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Focusing Rural Development in Central and Eastern European Countries

Forgács, Csaba[1]

Abstract

Discussion of rural development (RD) in the EU started in 1968 and some two decades later Agenda 2000 institutionalised RD policy. After a brief history of RD, Agenda 2000 and the SAPARD programme are discussed. The main body of the paper deals with Rural Development measures of Central and Eastern European countries (CEECs) with special regard to 2007-2013. It is concluded there is no clear relationship between farm structure and choosing rural development policy concept in CEECs for 2007-2013.

Keywords

Rural development, National Rural Development Strategic Plan, CEE, SAPARD, LEADER.

Introduction

This paper investigates the rural development programmes of the EU-8+2 (EU members of Central and Eastern European countries, CEECs) and is structured in the following way. Firstly, a review of rural development in CEECs will be given. Secondly, the goals of CEECs' rural development programmes and rural development measures by Axis for 2007-2013 will be discussed in detail. The paper ends with conclusions.

Rural development up to 2006

In this section we overview the roots of rural development in Central and Eastern Europe (CEE) up to 2006 in order to have a better understanding of rural development policy issues for 2007-2013 in ten CEE new EU Member States.

History of rural development policy in the EU and CEECs

The first element of the Common Agricultural Policy (CAP) was put into practice in 1962 but the issue of rural development came into the picture years later. The first real statement on the future of rural areas, released by the European Commission in 1988 (COM (88) 501) mentioned that rural areas in Europe are rather different regarding their historical background, future development possibilities and their use of traditional rural development policies (The Future of European Countryside). Explicit discussion of rural development took place between 1988 and 1999 and Agenda 2000 institutionalised rural development policy (Delgado and Ramos, 2002). In the literature two important aspects of rural development are identified: the so-called agricultural aspect and the territorial aspect. In discussions over the years it has never been clear whether rural policies were being developed because of the specific problems of rural areas (as territorial policies) or because of the specific problems arising from the need to reform the CAP (as sectoral policies) (Saraceno, 2004). As a result of the intensive discussions on rural policies in the 1990s the Cork Declaration identified ten important points for future development and underlined the importance of raising public aware-

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ness of starting new rural development policies, making rural areas more attractive for people to live and work in, emphasising the need for co-operation and playing an active role in promoting sustainable rural development in an international context (Cork Declaration, 1996).

Based on the CAP a Common Agriculture and Rural Policy for Europe (CARPE) was developed (Buckwell report, 1997). Its suggestions pushed the CAP away from being a sectorial policy for agriculture to becoming part of a set of territorial policies for rural areas. The report proposed a significant shift in budget allocation with a strong reduction in market support and compensation payments, and with an increasing budget share in rural development incentives and environmental and cultural landscape payments over the period 1990-2008. Such significant structural changes in budget allocation have never been achieved.

Agenda 2000 was a turning point by institutionalising rural development, regarding the latter as the second pillar of the CAP. Between 2000 and 2006 there were two measures supporting rural development: modulation, which allowed a budget transfer from Pillar 1 to Pillar 2 in the EU-15 countries, and some new measures related to rural development concerning the environment, plant health, animal welfare etc. One of the measures is related to *investments in agricultural holdings* and making agriculture more competitive especially at global level. Also a substantial portion of the budget was to be allocated to *human resource development*. All EU-27 countries have had problems with the high average age of farmers. Thus there is a need to support young farmers to enter farming, to help old people to quit farming and pass farms on to younger people, and the improvement of human resources. More resources were needed for training, vocational training and educating farmers. Another part of these measures related to *less-favoured areas with strong environmental restrictions.* People living in such areas also needed support. *Rationalisation of processing and marketing* focused on having products of high added value and a better marketing system to make these products better available for consumers than before. The ecological aspect and the social functions of forests became better understood and were emphasised. The budget of Agenda 2000 still contained a small amount for rural development however; it was a new element.

SAPARD and National Rural Development Plans in CEECs (2004-2006)

The period 2000-2006 consists of two sub-periods: the three years before and the three years after the accession of the CEE countries.

SAPARD programme for EU-8+2 countries

SAPARD (Special Accession Program of Agriculture and Rural Development) was established by Council Regulation 1268/1999 in June 1999 and was part of Agenda 2000**.** It was initiated by the European Community for the New Member States. This programme focused on *agricultural structural adjustment and rural development issues* and aimed to help the ten CEE countries to make a smoother structural development and in the adaptation of the *acquis communautaire*.

Unfortunately, the second pillar of CAP has brought neither new resources nor a new model in rural development policy. The latter was manifested in the conflict of two opposing principles. The general rhetoric focused on decentralisation, projecting fundamental change in rural development including sustainability, active participation of local action groups, bottom up approach etc. (Nemes, 2007).

Under SAPARD, 34.7% of the budget was allocated to improving *processing and marketing* of agricultural and fishery products of CEECs in order to have more value added goods and to make them available for the consumers on the markets. Another 33.1% was devoted to the *development and improvement of rural infrastructure* which is in poor shape in CEECs. Only 18% of the budget focused on *investments in agricultural holdings* and increasing competitiveness. Environmental considerations gained 10.3% of the budget in different fields such as diversifying the economic activities in rural areas, renovating villages, improving water resource management and promoting forestry. Under the SAPARD programme it was shown that national programmes gave priority to increasing competitiveness of large farms and the processing industry. Also, the majority of SAPARD funds were oriented to agricultural production, processing and investments in large farms and infrastructure with a goal of preparing large farms for the market economy competition in the enlarged EU.

Concerning rural development issues one cannot neglect the LEADER programme. LEADER was launched in 1991, followed by LEADER 2 (1994-99) and LEADER+ (2000-2006). For the 2007-13 programming period, LEADER is no longer be a separate programme but is integrated ('mainstreamed') in all national/regional rural development programmes. LEADER has brought a *new method of development* where people who are really affected in the countryside can be more involved in rural development. The cooperation between local people and local agents had to improve. There were seven key features laid down by the programme. Setting up *integrated territorial development strategies* was very demanding especially for those agents who had never worked with such programmes. The second was to use the *bottom up approach* so starting from the ground and asking those who are really affected to be involved. Supporting this involvement an *encouragement of cooperation* between the local partners was given. Further tasks included using *decentralised management* (local public private partnership), promoting cooperation and *networking***,** facilitating *innovation* and executing *integrated and multi-sector actions***.** People in rural areas have to understand their own situation and they have to find their own way to move forward (LEADER, 2007d).

Implementation of SAPARD (2000-2006)

Looking at the implementation of SAPARD a brief analysis of programmes in Estonia, Slovenia, Poland and Romania will be given.

The *Estonian* rural development programme funded large investments in agricultural holdings similar to other CEECs. These countries wanted to allocate more money to this area because they were afraid of the increasing competition after the EU Eastward enlargement. They also wanted to improve food processing by making new investments to produce more value-added products.

Slovenia practically followed the same line as Estonia did though giving more specific support to areas of meat and milk production, processing and marketing with the aim of becoming competitive in these industries after EU accession (Slovenia, 2000).

In *Poland* 45.0% of public expenditure was planned to support processing and marketing while 20.9% went to investments on farms. Some 30% of the budget was targeted to priority 2. Within the latter, 16.8% was allocated for realisation and 13.6% supported economic diversification. Agri-environmental measures, vocational training and technical assistance were marginal areas. Poland realised that the country could improve its competitiveness by stabilising farms and producing more value added food products backed by good marketing practice (Poland, 2000).

Romania's SAPARD (2000-2006) budget accounted for EUR 2.083 million of which public expenditure amounted to 70% and of which 37.2% went to farm investments (14.1%), diversification (9.3%) and forestry (9.4%). As a single measure infrastructure development had a higher amount from the budget. The budget gave priority: (1) to meet EU standards in agricultural policy, food safety and consumer protection, animal health and welfare, plant health and environmental protection; (2) to implement environmental protection programmes through the Nitrates Directive, NATURA 2000 and the Environmental Impact Directive; (3) to achieve the sustainable development of agriculture (Romania, 2000).

National Rural Development Plans (2004-2006)

Concerning rural development programmes the European Commission (EC) proposed for 2004-2006 to build to the maximum extent on the experience gained with the implementing bodies set up under SAPARD. In order to optimise the use of available sources the European Community suggested flexible instruments building on SAPARD and adaptation to the needs of the new Member States. Each new Member State was asked to set up a temporary rural development instrument. The latter was financed by the EAGGF Guarantee Section and managed on the basis of specific transitional rules. Guidelines were set up for the switch from SAPARD to post-accession rural development instruments (2004-2006) to help the administrative, financial and programming transition (Temporary Rural Development Instruments). The *Temporary Rural Development Instrument (TRDI)* covered the following specific rural development measures:

- semi-subsistence farms undergoing restructuring,
- producer groups,
- compliance with Community standards,
- technical assistance and
- complements to direct payments.

In addition to these measures new Member States could also benefit from a LEADER-type measure to be funded by the EAGGF Guidance section. The cases of Hungary and Slovakia (2004-2006) will be briefly discussed.

In *Hungary* the efficiency indicator of agricultural production amounted to 33.4% of the EU average. Thus the National Rural Development Plan aimed to improve efficiency of production through assisting a transition towards optimal utilisation of land (agri-environment, less favoured areas and afforestation). A substantial amount of money was spent on rural development between 2004 and 2006. The environmental scheme was strong and approximately 1.5 million ha of land was involved in the programme (Hungary, 2005). One of the difficulties was that the organic products produced under the scheme sometimes could not be marketed even at the price of conventional products.

The case of *Slovakia* shows the money spent on the sectorial operational programme on agricultural production is less than the money devoted for rural development. The second pillar of the CAP was quite strong in this country. Funds spent on rural development programmes were double that of the money spent on the first pillar. The priority of support of sustainable rural development covered five different areas including the adjustment and development in rural areas, forestry and fisheries, training and technical assistance (Slovakia, 2004).

General issues in CEECs

Looking at the rural development measures in CEECs with dual farm structure (Forgacs, 2002) there are some similarities and some differences. Generally, there is no significant difference between the EU-8+2 countries in the resource allocation frame of the two funds mentioned above. This is because the goals, conditions and to some extent the heritage and problems of CEECs are similar and the activities focused on similar tasks in the selected countries. Similar actions were taken under the same measures in the different countries with some exceptions. Slovenia spent more funds on the soft measures than on other fields, such as training, education, research and development and networking. In Hungary a strong focus was given to agro-environmental issues. The structure of the funds supporting rural development was as follows: most of the money was spent from the European Regional Development Fund with the European Social Fund in second place. The EAGGF was the third biggest contributor with still a significant amount while the FIFG had only a small share (Iglói, 2006).

Rural Development National Strategic Plan (RDNSP) in CEECs (2007-2013)

In 2002 the EC proposed to work out a new generation of rural development programmes. It was decided that a single fund would support rural development programmes (Council regulation (EC) No 1698/2005 of 20 September 2005 on support for rural development by the European Agricultural Fund for Rural Development, EAFRD) (Council regulation, 2005). A decision by the Council was made on 20 February 2006 on Community strategic guidelines for rural development (programming period 2007 to 2013) (2006/144/EC) (Council regulation, 2006).

One of the main questions was how to centre a policy more around the territorial instead of the sectorial line and how these two have to be integrated serving the future of the European Union in the 2007–2013 budget period. The Second European rural development meeting, held in Salzburg (Salzburg, 2003a), *set up some principles for future development.* For example, people living in the countryside should be comfortable and all economic, social, cultural values of the countries have to be preserved. The competitive aspect of agriculture was also underlined. Rural development policy should apply in all areas in the enlarged EU and not only in some regions within the Community. It was emphasised that the whole system should be simpler and more understandable for all those affected. The new rural development policy is one funding and programming instrument so everybody can become familiar with the rules. People do not have to look for different channels where funds are available for the same area. The programme should focus more on EU priorities which was not always the case previously. Emphasis was given to control, evaluation and reporting and a clearer division of responsibilities between the Member States and the EU or the EC. It underlined the need for strengthening the bottom up approach, to make Local Action Groups more active and to force people to set up a more lively cooperation in the local and regional areas in order to change the way of life in the region.

There are *three objectives* focused on as (a) *increasing competitiveness* of farms and the forestry sector through support for restructuring, modernisation and quality production. In other words there is a need for restructuring agriculture and modernising farms and focusing on quality production rather than quantity; (b) there is a need *to protect the environment and the countryside*; (c) addressing the *quality of the life* in rural areas which, in many cases, have many problems. Many people in different regions have a low standard of living and are struggling to overcome serious difficulties. The simplification of the whole system was reflected in the fact that the previous two sources of finance, three systems for financial management and controls and five types of programming were replaced by only one. Concerning the budget of rural development between 2007 and 2013 there is

an increase of some 25% in real terms so within the EU budget more money is being allocated for rural development because of its more important role in the future.

EU Frame for Rural Development Policy

The essential rules governing rural development policy for the period 2007 to 2013, as well as the policy measures available to Member States and regions, were set out in council Regulation (EC) No. 1698/2005. Under this Regulation, rural development policy for 2007 to 2013 is focused on three themes (thematic axes) as (1) improving the competitiveness of the agricultural and forestry sector; (2) improving the environment and the countryside and (3) improving the quality of life in rural areas and encouraging diversification of the rural economy. In order to ensure a balanced approach to policy, Member States are obliged to spread their rural development funding between all three of these thematic axes.

A further requirement is that some of the funding must support projects based on experience with the LEADER Community Initiatives. The "LEADER approach" to rural development involves highly individual projects designed and executed by local partnerships to address specific local problems. Every Member State must set out a rural development programme specifying what funding will be spent on which measures in the planned period. For 2007 to 2013 a greater emphasis is placed on a coherent strategy for rural development across the EU to be achieved through the use of National Strategy Plans which must be based on EU Strategic Guidelines (Council regulation, 2005).

Main directions of RNDSPs in CEECs

Due to the accession treaties of the EU-8+2, in comparison with farms of the EU-15, financial resources available for farms in CEE Member States under Pillar 1 are strongly limited. For these countries, quotas fixed at lower levels than the potential are a tough requirement for agricultural farms in the region. EU financial support for rural development can partly counterbalance such disadvantage and may encourage new Member States to make more efforts to implement a rural development policy resulting in a more balanced development of the rural economy. It is a question of great importance how CEE Member States can manage this transition towards establishing a dynamic and healthy rural economy and to offer more jobs for those having lost their jobs because of quota limits. The question can be asked: can rural development measures offer sufficient new work places for those people pushed out from farming and, what kind of implementation of rural development policy will best serve this important goal? From this point of view successful rural development is not only an opportunity for the countries concerned but at the same time it is a challenge for them. Countries have to fix in their national RDNSP those measures, and later on, in projects which really can give a good injection in rural areas especially with agricultural character. First experiences of implemented RD projects in new Member States gave a warning indicating such investments can be regarded as medicine for high level rural unemployment only in a small share. RD measures have not and could not be a solution for the problem of a high level of rural unemployment.

In this section we investigate the main goals and development directions of RDNSP of CEECs for 2007-2013.[2] RDNSP plans have been worked out by the Member States following the guidelines given by the EU. National plans have to be based on the national strategic plan. The plan should support prosperous people in a sustainable countryside. Based on their current situation analyses

[2] Analysis based on EU published information. In analysing budget of Axis 1, 2, 3 and LEADER are considered. Technical assistance and, complements to direct payments for Bulgaria and Romania are not covered.

countries put together draft version of their plan for negotiation with the EU. These proposals were discussed and finally accepted by EU between July 2007 and May 2008. The EU gives a significant contribution to rural development programmes for CEE through EAFRD. Member States have the possibility to choose a single National Rural Development Plan or several regional RDPs (Tietz and Grajewski, 2009). Looking at EAFRD financial support, one third of the total EU contribution to rural development goes to EU-8 new Member States of which 48.8% is allocated to convergence. Within the latter about half of EU supports has been allocated to Poland, 14-15% to Hungary and 10-11% to Czech Republic. Funds provided are stable over time enabling countries to carry out a balanced development strategy (EU, 2006). After the EU accession of Romania and Bulgaria in 2007 altogether EUR 45,432.3 million of public expenditure will be used for RD in EU-8+2 with EU support of EUR 35,256.5 million from EAFRD (77.6%)[3] (Table 1, 2).

Table 1

Budget for Rural Development in NRDSP in EU 8+2 countries (2007-2013)

Country	Total public expenditure by Axis, in € million				
	Axis 1	Axis 2	Axis 3	LEADER	Total
Bulgaria	1,204.9	777.4	877.7	77.0	2,937.0
Czech Republic	840.0	1,945.0	635.0	175.0	3,595.0
Estonia	347.6	334.5	118.9	85.8	886.8
Hungary	2,366.4	1,626.6	690.7	272.4	4,956.1
Latvia	649.0	365.0	259.6	32.5	1,306.1
Lithuania	930.2	824.6	275.6	137.0	2,167.4
Poland	7,187.5	5,546.0	3,430.2	787.5	16,951.2
Romania	3,967.3	2,293.5	2,473.7	235.1	8,969.6
Slovakia	835.4	1,242.1	358.1	74.5	2,510.1
Slovenia	399.0	588.0	132.0	34.0	1,153.0
Total (EU-8+2)	18,727.3	15,542.7	9,251.5	1,910.8	45,432.3

Source: Own composition from EU data

The National Rural Development Network (NRDN) has been set up in all countries concerned in order to facilitate and manage the execution of the NRDSP of the country. The European Network for Rural Development was established in order to exchange experience of rural development between Member States and help by transmitting good practice to those are lagging.

Looking at the major goals of CEECs in RDPs it is the competitiveness issue, Axis 1. The EU-8+2 made increasing competitiveness of agriculture the most important goal. This is so because, on average, they are well behind in investments and feel that in the EU their farms have to be strengthened economically otherwise they will not be able to compete on international or even on national markets. The low labour productivity should be increased and more investments are needed to use modern technologies to reduce per unit production costs. If the farms are not prepared for competition then more and more of them will lose their markets and be forced to quit farming. That is why under the rural development measures to establish a more efficient farming is one of the key issues in CEECs. Among major goals, competitiveness became a priority in most of the countries.

[3] Complements to direct payments for Bulgaria and Romania and, technical assistance are not included. The latter amounts to EUR 1,231.4 million.

Besides competitiveness, sustainable management of natural resources (Slovenia) and sustainable development and the protection of natural values and biodiversity (Hungary) can be mentioned. In the RDNSP of Romania where labour engaged in agriculture is rather high facilitating the movement of labour out of agriculture into other sectors, and ensuring adequate economic and social conditions for the rural population were targeted. Some CEECs formulated their overall aim of their rural development programme by mentioning all three pillars as equally important for society. Slovenia emphasises that the three pillars are the measures to establish sustainable rural development.

Priorities of rural development in CEECs

The EU-8+2 will use 41.2% of the total RD programmes for Axis 1. A little over one third (34.2%) is allocated to Axis 2 and one fifth (20.4%) will support improvement of quality of life and diversification (Axis 3). LEADER has 4.2% of the total rural development budget.

Table 2

Share of EAFRD in Rural Development in EU 8+2 countries (2007-2013), %

Country	Total public expenditure, %	RD from EAFRD, %				
		Axis 1	Axis 2	Axis 3	Leader	Total
Bulgaria	100	32.8	21.7	23.9	2.1	80.5
Czech Republic	100	17.5	43.2	13.3	3.9	77.9
Estonia	100	29.4	30.2	10.1	7.7	77.4
Hungary	100	34.3	25.2	10.0	4.2	73.7
Latvia	100	37.3	22.4	14.9	2.0	76.6
Lithuania	100	32.2	30.4	9.5	5.1	77.2
Poland	100	31.8	26.2	15.2	3.7	76.9
Romania	100	35.4	21.0	22.1	2.1	80.6
Slovakia	100	24.7	39.2	10.6	2.4	76.9
Slovenia	100	26.0	40.8	8.6	2.3	77.7
Total (EU 8+2)	100	31.3	27.4	15.6	3.3	77.6

Source: Own composition from EU data

Axis 1: Improving the Competitiveness of the Agricultural and Forestry Sector

The ten CEE countries will allocate EUR 18.7 billion for new investments and modernisation of agricultural production. In seven of ten countries Axis 1 has the highest share in the total RD budget. This share is especially high in Latvia (47.7%) and Hungary (45.9%). Czech Republic, Slovakia and Slovenia regard their farm structure stable and competitive enough and allocate less money in relative terms to support new investments to increase competitiveness. These three countries have a more stable farm structure which is already able to compete on food markets having moderate support level. Several CEE countries in RD programmes emphasise the importance of further development of human capital. Skills and management capacity will be improved through support for vocational training and the provision of farm advisory and extension services. More countries want to improve infrastructure creating better facilities for farms in storing and distributing agricultural products. Concerning added value, practically all ten countries focus on producing more high added value products meeting consumer needs. Measures shall contribute towards raising

the productivity of the agri-food and forestry sector, improving the innovation level, production specialisation and level of professional agricultural activity by considering the principles of sustainable management.

Hungary supports farm and production restructuring and investments in primary and secondary production, infrastructure and for age restructuring, training and information activities including the use of advisory services. *Latvia* targeted modernisation of agricultural holdings, increasing added value to agricultural and forestry products and support semi-subsistence farming. *Bulgaria* will mainly allocate financial resources to modernisation of physical assets and production factors in the agricultural, forestry and food processing sectors in order to improve productivity. Other fields targeted by RD programmes are: investments for compliance with Community standards on farm or by food processing enterprises; adjustments in farming structures by encouraging setting up by young farmers and development of viable market-based businesses by semi-subsistence farmers and improvement of human potential by giving support for training and advisory services in agriculture and forestry. *Lithuania* intends to support early retirement, setting-up of young farmers, to restructure semi-subsistence farms and to improve forest and agriculture related infrastructure. *Poland* focuses on improvement of cooperation and concentration of supply chains and processing. *Czech Republic* is aiming at creating a strong agri-food industry and dynamic agri-food environment, to modernise agricultural holdings and to introduce innovations. Furthermore, the funds should be used to increase the quality of products, to extend training and advisory services and to reduce the average age of workers in agriculture. The focus in *Slovakia* has been to increase the modernisation, innovation and efficiency of the agricultural, food and forestry sector; furthermore, deepening knowledge and improving the professional overview in the ó sector. *Slovenia* wants to improve qualifications and to strengthen the human potential in agriculture and forestry and will introduce measures to restructure the physical capital in agriculture and forestry as well as enhancing innovation. In addition it would like to improve the quality of agricultural production and products. All these measures shall contribute towards raising the productivity, specialisation and innovation.

Axis 2: Improving the environment and the countryside

Under Axis 2, EU-8+2 countries will use a budget of EUR 15,542.7 (34.2%) to achieve significant development in a wide range of areas such as sustainable management of agricultural and forest land; enhancing biodiversity; protection of the quality of surface and ground water sources; protecting less-favoured areas and NATURA territories; environmentally friendly practices; soil and water protection; maintaining sustainable farming in mountain and other disadvantaged areas; improving the quality of underground and ground waters; preservation of favourable environmental conditions and reduction of hazards.

The share of funds within rural development allocated to Axis 2 is the highest in Czech Republic (54.1%), Slovenia (51%) and Slovakia (49.5%). The rural development policies in these countries are very much in line with the EU approach namely they spend most of the budget in the area where the EU has the highest minimum guideline (25%). Although farm structure differs very much between Czech Republic and Slovakia on the one side and Slovenia on the other, it is still regarded as such not needed to be a priority to improve competitiveness of farms as the latter are better prepared for working under market forces than in other CEE Member States. Instead, environmental issues and improving the countryside is more focused in providing financial support from EAFRD. In these three countries the strategic approach of protecting the environment and the rural economy was given priority over improving competitiveness of the agricultural and forestry sector.

Romania, Bulgaria and Latvia allocated 25.6-27.9% of their rural development budget for Axis 2, while in four countries (Poland, Hungary, Estonia and Lithuania) this Axis amounts to around one third (32.7% up to 38.0%) of the budget.

Czech Republic placed the focus of Axis 2 on the protection of the quality of surface and ground water sources through measures focusing on erosion control and suitable use of agricultural land, and promotion of environmentally friendly farming methods leading to biodiversity. In addition, targeted areas are as follows: protecting suitable farming systems to preserve rural landscape, the environment on agricultural land and in forest areas of high nature value, and the use of renewable energy sources through the existing forestry potential and through the possibilities of its expansion and the preservation of the positive functions of forests. *Slovenia* allocates significant resources to the utilisation and the preservation of favourable environmental conditions, reduction of hazards due to locally intensive farming, to preserve agricultural activity in less favoured areas and to preventing soil erosion in certain areas. *Slovakia* plans to enhance biodiversity in rural areas and agriculture and forestry systems of high natural value. Maintaining and improving the quality of underground and ground waters are also a priority. The third element of major support is maintaining and enhancing the quality of agricultural and forest soil and mitigation of the impacts of climatic changes.

Romania wants to maintain sustainable farming in mountain and other disadvantaged areas in order to maintain the environment, prevent land abandonment and address problems such as soil erosion. In addition, it wants to maintain and enhance the environmental benefits generated by traditional extensive farming systems in High Nature Value ecosystems such as the Carpathian mountains and Transylvania. In *Bulgaria* overall priority goes to increasing the sustainable management of agricultural and forest land. Specific priorities are: (a) conservation of biodiversity and High Nature Value Farmlands, (b) development of organic farming, (c) improvement of water and soil quality, (d) development of sustainable land and forestry management practices for example to fight soil erosion in mountainous areas and (e) to extend and improve forest resources making positive contribution in the climate change context. *Latvia* indicates payments for three areas as (a) agri-environmental programmes, (b) farmers in areas with handicaps other than mountain areas and (c) Natura 2000.

In the remaining four countries the budget share used for Axis 2 amounts to 38% of total public expenditure in *Lithuania* and 37.7% in *Estonia*, while *Poland* and *Hungary* use lower shares (32.7 and 32.8% respectively). *Estonia* concentrates its support on agri-environmental support, support for less-favoured areas and Natura 2000 support for agricultural land. *Lithuania* has targeted three areas for protection: (a) environmentally friendly practices (23.4% of the total per axis), (b) preservation of biodiversity and high nature value landscapes (Natura 2000 and LFA, 59.7%) and (c) combating climate change (16.9%). *Lithuania* also aims to combat climate change through rational use of available land resources (LFA payments, Natura 2000), in particular abandoned agricultural land not used for agriculture as well as sustainable forestry development through afforestation, restoration of damaged forests and forest environment as well as Natura 2000 payments. Environmentally friendly practices will be complemented by the landscape stewardship, protection of water bodies, supporting rare breeds and development of organic farming. In *Poland* the budget will contribute to protection of biodiversity, environmental protection including soil and water protection and an increase in forest cover. The objectives of Axis 2 in *Hungary* will be realised through the following main actions: (1) support for agri-environment, forest-environment and Natura 2000 territories, (2) support for LFAs and (3) support for forestry.

Axis 3: Quality of Life and Diversification

In many rural areas of CEECs the standard of living is low and the quality of life should be improved in order to slow down migration. Axis 3 helps not only to increase the quality of life, but also to establish a more balanced rural economy by strengthening diversification. EUR 9,251.5 million will be available for measures under Axis 3 of which 76.5% comes from EAFRD and having a share of 20.4% of the total rural development budget.

Measures in CEECs will be taken both on the demand and the supply side. The satisfaction of people with quality of life demands sufficient income. So it is an important task to provide rural people with higher incomes. It makes necessary to create new jobs for unemployed people on the one side and to increase wages/salaries for employed people on the other. The latter can be derived by diversifying the rural economy, to take advantage of multifunctional agriculture, while new investments may bring results in job creation. In a number of rural areas it is very important to retain population which also means development in infrastructure in a broader sense such as education, health care, transportation, cultural life etc. There is a need for a wider variety of services and especially basic services and to create an economic environment attractive for the establishment of rural micro-enterprises. Rural tourism has developed very much in certain areas but there are still many opportunities left to be explored. The more the local resources can be realised through different activities the better the chance for the rural region to maintain attractiveness of rural life especially for those living in these areas for decades. Once job opportunities and income level are reasonable then people prefer to stay rather than to migrate, and to run their own business there instead of moving to local towns. CEECs designated different areas where measures can contribute to a better quality of life.

In EU CEECs 20.4% of total rural development resources will be allocated to Axis 3. There are only two countries namely Bulgaria (27.1%) and Romania (24.8%) where the share of Axis 3 within the total budget is close or even above one quarter of the budget. In five countries the budget share is rather low, namely Slovenia (11.4%), Lithuania (12.2%), Estonia (12.8%), Hungary (13.4%) and Slovakia (14%). Poland, Latvia and Czech Republic spend more on Axis 3 i.e. 19.9%, 19.1% and 17.5% respectively.

Axis 3 in *Bulgaria* will seek to address the poor quality and accessibility of basic services and infrastructure in rural areas as an important pre-condition for economic growth and retaining population in the rural areas. It will also tackle the lack of job opportunities and high dependency on agriculture by supporting diversification into non-agricultural activities and the creation and development of rural micro-enterprises. Within the RDP 27.1% of resources are allocated to Axis 3 (EUR 878 million of public expenditure). Of these resources, 69% will target improvement of quality of life and 31% – diversification of job opportunities. In *Romania* the diversification of the rural economy and job creation will be encouraged through support for micro-enterprises and tourist facilities and attractions. Village renewal and development will also be a priority. The strategic plan encourages communities to submit integrated projects covering a range of physical and social infrastructure elements to improve village life.

Poland wants to achieve significant progress in improvement of living standards. Due to the latter the plan facilitates to access to services. To make rural life more attractive, improvement of infrastructure in rural areas is also a priority. Support for entrepreneurship and the creation of jobs outside agriculture are also important parts of the rural development strategy. *Latvia* also focuses on improving basic services and will support micro-enterprises and diversification into non-agricultural activities. *Czech Republic* allocates EUR 635 million for Axis 3. The programme aims to create employment opportunities and provide higher incomes for the rural population through the devel-

opment and diversification of activities in rural areas and promotion of rural tourism. Significant resources will be spent on use of renewable energy sources. The aims are to improve the facilities and appearance of villages and public areas and to strengthen the population's sense of identity with the local environment and rural heritage. Axis 3 should provide for the development of rural infrastructure with the objective of encouraging the development of small and medium-sized enterprises, and to improve the village environment and contribute to a higher level of education and employment of the rural population through the development of advisory services and training. The importance of use of information and communication technologies is also emphasised in the plan.

Slovakia concentrates financial resources on four areas i.e. (1) creating job opportunities in rural areas, (2) promoting training activities, (3) improving quality of life in rural areas and (4) formation of local partnerships. *Hungary* will take the following main actions: (1) enterprise development, (2) support for improving basic services, (3) preserving natural and cultural heritage, (4) local capacity building. Within Axis 3, 58% will be allocated to supporting diversification, microbusinesses and tourism closely linked with job creation. In addition 31% will be used for improving quality of life and 10% of funding is earmarked for training and capacity building. *Estonia* emphasised that 60% of this axis will be allocated to diversification of the rural economy. *Lithuania* formulated three main lines for rural development programmes: (1) environmentally friendly practices (23.4%), (2) preservation of biodiversity and high nature value landscapes (Natura 2000 and LFA, 59.7%) and (3) combat climate change (16.9%). Environmentally friendly practices will be complemented by landscape stewardship, protection of water bodies, supporting rare breeds and development of organic farming The country aims to combat climate change through rational use of available land resources, in particular abandoned agricultural land not used for agriculture as well as sustainable forestry development through afforestation, restoration of damaged forests and forest environment as well as Natura 2000 payments. *Slovenia* aimed at improving the quality of life and encouraging economic diversification and entrepreneurship in the countryside, improvement of the unfavourable age structure and the increase of low incomes. Within Axis 3, greatest attention has been placed on measures for supporting the establishment and development of enterprises, diversification into non-agricultural activities through village renewal and development and conservation of the heritage in the countryside.

LEADER

In the EU-8+2 EUR 1,910.8 million will be used for LEADER amounting to 4.2% on average of the total RD budget for 2007-2013. Four countries allocated budgets well above this average figure: Estonia and Lithuania 9.3% and 6.1% respectively, while in Hungary and Poland these figures are 5.3% and 4.6%, indicating that the governments want strong involvement of different local agents in rural development using a more decentralised approach than other countries. This policy may be rooted in experience gained in implementation of previous LEADER projects. On the other hand in the case of five countries only between 2.4% and 2.9% of the budget is allocated for LEADER. Although LEADER should be used in projects of all Axes still Member States handle this approach differently.

It is also a question how Member States plan to use LEADER to support the successful implementation of RD programmes by regions. It may happen in one case that more applications under LEADER can be accepted if the budget limits for single applications are fixed. Such a limit would help to accept and finance more LEADER programmes with smaller budgets and having their influences mostly in local areas. While on the other hand if new proposals integrate a great number of settlements or regions it may result in a concentrated use of the budget and much fewer

proposals can be accepted because of large budget claims by each. In such cases the politics may have stronger influence on which proposals will be selected for financial support and which will not. Nonetheless, the LEADER programme has a potential to help rural development programmes to be more successful.

Conclusions

A high percentage of territories within the EU are called rural areas and this figure is even higher in Central and Eastern Europe. So the rural development issue is of great importance and plays a very important role in the rural regions in CEECs. However, the vision of the Buckwell report on the future role of RD has not been justified yet. There has been significant support for rural development in CEE countries since 2000 but more is needed. Under SAPARD mostly large farms received a substantial part of the funds, although it was not a priority.

RDNSP for 2007-2013 rural development is a great challenge and at the same time a good opportunity for EU CEE Member States to make significant steps in strengthening their rural economy. Some EUR 45 billion is available for the 2007-2013 period and can be regarded as an injection of great importance in improving rural economies. However, very much depends on the implementation of RD programs in the region. Firstly, what Axis the Member States will focus their budget on and, secondly, how efficiently financial resources will be used during implementation of the programme. The new EU policy and financing are more transparent and simplified, helping the countries concerned to absorb their indicative budgets.

EU proposals for resource allocation have resulted in different national strategic rural development policies reflecting national specificities. However, competitiveness of agricultural production has the strongest focus in most CEECs with the exception of Czech Republic, Slovakia and Slovenia where the highest budget is allocated to Axis 2.

Seven countries out of ten think that improving competitiveness of farms helps more to strengthen rural economies in long run and allocate 39.2-49.7% of the budget to Axis 1 with the lowest in Estonia and the highest in Latvia. Czech Republic, Slovakia and Slovenia give strong support to Axis 2 (49.5-54.1%, the lowest in Slovakia and the highest in Czech Republic). Bulgaria and Romania, where the standard of living is low, besides focusing on improving competitiveness, also allocate budget above one quarter to quality of life and diversification 27.6% and 29.9% respectively.

No clear relationship can be recognised between the farm structure and the budget allocation structure of the CEECs. Among countries spending more on improving competitiveness of farms one can find countries with small farms (e.g. Latvia) and large farms (Czech Republic, Slovakia). However, the question as to whether the support to increase competitiveness will go to small or large farms strongly depends on conditions set up for applicants by national authorities. It is a challenge for CEECs to use the 2007-2013 budget for rural development in a way more fitting to national preferences by taking into account their experiences gained during transition so far.

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Vertical coordination as a driving force for structural change in the Romanian dairy market

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Abstract

This paper addresses the various modes of access to production factors, such as capital, specific inputs and know-how, as reasons for the varied development of Romanian dairy supply chains and their respective actors (farmers, processors). The paper draws on results from an ongoing World Bank study. The findings are based on semi-structured telephone and face-to-face interviews conducted in January-February 2009. The interviews indicate that large and prosperous dairy chains have better access to all production factors, which allows the strengthening of their relationships, especially in the upstream stages (farmers), and supports their competitive advantages in the domestic market. Many barriers exist in the domestic market, particularly for small and medium-sized dairy chains, which hamper their potential exploitation of particular stages in the chain. In the same way the findings indicate that virtually only large companies and farms benefit from public support regarding access to capital (EU funding, governmental programmes) and know-how (extension service).

Keywords

vertical coordination, structural change, small farms, Romania, dairy.

1. Introduction

The increasing demand for high value dairy products and investments by foreign companies in processing and retailing have led to a diffusion of higher quality standards in Romania. This, together with globalisation and European Union (EU) integration, has had considerable overall effects on the domestic agricultural sector. In particular, in the context of retail internationalisation, it can be observed that 'western' retailers are taking their own business models into the new markets (Hanf and Pieniadz, 2007; Palmer, 2005; Roberts, 2005). Thus, one can say that modern management concepts and their demands on the business partners are exported. This results in the following changes: The traditional, local, store-by-store procurement should be shifted to centralised, large and modern distribution centres and external specialised logistics firms should be used. Furthermore, modern retailers set their own standards of food quality and safety that are often much higher than those of the local governments (Dries et al., 2004, Fulponi L., 2006). Moreover, the requirements of the newly established procurement systems demand that suppliers are able to guarantee both disruption-free product flows and delivery of products of a certain quality. Thus, domestic producers should keep up with the demanded quantity and quality or products will be imported instead. Foreign direct investments are particularly regarded as a catalyst for vertical coordination (Gorton 2006, Swinnen and Vandeplas, 2008).

In Romania, a majority of raw milk deliveries still come from smallholders (Fritzsch et al., 2008; van Berkum, 2005). At the same time, purchasers (retailers, processor) requiring a certain quality of raw materials apply their standards equally to all suppliers regardless of their size. To adjust production technology and meet the higher quality standards, farmers require access to dif-

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ferent production factors as well as to input and output services on reasonable terms. As Hazell et al. (2007) indicated, "If one element of the set is missing, then the benefits of investments in all of the others will be lost or significantly reduced". Thus, both private (i.e. dairies) and public (EU, Romanian government) stakeholders have recognised these needs, and different forms of assistance have been provided so far. These include support for investments in agricultural holdings and food processing (i.e. to facilitate the adoption of EU standards); setting up producer groups (horizontal integration) and improving vocational training for actors in agri-business (knowledge transfer), (World Bank, 2005a, 2005b).

The aim of this paper is to analyse the vertical coordination between dairy farmers and the downstream businesses and to identify opportunities and challenges, as well as possible development paths, for different types of dairy chains and farmers. Since smallholders face major challenges regarding access to production factors and hence integration within modern supply chains, the main part of this paper, as well as our recommendation, focus on issues affecting small dairy chains/farmers. One research question is whether the Common Agricultural Policy (CAP) is able to correct the market failures or rather increases the disparities among chains, processors and farmers.

The remainder of the paper is organised as follows. The next section elaborates the general developments in the Romanian dairy markets and the particular actors involved in the markets (consumers, processors, producers, public service). The third section focuses on vertical coordination and especially on the position of small farmers in modern supply chains. The results presented in this section are based on the semi-structured interviews conducted in January and February 2009. The fourth section concludes the paper and suggests possible extensions.

2. Characteristic of the Romanian dairy market

2.1. Developments on the product market

The economic, legal and political adjustment processes induced by globalisation and EU integration have had a considerable effect on the dairy sector, a market with 21.5 million consumers. The average consumption of dairy products is still far behind the European average but is constantly growing as consumer purchasing power increases. Additionally, roughly 55% of raw milk (about three million tons) is still marked as individual consumption and losses. However, the majority of this quantity is reckoned to be sold on the black market. These figures indicate that there is a considerable demand for milk products and hence an unexploited potential for high value products.

In the retail sector, German (Metro, Rewe, Real, Kaufland), French (Carrefour, Auchan, Interrex/Intermarche Group), and Belgian (Cora) retailers, all of which require International Food Standards (IFS), dominate the Romanian market. Meanwhile, multinationals are increasingly switching their focus from Bucharest and other large cities (which have already reached a certain degree of saturation) to other regions, and they are also targeting smaller towns, depending on their profile. Regarding the processing sector, top international dairy producers have already entered the domestic market via green field investments (Danone, Tnuva) or acquisitions (Lactalis, Campina, Nordex Food) or both (Friesland, Hochland). Even some dairies from eastern central European countries (e.g. the Hungarian company Sole-Mizo) are considering investing in the Romanian dairy market.

At the same time, the traditional domestic dairies still face complex challenges regarding adaption of their current business strategy to the changing environment. Considerable investments have been allocated to reconfiguring the production system (technology, management) within the

firm and improving the quality of inputs, as well as redesigning the food chains. Because economies of scale have become an important factor in the milk sector, the largest Romanian enterprises strive to expand in the milk market by applying various growth strategies. The most common strategy is internal growth via entering more new (export) markets, coupled with market penetration. For example, LaDorna exports about 20% of its products to countries such as Greece, Great Britain, Germany, Spain and the United States, with the focus on organic products. Some dairies decide to expand by building a new processing plant (i.e. "Albalact" in Oiejdea) or through mergers and acquisitions (i.e. Albalact and Raraul). In addition to rapidly increasing revenue, this allows them to use economies of scope, e.g. the transfer of capital, technology and know-how within the company, as well as synergies associated with using common brand names. However, buy-outs of relatively well-performing dairies by foreign investors still dominate in Romania; this seems to be a more effective method of external growth, since this gives domestic dairies access to approved technologies and business concepts. Experts expect further consolidation in the dairy market via mergers and acquisitions.

Increasing demand for high value dairy products attracts further investments in the production process as well as in marketing and logistics. Some domestic companies, such as Albalact ("Zuzu", "Fulga"), LaDorna ("LaDorna"), Brailact ("Brenac"), and Lacta Prod ("Paco") have successfully managed to create several distinct brands in the last five years. Today their products are listed in almost all large, modern retailers located in urban areas. Other domestic dairies are also planning to increase their portfolio of products and brands. Investments into brand, reputation and the reduction of information asymmetry about product quality are becoming a priority for the large companies. Thus, significant players in the market (foreign, domestic) use much diversified campaigns (television advertisements, food exhibitions etc.) and allocate considerable shares of their budgets to advertising and marketing activities. Tnuva, Friesland, and Albalact are among the companies with very aggressive and ongoing marketing campaigns. The required capital for these activities is (or was) usually supplied through bank credit, SAPARD[3] funds and the company's resources. The intensive promotion campaigns generate additional demand for products and hence strongly increase the market shares of those firms. Despite some successes, some of the domestic leaders may become easy takeover targets within the next few years, which is consistent with the increasing consolidation process in the European market. However, local brands that have managed to build significant brand equity will stand a good chance of being preserved or even promoted to international status, thereby increasing the acquisition value of their owners.

2.2. The quality of raw milk

The adaptation of EU hygiene rules for food of animal origin is still one of the biggest challenges for the majority of actors involved in the Romanian dairy market. The EU regulations contain various obligations for construction, layout and equipment in enterprises (called structural requirements) and organisation of the supply chain that requires extensive investments. Transitional arrangements based on those of the past were agreed upon with Romania (and Bulgaria) to ensure the smoothest possible integration into the EU. Of all the companies that were registered in February 2009, half of the dairies (trade companies) and 70% of the collecting points are still in the transition period, and hence obliged to comply with community structural requirements until the end of 2009 (Figure 1). All of the collecting points in the transition period are located in Transylvania; most are located in Cluj County and belong to the Napolact company which is owned by Friesland Romania. The share of dairies not complying with EU standards ranges between 48% in Transylvania (57), to more than 51% (45) in Moldova, to 60% (58) in south Romania.

[3] SAPARD: Special Accession Program for Agriculture and Rural Development.

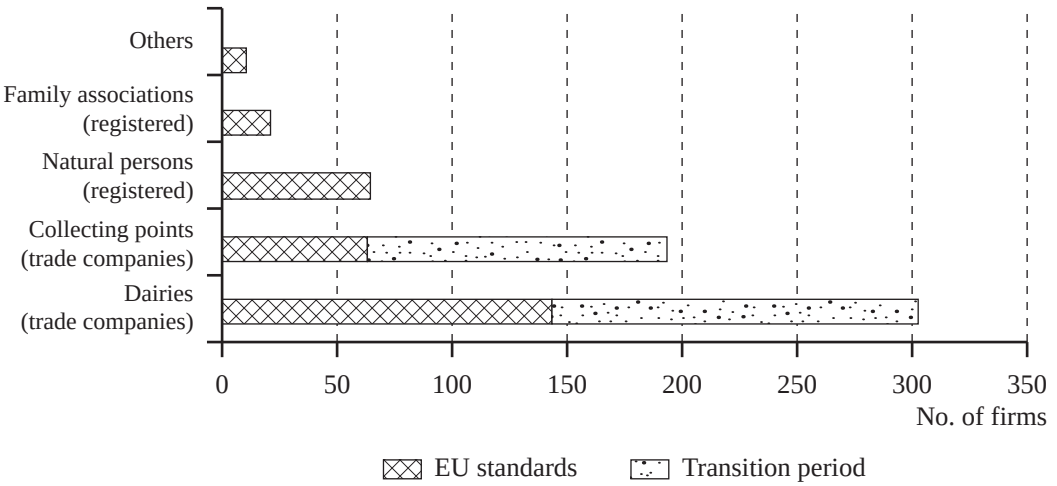

Figure 1: State of compliance with the EU standards in the Romanian dairy sector

Source: Own illustration based on Romanian Ministry of Agriculture, Forestry and Rural Development.

Due to the high restructuring need it is likely that until the end of 2009, more dairies and collecting points in Romania will have to cease business activities altogether due to delays in their modernisation process. The above-mentioned figures indicate that the most relevant structural changes are expected in Transylvania. Additionally, it is likely that the most frequently affected will be small and medium sized entities that are not registered – in other words, those operating in the black market.

2.3. The structure of dairy farming

During the first phase of transition in Romania, there was an immediate and strong increase in individual farms, while on average, agricultural labour use also increased. Furthermore, parts of the collective land were restituted to members and workers of collective farms. In a second phase, labour use in agriculture started to decline while the shift to individual farms slowed (Swinnen, 2005). On the other hand, many households already possessed small plots and some animals for their own production before transition. Today the Romanian farm structure is still highly fragmented especially in dairy production (Figure 2).

In April 2009, the MAPDR[4] reported that there were roughly 850 thousand dairy producers of which 89% still hold one or two cows. The interviews indicated that small dairies in particular still procure the milk from these farmers. The procurement occurs both legally and on the black market. The majority of those suppliers are older farmers without a successor. Some of them do not (or are not willing to) understand the quality requirements and have problems with adjusting to new organisational rules (contracting, farm economics). The delivered milk usually does not comply with the mandatory standards. The small farms rarely discontinue their production. Rather, they reduce their stock to one or two cows to ensure self-sufficiency. Relatively low incomes in rural areas and rising unemployment, particularly in under-developed regions (i.e. the Carpathian region) contribute to the persistence of subsistence producers. Thus, part-time livestock breeding still plays a significant role in Romania. Due to the high entry barriers, those farmers are not expected to surpass their subsistence status. However, they can still contribute to the persistence of the black market.

[4] MAPDR: Romanian Ministry of Agriculture, Forestry and Rural Development.

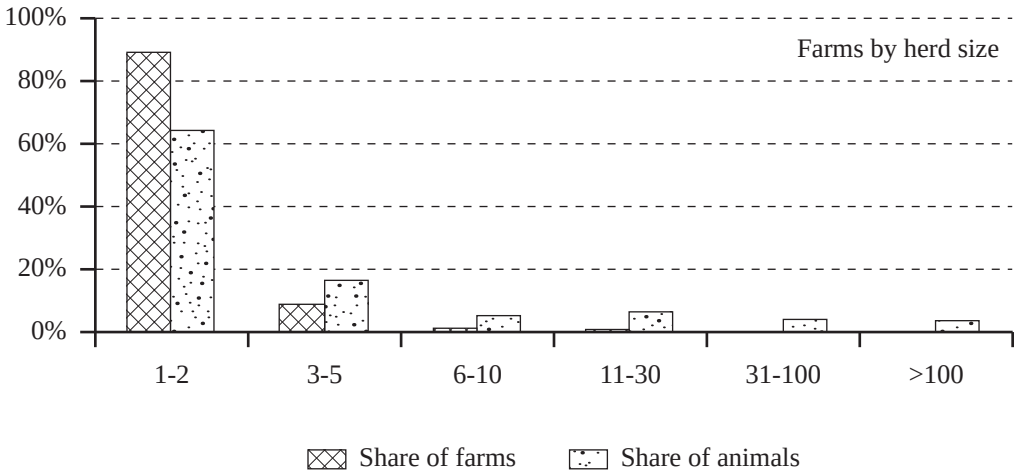

Figure 2: Structure of cow milk production in Romania, April 2009

Source: Own illustration based on Romanian Ministry of Agriculture, Forestry and Rural Development.

However, despite a general fragmentation, a gradual increase in average farm size can be observed. This is especially true in the case of full-time enterprises, where there is a general tendency towards forming fewer but larger units. Adopting the EU standards and activities of the focal companies are the driving forces behind the dynamic development of more competitive and sustainable agricultural structures. Because the Romanian milk quota[5] has not yet been reached, specialised dairy farms are not restricted in their growth. Thus, the role of specialised, large-scale milk producers (>30 cows) is recently disproportionately increasing in this market.

At the same time it is evident that the middle category (those with three to five cows) is declining, whereas the shares of relatively larger and smaller milk producers are increasing. Hence, a polarisation in the production structures can already be observed. This development is similar to processes observed in other countries with a similar agricultural structure.[6]

As the structure of dairy production changes, there is an increasing tendency towards replacing the indirect method of milk collection with direct deliveries from the farm to the processor. However, the choice of the procurement channel depends on the production structure in each individual market. In areas that still have fragmented farm structures (such as Transylvania), the indirect channels dominate. Generally, this structure impedes cost reduction and quality improvement. On the contrary, in areas such as south Romania (around Bucharest), direct deliveries predominate. Some dairies such as Danone no longer procure raw milk via collecting points; today, Danone procures raw milk directly from (relatively large) farmers. Some additional quantities are provided by an intermediary (from another region or country). Likewise, other foreign investors prefer to deal with a few larger suppliers to reduce the transaction costs (collection/transportation costs, quality risks).

[5] For the 2007/08 quota year, the total quota for deliveries to dairies in Romania was 1.34 million tonnes, 70% of which was used. There is also a separate quota of 1.72 million tonnes for direct sales to consumers. The registered direct sales indicate that 83% of the direct quota was utilised in this period. In 2008 the total production in Romania accounted for 5.5 million tonnes. This implies that about three million tonnes are still marked as individual consumption and losses, and is indeed again an indication of the existence of a large black market.

[6] For example, in Poland around the time of the EU accession, the number of farms with four to five cows started to decline. Currently (2007/2008) it can be observed that the group of farms with fewer than ten cows is decreasing. At the same time, many households still hold one (maximum two cows). The relevance of these semi-subsistence farms continually increased in the last decade; for example, their share of the total number of milk farms increased from 40% in 1996 to 48% in 2007.

For the southern part of Romania, the higher demand for quality products and hence the respective activities of retailers and leading companies have had a significant influence on consolidation of the procurement base. The relevance of milk procurement and the structure of deliveries with regard to direct and indirect (collecting points) deliveries is shown in Figure 3.

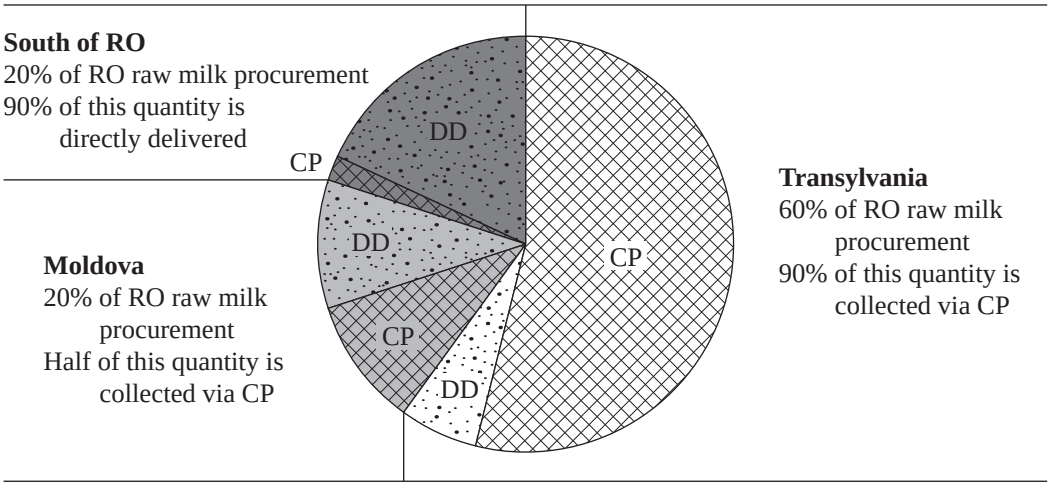

Figure 3: Regional structure of the milk procurement in Romania in 2008/2009.

Notes: DD: Direct deliveries from farm to dairy, CP: Collecting points.
Source: Own illustration based on estimations of an APRIL representative.

2.4. The Common Agricultural Policy

The EU has recognised the specific needs of the new member states (NMS) with regard to the restructuring demand and the characteristic dualistic structure of the agri-food markets. Thus, financial aid has been provided and allocated to those countries to support the sustainable development of this sector. Prior to EU accession, the SAPARD programme in particular focused on the agri-food sector and rural infrastructure, and under this programme both the agricultural administration and the beneficiaries (farmers, processors) gained first-hand experiences with measures similar to those provided under the CAP. The majority of these funds were allocated to particular stages of the marketing chain. For example, the support focuses on investing in agricultural holdings and food processing (i.e. to facilitate the adoption of minimum [mandatory] quality standards), setting up producer groups (horizontal integration), or improving vocational training for actors in the agri-business (knowledge transfer). However, few financial resources have been allocated to foster the relationships between producers and downstream businesses to create sustainable partnerships. Additionally, some studies indicate that mostly large units (farmers, processors) benefited from these measures due to their improved access to information and possibilities to pre-finance and/or co-finance the investment projects (Luca, 2007). On the contrary, for most of the small and medium-sized units, the reduced capacity to co-finance the investment was one of the main limiting factors that delayed the absorption of the SAPARD funds, especially in the first period of the programme's implementation.

Since Romania's accession to the EU, agricultural policy implementation has been based on the CAP structure (two pillars). In each country, the organisational structure follows the administrative requirements of each of the two pillars.[7] For the NMS, additional transitional measures have

[7] Council Regulation (EC) No 1290/2005, Regulation (EC) no. 1698/2005).

been introduced into the second pillar, such as supporting semi-subsistence agricultural holdings undergoing restructuring and setting-up producer groups. Romania and Bulgaria, the newest member states, can potentially benefit from these measures until 2013. The objective of these measures is to improve the competitiveness of the agricultural sector by bringing small and semi-subsistence farms into the market (NRDP, 2008).

2.5. Vertical coordination and access to production factors

The findings discussed in this chapter are based on semi-structured interviews conducted with different stakeholders along the Romanian dairy supply chain and representatives of the Romanian agricultural administration in early 2009.

The representatives from the dairy sector were usually processors, producers and experts in relevant organisations; the goal of the survey was to identify the design of vertical coordination and the use and sources of structured finance instruments to provide access to production factors such as know-how/information, capital and specific inputs. Additionally, the intention was to identify opportunities and challenges fostering or hampering access to production factors and hence vertical coordinatioThe aim of the survey regarding representatives of the agricultural administration was to assess the quality of service provided to Romanian farmers within the CAP, the quality of back-office support to policy-makers and planners, as well as the quality and client orientation of technical and socio-economic advisory and extension services. In order to additionally assess the administrative service quality as perceived by the farmers, semi-structured interviews with farmers in one region (Harghita County, Transylvania) were carried out. The survey included both recipients and non-recipients of CAP payments.

The conducted surveys indicated that vertical coordination takes very heterogeneous forms in the Romanian dairy market. The most sophisticated instruments are provided by chains governed by a foreign direct investor (FDI) as an initiator of contracting. Domestic companies still lag. Small dairy chains have restricted access to all production factors (capital, inputs, know-how) and hence show quite loose partnerships along the chain or tend towards vertical integration. The results indicate that the majority of domestic dairy chains still have a large demand for any type of support. The main findings are summarised below.

i. The enormous demand for basic quality controls has not yet been met

The interview results reveal that especially small chains (farmers, processors) have restricted access to any kind of veterinary support and quality control, even to those which are required by law. The production holdings should undergo periodic inspections to ensure that the nationally-regulated hygiene requirements for the production of raw milk are met. For example, a milk holding is given an appropriate health certificate as a result of a positive inspection. To our knowledge, only a small share of farmers possess an appropriate certificate, which indicates considerable quality risks at the procurement stage.

Farmers in Romania generally have three alternatives for the control of raw materials: i) The farmer can receive the respective service free from the milk processor; ii) the Veterinary Sanitary County Department (DSV); or iii) independent laboratories.

Our findings indicate that because quality controls in independent institutions are both efficient and equally beneficial, the establishment of similar independent laboratories should be encouraged.

ii. The more sophisticated the dairy chain, the better its access to know-how

The provision of a technical advisory service appears to be more effective in well-functioning supply chains. Whereas the top companies usually provide a well-structured extension service and vocational training, the large and medium-sized domestic dairies focus on "informal information exchange" and usually give "…oral advice to farmers who wish to expand their milk holdings and specialise more strongly in milk production," (respondents' answers). It also holds that the larger the farm, the larger the processor's willingness to advise the farmer. Respondents that represent small chains claimed that neither processors nor farms receive any kind of technical advice. It is interesting to note that the majority of small and medium-sized processors did not consider providing and do not wish to provide education to their suppliers. They indicated, however, that "…the system should solve the major problems first," while providing more extension services and vocational training to the farmer. In some cases, they indicated that even education on basic farm economics and business culture is needed.

iii. Access to capital is strongly skewed among dairy chains

In order to exploit the full potential of the value chain, the initiators of contracting require sufficient funds and cash flow to finance the arranged instruments with suppliers. Again, the prosperous dairies have better access to financial sources originating from both i) private and ii) public providers.

We found that farmers and processors linked to foreign investors have the best access to capital. International foreign investors (Danone, Friesland) have access to their own companies' capital. Furthermore, we found that domestic processors who have links with international finance through contracts with international companies (such as Friesland/Napolact and Covalact/Campina) can more easily access money from the parent company. Our findings suggest that only a proportion of domestic companies and farms benefit from governmental support. The interviews indicated that small and medium-sized dairies have restricted access to governmental programmes because not all domestic companies were or are eligible for different governmental programmes.

Some of the initiatives were again hampered by the lack of capital needed to cover the farmer's own participation in the investment. Commercial banks usually refused to provide credits to cover the farmer's own participation. The banks did not accept any farmer's pledge or mortgage as a loan guarantee. The respondents mentioned that banks did not consider livestock, equipment or buildings owned by farmers as eligible criteria for credit. The only factor increasing the farmers' ability to secure credit was a large area of land. Hence, the majority of farmers are unattractive to banks. In some cases the dairies offered to provide respective pre-financing to the affected farmers. An interesting issue is that some of the farmers did not accept this offer, because they were afraid of "…becoming too dependent on both the processor and the bank".

iv. Small chains face additional challenges that are not only due to the heterogeneous support in the past

The investigated small and very small dairy chains usually provide generic products at the cheapest possible prices. They normally distribute their products via their own outlets (60%), wholesalers and food services and small shops, usually "…by its own car from gate to gate of the purchasers." Oral contracts predominate. Some of the chains are not registered, as was the case of one investigated farmer-processor involved in black market operations. The main reason for the low competitiveness of these products and their marketing to small shops is the low quality of raw

materials. The respondents indicated that many of their suppliers are not certified producers, and provide milk quality that is far below EU standards. Additionally, the quantity produced is low as there is a lack of both specialised dairy cow breeds and "…prospective to grow for small farmers". Quality control is a challenging issue for these chains. Some of the dairies provide a 'trusted' man at the collecting point, who supports the dairy while controlling for quality and preventing any fraud. However, "…even if at the collecting point the quality of delivery is controlled (fat, protein) it does not restrain some small suppliers from ongoing cheating", e.g. by adding water to the milk. To reduce the hazards of providing low quality products, some small processors provide certain financial assistance to the farmer (e.g. financial support to renovate farmers' residences).

2.6. Institutional development

The responses of the representatives of the Romanian dairy market argued at many stages that the institutional framework should still be improved to support the efficiency of market coordination mechanisms. In this part of the study we consider how the business environment works.

i. General institutional framework

Our findings suggest that there are major impediments regarding the scale of i) the black market and ii) contract enforcement.

a) The black market is not effectively addressed by governmental institutions. The increasing requirements implemented in the course of EU accession have intensified dairy milk operations on the black market. Additionally, certain farmers and small processors avoid paying taxes and hence avoid registering their business activities. Some respondents mentioned that the numerous middlemen especially contribute to the persistence of the black market. Many of the interviewees indicated that governmental institutions must provide instruments to reduce the scale of the black market. It is interesting to note that the call for such solutions was not very intensive and was very seldom, even though the share of raw milk sold on the Romanian black market is considerable (30% to 40% of milk production).

b) Contract enforcement is (still) difficult but essential. Enforcement is crucial to make any of the contracts or supplier-assistance programmes sustainable. Enforcement is especially problematic in environments in which public enforcement institutions are essentially absent. Evidence from the interviews suggests that all dairies – regardless of their size – face contract enforcement risks. For example, some farms diverted their pre-paid inputs for other uses. In other cases, despite being provided assistance instruments on a contractual basis, the suppliers sold all or part of their produce to other companies or traders. Trust is also often lacking within the large chains. Even within the small chains, contract enforcement is still a challenge. The small dairies usually use short-term (monthly) contracts with small (one or two cows) and medium (11 or 20 cows) farmers. The biggest farm is seldom larger than 40 cows. Contracts are mainly trust-based, even if they are written. The respondents indicated that they do not pay much attention to the formal (written) contract. The low level of contract enforcement is also one reason why the small chains see vertical integration via the establishment of farms as one solution to overcoming delivery problems within one firm (internalisation of market transactions). Thus, the government should be encouraged to create the proper institutional conditions for successful contracting. Alternatively, the initiators of contracting must find an innovative way to design self-enforcing contracts. This, however, requires extensive knowledge of the local partner.

ii. Quality of agricultural service delivery

Additionally, the surveys regarding the quality of the delivery service provided the following main results:

a) CAP measures not targeted to small farmers require conditions that are difficult to fulfil for smallholders. Two specific challenges are advising and delivering information to small farms, as these issues are completely dependent on personal advice, which demands a substantial amount of administrative resources. Small farmers do not have proper records, their land is often unregistered and they are not accustomed to formal paperwork; thus, advising them on applications ties up much of the agencies' capacities at both the county and local level. For instance, field checks have to be repeated for revising failures in land declaration and the fieldworkers, not the farmers themselves, fill out these application forms.

b) There are still many structural obstacles regarding the functioning of the public agencies that provide services to farmers. For example, agencies at the county level are sometimes found in multiple locations. This makes the contact that farmers do have with the administration more cumbersome and increases farmers' transaction costs, e.g. for requesting information. In addition, this may also lead to incoherent information provided by the agencies, as the distance hampers direct and informal communication. Additionally, agencies are challenged by human resource management, which results in less motivated and less qualified staff. The main obstacle of human resource management seems to be the wage system. Firstly, due to low wages, qualified employees leave for the private sector after receiving training and insight into public administration. Low salaries also hamper the recruitment of qualified employees. Secondly, different salary levels, for instance between the paying agencies on the one hand and the DARD[8] and the COAC[9] on the other hand, can lead to conflicts. Furthermore, single agencies pay diverse bonuses as top–ups, an arrangement which makes the system even more opaque. Further problems, such as the changing legal administrative framework (ongoing adjustment to changing EU legislation), conflicts of interest and public internal financial control still exist.

c) A lack of producers' associations and their feedback lead to low enforceability and little participation. Farmers do not have clear means of claiming their interests and there is a lack of farmers' associations that represent small farmers. Due to their experience with cooperatives during the socialist era, in general most farmers are sceptical of associations or producers' groups. Farmer and expert interviews revealed once again that lack of trust is still a problem for increased cooperation among farmers. Nevertheless, there are some success stories, such as the Farmers' Association from Udvarhely, Harghita County, which began assisting farmers with applications. Moreover, there are also some newly-founded farmers' associations like the LAPAR[10] and FNBAR[11], which represent farmers' interests at the national level, but thus far they represent mainly large farms. There are still no associations that represent small farmers at the national level. All in all, associations and NGOs play a minor role in the farmers' business. Both activities and the farmers' courage to improve implementation of CAP measures are missing. Moreover, farmers rarely provide individual feedback to agencies and do not know about the client charter. In addition, agencies do not systematically collect feedback from farmers about the delivery of service.

[8] DARD: Directorate for Agriculture and Rural Development.
[9] COAC: County Office for Agricultural Consultancy.
[10] LAPAR stands for "Romania Agricultural Procedures Associations League".
[11] FNBAR stands for "Romania Agricultural Procedures National Federation".

d) Producers' associations seem to be less attractive partners for the processors. The evidence from our survey suggests that the initiators of contracting in dairy chains prefer to invest in partnerships with trade companies, rather than farmers' associations. Some respondents indicated that "…due to the lack of solidarity among farmers' associations it is difficult to build a strong lobby or any kind of umbrella organisation". Thus, the Romanian government should rethink how to more effectively support the establishment and functioning of producer organisations to make them attractive to partners in dairy supply chains and to strengthen their 'articulation power'.

3. Conclusions and recommendations

The results indicate that the dairy market, likewise the whole agri-food business in Romania, is characterised by a dualistic production and processing structure. In dynamically changing market conditions, the relatively small chains (farmers, processors) are usually disadvantaged regarding access to input and output markets. Following Hertel (2007), targeted policy interventions that correct the underlying market failures might be win-win solutions for efficiency and equity. The development of (dairy) farmers requires sufficient access to different production factors, i.e. land, labour, technical skills and information, purchased inputs, and fixed and working capital. We found that growth for some large dairy producers, especially in relatively prosperous regions (Bucharest area) is increasingly restricted by access to additional land (only), as in the majority of producers in Western countries. On the contrary, the majority of farmers and dairy chains are restricted by almost all other production factors. The majority are small or medium-sized units, all of them demanding a complete set of these factors of production and input and output services on reasonable terms.

This situation raises three key questions: i) how can agricultural policy measures adjust to the unique circumstances of the NMS and what are the unique service demands of the different groups of farms; ii) what strategies are needed to deal with the large number of small entities (Fritzsch et al., 2008) to help with adjustment and modernisation or exit from agriculture; iii) how to increase competitiveness of the few medium-sized farms?

How can the CAP effectively engage in the problem?

Our first conclusion is that two years after accession, the CAP has successfully supported many investments to upgrade the dairy chain in Romania. However, this support seems only to facilitate the development of relatively large and financially strong farms and firms, which usually have sufficient financial means to access modern agricultural supply chains. At the same time, the traditional financial instruments do not help establish mechanisms to connect small producers and producer organisations with food processors, marketers and traders. Thus, the gap between the prospering chains and small or medium-sized dairy chains seems to have increased over the last two years. This result questions the effectiveness of the traditional CAP instruments, which seem to be unsuitable for the dualistically-structured NMS.

Since EU accession, the NMS have additionally benefited from transitional measures such as aids for semi-subsistence farmers and support for producers' groups. However, the effectiveness of these measures in the Romanian case seems to be low or should be questioned. For example, our results indicate that the access of potential beneficiaries to semi-subsistence aids is relatively restricted, indicating this measure's low impact. Additionally, we argue that these measures probably encourage some nonviable small farms to stay in agriculture (in the dairy market). Since the majority of these farmers do not comply with mandatory EU standards, their existence contributes to the persistence of the black market, which hinders the allocation of resources (i.e. land) to more effective units, and hence the competitiveness of the Romanian dairy supply chain.

The case of active entrepreneur (small commercial farms)

The need for governments to support commercially-oriented small farms (chains) to exploit growth opportunities is less obvious. In functioning markets, one expects that the government should stand back and let the 'invisible hand of the market' coordinate the behaviour of economic agents. In theory, this process should ensure the optimal allocation of production factors to the most efficient commodities, regions, organisational forms and farm sizes. Hazell et al. (2007) argue that in this case, "…policy interventions would focus on providing an enabling economic environment for market-led development, typically by providing stable and undistorted economic incentives and essential public goods and services". However, our results indicate that both Romanian institutions and markets show many failures, which can lead to discriminatory and inefficient outcomes.

Generally, the importance of improving the delivery of service in Romania to reduce market distortions is obvious. However, even with effective institutions, transaction costs cannot be reduced to zero. Looking at the various marketing channels in the Romanian dairy chain, a self-enforcing dualism exists: the large supply chains (and commercially-oriented farmers) that use direct marketing channels usually face lower transaction costs (higher quality, lower transportation costs per unit and quality risks). In contrast, small farmers whose production does not considerably exceed the subsistence level incur relatively high (per unit) transaction costs when selling their produce on local markets or via collecting points.

In our opinion, the government should help maintain the dualistic structure of the dairy sector in Romania, due to the various advantages of such a structure (competition, landscape, job opportunities, etc.). These are our suggestions:

… provide financial aid to support niche marketing. Through negotiations with the EU, Romania obtained brand recognition and protection for the name of origin (PDO) and geographical designation (PGI) of several types of products (i.e. some yoghurt sorts and semi-hard cheeses). However, there is need for a better understanding of these protected products as well as a general regard for the 'traditional/organic agriculture' meeting of European standards. Some respondents indicated that lacking know-how and experience, as well as the complexity of applying for potential aid, are the major challenges to the development of marketable regional food production. For the producers it is important to change the thinking from a production orientation to market orientation to successfully target the market niches. Additionally, the provision of additional capital is needed to first invest in the local brand and finally to collectively promote the local products.

… however, **target active farmers only.** Effective policy measures (extension, financial support) should target active farmers or business starters with a high level of entrepreneurial skills and good business concepts. "Investing in education of farmers which are averse to any change is a waste of money."

… do not mix agricultural and social policies. Some small chains still procure raw milk from very small farmers (with only one or two cows). However, the quality of the milk is low and the farmers are usually advanced in age and are neither flexible nor willing to adjust to changing market conditions (quality requirements, farm economics, contracting). The majority of these farmers do not possess milk quotas. Thus, for them it will be difficult to even enter the legal market. Due to these additional market entry barriers, it cannot be expected that those small farmers will ever be vertically integrated into modern supply chains. The case of the small farmers should not be the responsibility of the Romanian Ministry of Agriculture since they represent a social problem ("if the Ministry allocates money for them, the money is lost forever"). A solution for the dairy farms would be to help them diversify their production portfolios or to include them in the European retirement programmes.

In this context, the EC should consider an expanded range of eligible measures under Pillar II to provide advisory services geared exclusively towards the needs of smallholders who do not qualify for farm payments and who may want to explore off-farm employment, or alternative enterprise options while maintaining a semi-subsistence operation, or to exit agriculture altogether. After the Health Check of the CAP there are some additional opportunities to engage in and financial support is available to diversify the incomes of the rural population.

However, at this stage one might question the role/effectiveness of Pillar II measures, since some of them are linked to agricultural production. Since a clear differentiation between the agricultural and social (regional) policy is not given, it is likely that this structure contributes to the persistence (scale) of the currently observed paradigms such as the freezing of agricultural structures and the black market. Perhaps for the next CAP reforms (after 2013), joining the cohesion policy and Pillar II measures should be considered (especially the measures regarding water, landscape management, etc.) to guarantee a clearer direction and clearer goals for the particular EU policies. At the same time, the scale of the paradigms such as the freezing of agricultural structures and the black market could be reduced and the effectiveness of the EU policy measures increased.

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Report on the Position of the Hungarian Milk and Dairy Sector

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Keywords

Hungary, dairy market, milk production, milk processing, competitive disadvantages

Introduction

In recent years the Hungarian milk sector has had serious problems. Since the EU accession, domestic milk production has continuously declined, the balance of the foreign trade of milk and dairy products has deteriorated year after year and the degree of self-sufficiency has fallen below 100%. This paper, drawing on the study of Popp and Potori [2009], analyses why the competitive position of the Hungarian milk and dairy sector has collapsed in recent years.

Our analysis does not start from agricultural production but from the side of the consumers, that is, from the demand, and approaches production from this viewpoint. Namely, the situation of production cannot be evaluated without knowledge of the food industry and trade phases, and, without the buyers/consumers' requirements, because agricultural production is the very sector where the need for adaptation is most compelling.

Prior to discussing the situation in the dairy sector it should be recalled that the most severe problems are not sector-specific, but derive partly from the macro-environment (e.g. tax and contribution burdens, bureaucracy, land issues, state involvement etc.). These problems are discussed in detail by Popp *et al.* [2008] and their presentation is not within the scope of this paper.

Methods

We visited several important participants in the supply chain (agricultural producers, food industrial processors, retail trade chains, input suppliers and trade advocacy organisations) and tried to summarise the problems and show functional interrelations in the course of professional discussions and interviews[2]. The synthesis of the consultations was completed by information available from the Ministry of Agriculture and Rural Development and the Agricultural and Rural Development Agency, as well as by data from the database of the Central Statistical Office and the knowledge of the Research Institute of Agricultural Economics.

The dairy market in Hungary

The changes in world market prices influence the Hungarian market for milk and dairy products through Hungary's EU export opportunities. As a result of the European Community's (EC) deteriorating export competitiveness, the internal market's pressure is increasing and the competi-

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[2] For the sake of exposing the objective and subjective competitive disadvantages we have also visited producers, processors and organisations in Slovakia and in Poland. When selecting our interviewees, we did not strive for full representativeness as our competitive chances may be realistically evaluated from the viewpoint of the more important market players.

tion among member states is sharpening [European Commission, 2009]. It is determinative for the Hungarian milk and dairy market that Hungary's exports are principally to other EU member states and to other European countries. Typically, Hungary exports only special products (mainly cheese varieties) to greater distances (for example to the Arabian countries), where quality and reputation are more important than price.

At present, 10-15% of the raw milk and 20-25% of the processed milk (expressed in milk equivalent) is exported; even so the foreign trade balance of milk and dairy products is negative (Figure 1) because imports of high added value products have increased. Hungarian exports are not mainly constituted of high added value products (with the exception of supplies due to the inter-country division of labour of some multinational company groups) but mainly of raw and skimmed milk. According to the data of the Hungarian Central Statistical Office (HCSO), Hungarian milk exports have been continuously growing since the accession to the EU, amounting to 274,000 tonnes in 2007 and 313,000 tonnes in 2008. Italy is the largest market, but Romania and Slovenia also purchase increasing quantities of Hungarian milk. Transport of liquid milk exports is principally undertaken by the foreign customers and not by domestic companies. Deliveries to Romania are the only exception, as customers of that country usually have insufficient transport capacities.

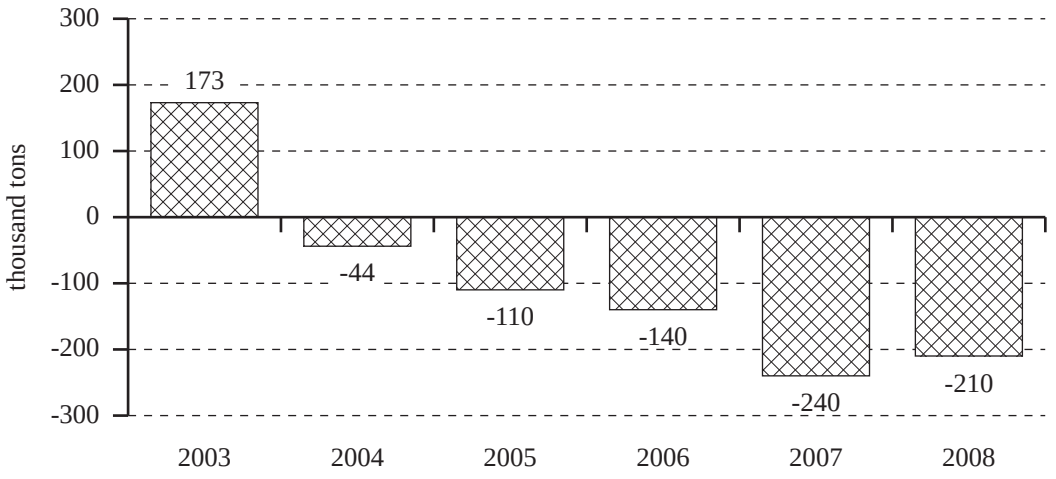

Figure 1: Net trade balance of milk and dairy products in milk equivalent
Source: HCSO, AKI-PÁIR, and calculations by the Agricultural Policy Research Department of AKI

The trends of the raw milk exports have a determinative influence on the entire sector. Beyond the indirect impact of the prices in Germany, the purchase prices of the milk in Hungary are mainly determined by the prices available for Hungarian exports to Italy. The dynamic increase of the exports is also shown by the fact that by 2008 Hungary had become the third largest raw milk supplier to Italy – after Germany and Austria – even though in 2000 it was not a supplier to Italy. The exports of dairy products have declined following the EU accession, even though exports to third countries remained unchanged. The enterprises are usually able to export at prices that are lower than the domestic prices. Unprofitable exports are often maintained in order to dispose of the temporary surplus generated by the inequalities in the production and internal consumption.

Several processing companies have almost entirely stopped production of previously important export products (milk powder, bulk butter) and their capacities are out of use or have been dismantled.

Processing enterprises, especially companies with international relationships, also purchase small quantities of raw milk from time to time from abroad. The majority of the imports are however constituted of semi-finished products: cream, bulk butter and other additives required for the production of some products. In the aggregate, only small quantities arrive in the country, amounting to a small percentage of the imports. Importation is principally not motivated by the lower prices but by the fact that the fat content of Hungarian milk is low, therefore milk fat is insufficient.

Table 1

Foreign trade structure of milk and dairy products (2003-2008)

		2003	2004	2005	2006	2007	2008
Export, tonnes	Milk, cream	45,587	49,386	113,806	228,690	274,436	312,966
	Cheese	23,594	19,694	17,485	13,702	11,108	10,796
Import, tonnes	Milk, cream	4,003	29,427	72,657	72,816	123,059	99,254
	Sour cream, yoghurt	12,070	18,573	24,998	25,690	34,351	33,026
	Butter	1,663	4,356	3,766	5,243	5,428	4,478
	Cheese	12,719	18,315	22,893	32,668	39,155	34,718

Source: HCSO and calculations by the Agricultural Policy Research Department of AKI

Since Hungary's accession to the EU, the EU regulations have been applicable in the Hungarian milk and dairy products market. Milk producers received top-up payments linked to production from national funds, the so-called dairy premium. As of 2007, these supports have been decoupled from production, on a historical basis (the milk quota of 31 March 2007). Dairy producers in 2007 and 2008 were entitled to up to HUF 8.03 support by historical eligibility units, that is, by kilogramme, up to 1.99 million tons on the national level.

For Hungary, the national reference quantity (the national quota) amounted to 2,019,300 tonnes for the quota year 2007/2007, while the national reference fat content was 3.604 percent by mass. According to the data of the Agricultural and Rural Development Agency (paying agency), the producers had 1,856,014 tonnes of supply quota and 53,500 tonnes of direct selling quota at the end of the quota year 2007/2008. The utilisation of the supply quota amounted to 1,666,762 tonnes, that of the quota of direct sales by producers to 52,002 tonnes. The rate of utilisation of the national quota amounted to around 85% and, within it, that of the quota for processing was 89.8%, showing that *growth is not obstructed by the quotas at national level.* It should be noted, however, that most of the EU member states were unable to fulfil their processing quotas during the quota year 2008/2009 (Figure 2).

The gradual increase of milk quotas in the EU concerns Hungary directly, because as a consequence milk and dairy production is growing in certain member states (e.g. Germany, Italy and the Netherlands). The quota increase may influence Hungarian raw milk export, as member countries with more efficient production may have an advantage on the Italian market, narrowing Hungary's exporting opportunities and thus further depressing the purchase prices in Hungary. It is however certain that through continuing concentration of the EU's milk production the large specialised factories will gain further market share, resulting in a decrease in the production costs at EU level. In the long term – and subject to the trends in feed prices and to climate change – milk production may shift towards the member countries with abundant precipitation and excellent grass yields, thus allowing production of cheap mass fodder.

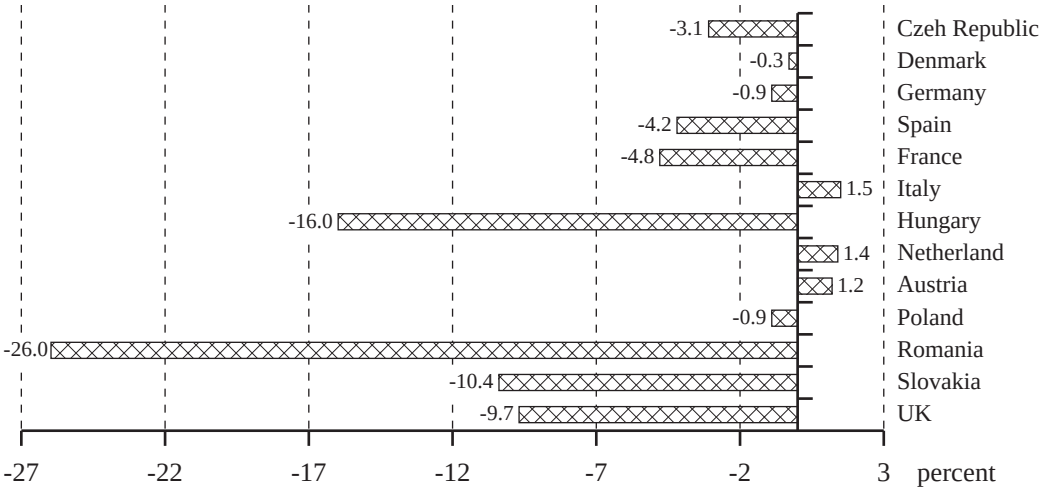

Figure 2: Processing quota utilisation of some EU member states in 2008/2009

Source: Calculations by the Agricultural Policy Research Department of AKI on the basis of DG AGRI data

Consumption

Unlike the global trends, consumption of milk and dairy products has only slightly increased in Hungary during recent years, remaining far below the level of the 1990s. According to the HCSO, the annual per capita consumption in milk equivalent amounted to about 180 kg in 2006 (while the average in the EU-15 countries exceeded 260 kg). The biggest lag compared to the more developed member states is in the field of butter and cheese consumption. In Hungary, consumption of liquid milk amounted to 81 kg per annum per capita, while the average consumption in the EU-25 countries approached 93 kg. Growth in liquid milk consumption is not expected in Hungary but demand may perhaps be encouraged through launching new, innovative dairy products onto the market [Hockmann and Vőneki, 2007].

In the last few years, the growth of cheese and butter consumption has accelerated. The per capita cheese consumption (quark included) in Hungary amounted to 10.6 kg per annum, exceeding by 18% the quantity of 2004. The average per capita cheese consumption of the EU-25 countries amounted to 18.4 kg in 2006. The global butter consumption was 1.3 kg per capita in 2006, while it amounted to approximately 4.1 kg in the EU-25 countries. In Hungary, the per capita butter consumption was just 1.2 kg in 2006, even after increasing by 33% in a single year. The negative judgements concerning animal fat consumption are decreasing and popularity of spreadable butter is increasing against margarine. The extended shelf-life convenience products are gaining popularity; also Hungarian consumers purchase breaded cheese, flavoured butter cream etc. in increasing quantities. ESL (*extended shelf-life*) milk that can be stored for 21 days is a novelty gaining popularity; short time pasteurisation occurs at 130 °C (for about half a second), thus the milk's flavour and original properties are better conserved.

The milk and dairy product consumption habits are still basically determined by income levels (cheese consumption is growing more quickly in the world's more developed countries, while in the poor countries, liquid milk consumption is principally increasing). In Hungary, too, further increase in the consumption of cheese and milk desserts may be expected. Due to the low level of

cheese culture (processed and semi-firm cheeses continue to be most in demand), there are still opportunities in the cheese market: special products could fill market gaps.

Loyalty to the Hungarian products is not typical; at most, consumers keep to some "approved" old domestic brands, but are open towards the (cheaper) imported products preferred by the retail trade chains. Of course there are some Hungarian products that continue to be popular to such extent that even discount stores mainly relying on imported products cannot neglect them. These are well-distinguished, highly processed and high added value products, principally yoghurts, bars and milk desserts. Only sales of these domestic products have presented real growth and no new, innovative Hungarian products have been launched on the market recently.

Trade

As a consequence of the direct commercial relationship, changes in the dairy product prices in other member states have strong effects on the Hungarian market of dairy products. By importing from other countries, the retail trade chains compel the Hungarian dairy industry to adapt. Merchants strive to cut prices to gain consumers and increase their attractive force with the help of cheap imported products. According to estimates, the milk processing companies sell 75 to 80% of their products within the country to the retail trade chains, the remaining quantity being exported. The pecentage of milk and dairy products originating from abroad may account for up to 30% of consumption (or even 40% in the case of cheeses).

Competition in the dairy products market is tough; the processing companies underbid each other and are often compelled to accept prices below costs. The market strategy of the retail trade chains is unilaterally consumer-oriented; they a follow price adjustment strategy and, as regional purchases are increasingly typical, they do not take into consideration the local possibilities and conditions of milk production and processing (e.g. high or increasing production costs).

Own brand products of the commercial sector constitute a serious challenge to the processing companies. These are usually the cheapest products (partly from imports), sold in the largest volumes. There is strong competition for their production, but producers may improve the utilisation of their capacities through their production, while decreasing the production rate of their manufacturer brand products. Trends show that the price gap between commercial and manufacturer brands is narrowing and the own brands of the retail chains target increasingly higher quality categories, too.

The processing companies often receive orders from the commercial chains on daily basis, thus sometimes they have to deliver within 24 hours. Due to the frequent sales transactions, the prices are often changed. Production is difficult to schedule; some milk processing companies accept orders in excess of their capacities and purchase the excess goods from other sources, thus avoiding their own production remaining unsold. There are companies that have relatively stable order quantities, but at other enterprises the quantities ordered may have even twenty fold differences from one week to another. Sales transactions are usually (but not always) discussed by the processing companies and the commercial chains one month in advance. It also happens that such transactions are established in contracts for a year in advance. Processing companies estimate that about 20% of the dairy industry's total production value is marketed at reduced "sale" prices.

Processing

In Hungary, milk production amounted to 12% of the food industry's production in 2007. According to the data of the Hungarian Tax and Financial Control Administration, 50 milk processing companies have been operating since 2004, their number remaining practically unchanged. Despite the large number of processing companies, the degree of concentration is relatively high: based on the 2007 year's data of AKI and the HCSO, the largest company has approximately 30%, the five largest processing enterprises about 70% and the ten largest companies more than 80% share of milk purchases. With these data Hungary has the leading position among the Visegrad countries, but a much stronger concentration characterises milk processing in the EU-15 countries.

The processing companies purchased 74% of the domestic raw milk production in 2007. 15% of the total domestic production was exported. Imported raw milk amounted to 8% of the total processed quantity (Figure 3). The imports of milk and dairy products calculated in milk equivalent amounted to 703 million kg, considerably exceeding the exports of about 610 million kg.

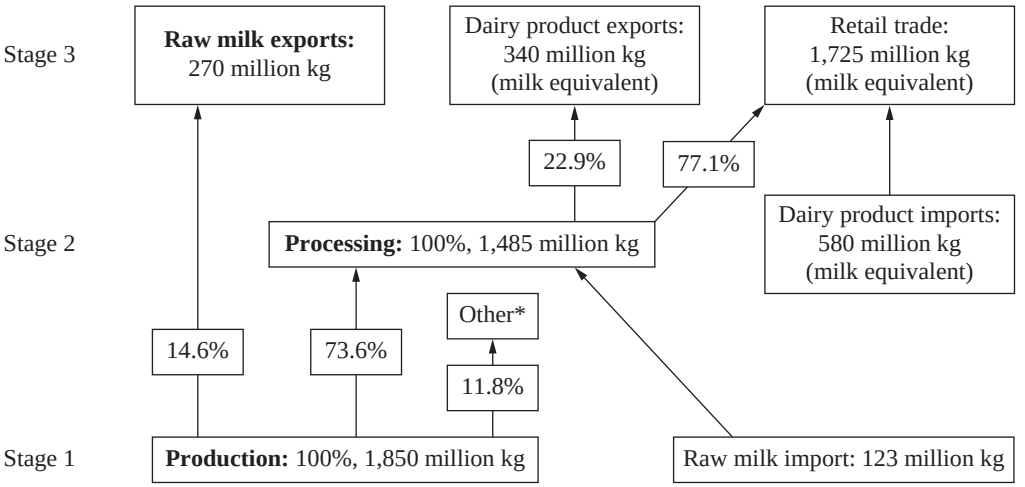

Figure 3: Stages and marketing channels of the dairy industry

* Direct sales and other non-traceable milk turnover.
Source: HCSO, and calculations by the Agricultural Policy Research Department of AKI

Even the smaller milk processors purchase milk from several dozens of producers, while the larger ones buy from up to 200 producers. The processing enterprises have a relatively strong bargaining position, having contacts with a large number of unorganised and relatively undefended producers. There is a general belief that smaller companies consider producers as their partners, having the aim of establishing long term co-operation. The purchase prices are defined by mutual agreement, in compliance with market prices.

The processing companies apply more or less uniform contractual basic prices, changing subject to the fat and protein content, and some enterprises may also differentiate (up to 5%) on the basis of quantity. When establishing the basic price, a majority of the processors start from the national average price data regularly collected and published by AKI, or from the price statistics of the product council. Thanks to its sector neutrality, in most cases the AKI price is accepted and purchases are implemented mainly on its basis. Several critical statements may however be made

in respect of pricing. Firstly, to a certain extent the processing companies are able to influence the data gathered; the prices reported are not identical with the amounts actually received by suppliers, because they are completed by premiums and other additions such as professional consulting fees, transport cost reimbursement etc. (Thus prices paid for a litre of milk may in fact exceed by HUF 3 to 5 the price actually published.) On the other hand, the published price is based on historical data, it does not reflect the differences arising from local conditions. Furthermore it has an automatic feed-back effect on real prices. At the same time it is important to emphasise that, due to the increasing amount of excess milk, processors are purchasing an increasing percentage, 10 to 30% of the total milk supplies, on the *spot* market.

The weak quality parameters of milk and its low protein and fat content (Figure 4) spoil the competitiveness of processing and cause extra costs against Hungary's European competitors.

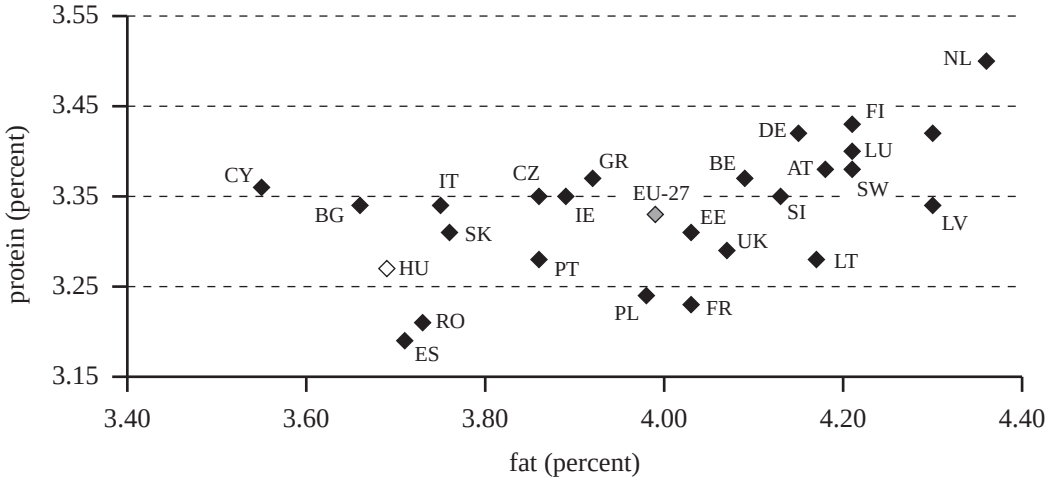

Figure 4: Nutritional content of raw milk in the EU member states (2008)

Source: Eurostat

The rate of utilisation of the dairy industry's capacities has slightly improved during the last few years at sector level, but still remains very low – estimated to be about 50%. The loss-making butter and powdered milk factories were closed, but in the meantime several investments allowing compliance with the Community's requirements and more efficient operation have been implemented. There are great differences among enterprises and even among factories. While the most competitive processors in Western Europe and the surrounding countries strive for maximally utilising the capacities, for two- or three-shift operation, single shift operation (perhaps extended) is characterising Hungary. Moreover, in some places, the number of the weekly working days also had to be decreased, constituting a competitive disadvantage. Milk processing factories with around the clock capacity utilisation are rare exceptions in Hungary. The multinational companies are characterised by strict co-operation with their other subsidiaries; the importance of the international division of labour is increasing. Co-operation among domestic processors still remains low in the field of the reasonable division of labour; the utilisation of capacities could be increased through assigning production of certain products under contract work.

Almost all processing companies wish to increase their revenues, not through takeovers or mergers but through better utilisation of their capacities. While in the past, larger market share constituted the main strategic objective, by today, improvement of profits has become the principal goal, for example through profile cleaning or better capacity utilisation. Cost cutting is a general aspiration, while the production shifts towards the products with a higher degree of processing. At the same time, however, benchmark analyses are not performed. Where such analysis was done, it transpired that specific water consumption was considerably higher and machine exploitation and energy efficiency remarkably worse in Hungary than with competitors. Correct adjustment of the dry matter content in the case of cheese production is a very important requirement. Recycling of the by-products and of waste water also allow important economies.

Product development, introduction of new packing sizes and of more modern packaging are included among the objectives of enterprises. Based on market research studies performed by the processing companies, development in the category of desserts and cheeses is most rewarding. Even so, *Hungarian companies are behind their competitors in the field of product innovation.* This is for several reasons. On the one hand, enterprises really strong in capital and equipped with modern technologies are mainly owned by foreign investors and operate as subsidiaries of multinational companies. The innovative products are often developed and manufactured by the parent company, while subsidiaries, in the best case, take up the process against payment of a fee, or more frequently, the ready product is directly imported by the trade. The product range is often too large and the quantities produced too low, thus remarkably increasing the costs of developments. In addition, Hungarian consumers are extremely price sensitive, not readily accepting expensive novelties.

The Hungarian dairy industry is unable to compete with the large European processing companies in the field of mass products (e.g. semi-hard cheeses). For example, the market position of the traditional *Trappista* cheese, most popular in Hungary, may be defined as dramatic: the brand is not protected, anybody may produce it at present, while *Edam* and *Gouda* type cheeses manufactured in the Netherlands and in Germany exercise a huge pressure to the Hungarian market of the semi-firm cheeses.

While dairy processing in Western Europe is characterised by high technology level and narrow product range, the situation is just the opposite in Hungary. Thus the market share of the domestic processors will continue to decrease due to growing imports, rendering unavoidable the selection of the companies and further expansion of the foreign dairy products in the sales.

The situation of the smaller milk processing companies (especially of those manufacturing mass products) is becoming increasingly difficult and they are gradually losing ground in the market. These processors principally supply wholesalers and retail trade chains under Hungarian ownership. Due to the small volumes, it is difficult for them to access the shelves of the multinational chains. Therefore, for them manufacturing of special (e.g. lactose-free or organic) products and the expected future propagation of the speciality stores may offer the possibility of survival or through collaboration they could achieve higher volumes or convince the commercial companies to grant separate shelves for their special products.

The market participants are of the opinion that the requirements created by the authorities are over-precise and lacking practical relevance, thus the non-uniform operational mentality of the authorities sometimes causes significant extra costs in milk processing.

The black economy amounts to about 10% of the dairy industry (except for direct sales of raw milk), according to estimates of the sector's participants. Even though the tax evading market players are not price-setters, they quickly fill the market gaps thanks to their lower sales prices.

Production

The bovine population in Hungary has almost continuously decreased during in recent years: according to the HCSO's data, the 703,000 beef cattle counted on 1 June 2009 is 3.4% lower than the number of cattle one year earlier. The number of cows has fallen by 6.4% from 2004 to 2009, amounting to 320,000 on 1 June 2009. Within this, the number of dairy cows was 219,000 (-13.1%), of meat cows 61,000 (+56.4%) and of the mixed utilisation cows to 40,000 (-21.6%). About 80% of the dairy cows are kept by economic corporations and the remaining 20% on individual farms; this rate has not changed in recent years.

Hungary's milk production has been continuously decreasing since EU accession, amounting to just 1.85 million tonnes in 2007. The milk purchase decreased further in 2008, and though raw milk exports have been increasing, a further fall in the output has also been detected in 2009. The trend of Hungarian milk production in the medium term will be remarkably influenced by the effects of the gradual increase and than of the termination of the quotas on raw milk exports.

According to the farm structure survey of 2007, there were 20,000 farms raising cattle in Hungary in that year. Nearly 8,000 of them kept dairy cows. In all, 4,000 farms produced milk for processing. In the production stage of the sector a single important producer organisation has recently been established: the *Alföldi Tej Értékesítő és Beszerző Kft*. With its quota of about 400 million litres, the enterprise had a 31% share of total milk purchases and 20% (expressed in milk equivalent) share of milk processing in 2007. Recently the low prices and the increasing quality requirements have expelled several producers from the market; the smaller ones elected farm gate sales or abandoned production, while the larger ones opted typically for joining producer organisations (e.g. *Alföldi Tej Kft*.).

By examining the farm structure it can be established that the dairy cattle concentration in Hungarian farms is high compared to other EU member states. While enterprises with cattle number between 30 and 99 are in the majority for example in Germany and Denmark, the overwhelming majority of the dairy cow population is held by cattle farms with 100 or more headcount in Hungary. Further strengthening of the concentration is expected in the future. Large processing companies would prefer to have contacts with only 20 or 30 milk producers instead of the current 100 to 150 suppliers.

The domestic milk farms can be divided into two main categories, differing basically in respect of the degree of concentration, the technologies applied and in part also in the production objectives. Farms raising more than 20 cows produce for direct dairy processing, while the rate of own consumption and direct sales is remarkable in the case of farms with less than 20 cows [Fertő *et al*., 2005]. (To be noted: those selling at the farm gate are higher in number than those having direct sale quotas).

The international comparison of milk production costs demonstrates well that, related to the protein and fat content, milk production is relatively expensive in Hungary. Feed costs constitute a determinative element of the cost structure. Although there are remarkable differences among factories in this cost element, the majority of the producers are at a disadvantage against competitors in respect of feed utilisation and of the green fodder use. A further problem is constituted by the fact that the supply of the relatively cheap sugar beet processing and canning industry by-products is continuously decreasing, thus increasing the costs of feeding. The relatively high level of labour costs denotes a competitive disadvantage of the Hungarian milk producers in the field of organisation and labour productivity.

Losses arising from the problems concerning the health state of the stock cannot be neglected either. According Ózsvári [2007] the annual losses per cow due to reproduction disorders may amount to HUF 40-80 thousand (EUR 145-290) in Hungary; this may represent as much as 9-11% of a cattle farm's total revenues. Due to the long period between birthings the output is lower and the reproduction slower. Frequent mastitis due to intensive deep litter keeping is another serious animal health problem causing significant losses.

Sufficient land (in ownership) may give a significant advantage; here a cattle farm is able to produce the necessary mass fodder and can dispose of the manure generated. With the lack of land property, the economic corporations are undefended against land owners in Hungary; however stability of land use is a very important aspect when making long term investment decisions. The problem is further aggravated by the inordinate land ownership relations, the fragmented property structure and by the large proportion of the undivided common property lands. In some regions of the country the majority of the suppliers are foreigners (the participation of the Dutch, Austrian, Italian and Belgian milk producers raising 400-600 cows may amount to up to 40%), with quite uncertain future, due to the unclear and secret so-called "pocket contracts".

Producers' co-operatives play an important role in cost cutting in western countries. Hungarian farmers, however, still make hardly efforts to decrease input costs, even though purchasing associations would be indispensable in Hungary, too, because input suppliers are much more concentrated than milk producers.

Beyond profits realised by the farms, the rural development supports will be the most important sources of investment and development in Hungary during the years to come. However interest for development supports is negligible in Hungary, especially by animal raisers, because the acute lack on capital, the expensive loans, the market conditions and the economic prospects together with production obligations imposed as a precondition for the supports dissuade large numbers of the participants from making improvements.

For some farmers diversification from milk production and additional activities (for example direct sales or operating milk shops, domestic cheese production, landscape management, organisation of corporate or school excursions etc.) may represent a solution. But the success of these activities is highly influenced – beyond availability of supports –by the geographical location and by the personal qualities of the entrepreneurs.

Summary

The Hungarian milk sector has faced serious problems of competitiveness in recent years. The production has continuously decreased, the foreign trade balance of milk and dairy products has deteriorated from year to year and the rate of self-sufficiency fallen below 100%. The rate of utilisation of the national quota (2,019 thousand tonnes) hardly reaches 85%, and within it the utilisation of the processing quota remains below 90%.

Recently not only have the imports of milk and dairy products increased, but also the milk exports: today, 10-15% of the produced raw milk and 20-25% of the milk for processing is sold abroad, mainly in Italy and also in Romania and Slovenia. The export volume of the dairy products has at the same time drastically declined. The purchase price of the raw milk is mainly determined in Hungary by the price of the raw milk realisable in the exports to Italy.

The consumption of milk and of dairy products has grown only very slightly in recent years. There is the largest lag in comparison to the more developed member states in butter and cheese consumption. In the future, principally an increase in the demand for cheeses and milk desserts may be expected, supposing however that the purchasing power of the Hungarian consumers would increase.

The domestic market is still dominated by brands of the period before the change of regime but loyalty of the Hungarian consumers to domestic products is not typical; they are open to (cheaper) imported products. The share of the imported milk and dairy products in the consumption attains 30% (and even 40% in the case of cheeses).

The commercial brand products represent a serious challenge for the processing companies. The competition for their production is very strong, thus the rate of manufacturer brands in the sales is gradually decreasing, but at least the utilisation rates of the milk processing capacities may be maintained. Due to the strong competition, the milk processing companies are often compelled to supply their products at prices below costs. The retail trade chains do not take into consideration the local conditions and interrelations of milk production and processing. The purchase prices are often changed due to the frequent sales transactions. In the estimate of the processing companies, about one fifth of the dairy industry's aggregate production value is sold at "sales prices".

While milk processing in Western Europe is characterised by high level technologies and a narrow product range, the situation is reversed in Hungary. This explains in part the very low degree of utilisation of the capacities – attaining hardly 50% in some estimates. Due to the growing imports, the market share of the milk processors is further decreasing, rendering selection indispensable and headway of the foreign capital very likely.

The market participants are of the opinion that the requirements created by the authorities, though circumstantial but lacking practical relevance, furthermore the non-uniform operational mentality of the authorities in Hungary cause sometimes significant extra costs in milk processing.

Recently the low prices and the increasing quality requirements have expelled several producers from the market; the smaller ones elected farm gate sales or abandoned production, while the larger ones opted typically for joining producer organisations.

Milk is produced in Hungary at relatively high costs related to the protein and fat content. The majority of the farmers are at a disadvantage against competitors in respect of feed utilisation and green fodder use. The relatively high labour costs denotes a competitive disadvantage of the Hungarian milk producers in the field of organisation and labour productivity. Important losses deriving from the stock's health condition problems constitute a determining element of the milk production costs.

In Hungary, the economic corporations are undefended against land owners due to the lack of their own landed property. Interest in development supports is negligible because the acute lack on capital, the expensive loans, the market conditions and the economic prospects, together with the production obligation imposed as a precondition for the supports dissuade a large number of the participants from making improvements.

The gradual increase of the milk quotas concern Hungary in an indirect manner: more efficient milk producing countries may be at an advantage on the Italian market, thus narrowing Hungary's exporting possibilities and as a consequence further depressing domestic producer prices. If the Hungarian producers are unable to keep pace with the growth of cost efficiency, the competitiveness of raw milk production will further deteriorate as the milk quotas are "inflating away".

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Indicators for the assessment of the potential for employment creation in rural areas

Fieldsend, Andrew F.[1]

Abstract

The EU Framework 7 project "RuralJobs" has used the DPSIR model to show the link between 'driving forces' of employment and economic prosperity, and policy responses. These driving forces can be 'endogenous' or (neo-) 'exogenous' to the territory. They act on the labour market or employment ('state') through the 'pressures' of jobs (economic activities) and people (the labour force). In turn, the employment rate (jobs per person) influences the 'impact' (sustainable economic prosperity). 'Responses' can be policy responses or socio-economic responses. A set of 40 indicators was compiled from strategies and programmes relevant to employment in rural areas in the EU.

Keywords

Rural employment, indicators, strategies, programmes, DPSIR

1. Introduction

The main outcome expected by the European Commission (EC) from the Framework 7 project "New Sources of Employment to Promote the Wealth-Generating Capacity of Rural Communities" is that "the results will allow a better targeting of rural development measures and future evolution of rural development policies in line with the Lisbon Strategy" (Fieldsend, 2008). This expectation reflects a growing desire by the EC to "make [the Common Agricultural Policy (CAP)] work for Lisbon" (Eposti, 2008). This is linked to a renewed understanding of what is meant by 'rural development'. It is now widely accepted (e.g. Baldock et al., 2001) that a more integrated, territorial approach, sensitive to the diversity of rural circumstances, rather than a purely sectorial (agricultural) approach, is needed to ensure regionally balanced development, and that rural development priorities should no longer be constrained by the legacy of their CAP origins. Anticipating these policy trends, the research being undertaken in RuralJobs is founded on three hypotheses:

- That a territorial approach to improving the wealth generating ability of rural areas via the creation of new sources of employment is required, whilst recognising the unique role of agriculture and other land-based industries in the rural economy
- Initiatives to create new sources of employment in rural areas must take account of the existence of markets for the products of labour, whether these are in the primary, secondary or tertiary sectors. Frequently, the largest markets are in urban areas
- Rural areas in different parts of the EU are fundamentally different from each other in many respects and that a single, EU-wide 'solution' or 'strategy' for creation of rural employment is not appropriate

This increasing interest in rural employment beyond agriculture must be accompanied by a better understanding of the relevant factors and processes, and the relationships between them. One approach to this is to review the indicators used by organisations internationally in strategies and programmes of relevance to rural employment within a suitable framework. In this paper, the driving force, pressure, state, impact and response (DPSIR) model (Figure 1) has been used as it is well established and has been successfully applied in other contexts.

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The DPSIR model has been widely adopted with environmentally oriented indicator sets. Here, "social and economic developments exert 'pressure' on the environment and, as a consequence, the 'state' of the environment, such as the provision of adequate conditions for health, resources availability and biodiversity, changes. This leads to 'impacts' on human health, ecosystems and materials that may elicit a societal 'response' that feeds back on the 'driving forces', or on the state or impacts directly, through adaptation or curative action" (Smeets and Weterings, 1999). In other words, the model assumes cause-effect relationships between interacting components, in general terms although it does not attempt to identify specific linkages.

Wang and Huang (2009) used the DPSIR model to interpret sustainable development of agricultural industrialisation, with efficiency of agricultural production as the 'state'. Although this approach appears not to have been widely used with respect to employment, as part of the EU Framework 6 project 'Sensor' Zhen et al. (2008) used the model in a study of response of land use changes to policy impacts. Driving forces included demography, urbanisation, Government investment in R&D and cars/1000 people; Pressures included land use; state included soil quality and rural employment; impacts included soil erosion, employment and GDP; and responses included land use policy and community participation.

This study has further adapted the DPSIR model as a tool to show the link between 'driving forces' which affect employment and economic prosperity, and policy responses. These driving forces (or 'needs' at which policy and societal responses can be targeted (Kristensen, 2004)), which influence the demand for workers and the supply of the workforce, and which represent targets for policy (including connecting the supply with the demand through activities such as jobcentres), are the 'endogenous' or 'exogenous' factors referred to above. To better understand this link, indicators from a series of strategies and programmes relevant to employment in rural areas in the EU have been reviewed in the framework of this model.

2. Data sources and methodology

Numerous indicator sets exist and this study reviews those which are considered to be the most relevant to rural employment in the EU, as follows:

- The OECD document 'Creating rural indicators for shaping territorial policy' (OECD, 1994), whilst now very old, is still widely cited in the literature.
- The Key Indicators of the Labour Market (KILM) provides a set of 20 indicators associated with the decent work initiative (ILO, 2007).
- The EU Sustainable Development Strategy (EU SDS) (EC, 2006a) provides the overarching framework covering quality of life, intra- and inter-generational equity and coherence between all policy areas.
- The Lisbon Strategy contributes to the overarching objective of sustainable development focusing primarily on actions and measures aimed at increasing competitiveness and economic growth and enhancing job creation (EC, 2005a).
- The European Employment Strategy (EES) is the main EU level tool to give direction to, and ensure co-ordination of, the employment policy priorities to which Member States should subscribe (EC, 2005b). The EES is accompanied by indicators for monitoring and analysis of progress (EC, 2008).
- The European Agricultural Fund for Rural Development (EAFRD), of which monitoring and evaluation of progress is carried out in accordance with indicators in the Common Monitoring and Evaluation Framework (CMEF) (EC, 2006b).

In the DPSIR model (Figure 1), rural employment (jobs per worker) represents the *state*. Employment has an impact on economic prosperity and other issues such as social cohesion, and these in turn influence policy (and other, such as socio-economic) *responses*. These responses may be targeted either at the *driving forces* which in turn influence the *pressures* on employment, i.e. supply of labour (population) and supply of jobs (economic activity); directly at the creation of more and better jobs, or even at the state, by connecting the offer with the demand. In all ways, policy responses can lead to an increase in employment in rural areas which in turn would have a positive *impact* in terms of their sustainable economic prosperity.

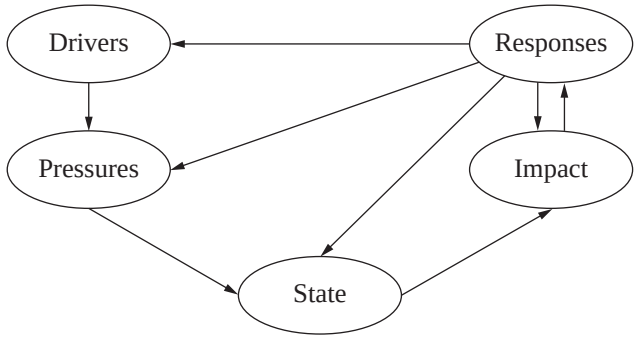

Figure 1: The DPSIR framework, as originally developed for reporting on environmental issues

Source: Smeets and Weterings, 1999

3. Review of indicators in strategies and programmes

3.1. Indicators of driving forces (needs)

Issues defined as 'driving forces', i.e. factors which may influence the 'pressures' on employment, namely the demand for workers (economic activity) and supply of the workforce (labour force), may be 'endogenous' or (neo-)'exogenous'.

3.1.1. Endogenous driving forces (human, social, financial, natural and physical capitals)

These endogenous driving forces are frequently characterised as five 'capitals', namely natural, human, social, physical and financial (e.g. Alkan Olsson et al., 2004). Although the term 'capital' is used, most of the assets are not capital stocks in the strict economic sense of the term. The term 'capital' is used because this is the common designation in the literature (DFID, 1999). DFID (1999) provides comprehensive definitions for each 'capital'. In this section, definitions of 'capitals' are used which are compatible with the DFID definitions, but simpler and employment-focused, as follows:

- *Human capital* is defined as the skills and knowledge possessed by workers. Workers acquire these skills both through formal education and through on-the-job and life experiences.
- *Social capital* is defined as the networks of relationships among persons, firms, and institutions in a society, together with associated norms of behaviour, trust, cooperation, etc., that enable a society to function effectively.
- *Financial capital* is defined as money used by entrepreneurs and businesses to buy what they need to make their products or provide their services.

- *Natural capital* is defined as a stock of natural resources, for example land, water, and minerals.
- In general, *physical capital* refers to any non-human asset made by humans and then used in production.

In the reviewed strategies and programmes, indicators relevant to human capital can be grouped under the topics 'educational attainment' and 'dynamism'. An example of the former is KILM indicator number 14 'Educational attainment and literacy'. The latter, through concepts such as 'innovation', 'R&D capacity' and 'entrepreneurship', tries to capture the aspects of human capital which can contribute to the (economic) 'dynamism' of a territory or locality. In fact it is not immediately clear how the inherent dynamism of a territory can be measured, and indicator sets tend to measure the results of activities associated with dynamism. For example, under the 'economic prosperity' key objective of the EU SDS, the 'innovation, competitiveness and eco-efficiency' sub-theme within the 'socio-economic development' theme includes some measures of innovation and R&D.

Topics included under social capital are 'discrimination' and 'crime rates'. Social capital has been associated with differential economic performance (Agarwal, 2004). The reviewed strategies and programmes include very few direct indicators of social capital. For example, there are no indicators of cultural heritage (customs etc.) which may potentially be valorised as sources of employment. Discrimination can be on the basis of age, sex, race or any other criterion. Age and sex disaggregated data of any form may provide some insight into levels of discrimination. The EU SDS indicator 'gender pay gap' may be an indicator of sex discrimination in the labour market. High levels of social capital include lower crime rates (various authors, cited by Agarwal, 2004) and low crime is cited as a reason why potential employers and employees choose to relocate to, or remain in, rural areas.

There seem to be no direct indicators of financial capital in the reviewed strategies and programmes. 'Business investment' may be a proxy for financial capital although it can be difficult to distinguish between 'endogenous' and 'exogenous' funds for investment. Running expenditure and tax costs are related to 'circulating capital' (the opposite of 'fixed capital').

Natural capital can be either renewable or non-renewable and can contribute to employment through its 'sustainable use and/or consumption' or through 'attractiveness' of a territory. Natural resources are a unique strength of rural areas compared to urban centres, but particularly with the decline in agriculture as an employer, their traditional role as 'raw materials' in economic activities providing jobs has declined. Some natural resources, such as coal and other minerals, do not seem to be mentioned at all in the reviewed documents. However, whilst natural (and other) resources in rural areas have significant, direct economic value, the 'attractiveness' of a territory, or the standard of perceived 'quality of life' it can support, can be a driving force which influences the migration patterns of both the more mobile sections of the population (such as the young, the better educated and the more wealthy) and of businesses, including entrepreneurs (Bosworth, 2006).

Under physical capital, relevant topics are 'accessibility', 'fixed capital' and 'attractiveness'. The former includes Transport and ICT infrastructure. For example, under its baseline indicators for Axis 3, the CMEF lists 'internet take-up in rural areas' as an objective-related indicator and 'internet infrastructure' as a context-related indicator. Greater availability of fixed capital is linked to greater opportunities for economic development. This covers public sector (e.g. hospitals) and private sector (e.g. farm buildings) fixed capital which, unlike transport and ICT infrastructure, do not directly relate to accessibility of rural areas. There seem to be few baseline indicators of fixed capital in the reviewed documents. In addition to being providers of employment in themselves, the level of pub-

lic (schools, hospitals, childcare centres, etc.) and other (shops, banks etc.) services can influence migration rate balances (and therefore the size of the labour force). The presence of built heritage can have similar influences, for example on the level of tourist activity.

3.1.2. Exogenous driving forces (investors, markets, knowledge centres, government, cultural assets)

Defining (neo-) exogenous driving forces is problematic, for several reasons. Firstly, there is no widely-recognised framework, such as the 'capitals' approach used with endogenous driving forces. Secondly, some driving forces, such as 'business finance', can have both endogenous and exogenous components. Thirdly, baseline indicators in strategies and programmes tend to focus on measuring the status of the territory in question, rather than that of neighbouring territories. Here the framework described by Sabau and Paquiet (2009) of investors, markets, knowledge centres, government and cultural assets is used.

Several investment indicators are included in the reviewed documents. Regarding markets, urban centres can be major markets for the products of rural localities, either in terms of 'export' of the products from the locality, or of visitors to the locality who 'consume' the products. Yet neither the proximity of an urban centre or market, nor the size of that centre or market, nor anything similar, is used as an indicator in any of the reviewed strategies or programmes. As regards knowledge centres, rural localities rarely have the 'critical mass' to support a university (or other institute of tertiary education) or a 'centre of innovation' and therefore tend to be dependent on urban centres for these services. However, no suitable indicators were identified in the reviewed documents. The same applies to government: no indicators are directly relevant to rural employment and, similarly, no indicators relevant to exogenous cultural assets were identified in the reviewed documents.

3.2. Indicators of pressures (the demand for workers; the supply of the workforce)

3.2.1. The demand for workers

Unlike for 'supply of the workforce' (below) and 'employment' (Section 3.3.), context indicators which measure the demand for workers in a locality, such as 'number of available jobs (filled or unfilled)', 'number of jobs (FTE)' or 'number of companies (tax registered and/or not tax registered)' are less systematically included in the reviewed documents. Presumably employment is considered to be a closer proxy for number of jobs than it is for size of labour force. At a very local level this can be a dangerous assumption as it disregards the influences of commuting. The error can be substantially reduced by using workplace-based employment data (which can be a good proxy for number of jobs) rather than residence-based employment data.

3.2.2. Supply of the workforce

Strictly speaking, the 'supply side' pressure on employment is labour force (the proportion of the population of working age). Population could be argued to be a component of human capital. However, the two are by definition closely correlated and many indicator sets include population and labour force indicators in the same section. Furthermore, indicators such as 'demographic pressure' (the population between 5 and 14 in relation to the population between 55 and 64) provide an insight into likely future 'supply side' pressures on employment (UN, 2007).

3.3. Indicators of state (employment)

There is general agreement between strategies on the choice of indicators for measuring employment-related objectives. With these indicators it is possible to measure:

- State, i.e. the situation or level of the indicator
- Dispersion, concentration or variability of the indicator across territorial units
- Tendency or trend over time

OECD (1994) captures the key issues such as the distinction between 'labour force participation' and 'employment' and 'unemployment rates', and data disaggregation on the basis of sex and age, and by sector (agriculture, manufacturing and services, plus employment in the high-tech sector), and changes over time. However, the reviewed indicators should cover more than current employment rates, or even trends. The EU is not just seeking 'more' rural jobs, but also 'better' rural jobs in compliance with the idea of 'decent work', which was first formulated by the International Labour Organisation in 1999 (Ghai, 2006). Amongst its other components, the decent work idea encompasses providing opportunities for work that is productive and delivers a fair income. In line with the Lisbon Strategy, through its aim of more and better jobs, job quality is the central objective of the European Employment Strategy (EC, 2008). The KILM document looks 'beyond the employment/unemployment dichotomy' by measuring quality of employment, an approach which does not seem to have been widely adopted in other documents reviewed here.

3.4. Indicators of impacts (sustainable economic prosperity)

Sustainability involves the simultaneous pursuit of economic prosperity, environmental quality and social equity (Hasna, 2007). This 'triple bottom line' approach to sustainability is fully accepted here, particularly as the sustainable use of natural capital is of particular importance to rural areas. However, the most direct impact of more and better jobs is economic prosperity, typically defined as "stage in an economic cycle in which conditions of relatively low unemployment and high total income prevail, leading to high purchasing power (if the inflation rate is kept low)" (BusinessDictionary.com). Economic prosperity is a key objective of the EU SDS and, as an example, within this the sub-theme 'economic development' includes two indicators of 'GDP' and one of 'household disposable income'.

3.5. Indicators of responses (including connecting the offer with the demand)

3.5.1. Policy responses

A wide range of policy responses are defined by the input, output, result and impact indicators of the CMEF and Structural Funds, 2000-2006, and also by relevant indicators from the European Employment Guidelines.

Responses targeting endogenous *driving forces* include 'increase in the participation rate of the labour force to training' (human capital); 'cooperation for development of new products, processes and technologies in the agriculture and food sector and forestry sector' (social capital); 'SME investment (leverage effect)' (financial capital); 'reversing biodiversity decline' (natural capital); and 'increase in internet penetration in rural areas' (physical capital). In terms of *pressures*, 'employment (created)' and 'employment (safeguarded)' are widely used indicators. The unit of measurement, for example in the case of Structural Funds, 2000-2006, is jobs (i.e. 'number and % of total jobs created and safeguarded (men/women)'), not employment. Thus, strictly speaking, these programmes are targeted at the 'demand for workers' component of *pressures* rather than at employ-

ment (*state*). Regarding the 'supply of the workforce', the CMEF output indicator 'early retirement' (number of farmers/farm workers early retired) seems to be inconsistent with the stated aim of the European Employment Strategy of 'supporting longer working lives'.

With respect to *state* (employment), there are several indicators for measuring the effects of interventions designed to connect the offer with the demand (i.e. get people into jobs). For example, linked with the European Employment Guidelines 'activation of long-term unemployed' is a direct measure of LMP (lifestyle modification programme) interventions. As for *impacts*, no response indicators directly targeting economic prosperity were noted.

3.5.2. Socio-economic responses

Commuting and *migration* are ways in which the population 'connects the offer with the demand' by travelling to, or relocating to, localities where jobs are available. The only commuting indicator noted was 'proportion of long distance commuting' in the ESPON 4.1.3. report (BBR, 2007). This would provide a vision about the adequacy between local provision and demand of jobs but data are not available across the entire EU and it is not used in any of the reviewed documents. Migration can lead to urbanisation (rural depopulation) or 'counter-urbanisation' and appears as an indicator in OECD (1994), the CMEF and the EU SDS.

The *creation* and *relocation* of businesses are also socio-economic responses. The indicator 'employment in newly-established enterprises' in the European Employment Guidelines indirectly measures the creation of business enterprises. In Structural Funds, 2000-2006, the indicator 'attractiveness of the area' under the theme 'urban development' is defined as 'businesses/commerce settling in the renewed area (number)'.

4. Recommended indicator shortlist

The range of topics which are relevant to rural employment and rural economic prosperity is illustrated by the fact that many of the indicators under the following themes of the EU Sustainable Development Strategy are cited in this report: 'socio-economic development', 'sustainable consumption and production' 'social inclusion', 'demographic changes', 'climate change and energy', 'sustainable transport', 'natural resources' and 'good governance'. Not directly relevant are those listed under the themes 'public health' and 'global partnership'.

Similarly, the range of indicators available is almost overwhelming. In this paper, a representative set of (where possible) widely used indicators is used to illustrate how the DPSIR model can show the link between 'driving forces' and economic prosperity, via 'pressures' (jobs and people) and 'state' (employment).

4.1. Indicators of driving forces

Fourteen independent, policy-relevant indicators have been selected to illustrate the range of 'territorial specificities' which can have an impact on employment in rural areas (Table 1). Whilst most are obvious candidates for such a list, some are less so. For example, indicator 10 'common bird index' is included as it is one of surprisingly few indicators that are available for quantifying diversity and therefore the (natural) attractiveness of an area.

Table 1

Shortlist of indicators of endogenous potentials of rural areas

No.	Name	Description	Source
1	Educational attainment	% adults aged 25-64 with medium (ISCED 3&4) and high (ISCED 5&6) educational attainment	CMEF
2	Lifelong learning in rural areas	Percentage of adults aged 25-64 participating in education and training	CMEF
3	Gross domestic expenditure on R&D	Gross domestic expenditure on R&D as a percentage of GDP	Lisbon Strategy
4	Gender pay gap	Difference between men's and women's average gross hourly earnings as a percentage of men's average gross hourly earnings (for paid employees)	EU SDS
5	Crime rates	Number of crimes per inhabitant	OECD
6	Business investment	Total gross fixed capital formation expressed as a percentage of GDP, for the private sector	EU SDS
7	Tax wedge on labour cost	Ratio of income tax plus employee and employer social contributions including payroll taxes less cash benefits divided by the labour costs for a single earner earning 67% of the average wage	EEG
8	Share of renewables in gross inland energy consumption	The percentage share of renewables in gross inland energy consumption	EU SDS
9	Land cover	Percentage of land area in agricultural, forest, natural and artificial classes	CMEF
10	Common bird index	An aggregated index integrating the abundance and the diversity of a selection of common bird species associated with specific habitats	EU SDS
11	Connectivity to railway stations	Proportion of population living within 30 minutes journey time by car to the nearest railway station	ESPON
12	Internet infrastructure	% population that is depending on switches equipped for DSL (digital subscriber line) and/or living in houses passed by an upgraded cable	CMEF
13	Tourism infrastructure in rural areas	Total number of bed places in all forms of tourist accommodation	CMEF
14	Child care	Children cared for (by formal arrangements other than the family) less than 30 hours a usual week / 30 hours or more a usual week as a proportion of all children of the same age group	EEG

Footnote: Indicators 1 and 2 can be disaggregated by sex.
Sources: CMEF: Common Monitoring and Evaluation Framework; SDS: Sustainable Development Strategy; OECD: Organisation for Economic Cooperation and Development; EEG: European Employment Guidelines; ESPON: ESPON project 4.1.3 (BBR, 2007). ISCED: International Standard Classification of Education.

4.2. Indicators of pressures, state and impacts

The 'pressures' on employment (the unit of measurement of which is jobs per person) are (a) the number of jobs in a locality and (b) the total number of people of working age in that locality, whether employed or not. Employment has an 'impact' on the economic prosperity of a locality. Thus, in Table 2:

- The pressure indicators measure the numbers of workers and jobs in a locality
- The state indicators measure the employment status of residents in a locality
- The impact indicators measure the prosperity of the residents in a locality

Table 2

Indicators of pressure, state and impact

No.	Name	Description	Source
	Pressure indicators		
15	Population	Number of inhabitants (by sex, and age: 0-14, 15-64 and 65+)	Eurostat
16	Population density	Number of inhabitants/km2	CMEF
17	Number of jobs	Total number of workplaces, occupied + vacant (by agriculture, manufacturing and services if data are available, see Table A.3.)	(a)
18	Jobs density	Number of filled jobs in an area divided by the no. of people of working age resident in that area	(b)
	State indicators		
19	Activity rate (Labour force participation rate)	Labour force (employed and unemployed) as a share of total population in the corresponding age bracket, expressed as a percentage	Eurostat
20	Employment rate	The number of employed divided by the population in the corresponding age bracket, expressed as a percentage	Eurostat
21	Unemployment rate	Unemployed as a share of the labour force (employed and unemployed) in the corresponding age bracket, expressed as a percentage	Eurostat
22	Long-term unemployment rate	Those unemployed for a duration of 12 months of more as a share of the labour force, expressed as a percentage	Eurostat
23	Employment by sector	Employment in agriculture, industry and services, each expressed as a percentage of total employment	KILM
24	Status in employment	Wage and salaried workers, self-employed workers, and contributing family workers, each expressed as a percentage of the total employed	KILM
	Impact indicators		
25	Personal income	Per capita (real)	OECD
26	Inequality of income distribution	The ratio of total income received by the 20 % of the population with the highest income to that received by the 20 % of the population with the lowest income	EU SDS
27	Housing (crowding)	Persons per room	OECD
28	Motorisation rate	No. of passenger cars per 1,000 inhabitants	EU SDS

Footnote: The 'state' indicators can be disaggregated by sex and age (15-24, 25-54 and 55 and over). In indicator 23 the sectors (agriculture, manufacturing and services) are defined according to ISCED but employment in knowledge intensive services, for example, is also of interest.

Sources: (a) A source for a definition of number of jobs has not been identified; (b) the definition of jobs density is taken from Hastings (2003); Eurostat definitions are taken from EC (2008); CMEF: Common Monitoring and Evaluation Framework; KILM: Key Indicators of the Labour Market (ILO, 2007); OECD: Organisation for Economic Cooperation and Development; SDS: Sustainable Development Strategy.

With regard to indicator 17 'number of jobs', workplace-based employment data would be a close proxy, but an underestimate owing to the existence of unfilled work places. Workplace-based employment data is the numerator for the 'jobs density' calculation. By contrast, 'employment rate' (indicator 18) is derived from residence-based employment data.

The list of 'state' indicators has been kept short as the focus of the study is indicators to assess the potential for economic diversification in rural areas, not to simply characterise the nature of rural employment/unemployment. For the latter, a more detailed analysis would need to include the indicators listed in Table 3. Some of these (e.g. 'time-related underemployment' or 'hidden unemployment') address quite complex issues and data are less likely to be available. For example, there is no all inclusive indicator of job quality. ILO (2007) suggests that employment-to-population ratios (KILM 2), status in employment (KILM 3), hours of work (KILM 6), employment in the informal economy (KILM 7), time-related underemployment (KILM 12) and working poverty (KILM 20) could complement each other as a measure.

In Table 2 the listed indicators of sustainable economic prosperity have been chosen to reflect issues (such as housing) which affect as wide a section of the population as possible.

Table 3

Supplementary list of indicators of state

No.	Name	Description	Source
29	Vacancies per unemployed	Ratio between the total number of vacancies compared to the total number of unemployed	EEG
30	Part-time employment rate	Total part-time employment as a percentage of total employment	KILM
31	Employment in the informal economy	The number of persons employed in the informal economy as a percentage of total employment	KILM
32	Time-related underemployment	The number of persons in time-related under-employment as a percentage of the labour force, or as a percentage of total employment	KILM
33	Employment; unemployment rate by highest level of education attained	Employment and unemployment indicators disaggregated by educational attainment	EU SDS; KILM
34	Labour market gaps for disadvantaged groups	Gaps on the labour market, such as difference between the employment, unemployment and activity rates for a non-disadvantaged group in percentage points and the corresponding rates for the disadvantaged group	EEG
35	Labour reserve	Inactive (i.e. not registered as unemployed) persons wanting to work as a percentage of the working age population (15-64). Annual average	EEG
36	Farmers with other gainful activity	% sole holders with other gainful activity	CMEF

Footnote: Indicators 30-34 can be disaggregated by sex
Sources: EEG: European Employment Guidelines; KILM: Key Indicators of the Labour Market (ILO, 2007); SDS: Sustainable Development Strategy; CMEF: Common Monitoring and Evaluation Framework.

4.3. Indicators of responses

Policy responses, by targeting objectives such as communication links, childcare and 'human capital, skills and adaptability' (as specified in the RuralJobs call for proposals) can translate 'jobs' into 'employment' by ensuring that the rural population, firstly, can access the newly-created jobs and, secondly, has the necessary abilities to undertake them.

For several reasons, the results of development programmes implemented in rural localities are frequently 'not the same' as in urban centres. Indicators of endogenous driving forces, the 'intervention logic' indicators of Structural Funds, 2000-2006 and the CMEF define several topics for which the contribution of EU funding to the creation and safeguarding of rural jobs can be assessed and examples of 'operational good practice' can be identified, i.e. where the results *are* the same in terms of several criteria including participation, skills levels, job creation, employment rates etc. These include:

- Participation in education, training, skills development and life-long learning
- Access to business support services including advice and mentoring
- Innovation and entrepreneurship, including developing new products and techniques
- Equal business opportunities for women and other disadvantaged groups
- Business cooperation
- More and 'better' jobs including jobs in knowledge-based sectors
- Access to financial capital by business and improved business survival rates
- Sustainable economic exploitation of natural capital
- Greater valorisation of natural capital for 'quality of life' and tourism
- Accessibility, including transport infrastructure and ICT
- Energy, water and other services infrastructure
- 'Fixed capital' contributing to 'quality of life' including rural built heritage

Four independent indicators of socio-economic responses have been selected (Table 4).

Table 4

Socio-economic indicators of responses

No.	Name	Description	Source
37	Proportion of long-distance commuters	Number of commuters in a residence area working at more than 45 min. from their residence area / total number of employed residents	ESPON
38	Net migration	Annual crude rate of net migration, rate per 1000 inhabitants	CMEF
39	Business creation and development	Number of micro-enterprises supported/created	CMEF
40	Attractiveness of the area	No. of businesses/commerce settling in the area	SF

Sources: ESPON: ESPON project 4.1.3 (BBR, 2007); CMEF: Common Monitoring and Evaluation Framework; SF: Structural Funds, 2000-2006.

5. Discussion

The Synthesis of Ex Ante Evaluations of Rural Development Programmes 2007-2013 – Final Report (metis GmbH, 2008) shows that when preparing rural development programmes many programme authorities considered the CMEF indicators to be insufficiently flexible. Thus, this study has not confined itself to using indicators only from one source. As rural development is now widely accepted as a 'territorial' rather than 'sectoral' (i.e. agricultural) discipline, the use of non-agricultural indicators is essential.

Driving forces can be either 'endogenous' or (neo-) 'exogenous'. The balance of these forces will vary from region to region and within a region can change over time. Ploeg et al. (2008) coin the term 'endogeneity' in reference to this balance of endogenous and exogenous resources and the control exerted over that balance (i.e. whether regionally or externally based) and to the destination and use of the produced wealth (i.e. within the region or channelled to other locations). They suggest that endogeneity refers to the degree in which a regional economy is grounded on regionally specific resources and, simultaneously, develops them. They hypothesise that the more endogeneity is developed, the higher the competitive advantage of the region concerned will be. The notion of endogeneity, as Ploeg et al. (2008) observe, does not only refer to material resources. The concept equally (if not especially) refers to social resources, to local, intangible assets such as entrepreneurial and civic culture, patterns of cooperation between economic and social agents and institutional quality.

Amongst endogenous driving forces, direct exploitation of natural capital, which is closely associated with agriculture, is only one of several driving forces on rural employment. The 'new challenges' of energy and environmental (including climate change), as well as food, security (Naesager, 2008; EC, 2009), whilst confirming the continued importance of natural capital to the economies of rural areas, will make it increasingly difficult to draw a clear distinction between use/consumption and conservation as they will demand more efficient use of available natural resources. There are several indicators listed in Section 3.1., some of which also appear in Table 1, which are relevant to these issues.

Another important driving force is attractiveness. More 'attractive' rural territories can better retain, or indeed attract, population from other rural areas or urban centres (UN, 2007, appendix 5). Terluin and Post (1999) stated that valorising natural landscapes by local actors (i.e. understanding that they are scarce resources and unique development assets that should be kept in good shape) can be a significant factor in regional prosperity. 'Attractive' natural resources are of course also an important driving force of tourism in rural areas.

The almost complete lack of appropriate indicators of exogenous driving forces identified by this research might also seem surprising at first. The DPSIR model does not define the geographical 'locality' in the context of which driving forces can be classified as endogenous or exogenous. Most strategies and programmes reviewed in this paper are targeted at NUTS2 regions or larger. Similarly, for convenience, administrative regions (NUTS2 or NUTS3) are frequently used as research areas in rural studies. However, evidence from across the EU (e.g. from Bond and Coombes (2007) in the UK and from Radvánszki and Sütő (2008) in Hungary) is that territory of a 'labour market area' is commonly sub-NUTS2 (sometimes even sub-NUTS3) in size. Thus, many of the rural employment issues for a rural locality may indeed be (neo-) 'exogenous' to the labour market area but still originate from within the NUTS2 region.

Regarding socio-economic responses, the social and economic impacts of migration are well known and this is reflected in the widespread use of migration indicators in the reviewed strategies and programmes. In view of the fact that commuting has environmental, social and economic impacts, and can obscure the fact that job supply in a locality is inadequate, the lack of indicators is surprising. In its REMI study, OECD (1996) included a case study on commuting and drew two major conclusions:

- Concentrations of jobs in urbanised areas, and the need to commute to these jobs, exist in all (case study) countries. There are more workers than jobs in predominantly rural regions, the consequence is a net out-commuting from this type of region
- There are strong inter-regional dependencies and linkages that are especially significant for trends in employment and the labour market. Functional division of space has to be taken into account and any analysis of rural employment should therefore not be limited to rural areas only

Jobs can be created though an increase in business activity either through direct support (measured by the CMEF indicator 'business creation and development') or indirectly through addressing 'driving forces' (attractiveness) (measured by the Structural Funds, 2000-2006 indicator 'attractiveness of the area'). Bosworth (2006) has presented evidence from the UK that in-migrant business owners can make a significant contribution to a rural economy.

As well as illustrating the links between rural employment and socio-economic responses, the DPSIR model is helpful in illustrating the links with policy responses. Driving forces are generally considered to be 'needs' (e.g. Kristensen, 2004) at which policy responses can be targeted. As we have seen, they may originate from within the territory or from outside.

RuralJobs is expected to "identify employment growth areas where rural development programmes can be targeted to increase their contribution to employment creation". As part of the research in RuralJobs, Sabau and Paquiet (2009) identified five 'conditions of success' for rural employment creation. The indicators of endogenous driving forces shown in Table 1 relate to the first three of these, namely 'foster the diffusion of knowledge among economic stakeholders', 'reduce the drawbacks and remoteness of rural areas' and 'value the territorial specificities'. Although many alternative indicators are available in the literature (for example Agarwal (2004) uses 'average house price' as one of ten indicators in a study on the economic performance of rural areas in the UK), these indicators, as a set, can contribute to the assessment of the 'endogeneity' of a region. The response indicators discussed in Section 4.3. are relevant to the fourth and fifth 'conditions of success' identified by Sabau and Paquiet (2009), i.e. 'support the creation/maintenance of activities' and 'adapt policies to the context'.

In conclusion, therefore, the DPSIR model and the shortlist of identified indicators has proved to be of practical value to the RuralJobs project and can be expected to be of similar use to others undertaking similar research.

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Motivation and intentions of farmers as regards the development of multifunctional agriculture in micro-regions of Northern and Eastern Hungary

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Abstract

There are an increasing number of references in the literature on the significance of the role of farm households and farm families in the development of multifunctional agriculture. The motivation and intentions of 104 farmers in three LEADER micro-regions in Northern and Eastern Hungary with respect to the present and future structures of their farms (including the expansion of non-agricultural activities and functions) were investigated using questionnaires and narrative interviews. Almost two-thirds of the respondents spoke of the existence of non-agricultural activities and functions, but few of these were market-driven. The farmers ranked the steps that should be taken to increase multifunctionality in their own micro-regions in order of importance and indicated which organisations they thought would be most competent for their implementation. They also noted what factors promoted or inhibited multifunctionality within their own farms.

Keywords

multifunctional agriculture, LEADER, rural economy, interviews, Hungary

Introduction

Despite a number of international attempts, *there is no uniformly accepted definition of multifunctional agriculture.* A summary of the appearance and interpretation of this term and of its development into an agrarian policy paradigm was published in our earlier paper (Petrics and Fehér, 2009).

In the late 1990s the European Union (EU) made multifunctionality one of the long-term aims of the European Model of Agriculture (EMA), developed partly for the purpose of WTO negotiations. The first signs of the practical application of this intention were visible in the reform of the CAP in 1999 but it was not until the 2003 reform that it was fully implemented. The interpretation of the EMA "puts farm households rather than farm businesses at the centre of concern and requires policy-makers to recognise the importance of agriculture in a region and the critical linkages between household livelihood strategies and the regional economic context in which they are situated" (Potter, 2004).

In the late 1990s seven EU member countries (Netherlands, Germany, Ireland, Italy, Spain, UK and France) carried out a survey of 3,250 professional farms within the framework of the IMPACT project in order to investigate the interaction between policy and practice. The data (including number of farm households, added value, new job opportunities) provided a quantitative picture of the multifunctionality of European agriculture. The survey indicated that 1.4% of the farms carried out organic farming, 11% were involved in producing special quality products, 20% marketed

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their own products in short chains, 2% participated in agri-tourism, 7.3% provided nature protection services and 3.7% carried out other forms of diversification (Knickel et al., 2004,).

Several detailed studies on multifunctionality in Hungarian agriculture have been published (Szabó and Fehér, 2004; Fehér, 2005, 2008; and Petrics, 2008). The importance of research by Ángyán (2003), Popp (2004) and Katona-Kovács (2007) should also be stressed. However, little work has been based on surveys carried out at the farm or farmer family level. The present work aims to fill this gap, with special emphasis on the LEADER micro-regions, rural spatial units that have been formed since 2006. The objectives of our research were as follows:

- to picture the real situation of multifunctional agriculture in the investigated micro-regions,
- to explore the factors and conditions stimulating or inhibiting the multifunctionality of the agriculture at farm and micro-regional level,
- to systematize the relationships basing on the analysis of the motivation, reaction and plans of the surveyed farmers.

Materials and methods

The databases used in the study were compiled for farmers in settlements belonging to three LEADER action groups located in Heves and Jász-Nagykun-Szolnok counties. In particular they are *Karcag micro-region* (in the database it is called "A"), Tarna *Mente Micro-regional Spatial Development Association* ("B") and *Tisza-Tarna-Rima-Menti Action Group Association* ("C"). Tarna *Mente Micro-regional Spatial Development Association* won a LEADER grant in the second round in 2006 and it operated as an action group in 2006–2007. In the Karcag-micro-region only a third of the settlements belonged to operating LEADER group at that time. The remaining settlements got beyond only the first round and they won LEADER grants only in 2009. The location of the research area is illustrated in Figure 1.

The following major aspects were taken into consideration when compiling the questionnaires and surveys and when conducting the interviews:

- Separate sections should deal with the farm, the farmer, the farmer's family and the farmer's opinion on the introduction and spread of multifunctional agriculture in his own farm and in the given micro-region.
- There should be questions allowing the results to be compared with other foreign and Hungarian surveys.
- Both open-ended and closed questions should be included. The majority of closed questions should allow a certain extent of openness through the "other" (separately detailed) option.
- Different types of questions should be combined. We put also *dichotomous questions* which requested "yes" or "no" answers and *ordinal-polytomous questions,* in case of which the respondent has more than two ordered options, and *continuous questions,* where the respondent is presented with a continuous scale.
- For certain questions there should be opportunities to query to check the correctness of other questions.
- There should be no personal questions (e.g. finances, income) which could make the farmers mistrustful.
- The interviews should include family members working on the farm or with a substantial financial interest.

- Farmers from all the major settlements in each region should be included in the survey.
- In settlements where special crops (vines, fruit and vegetables) are typical, farms with less than 10 hectares of land should be included.
- The survey was planned as a personal in-home, researcher-administered survey. The respondents were interviewed in person, on their farm or in their home, ensuring full anonymity. The questions also formed the skeleton of the narrative interviews with the farmers, thus allowing project workers to become acquainted with the circumstances of the farmers (and their families) and the background to the replies given in the questionnaire.

The information requested about *the farms* was concerned mainly with the production structure, market relations, employment, mechanisation, informatics background, land use and self-evaluation by the farmer.

Apart from their age, qualifications and place of residence, *the farmers* were also asked about their motives for establishing and developing the farm, how they obtained information, and the extent to which they used a computer.

The basic information collected on *the family* included the number of family members, their sources of income and their qualifications. Separate questions dealt with the relationships between the farm and the family and the possibilities of inheritance and transferring of the farm inside the family.

With respect to *multifunctional agriculture*, the farmers were asked about the source of their information, the circumstances under which multifunctional agriculture was introduced and developed in the given farm and region, stimulating and inhibiting factors, and measures that needed to be taken.

At the sample selection we applied the non-probability, convenience sampling approach. The sample of respondents was determined as 5% of farmers with more than 10 hectares land in the average of three micro-regions. At farmers with 10.1-50.0 hectares this rate was 2%, at those with more land the proportion was up to 10%. Farmers with less than 50 hectares of land made up 21% of the sample, those in the 50.1-100 hectare category 16%, the 100.1-300 ha farms 44% and estates of over 300 hectares 19%. The mean farm size (own + rented land, or land used without payment) within the four categories was 26, 66, 191 and 1,258 hectares, respectively.

The research results and the conclusions drawn from them are basically only true of the population examined. However, the size of the sample makes it possible to draw conclusions valid for the micro-regions in question.

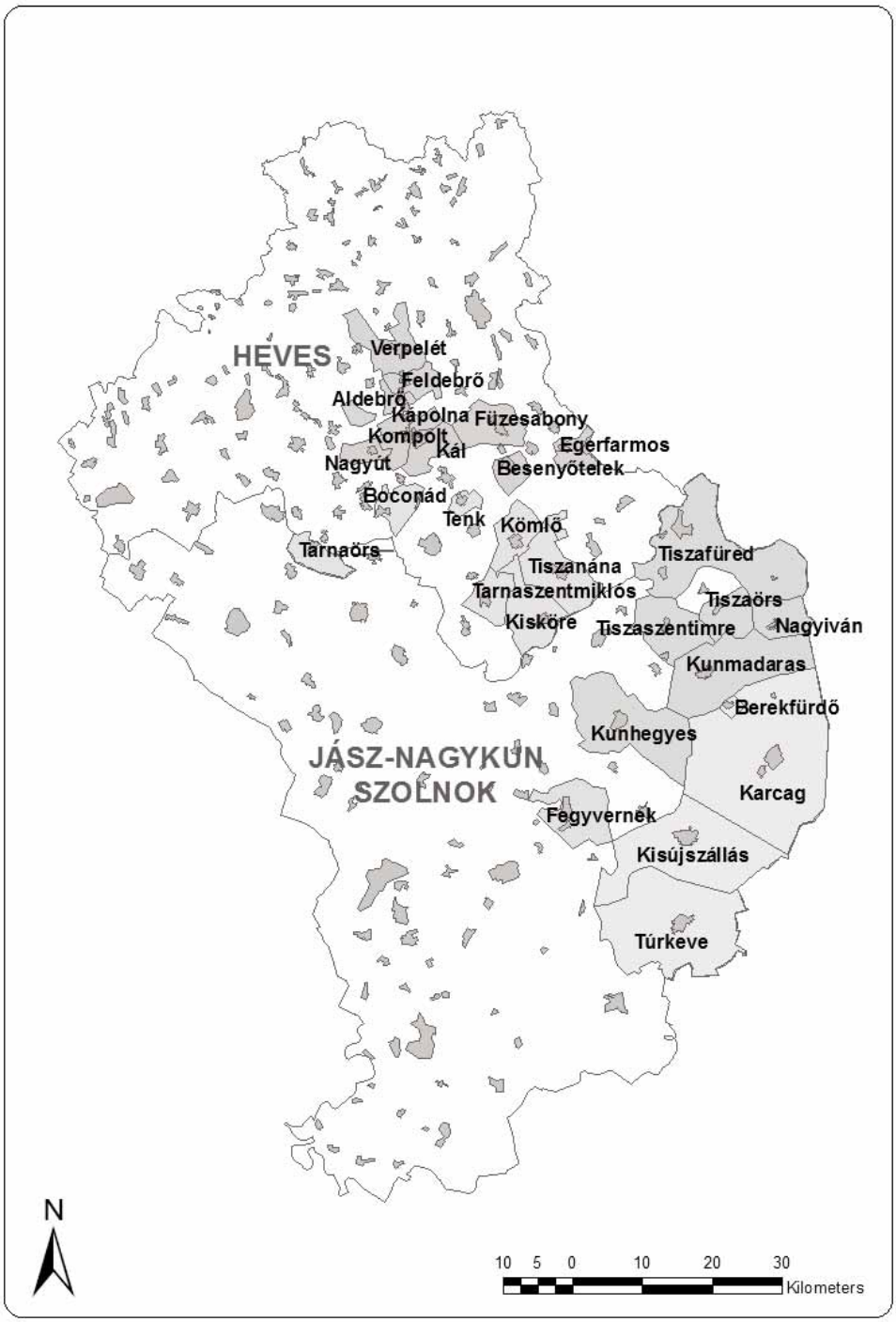

Figure 1: Location of the research area

Source: own work

Motivation for setting up and developing farms

The farmers in the three regions (A, B, C) were asked to give their reasons for setting up and developing their farms. As they were able to designate more than one motive, the total exceeds the number of respondents. (Table 1)

Table 1

Order of motives given for setting up farms

Motíve	LEADER micro-regions			Total
	A	B	C	
To provide a living for the family	I.	I.	I.	66
To continue a family tradition	II.	II.	II.	49
The desire for a more independent life	V.	III.	III.	34
Unqualified for anything but farming	III.	IV.	IV.	33
No other jobs available in the neighbourhood	IV.	V.	V.	23
Other	VI.	VI.	VI.	8

Source: own data and calculation

It can be clearly seen from the table that, despite certain regional differences in the order of motives, providing a living for the family was by far the most frequent motive, followed by the endeavour to continue family traditions. The desire for an independent life and the agricultural orientation of the farmers can also not be ignored. The significance of these motives was also revealed by research carried out by (Petrics, 2008).

In addition to the motives for setting up a farm, the motivation of development of farm business was also deemed extremely important. The results of this part of the survey are summarised in Table 2.

Table 2

Motives for farm business development, in order of importance

Motive	LEADER micro-regions			Mean
	A	B	C	
To ensure slow but sure development	I.	I.	I.	I.
To provide a living from the farm for as many family members as possible	II.	II.	II.	II.
To produce healthy foodstuffs and ensure a healthy environment	III.	VI.	III.	III.
To leave as large a farm as possible to their children	IV.	V.	IV.	IV.
To obtain as much community support as possible	V.	VII.	VII.	V.
To obtain maximum liquid cash income	VI.	IV.	V.	VI.
To increase their wealth	VIII.	III.	VI.	VII.
To provide jobs for others	VII.	VIII.	VIII.	VIII.

Source: own data and calculation

- It is clear from the table that, apart from the two top-ranked motives, there were again regional differences.
- The apparent lack of long-term planning was shown by the narrative interviews to be due to caution and suspicion with regard to the tax audit for increase of net wealth. The fact that 53% of the respondents put the slow, but sure development of the farm in first place, while the desire to leave as large a farm as possible to their children was ranked fourth, confirmed the existence and importance of long-term planning.
- The ranking of healthy food and environment was fairly high, but the narrative interviews suggested that obtaining community support was the real motive.
- The idea of providing jobs for other people appeared to be a negligible motive, with 35% of the respondents being emphatic about it being the last of their motives. This confirms that the statement made in the ex ante evaluation prepared in 2007 by Price Waterhouse Coopers in advance of the New Hungary Rural Development Programme, that "no substantial expansion of job possibilities could be expected in rural areas", is certainly true of agriculture (Új Magyarország, 2007).
  According to (Knickel et al., 2004), "multifunctionality could be operationalised at the level of the individual farm household". It can also be concluded from the present research that investigations on the relationship between the family and the farm are essential for farm-level studies on multifunctionality. This relationship was therefore examined from several aspects.
- The family played a decisive role (52%) in the establishment of the farm. This was manifested mainly (31%) in the need to ensure a living for the family and to a lesser extent (21%) in the continuation of family traditions.
- Providing a living for family members emerged as an extremely important farm business development motive, being ranked second. Family members (and business partners) made up 32% of the full-time and part-time employees, and this percentage was much higher on small farms.
- The farm was the main user of the land belonging to family members. All the farms that rented land were farming on the land of family members and relations. For two-thirds of these farms, this land made up the highest percentage of all the rented areas.
- The family played a major role in taking important decisions on the farm. In answer to the question "How are major business development decisions made on the farm?", the answer "The family decides in such questions" was ranked second.

Status of and motivation for multifunctionality

Information on multifunctional agriculture was available to 65% of the farmers surveyed. It should be noted that in the Tarna Mente micro-region, where the LEADER+ Programme had been implemented, this percentage was 87%, while in the Karcag micro-region, which withdrew from the second round in 2006, it was only 42%. The most frequent sources of knowledge were farm magazines and training courses or meetings organised within Hungary to exchange information. A very small role was played by agricultural books, the exchange of information on an international scale and village agri-economic experts, and little information was obtained from other farmers.

Some 98% of the respondents replied to questions on the existence of activities or functions other than agricultural production and 63% of them stated that their farms carried out functions in addition to agricultural production. The results for each micro-region are detailed in Table 3.

- There were considerable differences between the micro-regions as regards the ratio of farms involved only with agricultural production, but the reasons for this did not become apparent either from the questionnaires or from the narrative interviews. In the Karcag region the narrative interviews suggested that the better agricultural potential, the larger farm size and the higher standard of farming were the most important "conserving" factors.
- The activities and functions detailed in the table can be divided into three main groups. Some are *clearly market-driven* (on-farm sales of agricultural products, on-farm processing of agricultural products, local and community services, on-farm production of non-agricultural products, non-agricultural services), others are at present *not market-driven* (landscape management, nature protection, agricultural environment protection), while some represent a *transition between the two* (organic farming, energy production).

Among the activities and functions that are not market-driven, substantial community and national supports and payments can be obtained for nature protection and agricultural environment protection. Landscape management receives less support or supervision at present and is difficult to quantify, as it contains a number of subjective elements. The level of support is even lower, if it exists at all, for market-driven activities. The transitional category also occupies an intermediate position as regards support. It could be seen that on the surveyed farms there was a very modest proportion of market-driven, non-agricultural activities; in most cases the level was much lower than that recorded ten years ago in the framework of the IMPACT project. In the micro-regions included in the present research the only really decisive elements of agricultural multifunctionality are heavily supported, non-market-driven activities and functions.

Table 3

Percentage of non-agricultural activities and functions in the surveyed farms

Activity or function	As a percentage of the respondents*			
	LEADER micro-regions			Mean
	A	B	C	
Landscape management	27	57	67	44
Nature protection, agricultural environment protection	23	27	48	29
On-farm sales of agricultural products	8	20	5	11
Energy production	2	3	10	9
On-farm processing of agricultural products	6	7	5	6
Organic farming	2	3	4	3
On-farm production of non-agricultural products	2	3	-	2
Agri-tourism, village tourism	0	3	0	1
Local and community services	4	7	5	5
Other non-agricultural services	2	-	-	1
There are no non-agricultural activities	59	20	10	37

*As the respondents could designate several activities, the figures total more than 100%
Source: own data and calculation

Questions on future plans for non-commodity outputs were answered by 99% of the respondents, 57% of whom have no plans for such activities. The distribution of those considering future developments is illustrated in Table 4.

Table 4

Percentage of farmers planning to introduce non-commodity outputs in the surveyed micro-regions

Type of output	In the percentage of the respondents*			
	LEADER micro-regions			Mean
	A	B	C	
Strengthening the economy of their own micro-region	6	50	24	22
Improving food safety by increasing local sales	8	40	19	20
Increasing the recreation value of the region through landscape management	6	47	5	17
Increasing biological diversity	4	23	24	14
Moderation of natural risks	6	23	14	13
Preservation of the cultural heritage	2	0	0	1
There are no plans for non-commodity outputs	86	20	43	57

*As the respondents could designate several activities, the figures total more than 100%
Source: own data and calculation

- The distribution over the three micro-regions of those planning new developments was similar to that for non-agricultural activities and functions. It is worth noting that, with the exception of two cases, all those planning new developments already carry out some form of non-agricultural activity or function.
- Among the farmers considering new developments a relatively large number were clear about the importance of strengthening the economy of their micro-region and of increasing the role of local food markets. This is in agreement with earlier research which showed that nowadays the emphasis in Hungary should be put on building up and stabilising the rural economy, using various approaches in each region (Fehér, 2005).
- Environment and nature protection aspects are ranked highly among the future developments.

The survey also covered the measures that farmers thought were the most urgent in their own micro-region to promote multifunctionality in local agriculture. Urgency was evaluated on a 1–10 scale, the most urgent receiving a score of 10. The various measures were ranked on the basis of the total scores and divided into three groups. The three most urgent measures in each region were designated in the table by three dark blocks, the next three by two dark blocks and the least urgent three by one block. The question was answered by 98% of the respondents. In other words, a far larger number of farmers expressed an opinion on this matter than were actively considering non-commodity outputs.

The order in which the farmers ranked the various measures clearly indicated their desire to strengthen the economies of the micro-regions, indicating that the farmers appreciate the importance and urgency of developing the local economy.

The motivation of farmers already involved in non-agricultural activities and functions and of those considering new developments in non-commodity outputs was also investigated. The order established did not differ to any great extent from that listed in Table 2, suggesting that security, ensuring a living for the family, the production of healthy foodstuffs and ensuring a healthy environment also played a decisive role in the increase in multifunctionality. The farmers in question did not link multifunctionality with creating jobs for other people.

Table 5

Opinions of respondent farmers on the urgency of measures designed to improve multifunctionality in their micro-regions

Urgency of the measure in their micro-region: Type of measure	LEADER micro-regions									Mean		
	A			B			C					
Increase in the production and marketing of healthy, safe foodstuffs	II.			V.			II.			II.		
Improvements in cooperation between farmers in marketing, production and tool utilisation	V.			IV.			IV.			V.		
Production and utilisation of energy crops	IX.			VIII.			VII.			VIII.		
Expansion of nature protection and environmental services	VIII			VII.			VI.			VI.		
Increase in the economic and social adaptability of farmers	III.			II.			IV.			III.		
Better consumer acceptance of local products and services	IV.			III.			III.			IV.		
Improvements in living standards in rural settlements; better ability of the local economy to provide for a population	I.			I.			I.			I.		
Flexible forms of employment (part-time jobs, telework, etc.)	VI.			VI.			VIII.			VII.		
More rapid spread of computer skills, elimination of digital illiteracy	VII.			IX.			IX.			IX.		

Source: own data and calculation

Those who responded to the questions in Table 5 also indicated the level at which the individual measures should be implemented. The roles of the central government, the regional level, the local council and the farmer in the given measure were evaluated on a 1-5 scale, the most important role being awarded 5 points. The results are summarised in Figure 2.

For some of the measures (e.g. improvements in cooperation between farmers in marketing, production and machinery utilisation, increase in the economic and social adaptability of farmers, better consumer acceptance of local products and services) the farmers' evaluation of the role of various levels appears to be realistic.

In other cases, however, the evaluation appears to be less sound. For instance, in the case of the measure "Improvements in living standards in rural settlements; better ability of the local economy to provide for a population" the farmers thought their own role was unimportant, and chiefly expected solutions from central government, the regional level or the local council.

The role of the central government was generally over-evaluated. This level scored highest (4.4). The over-evaluation is especially true in the case of measures aimed at "increasing the production and marketing of healthy, safe foodstuffs".

The respondents assigned the second most important role to the farmers. However the very modest role of farmers, according to the Figure, in the spread of flexible forms of employment is not realistic.

In general the surveyed farmers ascribed an over-modest part to the local and regional governments. On the contrary, the economic role of the local council is over-evaluated. Unfortunately, due to the low standard of development of local economies, they do indeed have a disproportional role in the employment and in the income transfers in most of the settlements surveyed.

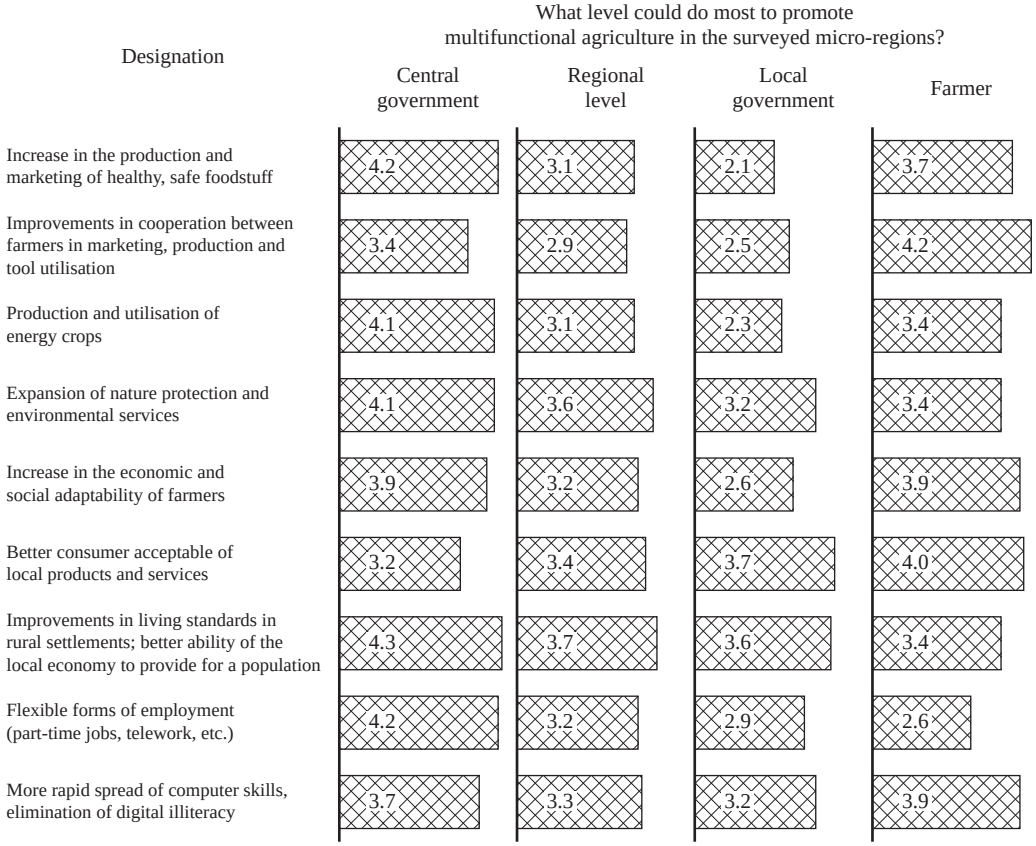

Figure 2: Opinions of farmers on the role of various administrative levels in the implementation of measures to improve multifunctionality in their micro-region

Source: own work

The question on factors stimulating and inhibiting multifunctionality was phrased as an open-ended question. Some 70% of the farmers mentioned stimulating, on-farm factors. Of these, the majority (47%) put mainly economic factors (better profitability, having various sources of income, a better standard of living for the family, better exploitation of machinery) in this category. This was followed by the desire for an independent, healthy way of life and personal ambitions (22%), and the endeavour to make use of the farming knowledge of family members (16%). Inhibitory factors were listed by two-thirds of the farmers. Mention was made of lack of capital (32%), problems related to farm size (22%), lack of knowledge or ambition (21%) and the age of the farmer and lack of heirs (9%).

Conclusions

The farming families play an important, complex role in both the establishment and development of the farms. On the one hand, the family is an economic factor (joint wealth, land use, source of labour), but on the other it is a subjective driving force in that it motivates the farmer to take economic steps that will ensure or improve the welfare of the family. This latter role is extremely important in farm-level surveys of multifunctional agriculture and in the implementation of measures aimed at enhancing multifunctionality. The method employed in the present work proved to be suitable for the survey in question and for the determination of correlations.

Neither the heads of farms already carrying out non-agricultural activities and functions, nor the whole of the farmers surveyed displayed any great motivation to create jobs for outsiders.

Almost two thirds of the farms reported the existence of non-agricultural activities and functions. However, the proportion of market-driven activities was low. The given level of multifunctionality was attributable to landscape management, agricultural environment management and nature protection.

More than a third of the farmers were planning new developments in non-commodity outputs. They were chiefly concerned to strengthen the economy of the micro-region, to develop local food markets and to improve the recreational value of the landscape.

The respondents considered the most urgent measures in their micro-regions to be the improvement of living standards for local inhabitants, an increase in the production and marketing of healthy, safe foodstuffs, and the greater economic and social adaptability of farmers. In some cases (e.g. improvements in cooperation between farmers in marketing, production and machinery utilisation, increase in the economic and social adaptability of farmers, better consumer acceptance of local products and services) the farmers' evaluation of the role of central government, the regional level, local councils and the farmers themselves appears to be realistic, while in other cases the evaluation was often contradictory.

The majority of the on-farm factors listed as stimulating multifunctionality were of an economic nature, but the desire for independence, personal ambitions and the desire to make use of their professional knowledge were also mentioned. The majority of the inhibitory factors mentioned were also of an economic nature, but the lack of knowledge and the age of the farmer were also decisive.

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Concentration of the trade and the small-scale fruit and vegetable producers – practices in Hungary and in the European Union[1]

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Abstract

This study examines the conflicts arising from the requirements of the food retail chains and their possible solutions, based on an analysis of the foreign and domestic trade literature and on a domestic assessment of 2008. Direct supplies from small-scale producers have future prospects only in the field of niche market products. Only production organisations integrating small-scale producers may be successful in the supply of large quantity products of homogeneous quality. In Hungary, similar organisations – principally POs – still do not have a role comparable to that they fulfil in more developed countries of the European Union in the field of the supplies to the food retail chains. For increasing supplies, the domestic small-scale producers should change their mentality, and increase their adaptability and marketing-oriented innovative skills. The state, on the other hand, should grant assistance in mitigating the lack of capital due to the small-scale production and support more efficiently the increasing role of the different producer organisations, especially of the POs.

Keywords

Concentration, food retail chains, supply, small-scale producers, fruits and vegetables

Introduction

Throughout Europe the channels to market of fresh fruits and vegetables have recently undergone considerable changes. The importance of the traditional local producers' markets has decreased while a growing number of large producers or producer organisations are directly supplying the food retail chains, thus decreasing the role of the wholesale sector. The same process, though more slowly and by cyclic movements is also to be observed in Hungary. In the process of commercial concentration, usually small scale producers with a diverse range of products fall into the weakest position and face the toughest challenges. The importance of this situation is demonstrated by the fact that about 80% of total production derives from medium and small-size enterprises (Erdész, 1994).

A similar concentration of the demand, therefore, requires reactions from small-scale producers getting into a more undefended position. It is however possible to define such reactions only through recognising the concentration process in effect on the demand side, that is, in the food retail trade and its effects.

There are several methods of approach known in the trade literature for investigating the concentration of the food retail trade and the relationship between the large food retail chains and the agricultural producers, including competition and market structure analyses, market dominance research, logistics-oriented study of the vertical co-ordination, the supply chain and of the product path and marketing-oriented analysis (Juhász et al., 2008a). We have opted for the marketing-oriented approach starting out from the customers' demand, joining works such as Lehota and Tomcsányi, 1994; Fertő and Szabó, 2004; Kohls and Uhl, 1990; Meulenberg, 1993; and Szakály et al., 1994.

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The purpose of the study is to examine the conflicts arising from the demand and requirements of the food retail chains and their possible solutions within the small-scale production in the European Union and in Hungary.

We have not examined the sales channels other than food retail chains (i.e. wholesale markets, consumer markets, independent small food shops and specialised shops, direct sales by producers etc.).

Methodology

We analysed the foreign and domestic trade literature and compared the practices followed in Hungary according to a domestic assessment made in 2008 and those followed in the European Union. When assessing the domestic situation we remembered that concentration of the food retail trade is a general trend in the developed world to which agricultural small-scale producers have to adapt. Therefore we are not attributing blame to the food retail chains and are not examining issues falling under competence of the market supervision (market dominance, sales below purchase price, shelf money, listing fees etc.), nor the system of state subsidies or government regulations. By revealing the conflicts emerging from the demands and requirements of the food retail chains and their causes within small-scale production, we have endeavoured to encourage marketing-oriented adaptation of the small-scale producers and, within this, expansion of their supply to food retail chains.

From the 11 food retail chains involved in the domestic assessment, eight are multinational and three are domestic chains. These chains have the following profiles:

- In majority hypermarkets: 3
- In majority supermarkets: 2
- Discount stores: 2
- Cash & Carry warehouse: 1
- (Domestic) chains with differentiated networks, where small shops have an important role: 3

During the domestic assessment, eight enterprise case studies and six interviews were performed. The case studies are divided as follows:

- Headquarters of multinational chains: 7
- Headquarters of domestic chains: 1

The interviews were performed at:

- Headquarters of a multinational chain: 1
- Headquarters of a domestic chain: 1
- Regional purchase centres of domestic chains: 3
- Wholesale merchant supplying food retail chains: 1

Results and discussion

Food retail trade tendencies

In Europe, shares of the different shop types show different trends: while the share of hypermarkets is already decreasing in Western Europe (partly due to the restrictive policies, rendering difficult the opening of new shops), it still continues to grow in the eastern regions. Hyper- and supermarket and discount stores have a leading position in the food retail trade within the European

Union. Both regions are characterised by increasing expansion of discount stores (especially of the hard discounters) (Verdict, 2008). While in 1992 their participation amounted to 7% in the European market, it had already grown to 10% by 2003 (Planer, 2004). In some countries, for example Germany, considered as the country of origin of the discount stores, and Norway, their share remarkably exceeds this value. Principally soft discount stores are typical in Scandinavia, that have a larger assortment of manufacturer brand products and of fresh products, such as fruits and vegetables. In Western Europe – as in Hungary – the discount stores have a smaller assortment of fruits and vegetables. On the contrary, hyper- and supermarkets have larger selection of these products.

Through the expansion of discount stores, sales of fruits and vegetables in these types of shops are increasing. As the chief executive of Ahold stated, 8-14% of the chain's turnover is derived from sales of fruits and vegetables. The strategic importance of fruits and vegetables is also demonstrated by the fact that these products are usually located near the entrance, as they are able to attract most customers into their retail units (Revista Mercados, 2007). Participation of the discount stores' sales of fruits and vegetables is also remarkable in Hungary. Hungarian large floor-space food shops also typically sell fruits and vegetables through strategically positioning them near the entrance, in order to increase their attractive force, because the sight of goods arranged on the shelves has a determinative impact on the shops' reputation, influencing turnover.

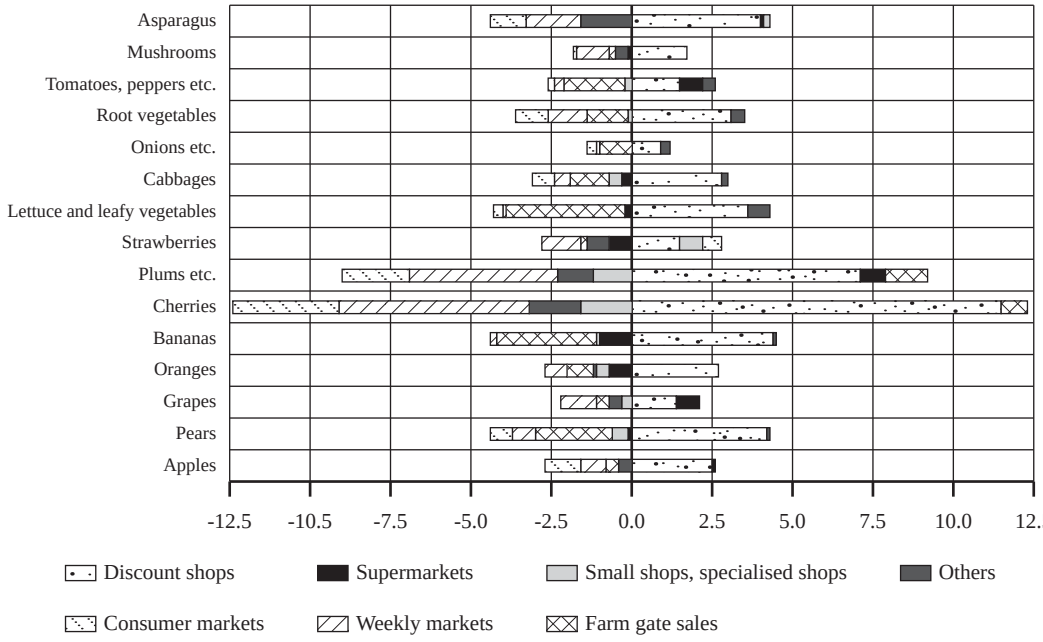

Figure 1: Changes of the purchase sources of certain fruits and vegetables between 2003 and 2005 in Germany, in percentage points

Source: Own calculation based on the data of ZMP (Zentrale Markt- und Preisberichtstelle für Erzeugnisse der Land-, Forst- und Ernährungswirtschaft GmbH).

Figure 1 showing the changes in percentage points of the purchase sources of certain fruits and vegetables between 2003 and 2005 in Germany illustrates well the trend of expansion of the discount stores in the sales of fruits and vegetables. In aggregate, it can be observed that sales in Germany are shifted towards the discount stores, mainly to the disadvantage of those selling on

the weekly markets and of producers. The biggest shift occurred in the sales of cherries, plums and greengages, where the sales values in the discount stores and consumer markets were higher in 2005 compared to 2003, to the detriment of those realised on weekly markets and of the direct purchases from producers.

Concentration of the food retail trade is characterising both the Eastern and Western European regions and Hungary, too, even though differences may be observed among individual countries as regards the ways of implementation (opening of new shops or mergers and takeovers). In Hungary, a very high degree of enterprise concentration had already developed by 2004 in the field of mixed profile food trade (hyper- and supermarkets, as well as discount stores belong to this category). Nearly 60% of the total returns from sales were concentrated at the 28 large enterprises, representing only 0.1% in number, while the 17,735 micro-enterprises, with 95% share in number, realised just 19% of the returns. The degree of concentration of this sector is further increased by the fact that this is the branch most characterised by the propagation of purchase and marketing associations (Juhász et al., 2008b).

A further increase in concentration is expected in the next five years. In Western Europe, the share of the 30 leading food retail chains is already high (it was 68% in 2004); therefore a slower growth may be expected here. According to Planer (2004), the indicator may attain 71.5% by 2009. On the contrary, the share of the first 30 food retail chains amounted to only 48% in Central Europe, quickly growing and attaining around 59.5% by 2009. The increasing concentration will imply growing pressure for fruit and vegetable suppliers and among them small-scale producers, because they will have to face ever more powerful customers when selling their products, thus further impairing their bargaining positions.

The expansion and leading market position of the hyper- and supermarkets and of discount stores are trends characterising also Hungary's food retail trade (Juhász et al., 2008a). At the same time, however, considerable differences also exist between Hungary and the more developed countries in respect of the sales channels. While the proportion of the traditional local markets has considerably decreased in the developed countries, in Hungary, the consumer markets continue to have an important share. A further Hungarian peculiarity consists in the important role of the nearby speciality shops and of the small self-service shops (Kürti et al., 2009).

In the environment of sharpening competition, in order to increase their competitiveness through cutting costs and improving quality, the commercial chains have introduced the following methods also in Central East Europe (Dries et al., 2004):

- Centralised purchasing system
- Cross-border purchasing system
- Specialised wholesalers
- Employment of global multinational logistic companies
- System of preferred suppliers
- Development of own standards

In the EU, the role of the long-term partnership and of the organised, contract-based relationship between commercial chains and suppliers is increasing. According to our domestic assessment, this trend is encumbered by the short-sightedness of the small-scale producers and by the remarkable share of the black economy. One of its consequences is unreliability. The overwhelming majority of the small producers are not willing to commit themselves to the food chains, to invest and to assume risks. If they have an opportunity to sell their produce at daily prices exceeding those contracted with the chains, they sell it to such customers in breach of their contract. They do not appreciate the benefits of a long-term relationship.

Sales difficulties and peculiarities deriving from the special character of fruits and vegetables

Due to the changes in purchasing habits, the demand for fruits and vegetables by the food trade chains has transformed during the recent period. Consumers require a greater variety of products in larger quantities, partly due to the increase of consumption and partly due to the fact that the large floor-space food retail shops have became the main purchasing source of the fruits and vegetables consumed. This situation has a detrimental impact to the small-scale producers, able to supply only small quantities, both in the European Union and in Hungary.

Fresh fruits and vegetables are special goods among food products, and their peculiarities cannot be disregarded by small producers. The factors determining the special character of this product line are summarised in the following five points:

1) These are perishable products, or products that, even if still consumable after a longer period, their enjoyment value and thus their quality is quickly diminishing due to loss of water, ripening and other factors[3]. As a consequence they require more efficient logistics than the majority of other foodstuffs.

2) Conversely, fruits and vegetables have the important property that the products included here are mainly undifferentiated, i.e. hardly distinguishable from similar products of other "brands". Even though there are initiatives to overcome this difficulty through introduction of brand names (for example Dole and Chiquita for tropical fruits or the Blackcat brand of the Spanish Anecoop organisation, or even the quality-based differentiation of the French Blue Whale Premium, Blue Whale and Blue Whale Prima brands), these brands provide added value for customers only if a very large product selection is available. In the case of other well differentiated foodstuffs customers may even defer the purchase if their preferred brands are unavailable; however this is not typical of fruits and vegetables.

   In the last decade, the own branded products of the food retail chains have appeared on the shelves. These were principally processed products. While previously the presence of similar products was not characteristic in the fruit and vegetable sector, by today they have penetrated also into this product segment. Metro Group, for example, introduced in 2005 the Cali brand for the excellent quality fresh fruits and vegetables in replacement of the previous own brands applied at national level. Customers are assisted by the help of a colour coding system: vegetables are coded green, exotic fruits red and mushrooms purple. With annual sales of three million tonnes, the Metro Cash and Carry self-service stores, Real hypermarkets and Extra supermarkets belong to the largest food retail chains as regards fruits and vegetable sales. More than half of the turnover is constituted of own brands, that is from goods produced by farmers contracted exclusively for the food retail chain. The quality of these products is guaranteed throughout the supply chain – from the farmer to the shop – thanks to the special quality assurance system – EKS – developed by the company (Metro Group, 2005).

   In Hungary, own brand products of the food retail chains are still not typical. Their role however is expected to increase in some chains, narrowing further the opportunities of small-scale producers due to the large volume requirements. Differentiation of the products is however possible by other means than brand names, too. Demand for products deriving from ecological farming, for the so-called regional products produced by local farmers, for

[3] Of course there are some exceptions that may be stored for long time, such as nuts and almonds.

fair-trade products etc. is increasing. These requirements are recognised also by several food retail chains that have adapted their purchase policies in compliance with such needs.

According to a study prepared by GfK Hungária Market Research Institute, due to the revival of the traditional home cooking habits, domestic traditional flavours are increasingly frequently found on the table of German consumers. Accommodating themselves to this trend, several German food retail chains pay increasing attention to selling products produced in their own region. For example, beyond products from ecological farming and the so-called fair-trade products, REWE offers regional products in increasing quantities and every week on its leaflets introduces a local farmer producing goods offered by the shop, thus trying to ensure prospects for the region together with the customers. At the same time, however, Wirthgen (2004) emphasises that even though the system of regional vertical marketing could be a successful strategy because consumers have manifested their preferences for regional products, especially if these are controlled and produced in environment-friendly manner, the food retail trade sector, though not being averse to selling regional products, is not inclined to pay more for them.

According to our domestic assessment, similar trends are already present at some food retail chains in Hungary. One multinational chain, for example, offers typical local specialities (tomato, paprika, onions, and apple) on separate shelves in a central location. Price is of secondary importance in the case of similar premium quality products.

3) This category includes mainly seasonal products and their offer throughout the year cannot be granted under the actual climate conditions, even though consumers would require it. With certain (but not every) products this may be ensured partly through forcing and partly through application of up-to-date storing techniques. But these are extremely costly procedures; therefore food retail chains both in the EU and in Hungary usually satisfy the extra-seasonal demand for fruits and vegetables with imported goods.

   The principal reason for the conflict between seasonality of production and consumer demands is that consumers already expect a uniform offer throughout the year. The food retail chains are able to mitigate this conflict only by importing products. In addition, import offers are often more favourable than domestic supplies. Consequently, imports constitute one of the critical points of the relationship between food retail chains and domestic suppliers, because imports are narrowing the opportunities of the domestic suppliers.

4) Product innovation is extremely slow in fruit plantations that start to bear fruits only after several years; therefore reactions to the new consumer demands are much slower than in the case of other food products.

5) Due to the age of the plantations and to environmental effects the quantity of produce is fluctuating and cannot be exactly defined in advance. Even if small-scale producers are not able to change certain factors (age, innovation) as a matter of course, through co-operation and co-ordinated production of individual farmers the poor variability of products and the seasonality could be improved.

Requirements of the food retail chains against suppliers and preparedness of the producers

Lehota and Fehér (2007) discuss the knowledge of the food retail trade's demands and requirements, as this knowledge has enhanced importance due to the concentration of the trade. Knowing the customers' requirements is especially important in the case of the food retail chains. A fundamental pre-requisite for supplies include that the product should be delivered (1) in proper quality, (2) in sufficient quantity, (3) at due time and (4) at favourable prices to the food retail chain's storage facility or sometimes to the retail unit itself. There are no differences regarding these universal basic requirements between Hungary and the European Union.

1) Availability of the product of a suitable quality is indispensable. *Product quality is basically determined by two factors: the quality of the fruit or vegetable itself and the additional services.* In other words the quality of the produce is only a part of the quality of the goods. The parameters influencing produce quality may be divided into three main categories. There are properties which can immediately be determined, such as cleanliness, colour, fragrance, shape, decay, different injuries and freckles etc. There are also properties which are easy to experience, such as the flavour and whether the fruit peels easily (for example, the ease of peeling was an important factor in spreading of clementines), the consistency etc. The third category includes the properties that can be experienced only during the long term consumption and the so-called confidence properties. These include for example the fruits' nutritional value and vitamin content or whether they are free from chemicals or come from ecological farming. The properties easy to determine are perhaps the most important, because consumers may assess them unequivocally during the purchase and also the procurement manager of the commercial chain accepts or rejects products on the basis of such properties. Beyond size and ripeness, the merchants interviewed by Beamer (1999) mentioned as the most important quality requirement proper selection and longest possible shelf life in the case of fresh fruits and vegetables.

   The majority of the confidence properties can be certified through application of different certification systems. For example, in Hungary 98% of the products derived from ecological farming are controlled by Biokontroll Hungária Nonprofit Kft. supervised by the Ministry of Agriculture and Rural Development, but there are national level organisations authorised to perform audits throughout Europe.

   Beyond quality of the produce, the so-called additional services also contribute to the final quality of the product, vesting it with new properties, allowing for example ease of transport (packaging), easy handling during processing (peeling, pre-washing, slicing etc.). The majority of these additional properties are developed during the post-harvest treatment in the fruit and vegetable farms. The purchase of the necessary up-to-date equipment is however a capital-intensive investment affordable mainly only for the producer organisations; small-scale producers are at a disadvantage in this respect in the case of the most of the produce both in the European Union and in Hungary. According to our domestic assessment, Hungarian small-scale producers have a considerable lag compared to their Western European companions in the field of the additional services and of the preparation of produces for goods. In the majority of cases, technical development was missed due to lack of capital, therefore they are not able to supply products which are cleaned, selected, packaged and labelled in compliance with the food retail chains' requirements.

There are different regulations, standards and certifications at international, national or company level or even in the form of civil initiatives for warranting and attesting the product characteristics. Also, several food retail chains have elaborated similar requirement systems, exacting suppliers to comply therewith. Such systems include for example BRC, EUREPGAP or Filière Qualité Carrefour. With the help of similar company and other standards and through imposing certification systems, the food retail chains strive to guarantee continuous good quality and security for their consumers. At the same time, there is an increasing demand from consumers to observe other criteria. These include for example sustainable agricultural production, organic products, social and environmental aspects, phytosanitary requirements etc. The chief executive of Ahold mentioned the observation of the delivery times and, beyond sufficient quantity, the existence of quality certificates and traceability as the most important requirements from suppliers (Revista Mercados, 2007).

The quality of the products is changing with time, therefore, the producer's task is not only guaranteeing excellent quality upon finishing harvest but – if he/she would like to be the supplier of a food retail chain – good quality should be guaranteed until arrival to consumers. Beamer (1999) interviewed a merchant of Virginia on this issue, who expressed the opinion that farmers should consider the product their own from sowing until reaches the table of consumers. According to him, even though the products of several producers are impeccable at the time of harvest, when it comes to the post-harvest treatment, packaging, transport, cooling and other procedures, they have no idea what steps would be required for guaranteeing arrival of the goods in the best possible quality to the consumers' table. According to Beamer (1999), though the local farmers would be able to supply fresher products to the food retail trade, without pre-cooling and if not transported in cold-storage trucks, local products are received in such decayed condition that it is better to transport goods from greater distances.

The recent changes in food consumption trends, in which positive and negative economic changes had an important role, have lead to the transformation of the demand for fruit and vegetables. Though in some countries (especially in the countries in transition in the 1990s) fruit and vegetable consumption has decreased compared to the previous period, in several countries of Western Europe a growth of consumption has been experienced. In addition, by the expansion of urbanisation and of the modern lifestyle, demand is continuously increasing for highly processed, high added value, so-called *easy-to-consume* products; packaging is becoming more important, together with other additional services (sliced, pre-prepared goods), while the issue of quality and food safety has also gained emphasis (Van der Meer, 2004). The trend of healthy lifestyle and the wellness wave brought prosperity for healthy food, such as vegetables, fruits, fishes, and also consumption of organic food is continuously growing.

The demand of consumers – as participants located at the apex of the product path – for special products is transmitted by the food retail chains to producers. Thus, the commercial chains are principally conveying the consumers' requirements with their increased quality exigencies, when asking for washed and properly prepared fresh products from suppliers.

Increasing shelf life of the fresh products is a requirement not emanating from consumers; this need could be satisfied through plant improvement and different post-harvest procedures (pre-cooling, chemical treatment). Homogeneous quality (uniform size etc.) is a very important requirement of the food retail chains in respect of fruits and vegetables. Experience both

in Hungary and abroad demonstrate that this requirement (large homogeneous lots) cannot be satisfied by single small-scale producers.

2) The second group of problems concerns the issue of adequate quantities. The majority of European countries, and also the Hungarian fruit and vegetable production, is characterised by fragmentation. This constitutes a difficulty in respect of supplies to the food retail chains, because they usually require the supply of large, homogeneous quantities. As a general rule, the economic ordering quantity constitutes one of the basic concerns of supply chain management. Its determination is indispensable because the supply costs are constituted of variable costs and of a fixed cost portion; consequently, goods ordered in very small quantities may have extremely high specific ordering costs. These high costs are the very reason for the preference of the food retail chains for mainly ordering large quantities; single small-scale producers are usually unable to fulfil such orders, while food retail chains are not inclined to assume the increased transaction costs implied by the need to deal with several suppliers. The solution of this problem could be the establishment of producer organisations, co-operation of the producers on the one hand. On the other, in the case of niche market products, of which smaller quantities are ordered by the food retail chains, small-scale producers also have an opportunity to become suppliers. The Irish FORFÁS National Advisory Body for Enterprise and Science also considers niche market products as the most promising category for small and medium-size (FORFÁS, 1999). This trend is typical also in Hungary. Table 1 shows the structure of suppliers for seven domestic multinational food retail chains. It shows that large producers and POs have a determinative share in the supplies to all but one commercial chain. The proportion of direct supplies to the seven multinational chains by small-scale producers is low (0-5%), with the exception of one chain (15%).

   Our domestic assessment shows that direct supplies to the food retail chains by the small-scale fruit and vegetable producers have only future prospects in the field of special, niche market products also in Hungary. These are typically not mass products but special produce requiring manual work, specialities, local products and delicacies, where freshness of the produce is indispensable. The opportunities in this field are still less exploited by the domestic small-scale producers than by their Western European companions.

   Our domestic assessment also shows that direct supplies by small-scale producers have a greater share in the domestic food retail chains, where the network includes mostly small and medium-size shops and purchasing activities are not centralised to the same extent as with the multinational chains. Table 2 presents the purchasing structure of one of the assessed domestic food retail chains. The directly supplying small-scale producers have a 40% share in the total supplies. As many as 300 small-scale producers delivered goods to the central storage facility during the assessment. At the other two domestic food retail chains examined by us, supplies partly through wholesalers and partly through purchases by the smaller shops directly from small-scale agricultural producers were typical.

Table 1

Structure of fruit and vegetable supplies of seven multinational food retail chains in Hungary*

Type of supplier	Number of suppliers	Participation in the supplies (%)	Participation trend
Company # 1			
Large producers and POs*	5	65	Increasing
Wholesalers	3-4	30	Strongly decreasing (65% three years ago)
Small-scale producers	2-3	5	Slightly increasing
Total	10-12	100	
Company # 2			
Large producers	5	20	
POs	10-15	65-70	Increasing
Wholesalers	4-5	10	Decreasing
Small-scale producers	2-3	5	Increasing
Total	25-30	100	
Company # 3			
Large producers	6-8	10	Unchanged
POs	3-4	30-35	Slightly increasing
Wholesalers	6-8	50	Unchanged
Small-scale producers (excl. pickle producers)	6-8	5	Unchanged
Total	25	100	
Company # 4			
Large producers			
POs	6-8	90	
Wholesalers		5	
Small-scale producers	8	5	
Total		100	
Company # 5			
POs	5-6	80-90	Increasing
Wholesalers	15-20	10-20	Decreasing
Small-scale producers	1-2		Decreasing
Total	20-30	100	
Company # 6			
Large producers and integrators	25	60	Increasing slowly
POs	2	10	Increasing slowly
Wholesalers	2	30	Decreasing slowly
Small-scale producers	-	-	-
Total	29	100	
Company # 7			
Large producers	20-25	40	Unchanged
POs	10	40	Unchanged
Wholesalers	6	5	Decreasing
Small-scale producers	15	15	Unchanged
Total	50-55	100	

* Estimated data. Data of some chains are incomplete. No data were supplied by one of the chains.
** POs: Producer Organisations.
Source: Data supplied by the food retail chains.

Table 2

Structure of the fruit and vegetable supplies at one of the domestic food retail chains*

Type of Supplier	Number of Suppliers	Participation in the supplies (%)	Participation tendency
Large producers	-	-	-
POs	1	40	Unchanged
Wholesalers	10	20	Decreasing
Small-scale producers	300 (decreasing)	40	Unchanged
Total	310	100	

* Estimated data.

However the more fragmented purchase and sales system of the domestic food retail chains has disadvantages: lower efficiency, more expensive purchases, distribution and marketing. The 300 small-scale producers – supplying one of the domestic chains – are difficult to handle, therefore hardly sustainable in the long term. As a result, at two of the domestic chains (including that in Table 2) concentration of purchases is already considered or in place and this will diminish the opportunities for directly supplying small-scale producers.

The advantages implied in the economies of scale and in co-operation are clearly demonstrated by the case of the British Well-Pict European that organised berry growers in order to directly supply to ASDA supermarkets in Devon and Cornwall. Growers (of mainly strawberry) deliver their fruits to a farm, from where the goods are transported to the local ASDA supermarkets. The objective is to attain higher prices and to decrease the transport mileage (previously growers delivered their goods to an ASDA distribution centre, from where the fruits were practically redelivered to their starting point) (*Local farmers pilot…, 2006)*.

3) The goods have to be delivered at due times, in the case of the multinational food retail chains mostly a on daily basis. This is only possible with proper skills and through co-operation. Our assessment however showed that Hungarian fruit and vegetable producers typically like dumping goods onto the market on the one hand and, on the other they would supply less frequently and with large qualities at a time. This is principally due to the lack of storage facilities and to the expected higher prices.

Supplies require a high degree of logistic organisation – especially in the case of rapidly decaying produce – in order to adjust harvesting activities to the supplies. This problem can be better resolved by the producer organisations, through implementing their own logistics system. For example, the Spanish Anecoop organisation, partly for the sake of its expansion in Central-East Europe, and partly for serving their supplies to Germany, has established a logistic centre equipped with the most up-to-date technologies for satisfying the demands of the retail chains within the region. The centre has both BRC and IFS certificates.

The food retail chains now have requirements of suppliers even with respect to logistics which are increasingly difficult to satisfy, such as for daily supplies, which is becoming typical in the case of quickly decaying produce (FORFÁS, 1999). Small-scale producers are usually unable to comply with such requirements, especially if the goods have to be delivered to the chain's logistic centre. It is easier if the supplies are directed to the retail units, as it is evidenced by the example of the Cornwall farmers. Our domestic assessment showed the same problem in Hungary. The overwhelming majority of the fruit and vegetable small-scale

producers are unable to connect to the food retail chains' logistic system as they have insufficient transport capacities and transport means and they cannot justify the cool chain. Product path and logistics functions are emerging that the single small-scale producers are unable to guarantee alone and therefore they cannot become suppliers.

4) The strong competition in the food retail trade manifests itself principally as price competition, mostly between agricultural producers and among them small-scale producers. Many producers both in the EU and in Hungary complain of low prices. This is due to the extremely strong competition among food retail chains, where prices have a determinative role. In this situation the food retail trade would like to receive the highest possible value at the lowest possible price and this may often be obtained through marketing imported products and neglecting the local producers. This is especially true for manual work intensive products, in which case farmers of the developing countries have access to labour at considerably lower costs. In addition, more and more South American and Asian companies have suitable certification systems for complying with the quality requirements of the food retail chains.

   According to our domestic assessment, the low price requirement and the consequent need for extremely strict cost management is a condition very hard to comply with for small-scale producers of fruits and vegetables because the majority cannot guarantee a production volume that would allow profitable supplies to large food retail chains even at lower prices. Due to their size, the efficiency of the small-scale producers is anyway low and their cost level high. Therefore, their competitiveness as suppliers is weak.

   Beyond these basic criteria, the multinational food retail chains – in compliance with the practices usual in the EU and similar to other products – are also raising new expectations in the case of fresh products, such as automatic ordering or introduction of category management (Dimitri et al., 2003). However the related very expensive investments require extremely high expenditures from small-scale producers, but the finance is hard to raise and returns are low. As a consequence of the obviously high requirements, individual small-scale producers often rule out the possibility of supplying to food retail chains. This is partly due to the poor co-operation among small-scale producers and partly to insufficient knowledge of the customers' requirements and consequently to the lack of the suitable commodity fund.

   The wide product range is a strategic requirement of the multinational food retail chains. This is also confirmed by our domestic assessment. Three categories could be differentiated in respect of the fruit and vegetable assortment found in the food retail chains investigated. The first category is that of the chains having 30 to 100 articles. Discount stores and the domestic chains operating smaller and medium-size shops belong to this category. The second includes the chains with about 150 to 300 elements. The majority of supermarkets and hypermarkets belong to this category. The third one includes the chain of hypermarkets with about 350 to 400 articles. The connection between assortment and turnover is usually characterised by the fact that the overwhelming majority of the turnover derives from considerably fewer articles than the whole range.

   Beyond increasing the range, the food retail chains have an interest in expanding the selection of these products – perhaps with specialities – also due to the customer-enticing effects of fresh fruit and vegetables. The presence of more varieties of vegetables and fruits on the shelves implies on the one hand the appearance of non-endemic fruits and, on the other the availability of endemic fruits outside their ripening season, attained either with the help of cool storage or through extension of the season through different cultivation techniques (e.g.

forcing, utilisation of ripening accelerators) or by choosing a suitable variety structure, or even from imports. A consequence of these post-harvest technologies and, in part, of the abolition of the factors restricting imports is that in the case of several fresh products the offer is available throughout the year and that several tropical and subtropical products, until now less known and less popular, have appeared on the shelves. Lentz (2004) emphasised that there are more articles in the fresh fruit and vegetable category in supermarkets than ten years ago.

Not only the greater diversity of the fruit and vegetable species may lead to the expansion of the range. The supply of new varieties that better satisfy the requirements of consumers may also offer opportunities to producers. For example, clementines – mainly due to the ease of peeling and to fewer seeds –have become an everyday product. However the development of similar products mainly goes beyond the possibilities of the single small-scale producers. Producer organisations also have an advantage over small-scale producers in the field of research and development. The Spanish Anecoop is a good example: it maintains an experimental farm of 20 hectares, of which one task is developing new products. The organisation has successfully launched on the market some revolutionary new products developed here (for example seedless water melons with red and yellow flesh, different new varieties of nectarines and several lettuce varieties), thus gaining an advantage against the traditional products of the other suppliers.

Producer organisations

Collaboration between producers may be a successful answer to the many problems outlined above (Z. Kiss, 2003). The horizontal market structures provide instruments for granting competitive advantages and the agricultural marketing literature emphasises the benefits of the producer organisations. They are also indispensable because the multinational food retail chains do not assume the task of directly integrating the small-scale producers and the related costs (Wu Huang, 2004). This is equally true for the European Union and for Hungary. Shaw and Gibbs (1996) recapitulated the reasons that render important the co-operation in the agricultural sector as follows:

- Instability of the market,
- Relatively low level of product differentiation,
- Large number of agricultural producers.

In their view, agricultural co-operations give the following advantages:

- Increased bargaining power,
- Economies of scale in selling and purchasing,
- Availability of professionals,
- Opportunity to increase added value,
- Access to information.

As certain channels have higher expectations against their suppliers, these are available only to agricultural producers that can comply with these requirements. Access to larger quantities of products allows marketing through several channels, decreases risks and maximises the business opportunities (Shaw and Gibbs, 1996).

According to the Spanish Intercitrus (Interprofesional Citricola Española), changes in the following fields are necessary for the sake of the Spanish citrus sector's reorganisation:

- Analysing the demand and offer conditions within the sector,
- Assisting producers in reacting adequately to the changes in demand,

- Development of different systems to improve or to maintain the quality of produce,
- Encouraging contractual relationships,
- Acting as representative of the citrus sector,
- Strengthening research and development in production, distribution, processing and marketing,
- Expediting marketing and advertisement campaigns,
- Discussions on a plan of action, with the aim of increasing the producers' income.

According to the organisation, none of these measures can be implemented if the number of citrus producers does not decrease to leave some large companies, conglomerates or organisations representing the majority of the citrus production.

Although producer organisations are usually the most successful in the co-operation with retail food chains, there are also several producer organisations which are unable to become efficient market participants. The factors that may cause deficiencies in the organisations' operation are outlined below:

- Lack of well-defined objectives,
- Assertion of the individual interests instead of the common interest,
- Lacking transparency of the knowledge and information among partners,
- Inequalities among partners,
- Lack of realistic development plans,
- Lack of enterprising skills,
- Too much focus on the produce, instead of paying attention to services.

Bijman and Hendrikse (2003) have identified the following reasons:

- The collective ownership does not encourage members to invest,
- The collective decision-making has its disadvantages,
- Inelasticity of the organisation,
- The majority decides the policy to be followed by the organisations and the minority has to accept these decisions.

By eliminating these problems, and through introduction of competitive and efficient production methods and increasing the added value of the products, the role of the production organisations may further increase in the supplies to the food retail chains.

In Hungary, the producer organisations are not still as common in the fruit and vegetable sector as in the EU. This is one of the basic reasons for the small-scale fruit and vegetable producers' difficulties in the field of supplies. The differences between successful countries and Hungary are due to the fact that in Hungary the rate of the black sector is high and this does not encourage the domestic small-scale fruit and vegetable producers to adapt. On the other hand, the state does not efficiently encourage a decrease of the black sector and sales through the producer organisations, furthermore the provision of the product path functions connected to the logistic systems of the food retail trade chains.

As our domestic assessment has demonstrated, the multinational and domestic food retail chains mainly consider the POs as suitable partners. POs adapting themselves to the chains' purchasing strategy may usually become suppliers. The problem lies in the fact that some of the POs wish to produce a large variety of fruits and vegetables, while the chains principally need specialised POs, supplying three to five products in large quantities, instead of POs supplying a large product range. In the latter case, POs cannot be competitive as regards quantities, quality and price.

Our domestic assessments demonstrated that there are still several conflicts in the relationship between the POs and their members. This is due to the fact that – in the hope of higher profits and immediate payment – producers sell their products outside the POs in a higher proportion than allowed. POs should further develop in the following areas:

- Developing their own image,
- Strengthening specialisation,
- Better emphasising the regional or local origin of their products.

The selection process is still under way amongst them. On the basis of their prospects, they can be categorised as follows:

- Winners, operating already well and developing;
- "Sufferers" – these will disappear;
- "Where nothing is yet decided". They could develop into prospective POs because they have the capabilities but are unable to take benefit thereof, or lack proper professionals (logistic or commercial experts), or are unable to co-ordinate the production of their members.

Conclusions

It is a trend observed both in the food retail trade within the European Union and in Hungary that large floor-space hyper- and supermarkets and discount stores operated by large food retail chains are making headway and obtaining leading market positions. Direct supplies by small-scale producers to the multinational food retail chains have future prospects only in the field of special niche market products. In this product category, the Hungarian small-scale producers are still supplying to the large retail chains in smaller quantities than their Western European companions and remaining below their possibilities. Direct supplies by small-scale producers may be more important in the case of the domestic food retail chains, where the rate of small and medium-size shops is more important and purchases are not centralised.

Due to the large quantities of homogeneous quality products, the producer organisations integrating small-scale producers may become successful suppliers of the retail chains. In Hungary, the producer organisations in the fruit and vegetable sector still do not have the same role in supplying food retail chains as those in the European Union. Many of the domestic small-scale producers may principally become suppliers through joining similar organisations. POs may have a distinguished role in increasing supplies to the large food retail chains among the different producer organisations.

To increase sales, the domestic small-scale producers must adapt themselves to the requirements of the food retail chains both in the field of niche market products supplied directly and in the case of large quantity products of homogeneous quality supplied through the producer organisations. They should change their mentality and approach, increase their adaptation, improvement and marketing-oriented innovation abilities. The state, on the other part, should grant assistance in mitigating the lack on capital due to the small-scale production and support more efficiently the increasing role of the different producer organisations, especially of the POs.

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Intra-industry trade of Hungarian agricultural products and the EU-accession

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Abstract

This paper analyses structural changes in Hungarian agricultural trade after EU accession, especially considering intra-industry trade. Results suggest that EU accession raised the intensity of trade contacts but had a negative impact on trade balance. After accession, national agricultural exports by countries and products has shown a high but decreasing level of concentration, while in the case of agricultural imports, concentration was increasingly high by country and constantly low by product. Agricultural trade between Hungary and EU-15 is basically inter-industrial in nature, though the role of intra-industry trade is increasing.

Key words

EU-accession, agriculture, intra-industry trade

Introduction

In 2004, Hungary joined the European Union (EU) along with nine other Central and Eastern European Countries, causing several changes in the field of agriculture. One of the major changes was the transformation of national agricultural trade, as indicated by several authors (*Kiss* 2008, *Fertő* 2006). The aim of the paper is to analyse the effects of EU accession on agricultural trade, especially considering intra-industry trade, by using recent data. New trade theories stress that an increase in economic integration can be particularly seen in the increase of intra-industry trade (*Greenaway et al.* 1995, *Brülhart* 1994). In contrast with traditional trade theories focusing on comparative advantages and trade flows between different industries, intra-industry trade is based on economies of scale and imperfect competition and trade flows between products belonging to the same industry. Its essence is that two countries export and import similar products simultaneously. Observing changes in intra-intra-industry trade is useful since they provide numerical expressions of probable trade advantages arising from integration and changes in trade structure (*Bojnec and Hartman*, 2004).

The paper, therefore, seeks to expand the scant literature of the field by providing a comprehensive analysis of the effects of EU accession on national agricultural trade. In order to meet this aim, it uses the literature of intra-industry trade. First of all, the literature of intra-industry trade is reviewed, followed by the analyses of changes in national agricultural trade. Afterwards, several calculations are made to assess structural changes in national agri-food trade.

Data used in the article are based on the OECD trade database using SITC system, four digit breakdown. Agricultural trade is defined as trade in SITC 0 (food and live animals), resulting in 132 product groups using the four digit breakdown. As to agricultural industry, a unit of agricultural products with similar characteristics is meant. The article works with trade data between 2000-2007, which period is divided into two sub-periods (2000-2003, 2004-2007) in order to assess effects of EU accession clearly. In this context, the EU is defined as the member states of the EU-15. In some cases data for Luxemburg are missing due to lack of trade and thereby interpretation of indices.

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Theory of intra-industry trade

The notion of intra-industry trade first appeared in the 1960's when it turned out that countries with similar technologies and factor endowment started to export and import products at the same time within industries (*Verdoorn,* 1960, *Dréze,* 1961). In the 1970's, an increasing amount of research dealt with this issue, providing a theoretical basis for the "new trade theories". The first great work summarising the topic was that of *Helpman and Krugman* (1985), creating a framework for new trade theories and thereby for intra-industry trade theory by using the Chamberlin monopolistic competition theory. The authors pointed out that comparative advantages drive inter-industry trade through specialisation, while economies of scale drive intra-industry trade. In the latter case, companies concentrate on the production of new product varieties for which a demand exists.

The work of *Helpman and Krugman* (1985) was developed further by many scientists. *Bergstrand* (1990) analysed the rate of income, factor endowment and intra-industry trade processes through the gravity theory, while *Markusen and Venables* (1998) incorporated transportation costs and multinational firms into the original model. *Schmitt and Yu* (2001) created a model in which non-traded goods appear as a fixed cost of export and demonstrated a correlation between the level of economies of scale and the extent of trade. *Davis* (1995) showed that constant returns to scale and perfect competition can also generate intra-industry trade, while this thought was developed further by *Cukrowski and Aksen* (2003) by showing that the existence of intra-industry trade can be extended to homogenous products. In turn, *Qasmi and Fausti* (2001) and *Berkum* (1999) found that the higher level of intra-industry trade refers to a more developed economic integration.

Falvey (1981) has also dealt with the model of intra-industry trade and showed that the original model is only valid for the so called homogenous products, besides which companies differentiate their products by quality. According to the pioneering work of the author, notions of horizontal and vertical product differentiation have come into existence in the literature. The former refers to homogenous products with the same quality (perfect substitute), while in the latter case products have different quality and price. The distinction has huge significance as by concentrating on different quality products sold in intra-industry trade flows, characteristics of industries and countries will also be different (*Greenaway et al.* 1995). Moreover, it is demonstrable that horizontal intra-industry trade is associated with low adjustment costs, known as the "smooth adjustment hypothesis" in the literature (*Brülhart*, 1999). However, the same cost for vertical intra-industry trade can be significantly higher for two reasons: (1) because of differences in the factor content of export and import; (2) because of the possibly existing negative welfare effects (*Fertő*, 2005).

Empirical background of intra-industry trade in agricultural products

Although the importance of intra-industry trade in agricultural products is increasing, relatively little research has been made on the measurement and determination of its root causes (*Sarker and Surry*, 2006). Intra-industry trade of agricultural products in Iran was analysed by *Rasekhi* (2008) and showed that in 1997-2003 3-6% of Iran's trade was intra-industry in its nature but that this rate is increasing. By analysing intra-industry trade in agricultural products of China, *Wang* (2009) pointed out that its significant growth between 1996 and 2005 was mainly due to the increase of vertical intra-industry trade. *Bojnec and Hartmann* (2004) applied Grubel-Lloyd (GL) and marginal intra-industry trade indices to Slovenian agricultural trade and found that in spite of trade agreements, Slovenia's agricultural trade is still inter-industrial, especially in cases of bulk goods with low value added. Furthermore, the increase of Slovenian agricultural intra-industry trade is due

to the increasing rate of processed agricultural products, basically determining the competitiveness of the country (*Bojnec et al.* 2005). Similar conclusions were drawn by *Luka and Levkovych* (2004), who found Ukrainian agricultural trade to be predominantly inter-industrial and thereby based on comparative advantages.

Bojnec and Fertő (2008) analysed the integration of agricultural trade between South-East Europe and EU-15 and found that in spite of the predominantly inter-industry nature of trade in this respect, the proportion of vertical intra-industry trade in total agricultural trade is increasing, generating a change in resource allocations between agricultural sectors. Moreover, the authors showed that agricultural trade of different quality and price products between the two regions is a consequence of trade liberalisation, economic growth and the transition in agricultural sectors. By analysing the competitiveness of cotton and wheat production in Central Asia, *Levkovych* (2008) demonstrated that the low level of agricultural intra-industry trade in the countries analysed is due to the specialisation of agricultural production, which in turn is a consequence of natural endowments and earlier political decisions.

Fertő (2004, 2005, 2006, 2007, 2008, 2009) and *Fertő and Hubbard* (2001, 2003) have dealt with intra-industry trade of Hungarian agricultural products traded with the EU and calculations were made for 255 product groups during the period 1992-1998. The clear result is that agricultural trade between Hungary and EU-15 in the period analysed was mainly inter-industry in nature, though the intra-industrial part was dominated by vertical trade.

Methods of measuring intra-industry trade

Several methods exist to measure intra-industry trade. Firstly, the classical Grubel-Lloyd (GL) index, which is expressed formally as follows (*Grubel and Lloyd*, 1975):

$$GL_i = 1 - \frac{|X_i - M_i|}{(X_i + M_i)} \tag{1}$$

where X_i and M_i are the value of exports and imports of product category i in a particular country. The GL index varies between 0 (complete inter-industry trade) and 1 (complete intra-industry trade) and can be aggregated to level of countries and industries as follows:

$$GL = \sum_{i=1}^{n} GL_i w_i \text{ where } w_i = \frac{|X_i - M_i|}{\sum_{i=1}^{n}(X_i + M_i)} \tag{2}$$

where w_i comes from the share of industry i in total trade. The high level of intra-industry trade between two countries refers to higher degree of economic integration (*Fertő and Hubbard*, 2001). After 1975, several authors criticised the GL-index, for five main reasons: (1) aggregate or sectoral bias, (2) trade imbalance problem, (3) geographical bias, (4) inappropriateness to separate horizontal and vertical intra-industry trade (HIIT and VIIT), (5) inappropriateness for treating dynamics (*Erdey,* 2005). Detailed discussion of the first four problems would distract from the basic aim of this paper; a comprehensive review can be found in *Fertő* (2004).

The fourth problem of the GL index is given by the joint treatment of horizontal and vertical trade. Literature suggests several possibilities for solving this problem. Among these solutions, the most widespread one is based on unit values developed by *Abd-el Rahman* (1991). The underlying presumption behind unit values is that relative prices are likely to reflect relative quantities (*Stiglitz*, 1987). According to the widespread view in the literature based on this presumption, horizontally differentiated products are homogenous (perfect substitutes) and of the same quality, while ver-

tically differentiated products have different prices reflecting different quality (*Krugman* (1979), *Falvey* (1981)). According to the method of *Greenaway et al.* [1995], a product is horizontally differentiated if the unit value of export compared to the unit value of import lies within a 15% range. If this is not true, the GHM method is talking about vertically differentiated products.

The fifth problem is the inappropriateness of treating dynamics, which the concept of marginal intra-industry trade seeks to solve. According to the new approach, there is a need to create and apply such an index, which is able to measure, contrary to static GL-type indices, changes in intra-industry trade between two time periods. *Brülhart* (1994) was the first to provide the following dynamic version of the GL-index, which is able to measure intra-industry trade between two selected time periods:

$$A_i = 1 - \frac{|\Delta X_i - \Delta M_i|}{\|\Delta X_i\| + |\Delta M_i|} \tag{3}$$

where X_i and M_i means the same as in case of GL index, while Δ represents the change in trade between two years. As with the GL-index, the value of the A index also varies between 0 and 1, where the two extremes mean exactly the same as in the case of GL-indices. Unlike the GL-index, however, the A index provides information on the direction and structure of changes in trade flows (*Brülhart*, 1994).

Although the A index partly solves problems of dynamics of GL-type indices, it also generates new ones. *Oliveras and Terra* (1997) analysed the A index and found that there is no direct relationship between the A index of a certain period and the corresponding index of its sub-periods. Furthermore, there is no general relationship between the A index of a certain industry and the corresponding indices of its sub-industries. It can be concluded that the A index is quite sensitive to the choice of period and industry aggregation. A further problem with the A index (as with the GL-index) is that it cannot distinguish between HIIT and VIIT and may underestimate the importance of intra-industry trade (*Thom and McDowell*, 1999). Therefore, the authors propose the following modified method in order to distinguish HIIT and VIIT: let A_w mean horizontal marginal intra-industry trade, while A_j total marginal intra-industry trade as follows:

$$A_w = \sum_{i=1}^{N} A_i w_i \tag{4}$$

where w_i are appropriate weights. Formula of A_j is as follows:

$$A_j = 1 - \frac{|\Delta X_j - \Delta M_j|}{\sum_{i=1}^{N} |\Delta X_i| + \sum_{i=1}^{N} |\Delta M_i|} \tag{5}$$

where $X_j = \sum_{1}^{N} X_i$ and $M_j = \sum_{1}^{N} M_i$. Vertical marginal intra-industry trade is defined simply by the simple difference between the two as follows: A_j-A_w.

The various methods used in this paper are summarised in Figure 1, demonstrating the different types of trade.

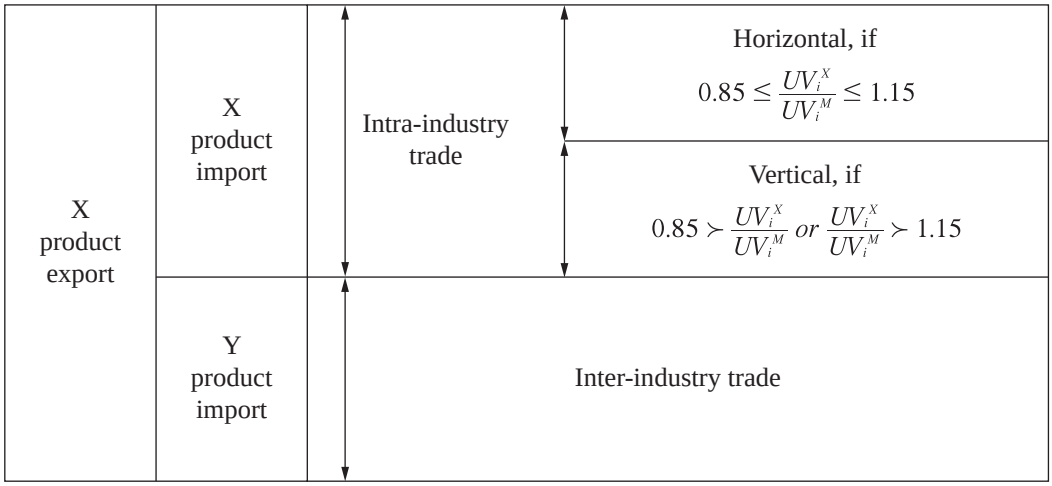


Figure 1: Types of trade

UV_i^X = Export unit value (export value/export quantity)
UV_i^M = Import unit value (import value/import quantity)
Source: Own composition

It is clear from *Figure 1* that export and import of the same or similar products at the same time is associated with intra-industry trade, while trade of different products refers to inter-industry trade. Intra-industry trade consists of horizontal and vertical trade, determined by the unit value of export and import unit values, according to the equation in *Figure 1*. Marginal trade, in turn, visualises the changes in time for all categories.

Changes in agricultural trade with the EU-15

The share of the EU-15 in Hungarian agricultural trade was stable before 2004, while it significantly changed after accession *(Figure 2)*. In the period 2000-2003, 40-50% of national agricultural export, import and trade balance was coming from trade with EU-15, while after accession, various changes have occurred. Firstly, the share of agricultural import from the EU-15 in total Hungarian agricultural imports increased above 60%, that of agricultural exports raised above 50%, while that of the trade balance decreased below 30% (except for 2007). It is observable that after accession, 60% of the total national agricultural imports and 50% of exports are accounted for by trade with the EU-15, although a continuously lower share of total trade balance originates from the EU-15 (according to trade statistics, the national agricultural trade balance with Eastern European, non-EU countries increases). One can conclude, therefore, that intensity of agricultural trade relations with EU-15 countries was enhanced by accession, though it resulted in lower profitability.

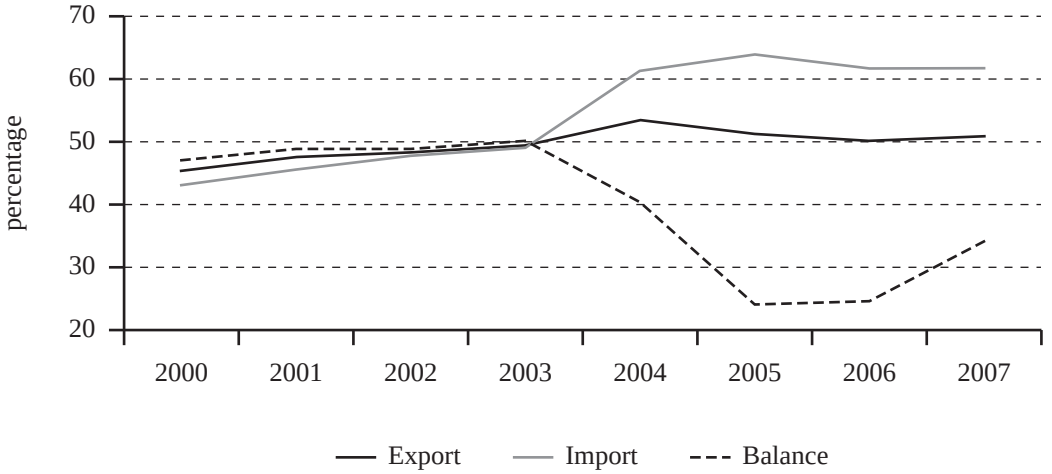


Figure 2: Share of Hungarian agri-food trade with the EU-15 in Hungary's total agri-food trade, 2000-2007

Source: Own calculations based on *OECD* (2009)

Similar conclusions can be drawn if analysing changes in the value of trade *(Figure 3)*. Agri-food export to EU-15 countries tripled from 2000 to 2007 and doubled from 2003 to 2007, while agri-food imports coming from EU-15 increased six times and three times respectively, depressing the export/import rate even further (it was above two before 2003). The growth of the agri-food trade balance is shrinking and just a small difference existed between 2003 and 2007 in this regard.

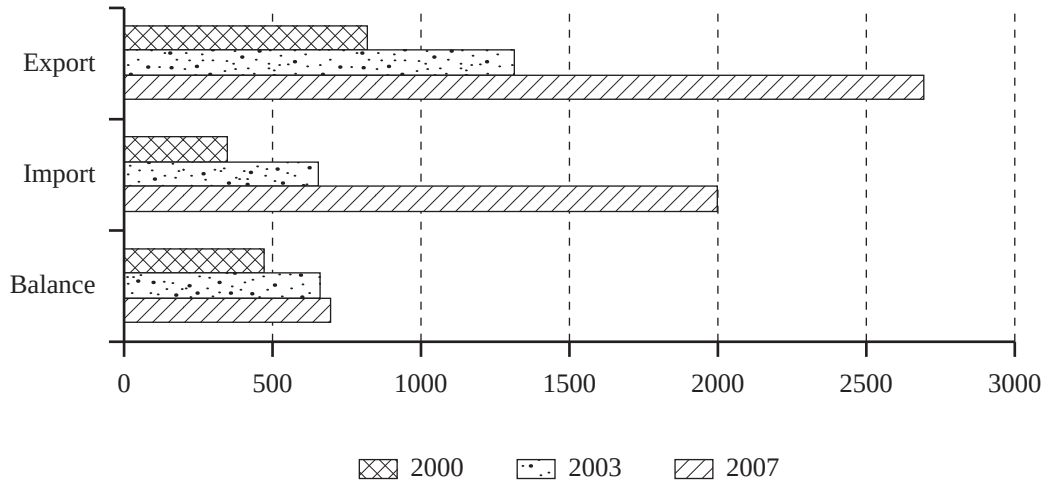


Figure 3: Hungarian agri-food trade with the EU-15, 2000-2007, million USD

Source: Own calculations based on *OECD* (2009)

An analysis of agricultural trade by markets reveals further changes in structure (*Table 1 and 2*). The most important agricultural markets for Hungary were Germany, Italy and Austria in the period analysed with an export share of 67% before and 62% after accession, indicating that concentration of Hungarian agricultural exports is still high but decreasing. The share of Germany in national agri-food exports declined by more than 10% after accession, predominantly to the benefit of Greece and Italy. National agricultural products account for less than 1% each in the markets of Denmark, Finland, Ireland and Portugal in the period analysed.

Table 1

Share of Hungarian agricultural export to the EU-15 by country* (%)

Country	2000-2003	2004-2007
Germany	38.42	27.84
Italy	15.37	19.87
Austria	13.39	14.21
Netherlands	5.51	7.38
France	7.76	7.04
Greece	1.30	6.53
United Kingdom	4.22	6.40
Spain	6.57	3.98
Belgium	3.91	2.95
Sweden	2.02	1.84
Denmark	0.53	0.95
Finland	0.73	0.62
Portugal	0.15	0.26
Ireland	0.12	0.13
EU-15	100.00	100.00

* In descending order according to 2004-2007 averages
Source: Own calculations based on OECD (2009)

The share of Hungarian agricultural imports from the EU-15 by country shows a slightly different picture than that of exports. Germany, Italy and Austria were the basis of national agri-food imports after accession, altogether giving a 55% share of total EU-15 imports, which is 10% higher than before accession, indicating that concentration was strengthened. This is especially true if the Netherlands is taken into consideration since it was the second biggest provider of agricultural products to Hungary in 2000-2007 (concentration with the Netherlands increased from 63% to 75%). After accession, Germany experienced a 10% share increase in national agri-food imports, contrary to the same rate of decrease indicated before in export share, while Italy lost national agricultural markets to the biggest extent after the accession. Hungarian agri-food exports coming from Finland, Ireland, Portugal and Sweden were insignificant, each accounted for less than 1% of total agri-food imports (except for Ireland in 2000-2003).

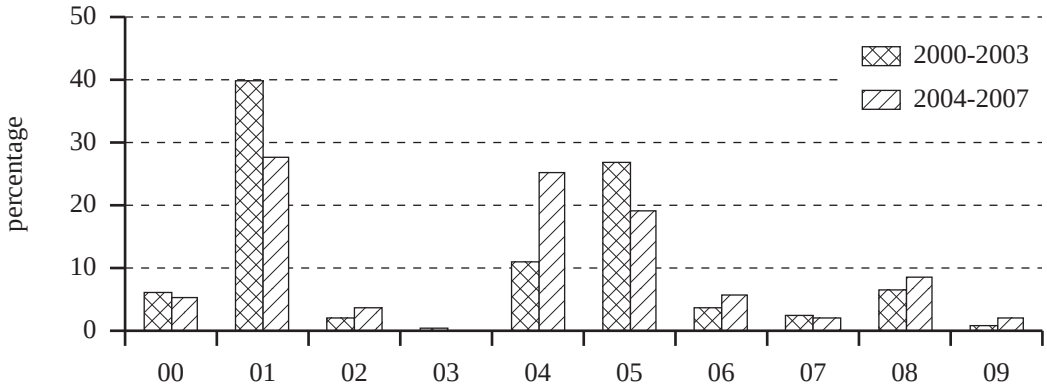
Table 2

Share of Hungarian agricultural imports from the EU-15 by country* (%)

Country	2000-2003	2004-2007
Germany	25.62	35.59
Netherlands	17.60	19.41
Austria	7.66	10.34
Italy	12.20	9.35
France	8.65	6.65
Spain	7.42	5.89
Belgium	5.41	4.37
United Kingdom	3.18	2.99
Denmark	5.82	2.35
Greece	4.40	1.56
Ireland	1.15	0.61
Sweden	0.76	0.53
Portugal	0.06	0.31
Finland	0.07	0.05
EU-15	100.00	100.00

* In descending order according to 2004-2007 averages
Source: Own calculations based on OECD (2009)

National agricultural trade by product groups, as by country, shows a concentrated picture *(Figure 4 and 5)*. Meat (01), cereals (04) and fruits-vegetables (05) had a prominent role in national agri-food exports, the common share of which declined from 78% to 72% after accession, indicating a high but decreasing level of concentration in agri-food exports, as observed by country**.** However, share of meat and fruits-vegetables in national agricultural exports declined significantly after accession in favour of cereals, partly due to the grain intervention system and changes in competitive conditions.

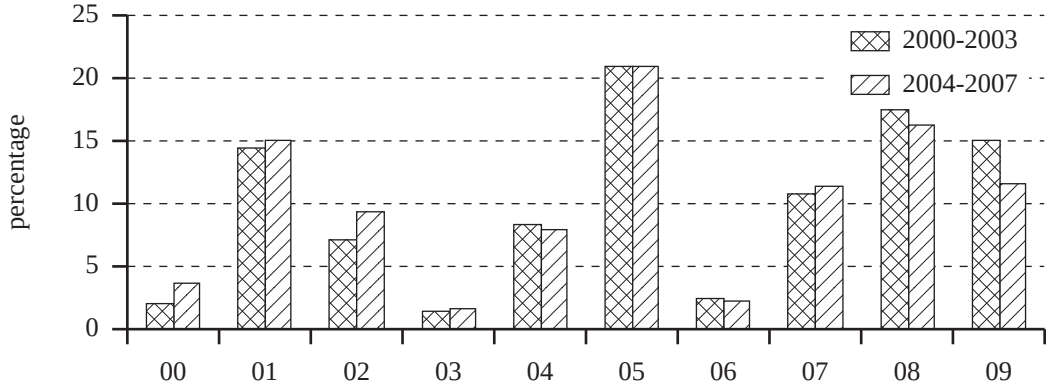


00: Live animals; 01: Meat and meat preparations; 02: Dairy products and birds' eggs; 03: Fish, crustaceans, molluscs; 04: Cereals and cereal preparations; 05: Vegetables and fruits; 06: Sugar, sugar preparations and honey; 07: Coffee, tea, cocoa, spices; 08: Feedstuff for animals; 09: Miscellaneous edible products

Figure 4: Share of Hungarian agricultural export to the EU-15 by product group

Source: Own calculations based on *OECD* (2009)

The changes in Hungarian agricultural imports by product groups are less significant than those of exports. The share of meat (01), cereals (04) and fruits-vegetables (05) was 44% in both periods but several other agricultural products appear besides them. There were no major changes in the structure of agricultural imports after accession; the highest shares pertain to fruits-vegetables (05) and the lowest to fish (03). *Figure 5* underpins the well-known fact that imports of tropical fruits and protein feed determine the profile of national agricultural imports.



00: Live animals; 01: Meat and meat preparations; 02: Dairy products and birds' eggs; 03: Fish, crustaceans, molluscs; 04: Cereals and cereal preparations; 05: Vegetables and fruits; 06: Sugar, sugar preparations and honey; 07: Coffee, tea, cocoa, spices; 08: Feedstuff for animals; 09: Miscellaneous edible products

Figure 5: Share of Hungarian agricultural import from the EU-15 by product group

Source: Own calculations based on *OECD* (2009)

It can be concluded that the share of Hungarian agricultural trade with the EU in total agricultural trade has grown after accession, though a smaller trade balance is realised in these markets. After accession, agricultural exports both by country and product group shows a high but decreasing level of concentration, while in the case of agricultural imports, concentration is high and increasing by country and low and stable by product group. Product structure has remained relatively stable after accession regarding imports, though changed measurably regarding exports.

Hungarian intra-industry trade with EU-15 countries

By using the above methods , intra-industry trade was calculated for agri-food trade between Hungary and EU-15 for the period 2000-2007. As indices happen to be different in nature, results are treated and demonstrated separately.

Hungarian-EU-15 intra-industry trade by GL-indices is presented in *Table 3*. GL indices showed ordinary values with some exceptions for the whole period, though in the majority of cases it was below 0.5, indicating that Hungarian-EU-15 agricultural trade runs basically between industries. The highest values pertain to France and the lowest to Greece. Moreover, in most cases, GL-index shows higher values at the EU-15 level than at country level, which is in line with previous expectations.

The value of the GL-index is decreasing in time at the EU-15 level, though country level results vary significantly *(Table 3)*. An obvious decline in values of the GL-index is observable in a group of countries (Belgium, France, Germany, Greece, Italy, the Netherlands and Spain) in the

period analysed, while in other countries (Austria, Denmark, Finland, Ireland, Portugal, Sweden and United Kingdom) a clear increase can be seen. Agri-food trade has become more and more intra-industry in nature in these latter countries, while in the former, the balance shifted towards inter-industry trade. In other words, this means that for the first group of countries trade in agricultural products created by different industries gave place to that created by a single industry, referring to the increase in specialisation (for the other group of countries, exactly the opposite is true). The largest increase is observable in Austria, while the biggest decrease was in Italy from 2000 to 2007. The values of standard deviations are low for all countries (<0.2), indicating that the structure of intra-industry trade was stable in the period. Huge differences between countries indicate that the EU-15 should not be treated as homogenous with respect to agri-food trade with Hungary, as previous research has already shown (*Fertő andHubbard*, 2001).

Table 3

Grubel-Lloyd indices in Hungarian agri-food trade with the EU-15 by country, 2000-2007

Country	2000	2001	2002	2003	2004	2005	2006	2007
Austria	0.35	0.34	0.35	0.41	0.47	0.50	0.49	0.47
Belgium	0.43	0.31	0.31	0.33	0.39	0.40	0.33	0.40
Denmark	0.42	0.51	0.42	0.30	0.50	0.55	0.48	0.48
Finland	0.02	0.05	0.04	0.04	0.07	0.10	0.04	0.04
France	0.71	0.72	0.64	0.52	0.51	0.58	0.58	0.51
Germany	0.57	0.55	0.51	0.48	0.45	0.50	0.49	0.46
Greece	0.05	0.03	0.03	0.04	0.02	0.01	0.03	0.03
Ireland	0.04	0.48	0.39	0.51	0.27	0.35	0.04	0.18
Italy	0.44	0.39	0.33	0.40	0.36	0.29	0.21	0.18
Netherlands	0.28	0.24	0.28	0.37	0.28	0.24	0.26	0.19
Portugal	0.26	0.10	0.21	0.05	0.06	0.17	0.22	0.50
Spain	0.66	0.41	0.40	0.43	0.41	0.30	0.36	0.41
Sweden	0.42	0.36	0.39	0.41	0.31	0.34	0.36	0.49
United Kingdom	0.41	0.43	0.41	0.45	0.38	0.46	0.53	0.57
EU-15 total	0.57	0.53	0.53	0.54	0.50	0.50	0.49	0.46

Source: Own calculations based on OECD (2009)

GL-indices were also calculated by product group and the results are summarised in *Table 4*. The values of GL-indices by product groups are somewhat lower than by country but show bigger changes. The values of meat (01), fruits-vegetables (05) and other products (09) almost doubled, while that of milk products (02), fish (03) and animal feed (08) significantly decreased from 2000 to 2007. Increasing GL values mean that the trade of specific product groups became more intra-industrial, while decreasing values mean that it became more inter-industrial in nature. In most cases, growth in intra-industry trade occurred in traditional export products, while decline occurred in traditional import products. This refers to the increase in specialisation of products devoted to export. The values of standard deviations are even lower compared to those by country, suggesting that results are stable for the whole period.

Table 4

Grubel-Lloyd indices in Hungarian agri-food trade with the EU-15, by product group, 2000-2007

GL index	2000	2001	2002	2003	2004	2005	2006	2007
00: Live animals	0.08	0.05	0.09	0.17	0.08	0.07	0.16	0.29
01: Meat and meat preparations	0.20	0.24	0.28	0.21	0.37	0.42	0.47	0.46
02: Dairy products and birds' eggs	0.58	0.57	0.48	0.69	0.57	0.48	0.38	0.55
03: Fish, crustaceans, molluscs	0.21	0.31	0.34	0.29	0.23	0.15	0.09	0.08
04: Cereals and cereal preparations	0.28	0.20	0.16	0.28	0.28	0.16	0.19	0.13
05: Vegetables and fruits	0.27	0.22	0.31	0.33	0.38	0.49	0.48	0.45
06: Sugar, sugar preparations and honey	0.34	0.37	0.32	0.29	0.31	0.41	0.39	0.32
07: Coffee, tea, cocoa, spices	0.37	0.41	0.43	0.42	0.31	0.32	0.37	0.34
08: Feedstuff for animals	0.69	0.61	0.67	0.51	0.36	0.39	0.47	0.48
09: Miscellaneous edible products	0.16	0.11	0.13	0.26	0.34	0.37	0.26	0.38

Source: Own calculations based on OECD (2009)

The frequency distribution of GL-indices is presented in *Table 5*. The results suggest that the majority of Hungarian agri-food trade with the EU-15 was inter-industrial as most of the products pertain to the first category representing low index values (0.00-0.19). The largest decline is observable in the same category from 2000 to 2001. Smaller, though not significant, changes can be seen in all categories.

Table 5

Frequency distribution of Grubel-Lloyd indices in Hungarian-EU-15 agri-food trade, 2000-2007 (%)

GL index	2000	2001	2002	2003	2004	2005	2006	2007
0.00-0.19	68.18	58.33	57.58	53.79	56.06	58.33	59.85	58.33
0.20-0.39	8.33	14.39	12.88	12.12	12.12	10.61	12.12	11.36
0.40-0.59	8.33	12.12	7.58	14.39	8.33	9.85	9.85	11.36
0.60-0.79	6.06	9.09	12.12	9.85	13.64	12.12	9.85	9.85
0.80-1.00	9.09	6.06	9.85	9.85	9.85	9.09	8.33	9.09
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source: Own calculations based on OECD (2009)

A different picture appears, however, if GL indices are presented in the form of a scatter diagram (*Figure 6*). Horizontal axis of the diagram represents values of 2000, while vertical axis represents values of 2007. A point in the diagonal means that no changes have occurred in the value of the GL index between 2000 and 2007, while a point above (below) the diagonal indicates that the value of GL index increased (decreased) from 2000 to 2007 (*Fertő and Hubbard, 2001*).

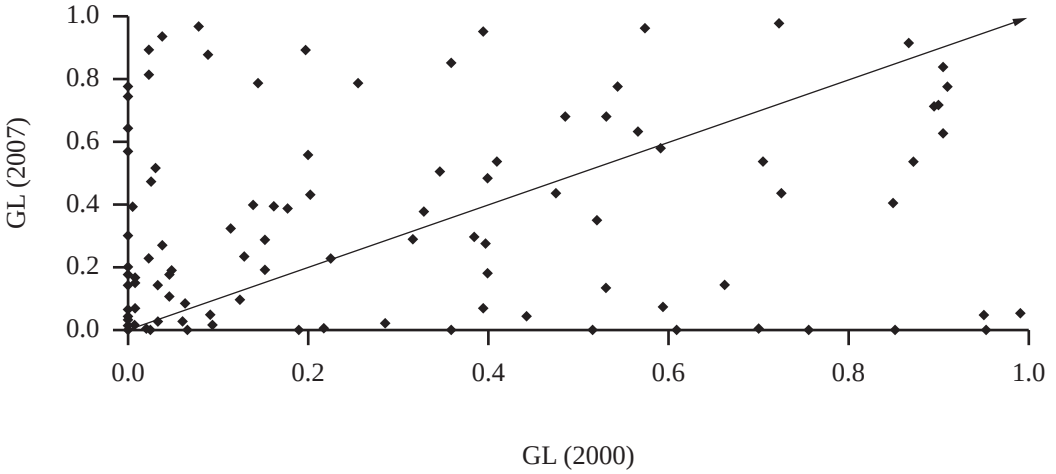


Figure 6: Scatter diagram for GL-indices (2000, 2007)
Source: Own calculations based on *OECD* (2009)

Figure 6 shows significant changes in the pattern of intra-industry trade between 2000 and 2007 as there are only a small number of points close to the diagonal. Many products with a high GL index in 2000 moved into lower categories in 2007 and this is even more true for GL indices pertaining to lower categories in 2000. Therefore, there was no change in the upper category (0.80-1.00) according to *Table 5*, though *Figure 6* shows exactly the opposite.

Results so far are based on the GL-index, thereby static in nature. As indicated above, marginal intra-industry trade intends to take the dynamics of trade processes into account. Therefore, it is a dynamic indicator playing a crucial role in analysing effects of accession. First of all, the A-index by *Brülhart* (1994) was calculated then horizontal and vertical marginal intra-industry trade indices, according to *Fertő* (2009), are also given.

The A-indices for Hungarian intra-industry trade with the EU-15 are summarised in *Table 6*. It can be seen that marginal intra-industry trade between Hungary and the EU-15 for agricultural products was basically low (<0.3), except for values for Austria and Germany changing from 2000 to 2007. The first and the last column show the effects of accession, by which we can conclude that intra-industry trade changed the most with Austria, Germany and the United Kingdom (values above 0.2 both from 2000 to 2007 and from 2004 to 2007). It is apparent from Table 6 that the increase in agri-food trade with countries was predominantly based on inter-industry trade growth.

According to *Table 6,* the assumption of *Oliveras and Terra* (1997) on the sensitiveness of the A index on period selection can just partly be supported (*Fertő*, 2008). Correlation indices between the whole period and the two sub-periods are 0.09 and 0.92, indicating that the first indicator does not, while the second indicator does represent changes in the whole period well. This follows that it is worth taking the 2004-2007 changes into account when interpreting results. Results by product groups are demonstrated in *Table 7.*

Table 6

Marginal intra-industry trade by A-indices for Hungarian-EU-15 agri-food trade, by country, 2007/2000

Country	2007/2000	2003/2000	2007/2004
Austria	0.35	0.27	0.26
Belgium	0.19	0.09	0.13
Denmark	0.25	0.04	0.17
Finland	0.01	0.01	0.01
France	0.28	0.08	0.12
Germany	0.37	0.22	0.28
Greece	0.03	0.02	0.01
Ireland	0.01	0.45	0.00
Italy	0.10	0.14	0.04
Netherlands	0.19	0.16	0.07
Portugal	0.06	0.03	0.10
Spain	0.08	0.42	0.06
Sweden	0.14	0.12	0.14
United Kingdom	0.23	0.08	0.22
EU-15	0.34	0.33	0.27

Source: Own calculations based on OECD (2009)

Table 7

Marginal intra-industry trade by A-indices for Hungarian-EU-15 agri-food trade, by product group, 2007/2000

Product	2007/2000	2003/2000	2007/2004
00: Live animals	0.18	0.09	0.26
01: Meat and meat preparations	0.41	0.29	0.39
02: Dairy products and birds' eggs	0.40	0.64	0.53
03: Fish, crustaceans, molluscs	0.01	0.03	0.01
04: Cereals and cereal preparations	0.18	0.12	0.12
05: Vegetables and fruits	0.35	0.51	0.29
06: Sugar, sugar preparations and honey	0.25	0.20	0.13
07: Coffee, tea, cocoa, spices	0.23	0.41	0.23
08: Feedstuff for animals	0.50	0.28	0.02
09: Miscellaneous edible products	0.40	0.21	0.67

Source: Own calculations based on OECD (2009)

Marginal intra-industry trade by product groups has higher values than by country, though differences between product groups are at least the same magnitude as between countries. Values are the highest for milk products (02),and lowest for fish (03). Results underpin the previous statement

according to which inside product groups, a major shift towards intra-industry trade is observable after accession, however, growth in agro-food trade is basically still inter-industrial. Consequently, trade of products created by a single industry increased after accession, implying also the increase in value added of national agricultural products. Marginal intra-industry trade is broken down further based on literature into horizontal and vertical marginal intra-industry trade (*Thom and McDowell*, 1999). Results by country are summarised in *Table 8*.

Table 8

Changes in Hungarian agri-food trade with the EU-15, by country, 2007/2000*

Country	TMIIT	HMIIT	VMIIT	MiIT
Austria	0.91	0.35	0.56	0.09
Belgium	0.80	0.19	0.61	0.20
Denmark	0.75	0.25	0.50	0.25
Finland	0.18	0.01	0.17	0.82
France	0.87	0.28	0.60	0.13
Germany	0.68	0.37	0.31	0.32
Greece	0.13	0.03	0.10	0.87
Ireland	0.85	0.01	0.84	0.15
Italy	0.48	0.10	0.38	0.52
Netherlands	0.91	0.19	0.72	0.09
Portugal	0.50	0.06	0.44	0.50
Spain	0.42	0.08	0.34	0.58
Sweden	0.70	0.14	0.56	0.30
United Kingdom	0.53	0.23	0.30	0.47
EU-15	0.94	0.34	0.59	0.06

* TMIIT = total-, HMIIT = horizontal-, VMIIT = vertical marginal, Intra-industry trade, MiIT = marginal inter-industry trade
Source: Own calculations based on OECD (2009)

Total marginal intra-industry trade show high values for all countries except Finland and Greece, significantly higher than corresponding values of GL indices given above, meaning that the the GL-index underestimates changes in intra-industry trade over time. Differences between countries are still big in this regard as well; the lowest value pertains to Greece and the highest to Austria and the Netherlands. Moreover, *Table 8* shows, contrary to the A-index developed by *Brülhart* (1994), how significant is the role of vertical intra-industry trade, providing at least 55% in total marginal intra-industry trade in all cases except Germany. In other words, the measurable change in total marginal intra-industry trade after accession was basically due to the change in vertical intra-industry trade. According to the literature, this means that the difference between the unit value of the export good (Ft/kg) and that of the import good (Ft/kg) was at least 15%, referring to huge price differences. Therefore, high VMIIT values in *Figure 8* indicate huge price differences between exports and imports appearing after accession in the trade of an increasingly large number of agricultural products, implying that this phenomenon is associated with quality differences in most cases (*Stiglitz*, 1987). In other words, Hungarian agricultural trade became composed of products with different prices and quality after accession.

According to *Table 9,* the results mentioned above are valid for all product groups except fish (03). The highest total marginal intra-industry trade values pertain to meat (01) and the lowest to fish (03). Based on the logic above, more and more products are traded inside the meat (01) industry (export and import of different meat products at the same time), while fish (03) tends to be traded with a product of another industry in international trade. Moreover, horizontal marginal intra-industry trade was the cause of changes for half of the product groups, while for the other half, vertical marginal intra intra-industry trade played a crucial role (had a higher proportion compared to values of TMIIT). It follows that the huge difference between export and import unit values (and thereby quality) is not unambiguous. Therefore, high values (live animals, fruits-vegetables, sugar) in the VMIIT column in *Table 9* refer to the fact that high price differences between exports and imports of similar products in the referred categories appear in a growing number of cases after accession, meaning that these products became to be traded by quality after 2004. Marginal inter-industry trade was just higher than that of intra-industry trade in the cases of fish (03) and cereals (04).

Table 9

Changes in Hungarian agri-food trade with the EU-15, by product group, 2007/2000*

Product	TMIIT	HMIIT	VMIIT	MiIT
00: Live animals	0.81	0.18	0.63	0.19
01: Meat and meat preparations	0.89	0.41	0.48	0.11
02: Dairy products and birds' eggs	0.71	0.40	0.31	0.29
03: Fish, crustaceans, molluscs	0.00	0.00	0.00	1.00
04: Cereals and cereal preparations	0.24	0.18	0.06	0.76
05: Vegetables and fruits	0.76	0.35	0.40	0.24
06: Sugar, sugar preparations and honey	0.70	0.25	0.45	0.30
07: Coffee, tea, cocoa, spices	0.32	0.23	0.09	0.68
08: Feedstuff for animals	0.65	0.50	0.15	0.35
09: Miscellaneous edible products	0.42	0.40	0.02	0.58

* TMIIT = total-, HMIIT = horizontal-, VMIIT = vertical marginal intra-industry trade, MiIT = marginal inter-industry trade
Source: Own calculations based on OECD (2009)

Summary

This paper analysed the effects of EU accession on agri-food trade between Hungary and EU-15 in 2000-2007. By analysing structural changes in national agricultural trade we found that EU accession raised the intensity of trade contacts but had a negative impact on trade balance. Moreover, it turned out that after accession, national agricultural exports by country and product has shown a high but decreasing level of concentration, while in the case of agricultural imports, concentration was increasingly high by country and consitently low by products. By analysing intra-industry trade with GL-indices it can be concluded that agricultural trade between Hungary and EU-15 flows basically between industries, though it becomes increasingly intra-industrial. This means that trade of products created by different industries is replaced by that created by the same industry, referring to the increase in specialisation. From 2000 to 2007, GL-indices changed measurably, though according to their frequency distribution, low indices are still a majority. Marginal intra-industry trade is low between Hungary and EU-15, while higher indices exist if analysis is extended to horizontal

and vertical marginal intra-industry trade as well. In line with these conclusions, it is stated that the significant change in total intra-industry trade after accession is basically due to changes in vertical intra-industry trade. This follows that after accession, Hungarian agricultural trade started shifting to products with different quality and price characteristics. On the whole, agricultural trade between Hungary and EU-15 after accession is still inter-industry in nature, though it becomes continuously intra-industrial. However, huge differences between countries indicate that EU-15 should not be treated as homogenous with respect to agri-food trade with Hungary, as previous research has already shown.

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The Food and Agriculture World Forum and Symposium 2009 in Budapest

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The International Food and Agribusiness Management Association (IAMA) serves as an effective worldwide networking organisation and acts as a functional bridge between the agribusiness sector, government, academies, consumer groups and non-governmental organisations. It has over 600 members from about 50 countries. IAMA also has corporate members e.g. Carrefour, Coca Cola, Danone, Monsanto, Nestlé, Pioneer, Rabobank, Royal Ahold, Syngenta, Unilever, etc.

The Annual IAMA Conference is a world-wide leadership forum stimulating strategic thinking across the global food chain and bringing together over 400 top food and agribusiness leaders, academics, government policy makers, consumers and other concerned stakeholders from around the world. At the Budapest event in 2009 more than 420 high-level people from 52 countries took part.

A tense and very sensitive transition is under way in Central Europe as the region moves from a closed to an open market system while integrating into the European Union. The Central European Countries (CECs) are important participants in the global agri-food market and seek to share solutions while strengthening their competitive global position. This conference provided regional solutions to global food system challenges while generating a dynamic and open exchange of strategies from top managers, policy makers and food experts from around the world.

The high level technical programme included almost 200 papers and 16 posters as well as several panel discussions which were held in the Europa Congress Centre in Budapest on 20-23 June 2009. The participants appreciated also the social events: the Welcome Reception in the Hungarian Agricultural Museum and the Presidential Banquet near Gödöllő were very successful. The World Forum and Symposium were sponsored by large organisations including OTP Bank, Coca Cola, Nestlé, the Ministry of Agriculture and Rural Development, Rabobank and Auchan.

The whole event included:

- Scientific Symposium (122 papers and 16 posters)
- Case Conference (21 cases)
- Student Case Competition (9 teams)
- FAO Workshop (16 papers)
- Special Discussion Sessions (7 sessions with 23 papers)
- Bridge Session: Agribusiness Education in Past, Present and Future (5 papers)
- World Forum with nine Sessions (30 papers and 9 panel discussions)

The opening plenary lecture of the **Scientific Symposium** given held by Professor Ernesto J. Gallo, Zamorano University, Honduras with the title „Megatrends Shaping the Future of Agribusiness". He analysed the Megatrend Drivers from the consumer's side, the firm's side, and the suppliers' side and from the market's side. On the demand side he addressed three points: the growing demand of the social groups, the current financial crisis and the 10 Fs of agribusiness demand which are competing for the world's resources. The 10 Fs are the following: Food, Feed, Fibre, Fuels, Flowers, Forest, Fish, Pharmacy, Furfural (for Bioplastics), Foods (Drugs). According to several

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research projects, aquaculture is the most efficient way of producing protein foods for human consumption.

The Scientific Symposium included following sessions:

- Food Chain Management
- Innovation in the Food Chain
- Supply Chain Management
- Financial Risk Management in the Food System
- Agribusiness Strategies
- Customer Orientation and Marketing
- Food Quality and Safety
- Environmental Challenges and Rural Development
- Recent Developments in the field of Biofuels

The high-level scientific papers were presented mostly in the milk and meat but also in the wine, and fruits and vegetables, sectors.

The **Case Conference** was organised by the Harvard Business School, Agricultural Programme, USA and by the INHolland University, The Netherlands. The successful Alltech Case Study was presented in the Opening Session of the Case Conference. Under the 21 interesting Case Studies which were introduced were the following from Hungary:

- Organic Food – Organic Milk (Kaposvár University)
- Traditional Pork – Mangalica (Hungarian Meat Research Institute)
- Fresh Fruit and Vegetables (Szent István University)

The **International Student Case Competition** was one of the most interesting parts of the IAMA Conference where 9 university teams representing universities from Australia (Curtin), Canada (Guelph), Hungary (Budapest Corvinus; Kaposvár; Szeged), Netherlands (InHolland) and USA (New Mexico; Purdue; Santa Clara) competed with each other. The case study prepared for the preliminary round dealt with the business problem of the Bánffi family company in Szeged producing "soda water" bearing the Guaranteed Traditional and Special Trademark in Hungary.

Soda water case

Soda water constitutes an important chapter in the history of Hungarian gastronomic culture. Through time, soda water, also known as seltzer, has been a clever innovation that created a fast growing market for small family business ventures such as Bánffi Soda Limited Partnership (Bánffi). Soda water could be mixed with wine, i.e. consumed as "spritzer". However, the Managing Director faces many challenges in the years ahead, first among them rapidly declining industry sales. While his industry was heavily influenced by tradition, he wondered if it was time for a new strategy.

A SWOT analysis was completed through in-depth interviews with the Managing Director, István Bánffi. In order to analyse the situation at Bánffi Soda it was important to look at Porter's five main forces: barriers to entry, suppliers, competition, customers and substitutes. The strategic planning by teams was based on market segments analysis, product life cycle analysis and marketing mix. The following three questions had to be answered by the nine student teams:

1) Summarise the situation for the Bánffi Soda Limited Partnership as you see it.
2) Develop and analyse several opportunities for Bánffi.
3) What strategy do you recommend for Bánffi to pursue?

Comparing the innovative and inspiring solutions submitted by the finalists for new development and marketing strategies in the short, medium and long terms, we can establish that the Bánffi Company has an opportunity to develop its traditional Hungarian roots into a sustainable, innovative producer of quality seltzers throughout the EU.

Evaluation was performed in compliance with the following seven points of view included in the IAMA Judging Guidelines:

1. Situation Analysis
2. Decision-Making and Recommendations
3. Quality of the Executive Summary
4. Quality of the Power Point Presentation
5. Overall Quality of the Oral Presentation
6. Responses to the Judges' Questions
7. Creativity and Originality

A score sheet was used to score each team (1-5). Ranking of the teams was arranged according to the numerical scores achieved. According to the decision of the Jury, four teams gained the right to take part in the final round. These were: University of Guelph; Santa Clara University; Szeged University and Purdue University.

Green Care Amsterdam Case

During the final round the teams had to find a solution for a timely agribusiness problem outlined in the Green Care Amsterdam Case. The term 'Green Care' (also known as: Farming for Health, Care Farming, or Social Farming) is defined as the use of farms as a base for extra-mural care, promoting physical and mental health. These farms are used to provide work-related or recreational activities for a wide range of care patients, including psychiatric patients, children with educational problems, the mentally or physically disabled, ex-prisoners, former drug addicts, long-term unemployed, people with burn out, etc. The objectives of the project were to develop and professionalise Green Care services in order to create new possibilities for interaction between the city of Amsterdam and its rural countryside. The objectives, value chain and performance measures for the project were discussed in the People, Planet, Profit (3P) Business Plan.

At the end of the case they were asked to provide their evaluation of the project and make recommendations as to what should be done to improve the performance of the project:

1. How would you evaluate the 3P- business performance of Green Care, given the data in the case?
2. What recommendations would you make in order to make the overall Green Care Farm project more successful, given the several different stakeholders?

According to the original idea of the Szeged team, they suggested reintegrating the unemployed people into society. Then the expenditure they impose on the state, such as unemployment benefit, will be decreased. On the one hand the expenditure of the government will be less. On the other hand, the reintegrated unemployed people could generate a higher consumption in the local market as well, which would also increase revenues of the local farmers. This system is able to create a direct connection between the state, firms and society. They emphasized the importance of local growth by the new marketing system. By adding these new factors into the system the PPP model can be more beneficial.

Based on the judges' collective evaluation, the Student Case Competition winners were as follows:

I. University of Guelph, Canada
II. Santa Clara University, USA
III. Szeged University, Hungary

The Szeged University was awarded a prize for the best European team as well. We would like to express gratitude and thanks to the following persons who assisted the many phases of both content and delivery of a successful SCC.

Co-chairs: Gregory Baker, Santa Clara University, USA and Imola Kisérdi-Palló, Ministry of Agriculture, Hungary

Advisors from Hungary: Csaba Forgács, Budapest Corvinus University; Viktória Szente, Kaposvár University; Ágota Panyor, Szeged University.

Judge from Hungary: György Raskó, President of Csopak Holding.

On the first two days of the 19th Annual World Forum & Symposium a joint **FAO-IAMA Workshop** was held with following sessions:

- Overview of Agri-food Sector Development in Central and Eastern Europe
- Linking Farmers to Markets
- Enabling Environment Reforms
- Supply Chain Management and Agri-food Sector Competitiveness
- Implications for Poverty Reduction and Rural Development

Special attention was paid to the vertical coordination related with chain quality management in the agri-food sector of the Central and Eastern European countries as well as in the Western Balkans. Foreign investors are already well aware of strategic chain management in their home countries but know-how transfer is still problematic due to the new local environment where even basic infrastructure requirements are often missing and have to be created. However, due to the rising food quality demands and to the increasing competition in the food business, vertical coordination shall also be intensified in transition economies. Development has started in this region as well: a literature review shows that in the transition countries vertical coordination and hence Western investors are using chain management involving local processors and retailers.

The following seven **Special Discussion Sessions** were successfully implemented after the Scientific Symposium:

- Metropolitan Agriculture: Creating the Next Green Revolution?
  organised by TransForum and Alterra, The Netherlands
- Food Dynamics and Innovation: The Challenge of Sustainability
  organised by International Centre for Food Chain and Network Research, University of Bonn, Germany
- Market Opportunities for Hungarian Wine and Spirits
  organised by the Hungarian Association of Food Science and Technology as well as by the Hungarian National Committee of the European Organisation for Quality, Hungary
- Biofuels Session I: Tension between the 4 F's Food – Fibre – Fuel – Feed
  organised by the McLaren Holdings, Argentina
- Sustainability in Agri-Food Chain – Global Reporting Initiative
  organised by SAI Platform, GRI, INHolland University, Baker Tilly International and Rijnconsult/ACE, The Netherlands

- Market Oriented Strategies to Revitalise Albania's Agricultural Industry organised by University of Hawaii, USA
- The Next Green Revolution organised by Brad Roberson and Dr. Edwin Price of the Borlaug Institute for International Agriculture, USA

Mary Shelman chaired the **Bridge Session** and provided an overview of agribusiness education programmes in the USA. An over-arching theme of the session was that employers are often global, with managers and leaders needing to be multi-skilled with an ability to handle risk. In addition, there is an emphasis on "soft skills" that are not often taught in schooling. There is a shortage of qualified agribusiness professionals in the USA. There is a growing need to convey the importance of agribusiness to young children and to engage them early in order to prepare them for agricultural jobs in the future.

Joydeep Bose is President and Global Head of Human Resources at Olam International in Singapore, a supply chain management company of agricultural raw materials. It processes 25% of the world's cashew nuts and is the third largest procurer of cotton. In the last five years, it has grown at a rate of 26% per year. Olam is the supplier of choice to many large brands. Olam's core competencies are its origin capabilities, its trading, marketing and risk management, and its unique competitive position. It buys directly from producing countries, it establishes strong relationships with customers and it has a unique combination of origins and sourcing capabilities. Areas for future potential growth in agriculture include Latin America and Sub Saharan Africa where talent must be developed.

Marcos Fava Neves, Professor of Planning at the University of São Paulo in Brazil, noted that the concept of agribusiness was not launched in Brazil until 1990. It was not until 1994 that the Silent Revolution of Agriculture occurred in Brazil to make it a well-respected centre for research and innovation. The speaker characterised global challenges as suffering from food and fuel myopia. He surmised that meeting industry needs includes developing integrated research groups as think tanks and supply methods for sustainable business projects. He concluded that human capital requires a global family, knowledge, socialisation, inclusion, acceptance and tolerance in order to develop solutions to arising challenges.

Csaba Forgács, Associate Professor from the Department of Agricultural Economics and Rural Development at the Budapest Corvinus University, based on a paper written with two co-authors (Gábor Szabó, Debrecen University and Csaba Székely, West-Hungarian University and Szent István University, Gödöllő), spoke about the centrally planned economy of Hungary after WWII. The first educational reforms occurred in 1968. The most powerful educational reforms occurred in 1989 and in the following decade led to a new curriculum meeting international standards. Forgács stressed that the curriculum will need more changes in the future, to reflect factors such as environmental challenges, social changes, technological development, globalisation and the current economic and financial crises among others.

Aidan Connolly, Vice President of Alltech Biotechnology, spoke about the nature of Alltech and its employees. Alltech is a leader in providing natural nutritional solutions to the animal food industry. The company is currently growing at 20% annually, demanding an increasing need for talent. The workforce at Alltech is well educated, with a large portion of recruitment done through universities, internships and relations in the industry. The most critical success factor for employees is "fire in the belly," something not often included in schooling. Alltech believes in "investing in people" through customised programmes and mini MBA programmes. Connolly concluded that the leaders of tomorrow must be innovative, proactive, quick to react in a crisis and IT savvy.

The World Forum's Welcome Session was chaired by **László Vajda**, IAMA President, Hungary. **Csaba Molnár** Minister of the Hungarian Prime Minister's Office, **Sándor Csányi**, Chairman and CEO of OTP Bank Plc. Hungary and **Jerry Siebert**, Executive Vice President of IAMA, USA welcomed the participants with short presentations.

The **First Forum Session "Global Challenges, Local Solutions: Trends in Food and Agribusiness**" discussed trends in the agri-food chains of the world. **Chris Peterson**, Professor at Michigan State University from the USA, chaired the session.

Csaba Csáki, Professor and Head of Department at Budapest Corvinus University spoke about Central and Eastern European agriculture, which supplies 17% of the world's agricultural production. The average share of agriculture of the GDP in this region is 10% compared to a world average of 3%. While agriculture is an important part of the economy for this region, the role of agriculture in GDP has recently been decreasing. Csaki listed a number of challenges that countries in Central and Eastern Europe must meet including European Union (EU) membership, the increased competitive nature of domestic markets and the agri-food sector and the economic crisis. In general, gross farm income per hectare in this region is increasing, partly due to subsidies. Exports are increasing in many countries, such as agri-food and beverage exports in Poland and Hungary. Foreign investment in the agro-sector is increasing, specifically for high value-added products. However, the share of foreign owners in Hungary is decreasing. Csáki concluded that there have been many visible developments in Central and Eastern Europe. EU membership has created overall positive impacts while the global crisis has had both positive and negative impacts for individual countries. With significant diversity in the Central and Eastern European countries, the initial conditions and national policies of each country have a significant impact on their outcomes.

Hans Jöhr, Corporate Head of Agriculture for Nestlé in Switzerland, spoke about the importance of agriculture and sustainability in the EU. Europe relies heavily on imports, with significant constraints in respect to land, water and energy. With the world population expected to reach 9.7 billion by 2050, the growth in output demand will lead to substantial changes in the productivity and efficiency of production methods and systems. This will include the smarter use of natural resources without waste, pollution or destruction. The dissemination of better practices needs to begin with spending on primary education and on road and extension services. The speaker stated that more people die from natural poisons than from chemical toxins partly due to a lack of information. Improved roads help link farmers to markets and increase the flow of goods and information. Hans Jöhr explained the importance and cost-effectiveness of extension work: the rate of return to extension work is 13% to 500%, an amount far surpassing R&D. In Pakistan, Nestle worked with women in poor farm communities to establish the "Barefoot Vets" to offer reasonably priced veterinarian services including milk collection, feed supplies and animal clinics. The programme created income-generating opportunities and market linkages for women with few other options. The project trained 4,000 women at a cost of only USD 50 per woman. This is a very small price for such powerful results. In conclusion, Hans Joehr stated that the most important topics for Nestlé are nutrition, rural development, water and agriculture. The company needs people in the supply chain who are "ready to serve, are well educated, and are humble" in order to pursue these areas of focus.

The **Second Forum Session introduced "How the Visegrad – 4 Countries are responding to Global Challenges"**. The Chair of the Session was **Jan van Roekel,** Managing Director of STIRR, the Netherlan**Tomas Kreutzer**, Director for the Federation of Food and Drink Industries in the Czech Republic spoke about the current challenges facing the Czech Republic, including the harmonisation of EU legislation, the transformation into a market economy and the building of institutions. When the Czech Republic joined the EU in May 2004, it had a planned economy in

which actions not allowed by law were forbidden. This is very different from the market economy it is working toward in which all actions that are not forbidden by law are allowed. With a market economy come the issues of monitoring safety criteria and quality. Under a planned economy, an authority defined quality, and quality was average with consumers protected by a weak selection. Under a market economy, quality is defined by the consumer, quality is much higher and selection is much more diverse. Kreutzer identified the significant market power of the retail chain as another challenge creating an unbalanced relationship between the supplier and customer. He listed the key challenges of the food and drink industry for the Czech Republic as: ensuring healthy choices for consumers, developing quality products, labelling, and assuring safety.

György Raskó, President of Csopak Holding in Hungary, spoke about the losses to the food industry in Hungary after its accession to the EU. The food industry has also been negatively affected by the economic and financial crises. In particular, the demand for processed branded labels has declined, the loan capacity of banks is minimal, and many meat and poultry companies are threatened with bankruptcy. The change to a market economy and joining the EU has led to more competition and higher prices which is good for producers but has led to struggles in the processing sector. Profitability is very low in this sector, which is mainly explained by the high bargaining power of dominant retail chains. While the food industry is suffering, farming has further opportunities. EU subsidies and new investments brought success especially for large-scale oilseed and cereal producers. Solutions to these issues, in Mr. Raskó's opinion, are to reduce taxes, move to more market oriented production and more innovative marketing practices.

Gerd Boeckenhoff, General Manager of Rabobank in Poland, presented a very different Poland perspective. The food and agriculture sector in Poland has grown faster than the overall economy since joining the EU in 2004. This is partly due to an increase in direct payments per capita income of farmers. Domestic growth drivers include an "attractive market in a supportive environment," while foreign growth drivers include a trade surplus with an increasing share of exports and trade. Challenges facing Poland are a lack of distribution logistics, a lack of certification/trading, a lack of horizontal and vertical integration and a lack of market consolidation.

Igor Mancel, Chairman of the Wine Growers Union of Slovakia in the Slovak Republic spoke about the wine industry of the Slovak Republic. The introduction of quality categories and imported wines has led to competition. Nevertheless there is a need for better competition between wines. Labelling with vintage and variety can play an important role but the requirements of globalisation and rationalisation are in conflict. Globalisation wants to reduce the importance of origin and wants to increase the importance of big markets.

Pál Molnár, Professor at Szeged University and President of HNC for EOQ, Hungary chaired the **Session "Food Products for Health and Well-being: Global and Local Developments".**

Diána Bánáti, Director General of CFRI and the Hungary Chair of EFSA MB in Italy, began by addressing consumer concerns in Europe. Consumers are worried about food safety, especially in Italy, Greece, Hungary and Latvia where there have been a number of food scares. Consumers' concerns are not always based on facts. With respect to GMOs, consumers fear that technology can get out of hand. It is either the prospect of too much danger or too little information that often turns consumers away. Risk management becomes more complicated and requires timely information for a quick response. Companies should be able to address societal concerns, assess emerging risk, identify scientific uncertainty and dialogue proactively with risk managers, stakeholders and consumers. Bánáti summarised that (1) excellence in science, (2) independence, (3) openness and transparency and (4) responsiveness are the key elements for a firm to manage food safety and communicate with its stakeholders.

Antonio Di Giulio, Head of Unit, Food, Health and Well Being for the European Commission in Belgium, spoke about future challenges for the food industry. The world population will grow mainly in Asia and Africa, and demand for energy will also increase resulting in unstable energy prices. The changing nature of production is a cause for concern and economic strategies for growth will demand applying processes that have been developed elsewhere (imitations) and developing new innovative products and processes (innovations). The food chain plays a vital role as most of the value is developed in processing rather than in products. However, the current challenges for the agro-food industry (innovation) and consumers' protection will rely on more robust scientific data. This will require further investment in product research and development, which supports new innovations in nutrition science. Public and private partnerships that leverage both private investments with the support of public funding at the regional, national and transactional level is inevitable.

Joan Prats, Corporate Responsibility Director for Health and Well-Being for the Coca-Cola Europe Group in Belgium, spoke about Coca-Cola's role in tackling obesity and maintaining a balance between energy intake and energy expenditure. The development of obesity has been fuelled by a number of factors at the individual, community and global levels. Obesity is a complex issue that cannot be simplified by a single solution. A multifactor approach is required as a matter of public health priority. It is also vital that effective public policy be grounded in solid nutritional and behavioural science. Health and wellness is at the heart of their strategy in a practical and innovative way. Coca-Cola is working together with other stakeholders to address the obesity issue.

Hilary Green, Head of R&D Communications for Nestlé S.A. in Switzerland, spoke about Nestlé's global presence as well as its local presence serving a large market and catering to local traditions and needs. R&D and innovation play an important role for Nestle, with 27 R&D centres worldwide. The Nestle Nutrition Council is composed of internationally renowned nutritional scientists who review nutrition issues and advises senior management of its impact on Nestlé's policies and strategies.

The **Biofuels Task Group** hosted two sessions in Budapest. They were organised and chaired by **Hector Laurence**, President and CEO of McLaren Holdings, Argentina and former IAMA President. The first Biofuel Session was held under the Specific Discussion Sessions with following Speakers: **József Popp**, Deputy Director General, Research Institute of Agricultural Economics, Hungary, **Jordi Rossell**, Professor at the Applied Economy, UAB, Fundacion Triptolemos, Spain and **Laszlo Mathe**, Bioenergy Coordinator, WWF International / WWF Scotland, United Kingdom. The Speakers at the Forum Session were **Marcos Jank**, President of UNICA – Sugar and Ethanol Exporters Association, Brasil, **Hector Huergo**, Director of Diaro Clarin, USA, and **William Scott**, Vice President of Agland Investment Services Inc., USA.

The speakers expressed the view that biofuels is a new and rapidly growing agro-industry driven by the pursuit for energy independence, high petrol prices, and alternatives to fossil fuel consumption, sustainability and environmental concerns. Yet competition for the same natural resources is creating tension among the food, feed, fibre and fuel sectors. This session provided accurate data on supply projections, comparative costs, new technologies, trading opportunities and barriers. A team of panellists explored the answers to the following questions: What have we learned from the 2008 financial crisis? Are biofuels responsible for the increasing food prices? Is the biofuel industry sacrificing sowing land? What surface of the world is being used for the production of biofuels? What percentage of the industry is practicing sustainability? Where are the international trade barriers and opportunities? What is the five-year forecast for predicting future demand?

Jordi Rosell shared his perspective of the biofuel market in Spain. Rosell criticised the directives and policy investment on biofuels in the EU. On one hand, Spain is a net importer of oilseeds, so an increase in biofuel production causes an increase in the national trade deficit. On the other hand there are reasonable doubts concerning the impact of biofuels on overall carbon emissions. Rural development does not benefit from biofuels in Spain as biofuels production factories are mainly in port areas.

Laszlo Mathe believes biofuels are crucial to reduce the world's carbon emissions, which are having an extremely negative impact on world climate. However, the policies on stimulating the use of biofuels have to take into account food security, survival of small producers and indigenous people's rights. Mathe introduced a set of tools of impact assessment and certification tools that WWF is currently using with international organisations in the field of sustainable production. However, he stressed that globally harmonised systems of impact assessment and certification are increasingly needed. Brazil processes sugarcane for ethanol production; a method that has proven to be eight times more efficient than coal when comparing the amounts of pollution generated. Sugarcane also produces potassium as a by-product, which re-fertilizes the ground after harvest.

Michael Cook, Professor at Missouri University, USA, chaired the Session „How Governance Policies and Strategies Affect the Agri-Food Sector".

László Vajda, Director General at the Ministry of Agriculture and Rural Development, EU Coordination and International Affairs in Hungary, described how Hungarian government policies have adapted to a changing environment. Beginning in 2005, the EU decided that it needed better regulations in order to achieve key political, social and economic objectives to reduce administrative burdens by 25% by 2012. Hungary experienced dire difficulties the first two years, but after the third year recorded better results by increasing its foreign trade balance, increasing farm incomes and adapting the new legislative and market environment. However, challenges common to all still exist. Climate change, renewable energy sources and the biodiversity of water management will demand strong cooperation from government, academia and business. This will be a future challenge undertaken by the Hungarian Ministry as it assumes the presidency of the EU Council in January 2011.

Marty Reagan, CEO of Ag. Processing, Inc. (AGP) in the USA, discussed how administrative changes in governmental policy will affect his company which is a large soybean cooperative in Omaha, Nebraska serving 200,000 producers and handling 6.5 million tonnes of soybeans per year. AGP is currently involved in renewable fuels and grain merchandising. Their largest challenge is change, because "change is unclear." Change is present in the context of sustainability, climate, regulations and how they are interpreted, renewable fuels, and monetary and fiscal policy. Reagan stated that cooperatives have always been leaders of personalising food markets and that there are many opportunities for cooperatives that stay focused on long-term approaches while providing timely information to their producers. For AGP, its "primary goal [for biofuels] is to clear what is not needed for feed." It is necessary to be pro-active rather than re-active. **Reto Battaglia**, General Manager of Battaglia Food Safety Systems GmbH in Switzerland, spoke about China's rich history of product failures for both non-food and food items.in fruits, tea; glass pieces in fruit, mushroom and vegetable preserves; and heavy metal contamination. The RASFF notifications of Chinese products have been increasing. As much as 12% or 355 of the RASFF notifications originated from Chinese goods and Hong Kong had roughly 50 notifications. These safety issues stem from negligence, sloppiness, ignorance and incompetence, but the overriding reason is the lack of food safety management. Battaglia explained that bad food from China gets more attention than any other source because, unlike other countries, the state guarantees the quality of exported goods and assumes full responsibility for those goods. Recently food safety standards

have been implemented in China, but there are still many problems and standards which are not tough enough. The Speaker concluded that quality from China is possible only if both processors and buyers take an active role and become more educated about food safety. Additionally, there are governmental and industrial efforts to strengthen food safety (food safety laws). So it is necessary to have quality assurance, knowledge of the food chain, a relationship of trust and fairness, plus audits, inspections and controls.

The **Session "Regional Products in the Global Arena: Connecting People with the Origin of Food"** was chaired by **Francesco Braga**, Professor at University of Guelph, Canada.

Erhard Hobaus, Head of Nutrition and Quality Assurance for the Ministry of Agriculture in Austria, spoke about the importance of consumers knowing the origin of the food they eat. Hobaus stated that 75% of people believe that products from consumers' local regions will be more important for consumers in the future. In Austria, there are currently a number of different labels and categories for products that link them to regions by having certain characteristics or traditions. The goals of these labels include establishing sustainable organisational structures, developing attractive goods and services, and boosting regional partnerships.

András Sebők, General Manager for Campden & Chorleywood in Hungary, spoke about traditional foods in Hungary, with references to soda water and "chimney cakes" (kürtös kalács), which are traditional Hungarian products. András Sebők mentioned that unique bottlenecks exist in traditional food chains that include a lack of trust, limited resources and a lack of knowledge. Success in this sector therefore relies on quality approaches, collaborative capacity and resource use, and innovations in these areas.

Ariane Angelier, Head of the Office for Quality Signs and Organic Farming for the Ministry of Agriculture in France, spoke about food quality policy in France and the shared responsibility of economic operators, consumers and public authorities. Quality labels for products in France include those for place of origin, manner of production, and traditional values which are good and favour the environment. These labels often provide a higher value-added for producers of certain products such as wine and cheese. INAO (Institut National des Appelations d'Origine), under the authority of the Ministry of Agriculture, is a council dedicated to controls for products and labels including Label Rouge, PGI (Protected Geographical Indication), and TSG (Traditional Specialties Guaranteed). The mission of INAO includes defining the official quality and origin signs, participating in the control and administration of designations of quality and origin, and contributing to their protection in France and abroad.

Arnoud-Jan Bijsterveld, Professor at Tilburg University in the Netherlands, spoke about connecting regional identity with regional products. He stated that the threat to sustainable regional products was "fake lore" and the attitude of "When I want to promote a product, I just invent a fairytale". Those commercial partners who are more eager to reach the market than to raise cultural awareness create challenges for traditional regional products. For example, in the Brabant region of the Netherlands, inhabitants experienced a loss of belonging and feared losing their cultural identity due to industrialisation and secularisation in the early 1900s. Regionalist movements evolved depicting (more or less) true images of the past along with inventing new traditions in order to revive a strong regional identity and forgetting the harsh reality of the past. Fake lore threatens authenticity, connectedness and quality among products. This is dangerous for sustainability. There is a potentially rich reservoir of regional food cultures readily available. Through fieldwork and interviews, history knowledge (stories, experiences, recipes, etc.) can be gathered. This information can be used for product innovation, tourism, education and cultural renewal through appropriation. This serves as major ingredients for sustainability, for the benefit of people, planet and profit.

Walter Armbruster, former President of the American Farm Foundation, chaired the **Session „Impact of the Retail Sector on the Value Chain"**.

Peter Feiner, Chairman of the Board of Directors for SPAR Hungary Trade Ltd, spoke about the Hungarian retail trade. In 2009, there was a large setback in consumption due to the economic crisis. The retail trade is subject to fierce price competition because of the significant media presence and a decrease in the number of independent small shops. It is subject to excessive regulations and there is a high degree of black-market trade and concerns related to suppliers so that the importance of brands is becoming increasingly significant. Feiner proposed that the tasks of the retail sector in the value chain are to measure consumer expectations and satisfaction, develop quality food based on consumer needs, purchase and control food from reliable sources and present quality foods in a safe environment for consumers.

Tibor Zsombor, Operations Director for METRO Trade Ltd in Hungary, gave an account of the retail sector from the wholesaler point of view. METRO learns about what customers want by talking with them. Customers demand fresh and tasty products, homogenous quality, reasonable prices, permanent availability and a professional approach. As a wholesaler, METRO aims to exceed customer expectations and urges producers to act in a similar manner.

Bernard Guntz, Director for Investment at Auchan Hungary Ltd., spoke about Auchan's role in the value chain. Auchan, an international retailer established in 1961 in Northern France, began internationalisation in 1981 and was founded in Hungary in 1995. Auchan has a presence in 12 countries. Their objective is to contribute to the local population by increasing the purchasing power of its customers. In recent years, globalisation has provided a positive experience for Auchan in spite of many pressures at the home, regional and national levels. The dynamic evolution of the company has also benefited its suppliers who have an opportunity for international appearances.

The **Closing Panel Discussion** had the current topic "**Global Economic Crisis: Strategies for Future Development",** which was chaired by **László Vajda**, IAMA President. The Facilitator was **Carole L. Brookins**, Managing Director of Public Capital Advisors, LLC, USA. Other participants were **Paul T. Jasper**, President-elect of IAMA, USA, **Frans van Bijsterveld**, Head Food & Agribusiness Europe, Rabobank International, The Netherlands, **Jerzy Plewa**, Deputy Director General, DG Agriculture and Rural Development, European Commission, Belgium and **Johan van Rooyen**, University of Pretoria, South Africa.

The global economic crisis is having a broad impact across many sectors. Most notable is the crisis in financial institutions and markets as well as the impact on both developed and developing economies. In addition, commodity markets have been impacted and there are serious implications for the global food and agribusiness sector and its participants. This Session at the 2009 IAMA Forum discussed this situation and its implications for the food and agribusiness sector as well as strategies for managing its impacts and consequences. Its goal was to provide insights into the global economic crisis and its impact on the global food system. Financial markets have had an impact on food production. It has been difficult to secure financing for agricultural production. Until the financial markets are stabilised, the financial situation will be a problem for the food system. The decline in oil prices has had an impact in lowering input costs for agriculture, especially for fertiliser and fuel. However, a resumption of increasing oil prices will have a negative effect on costs.

Long term, the food system will have to respond to an increasing global population and incomes. Especially important are the emerging economies and their increased demand for value added food products as well as those that improve their diets. Response to this demand shift will

depend on credit, technology and natural resource availability, especially arable land and water supply. There are few areas in the world that have undeveloped potential. One of those areas is Africa, which also has the highest return on Foreign Direct Investment in the world. There is evidence that developing economies such as China and India are investing in Africa to secure desired food supplies as well as other commodities needed for their increasing economies and populations. In total, many changes will take place in the global food system over the long term. How participants fare in this changing scenario will depend on developing strategies that enable them to compete.

Opportunities for product innovation need to be identified and taken advantage of. Sustainable production methods, including those of suppliers, need to be developed. Lastly, human capital will be at a premium and programmes and strategies need to be put in place that develop human capital as well as inform, educate and provide overall direction and trust.

Globalisation remains a trend in motion for our food system. The financial crisis has increased pressures for trade protectionism and has increased industrial policy. Investment financing will be more difficult to attain and bear a higher cost. But the dominant trend of our global interconnection in markets, ideas and goods is here to stay. Banks and other financial institutions are already essentially being nationalised or brought under very tight supervisory controls. In trying to shore up their capital base, they have tightened credit to both the commercial and consumer markets; and this credit tightening has reduced income growth even further while raising unemployment.

Short summary: On the World Forum and Scientific Symposium in Budapest many high-level papers were presented and discussed. Several professional and scientific cooperations could be prepared, e.g. regarding the future of sustainable agriculture as well as innovations in the agriculture and food industry. Famous authorities' presentations delivered in the conference also confirm our conviction that the agri-food sector could play a key role in getting away from the present-day economic crisis as well. Experiences gained in the World Forum may provide all of us with a firm basis to consolidate the strategic role of the agri-food sector throughout the world. The World Forum could not give a comprehensive solution to the global challenges of the present days but highlighted a great variety of possible local responses it wanted to give support to for facing them.

After the Closing Session of the World Forum **László Vajda** handed over the presidency of IAMA to **Paul Jasper** (USA), who invited participants to the jubilee 20th World Forum 2010 in Boston (USA).

The turbulent business climate for the agricultural sector continues to provide challenges and opportunities for agribusiness firms. The theme of the 20th Annual World Forum and Symposium on 19-22 June 2010 **"Navigating the Global Food and Agribusiness System in a New Era"** was chosen not only to celebrate the 20 years of success of the International Food and Agribusiness Management Association (IAMA), but equally importantly to focus on the future opportunities in this increasingly dynamic industry.

Further information: www.ifama.org.

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1. **Author(s).** Name(s), employer(s), mail and e-mail addresses are required. In case of more authors please indicate contact person.

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4. **Keywords**. Maximum five words expressing characteristics of problem (object), methods and results. They should be listed after the abstract.

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   (Koester, 1988:12) indication of page
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    Books:

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

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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**. Manuscripts (PDF and DOC extensions/double spaced) should be sent via e-mail to the Editor-in-chief (aki@aki.gov.hu).

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