of universal sustainability (independent of transition in CEEC countries) requires a period of preparation, and this is mentioned in the most recent literature (e.g. Kates and Parris 2003). The mentioned shortcomings could probably have been lessened by a summarising paper which can be done in a later phase of research.

Finally, one has to indicate to whom this book is addressed, and for what kind of professionals it should be recommended: essentially the book is for all of those interested in agri-environmental issues, in sustainable agriculture, in the CEEC region, and in the Eastern enlargement of the European Union. Regarding English terminology, the book may be very useful for undergraduates and PhD students. More importantly this volume can be recommended to university teachers and researchers dealing with agri-environmental issues. English speaking professionals and policy makers may also be interested in the work.

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## Conference on “EU Accession and Agriculture” – Krakow, 2003

Judit Kovács Katona<sup>20</sup>

Within a couple of months, ten new countries will join the European Union. Agriculture in candidate countries includes areas with less intensive forms of production, characterised by abundant wildlife and biodiversity. Agriculture in most accession countries employs relatively more people than in the current EU-15 countries and are often smaller or family-run farms in many areas. Implementation of the Common Agricultural Policy (CAP) together with elimination of trade barriers and ongoing eastward expansion of big supermarket chains could contribute to intensification of farm production with a higher use of artificial fertilisers and pesticides as well as an increased concentration in the farming sector and rural abandonment. The example of former accession countries shows that governments can implement the CAP in various ways with very different outcomes. Rural development policies and agri-environmental programmes offer an opportunity for the sustainable development of agriculture and rural economies. The question now is: where will the Accession countries go once they join the EU? Will they take advantage of their unique rural environments to produce high quality healthy food, or will they choose the path of agricultural intensification, and thus make the same mistakes as the EU-15?

The conference, with the title “EU Accession and Agriculture: Making the CAP Work for People and the Environment”, was organised in Krakow, on the 7<sup>th</sup> and 8<sup>th</sup> of November, 2003. The conference was attended by 150 participants – politicians, civil servants, farmer representatives, academics and NGOs – from across the whole region entering the EU next year.

One of the main organisers of the conference was the Friends of the Earth Europe (FoEE). FoEE unites more than 30 national member groups with thousands of local groups. FoEE is the largest environmental network in Europe working at a grassroots level. As the European branch of Friends of the Earth International (FoEI), the FoEE shares the aims, philosophy and democratic structure of the FoEI. FoEE is heavily involved in the sustainable development debate and recognises the need to change lifestyle and consumption patterns. With the project "Sustainable Europe", FoEE has defined concrete targets, timetables, and political steps to reach a sustainable society. FoEE member groups are united by a common conviction that reaching this goal requires both strong grassroots activism and effective national and European campaigning and coordination. FoEE coordinates and supports the campaigns and projects of its member groups. FoEE's main campaign “Food and Farming: Time to Choose” aims to channel the necessary public support for urgent CAP reform. This campaign is partly financed by European Union DG Environment. Through these activities, FoEE aims to raise public awareness, enhance the participation of people and environmental citizens' organisations in political processes, and influence political decision-makers, especially at the European level.

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The aim of the conference organised in Krakow was to look ahead to an EU-25 approach to agricultural policy issues. The main topics of the plenary sessions were:

- Visions for sustainable agriculture in the enlarged Europe.
- Challenges for sustainable agriculture under the new CAP.
- Making the CAP work for the environment in accession countries.
- Making the CAP work for farmers and rural communities in accession countries.

Here are some samples of the statements and opinions from the conference taken from citations from lecturers' papers.

Zbigniew Witkowski, President of Polish Ecological Club:

"The serious, accelerating problem is the increasingly weaker economic power of agriculture. During the last 12 years of transformation of the Polish economy, the share of agriculture and forestry in the Gross National Product, has been on a steady decline from 12.9% in 1989, 8.3% in 1990, 6.0% in 1995 down to 3.3% in 2001. The scope of the problem is in fact larger, as it is actually a global problem. Nowadays one can observe the decreasing role of agriculture and farmers, and the issues that have become important are social and ecological aspects of rural areas and agriculture."

Zoltán Waliczky, EU Accession Officer, Royal Society for the Protection of Birds:

"It is estimated that for every one tonne/ha increase in average cereal yield, for instance, there is an expected 8.7% decline in the population of all farmland birds, and an 11.1% decline for particularly vulnerable species. Indeed, preliminary pan-European bird indicators show that farmland birds have bounced back since 1990 in Eastern European countries. We believe it is due to a fall in production levels and in the use of fertilisers and pesticides throughout the region. The introduction of the CAP could reverse all this. A very important aspect of enlargement is the possible social upheaval in rural areas. In the candidate countries, where farming is still the main activity for a large segment of society, the restructuring of the agriculture sector could come with enormous social costs. Measures that help preserving the natural environment often also help to keep people on the land or to offer new types of employment, and therefore can ease the social problems."

Karl Erik Olsson, Member of the European Parliament, Sweden:

"Future prospects for rural areas and agriculture are: biodiversity, renewable raw materials, energy, industry, food, health, taste, experiences and services, and full sensory enjoyment of the taste of food and drink, plus the feeling of being close to nature and to life itself."

Jan-Erik Petersen, Project Manager for Agriculture and Environment at the European Environment Agency, Denmark:

"EU agricultural policy instruments are divided into first pillar and second pillar measures. The overall level of agricultural support per hectare for the acceding countries is considerably lower than in the present EU countries. However, the share of foreseen rural development spending is far higher than under the general budget (~ 50% in the ten acceding countries against 10% in the EU). The CAP budget for the ten new Member States gives scope for considerably higher spending on agri-environmental measures, support for semi-



subsistence farming and agricultural diversification. However, it also increases the administrative complexity of agricultural policy.”

Alois Posch, Ministerial Counsellor, Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management, Austria:

“In Austria, an additional level has been erected between the farmer and the paying agency, which controls whether the submitted areas are subject to the overlapping interests of nature protection and which obligations and compensatory payments are necessary for this purpose. At this level, planning for the efficacy of the measures taken is essential. “Projects” are planned and the farmer is invited to submit concrete areas, which is fostered by certain incentives. In a project file the necessary obligations and the relevant premiums are laid down. With this flexible instrument, the varying requirements ranging from wetlands apt for intensive production to dry meadows can be dealt with specifically. This also enables the definition of obligations necessary for the protection of endangered animal species.”

Alan Wilkinson, Head of SAPARD Unit, DG Agriculture, European Commission, Belgium:

“The difficult part of policy making concerns details. It may be relatively easy to obtain agreement on broad principles, such as support for sustainable agriculture, fair trading practices or protection of consumers’ rights. The hard part is to convert the principles into operational consequences, and here the detail is all important.” “The most important lesson learned from SAPARD: To apply the CAP, every Member State must have adequate administrative structures with sufficient and competent staff. These administrations moreover need to be able to call on a network of effective professional, Non-Governmental Organisations, to test ideas and put forward the views of parties who are directly involved, to provide feedback and to be a source of objective information.”

In the afternoons of the conference participants could take part in different parallel sessions. Some outcomes of the sessions – which I think is important also for Hungary to get ready for the CAP and make agriculture sustainable – were the following:

- More co-operation is needed between organisations and sectors at national and European levels. Communication from farmer to ministry and vice versa.
- Institutionally – especially cooperation and coordination between Ministries of Environment and Agriculture, e.g. with regard to programme design and management.
- Training and advisory systems for target groups – to enable the greatest participation in and support for sustainable agricultural and rural policy measures.
- A new comprehensive definition of Good Agricultural Practice.
- Strengthen local economies and marginal areas instead of an export-oriented CAP focused on global competitiveness.
- Get the prices right, by internalising negative external costs into price, carrying out a green tax reform and ensuring fair prices for farmers above the costs of production.

The “Krakow Declaration on Agriculture in the Enlarged EU” was presented during the conference. The declaration is intended to be a useful tool for accession country NGOs to develop a dialogue and strengthen collaboration for greater political and public impact on agricultural policy. The Declaration has been signed by 209 NGOs from 36 countries of

which 15 signatures were from Hungary. Summarising, the Krakow Declaration demands that:

- Accession country leaders implement the EU Common Agriculture Policy (CAP) in such a way as to support the sustainability, quality and diversity of food and farming in local economies.
- The CAP is fundamentally reformed to promote sustainable agriculture, localised food chains and fair trade with developing countries.
- Retailers ensure food free of pesticides, chemical inputs, and GMOs, and use local food varieties and pay farmers a fair price for their produce.
- Consumers have access to information about how food is produced to be able to use their right to choose.

For me it was rewarding that those participating the conference had a real interest in the topic, and that there was enough time for discussion. The problems around the CAP impacts on all the countries in the EU-25, and it means that such conferences are also needed in the future. Hungary could play a greater role in future conferences.

More information can be found on the website: <http://www.foeeurope.org>.

## The effects of the EU accession of Hungary on agrarian sector in Austria and in the EU – Budapest, 2003

Henrietta Kovács<sup>21</sup>

This conference has been organised between Research and Information Institute for Agricultural Economics (AKII) and "Wiener Bundesanstalt für Agrarwirtschaft" (AWI) thanks to the direct cooperation of many decades' standing from 5th to 6th November 2003. Organizer and location of this conference was the AKII of Budapest. Lectures were presented by the researchers of AKII, AWI and WIIW (Comparative and Research Institute for Economics of Viennese). Sessions were chaired by József Popp the researcher head of AKII.

The lecture's title of **Zdenek Lukas (WIIW)** was "Is the EU expansion threat for austrian agricultural economics?" Research showed apply both to the joining 8 countries in the first step and 2 middle east european countries in the second step how different the economics' development in these countries generally. All of these countries are current to a certain extend that their companies are viable because both the general price-level compared to EU is low and the wages also. That's why they can produce at low cost. Into Euro converted prices also fit to this general image except Slovenia and the prices are lower than EU prices. Lower output prices mean smaller distance from the world-market-prices and smaller subsidy in the agricultural. Input prices compared to EU are considerably lower in the 10 MEEC (Middle East European Countries). Farm prices of most important agrarian products are over world-market-prices. These high prices are going to make a positive effect on the prices of MEEC's most important agricultural products immediately in EU. After initial rise won't be further rise in prices because according to plans of CAP the community prices are going to approach to world-market-prices. It is likely to happen the agricultural input prices are going to notably approach the level of EU-15 after EU accession. The agrarian scissors are going to open again.

Significance of direct payments are overemphasized by publicity ever so much. From the budget of CAP in 2005 so amounts are going to be payed out that are calculated for agricultural employee and aren't far off in agrarian sector payed average gross salary. On the whole austrian agricultural rather benefits from, that CAP limits the possibilities for the agricultural of MEEC. Agricultural of EU-15 is going to profit in the long run from, that in case of MEEC-10 consumption of foodstuff will grow. With this the agrarian redundancy' decrease is expected.

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The title of **Josef Pöschl's** lecture (**WIIV**) was: "Scenarios for the development of MEEC's agricultural both in European and international connection." The break of customs between EU-15 and MEEC-10 and expansion of EU's external custom protection system to EU-25 or EU-27 will change the direction commercial process. It's measure will be neither dramatic nor unfavourable for EU-15 or Austria. Higher appreciation of MEEC currencies would have larger effect on the commerce between EU and MEEC comparatively. This would make better the commercial balance between EU-15 and Austria significantly in case of agricultural and industry of foodstuff. In the following years the rise of incomes are going to be higher in MEEC-10 than EU-15. Demand of foodstuff will rise in MEEC-10 significantly. The joining of MEEC-10 is going to offer larger advantage for Austrian food industry than agricultural.

The previous 2 presentations are macroeconomics, while the lecture of **Franz Greif (AWII)** - "Is fear of enlargement established of unfounded on frontier region?" - is regional political. This lecture discussed in sociological approximation the possible effects of EU accession. On frontier region can be found the following factors on the result of EU enlargement: direct regional weaknesses, very different agricultural structural relations, often imperfect market conditions and different communal political relations on the both side of border. To the influence of "4 freedom" perfect competition will form. Among the present fears in connection with accession hardly ever newer can be found. The fear of stronger concurrency in labour market isn't founded because economy frontier regions without foreign working power wouldn't be viable. This has been situation for 10 years. Stronger supply concurrency is real and possible because of the foreign agricultural products as expense's difference can be 15-25 % between the Hungarian –and Austrian agricultural plants. In the future stream of purchasing power to the neighbours can be expected.

**Leopold Kirner (AWI)** spoke about: "The effects of CAP- reform on Austrian plants." Without adaptable measures it is sure that Total Gross Margin is going to decrease and also income. On the other hand it is less worth widening the area after reform than before because of partial decoupling of premiums. Widening will be important in the future for those farms whose production technology is excellent and their growth won't be so costly. It was general established that the output should be shaped in the future according to market expectations. Besides the standard of environmental and protection of animal have to be observed the conditions of payment should be satisfied.

**Norbert Potori (AKII)** showed: "The SAPS application in Hungary". The direct subsidies of EU are about 308 million Euro. From this 270 million Euro are for cultivation of plants 38 million Euro for animal husbandry. Agreement in Copenhagen offered two possibilities. One of them is standard payment of EU amounts. The other is SAPS.

Advantages of SAPS: the market orient change of produce structure; temporarily shaping of simpler Integrated Direction and Controlled System.

Disadvantages of SAPS: the size of areas that are entitled to subsidy; the payment of subsidies for animal husbandry grounded on territory; the determine of basis' Single Farm Payment. The simple payment of EU money depends on the size of in culture conditions kept agricultural fields (4.48 million ha). So the SAPS amount is 68.79 Euro/ha ~ 17.540 HUF. The national supplement is 30 %. From the 361 million Euro 324 million Euro is for animal husbandry and 37 million Euro is for cultivation of plants.

The title of lecture of **János Kartali (AKII)**: “The external markets of Hungarian agrarian export with special regard to EU”. The Hungarian agrarian export (2002) is European central (92%). 41 % of agrarian import of the world is from Europe 27 % from Asia and 26 % from other parts of the world (2001). The average market radius of Hungary is 2477 km. Unequivocal the negative correlation between the size of export and the distance. Market concentration of Hungarian agrarian export is decreasing. The dividend of first five market in 1991 was 63 % in 2002 43 %. Our largest markets are also the most stationary. On the first place stands Germany on the second France and on the third Austria. The most unstable is Morocco. The trade by middlemen rearranges the order of importance of our markets. The value of trade settled by middlemen was between 20-26 % in 1991-2002 years. Big mediators are Switzerland, France, USA, Netherlands.

**Gábor Udovecz (AKII)** presented: “The fears and possibilities of EU-accession for Hungarian agricultural “. Starting situation isn’t favourable: low yield, closing up prices, weak organisation, low income. Aggravating circumstance are the measure of investment subsidies, the budget in 2004, the payment system. Prospective consequence are increased sectors, critical sectors, company selection. (From this you can read more in Studies in Agricultural Economics No. 99. Budapest, 2003.)

**László Dorgai (AKII)** presented: “The development of country aims and possibilities after EU accession”. EU sources (2004-2006) give 207.8 thousand million HUF for development of country and the national supplement is 58.6 thousand million HUF. From this 266.4 thousand million HUF 107.8 thousand million HUF is for structural measures and 158.6 thousand million HUF for attending measures. Aim: marketable agricultural, better quality environment, more balanced regional development.

This conference was very useful. It gave an opportunity to cause more information about the EU accession from national researchers besides books. On the other hand the AKII, AWI and WIIW enhanced their connection.



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3. **Abstract.** A short summary of the problem, analysis and results not exceeding 100 words at the beginning of the paper.
4. **Keywords.** Maximum five words expressing characteristics of problem (object), methods and results. They should be listed after the abstract.
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6. **Citations.** A generally accepted principle is to refer authors instead of editors e.g. in case of referring a chapter (contribution) of a book. Examples of referring.  
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11. **Acknowledgement.** Short appreciation of work of contributing persons in research, of reviewers or those who gave financial support for the research.
12. **Submission.** **Three printed copy (with length of maximum 15-20 pages) plus one floppy disc.**





## ÚTMUTATÓ

### A „Studies in Agricultural Economics” szerzői részére

- Szerző(k):** neve, munkahelye, levelezési és e-mail címe. Kéziratokhoz kérjük megadni, több szerző esetében pedig \*-gal kérjük megjelölni azt a szerzőt, akihez a különlenyomatért, vagy egyéb levelezéssel fordulhatnak (tudományos fokozat és egyéb rang nem szükséges).
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- Összefoglaló** (abstract): A probléma, a vizsgálat és az eredmények lényegét összegező tömörítvény, maximum 100 szavas, a közlemény elejére kerüljön.
- Tárgyszavak** (key words): Maximum 5 szó, amely a referálás és számítógépes keresés számára jelzi a dolgozat témáját: a problémát, a vizsgálat tárgyát, módszerét. Az összefoglalás (abstract) után sorolandók fel.
- Tagolás, tartalom:** Minden kéziratot lehetőség szerint a következő részekből kell felépíteni: bevezetés, adatbázis és módszer(ek), eredmények (és megvitatásuk), következtetések. Ezeket természetesen inkább logikai részekként kell alkalmazni, nem feltétlenül alcímekként (de alcímekként is lehetségesek). A „Bevezetés”-nek legalább három dolgot kell tartalmaznia: a problémafelvetést, az előzményeket, és hogy mely kérdésekre kíván választ adni az adott tanulmány.
- Hivatkozások:** Főként az előzmények felsorolásakor és az eredmények megvitatásakor szükségesek. Nemzetközi gyakorlatban elfogadott alapelv, hogy – lehetőség szerint – a szerző(k)-re kell hivatkozni (nem elegendő a szerkesztőkre, pl. könyvfejezet esetében).  
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(Koester, 1988:12): idézés esetében az oldalszám feltüntetése.  
(Harris et al., 1983): kettőnél több szerző esetében az „és társai” jelölés  
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- Irodalomjegyzék:** Csak a hivatkozott forrásokat – az első szerző családnévének kezdőbetűje szerinti ABC-sorrendben – kell felsorolni. Minták:

**Könyv:**

Harris, S., Swinbank, A. and Wilkinson, G. (1983) **The Food and Farm policies of the European Community**. New York: Wiley.

**Könyvrészlet:**

Tarditi, S. and Croci-Angelini, E. (1987). Efficiency and equity components of sector policy analysis and evaluation. In: I Y. Leon and L. Mahé (eds), **Income Disparities among Farm Households and Agricultural Policy**. Kiel: Vauk, 43-80.

**Folyóirat cikk:**

Mergos, G.J. and Yotopoulos, P. A. (1988). Demand for feed input in the Greek livestock sector. **European Review of Agricultural Economics** 15(1): 1-17.

**Disszertációk, jelentések, konferencia anyagok**

Koester, U. (ed) (1988). Disharmonies in the EC and US Agricultural Policy Measures. Report prepared for the Commission of the European Communities. Brussels: EC Commission.

11. **Köszönet:** Rövid köszönetnyilvánítás a kutatásban közreműködő (nem szerző) személyeknek, lektoroknak, finanszírozóknak.
12. **Kézirat benyújtása: Magyarul és angolul, gépelve 3 példányban és 1 pld. floppy discen, maximális terjedelem: 15-20 oldal (kivéve az ismertető cikkeket).**

