# AGRIBUSINESS AND AGRO-INDUSTRIES DEVELOPMENT IN CENTRAL AND EASTERN EUROPE

WORKSHOP PROCEEDINGS

# AGRIBUSINESS AND AGRO-INDUSTRIES DEVELOPMENT IN CENTRAL AND EASTERN EUROPE

PROCEEDINGS OF JOINT FAO-IAMA WORKSHOP AT INTERNATIONAL FOOD AND AGRIBUSINESS MANAGEMENT ASSOCIATION
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Edited by Stjepan Tanic

Regional Office for Europe and Central Asia
FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
ROME, ITALY

For more information please contact:
Stjepan Tanic
Agribusiness and Enterprise Development Officer
FAO Regional Office for Europe and Central Asia
Budapest, Hungary
**Email:** stjepan.tanic@fao.org

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# INTRODUCTION

Significant changes occurred in the agrifood chains and related market relations throughout Central and Eastern Europe during the last decades. Besides very different transition patterns and political, demographic, climatic and geographical conditions, agribusiness and agro-industries in the region are currently challenged by the need to comply with the European Union and the World Trade Organization regulations, in order to access broader and more diversified markets. As a result of these developments, the need to improve the competitiveness of agrifood industries throughout the region has become an imperative and a concern for policy makers and agrifood chain stakeholders, particularly farmers and small and medium-sized enterprises.

The competitiveness of agriculture and the weakness of the food industry is a concern, most of all to farmers and small and medium-sized enterprises. Major changes in production standards and in the quality of supply are noticeable. Despite recent recovery, profitability remains low and there is excess capacity in many countries, particularly in the primary processing sectors, such as meat and dairy processing and grain milling. Limited access to finance, the uneven quality and volume of supplies from primary producers and significant arrears in payments from retailers and wholesalers contribute to the industry's difficulties. Further restructuring of the food industry will have to be driven by export orientation, however without neglecting domestic consumer loyalty, which needs be boosted, as well as reintegration of farmers in the value chains.

Changes in technologies, distribution systems, urbanization and in the nature of consumer demand for agrifood products have brought about new challenges to the multiple organizations involved in production and distribution of agrifood products. Agrifood chains now require improved planning and coordination, and in particular stronger linkages between farmers, traders, agro-processors and retailers. Evidence suggests that in transition countries of Central and Easter Europe vertical coordination and hence chain management is implemented by western investors but also by imitating local processors and retailers. In such context agribusiness managers must not only possess corporate management knowledge, but also skills in areas such as cooperation and relationship building with farmers, in order to enhance and transform supply chains into harmonised, integrated value chains.

The development of competitive agribusinesses and agro-industries has been recognised as crucial for creating employment and income opportunities as well as for enhancing the demand for farm products. Agro-industry and rural enterprise development has the potential to provide employment for the rural poor in the form of off-farm activities such as handling, packaging, processing, transporting and marketing of food and agricultural produce. Unfortunately, there are also risks and trade-offs in agro-industrial development, often affecting the most vulnerable countries and people. It is important therefore to build on the experiences of countries that have

developed competitive agro-industries in order to improve the understanding of trends and contribute to the formulation of sound policies and strategies for fostering agro-industries and rural enterprises.

In much of the Region there is still a critical gap in establishing effective relationships between policies, institutions and farm-household systems. On one hand this is due to the lack of adequate data and information, while on the other hand, there is still significant lack of capacity for the effective analysis, design, implementation and monitoring of the effects of policy measures on farm performance. Finally, improved exchange of existing information about local realities, especially between all stakeholders, is required.

The business environment represents one of the most important drivers of competitiveness for domestic and export-oriented agro-enterprises and agro-industries. Although many countries in EECA have implemented major policy reforms over the past two decades, the business environment today is often far from being conducive for agribusiness and agro-industries. Farmers in EECA are faced more and more not only with constraints originating from their micro and neighbouring environments, but also with macro-level constraints. Low efficiency of agriculture is largely affected by weak links with the markets. Response to the market demand is in many cases could be improved provided there is better vertical coordination between farmers, processors, traders and retailers. The challenge is to provide an enabling environment involving public-private partnerships, building of local linkages and institutions supporting innovation and investment in agricultural knowledge-based technologies to support diverse livelihoods, as well as improved management skills for market-oriented agriculture.

To address these and other issues pertinent to agribusiness and agro-industries development in Central and Eastern Europe, the FAO-IAMA Workshop brought together industry leaders, policy makers, scientists and practitioners, as well as agrifood chain stakeholders in general, to discuss and exchange views on regional needs and priorities for sector development, as well as on the perspectives for more effective integration of agribusiness and agro-industries of the region in the global marketplace. The goal was to offer a platform whereby regional experiences in agribusiness and agro-industries development can be discussed, lessons can be learned and recommendations can be made to improve the effectiveness of agribusiness and agro-industries promotion initiatives by governments and development organizations. Of particular importance was that the whole event has been prepared and implemented in partnership with International Food and Agribusiness Management Association during its 19th Annual World Forum and Symposium.

Workshop deliberations were based on presentation of 18 contributed papers prepared by experienced and recognized experts and practitioners, which are presented in these proceedings. The papers presented selected experiences of agrifood sector development in Central and Eastern Europe and in particular addressed the issues of linking farmers to markets, ongoing reforms of enabling environment, the relevance of supply chain management for agrifood sector competitiveness, as well as potential of agribusiness and agro-industry development for poverty reduction and rural development.

# VERTICAL COORDINATION IN CENTRAL AND EAST-EUROPEAN COUNTRIES: STATUS QUO AND OUTLOOK

Taras Gagalyuk[1], *Jon Hanf, Vera Belaya*

## Abstract

The necessity to increase food safety and product quality, reduce costs and waste, build customer and stakeholder value while striving to achieve social and environmental stewardship requires all of the agrifood value chain (VC) business entities to act jointly. . This increases emphasis on the strategic importance of vertical integration/coordination in the agrifood business, e.g. the tightening of supplier relationships. Central and Eastern European countries (CEEC) are no exception in this respect and demonstrate a significantly wider scope and higher complexity of vertical coordination than Western economies. But, paradoxically, this development is influenced to a large extent by the Western direct investors whose own strategies emphasize optimization of supply chains through use of vertical integration/coordination initiatives. Imported business models usually rely on VC strategy as a means of gaining competitive advantage. In order to compete successfully with foreign firms, local companies mainly resort to imitating these VC strategies. Overall, such competitive dynamics result in new forms of vertical integration/coordination. However, whether such a variety of approaches will lead to sustainable improvements and 'win-win' situations depends greatly on the specific business environments of the post-socialist economies. On one hand, several well-known studies posit that implementation of VC-wide management practices faces serious infrastructural and institutional problems in CEEC. On the other hand, privately initiated approaches to vertical integration/coordination often serve as the only solution to those infrastructural and institutional problems.

Given differing views on the combined effects of vertical integration/coordination and the increased sophistication of business management practices in transition countries, the aim of this paper[1] is to trace the most prominent recent trends in

1 Leibniz Institute of Agricultural Development in Central and Eastern Europe(IAMO)

vertical integration/coordination in CEEC[2]. Furthermore, this knowledge base is enriched with a discussion of the theoretical underpinnings of vertical integration/coordination and cooperation to provide a well-grounded outlook on the subject in the transition economies of Central and Eastern Europe.

## Introduction

The agrifood value chain (i.e. primary production, processing, distribution and retailing) has never been under greater scrutiny by stakeholders than it is today. The necessity to increase food safety and product quality, reduce costs and waste, build customer and stakeholder value while striving to achieve social and environmental stewardship requires all of the agrifood value chain (VC) business entities to act jointly. This increases emphasis on the strategic importance of vertical integration/coordination in the agrifood business, e.g. the tightening of supplier relationships. Depending on relative transaction costs and the costs of product logistics, vertical integration/coordination becomes apparent in the form of vertically integrated firms or vertically cooperating hybrids. Such hybrids consist of many organizations acting together, with each organization dependent on the performance and actions of the others (Brito and Roseira 2005). Most often these types of collaborations are led by focal companies that are following 'brand management' strategies (i.e. branded processors or retailers); the collaborations are characterized by pyramidal and hierarchical organizational structures (Jarillo 1988).

Central and Eastern European countries (CEEC) are no exception in this respect and demonstrate a significantly wider scope and higher complexity of vertical coordination than Western economies. But, paradoxically, this development is influenced to a large extent by the Western direct investors whose own strategies emphasize optimization of supply chains. Imported business models usually rely on VC strategy as a means of gaining competitive advantage. In order to compete successfully with the foreign capital, local companies mainly resort to imitating these VC strategies.

Vertical coordination can be described as the contractual cooperation of each link in the agrifood VC to overcome problems of supply and quality (Валентинов [Valentinov] 2003b). Traders, agribusinesses and food companies contract with farms and provide inputs and assistance in return for guaranteed supplies of a certain quality (Gow and Swinnen 1998; Dries and Swinnen 2004; Swinnen 2005; Gorton *et al*. 2006). The need for tighter vertical coordination in Central and Eastern Europe began during the transition process when relationships along the entire agrifood VC – from farm suppliers to retailers –broke down. The result was disruptions of supply and inferior-quality food products. Food quality can only be achieved if all participants in the agrifood VC work together. Therefore, the managerial approach to food quality has to address quality management across the entire VC.

Vertical integration/coordination and the resulting managerial challenges can be viewed as one of the most relevant issues for enterprises that are, or want to be, active in Central and Eastern European countries. Within this context, the aims of this article are:



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- To outline the extent and relevance of vertical integration/coordination in transition countries;
- To present some ideas about future challenges regarding vertical integration/coordination in transition countries.

To accomplish these aims, the paper is structured as follows:

- Introduction of the agrifood business in transition economies based on secondary data;
- Some empirical findings from another study are presented that highlight the relevance of vertical coordination in Ukraine and exemplify the resulting challenges;
- A conclusion and general outlook on the future of vertical integration/coordination in transition economies are presented;
- The article ends with a short summary.

## Agrifood business in transition economies

Vertical coordination is seen to be an important and growing phenomenon in agrifood chains of eastern European countries (Swinnen 2006). A major reason for this vertical coordination is the private contractual initiatives that were formed to overcome supply disruptions (Валентинов [Valentinov] 2003a). The importance of quality can be regarded as the main driver behind the development of the private contracting initiatives (Gorton *et al*. 2006; Гагалюк и Валентинов [Gagalyuk and Valentinov] 2009). Because foreign direct investors most often demand higher quality and have significant influence on the food sector, these companies can be regarded as an even more powerful source of structural change in transition countries than WTO and trade policy (Swinnen 2006).

Even though the transition process differs widely in the various countries, Ukraine serves as an example to identify the challenges more clearly. Today the Ukrainian agrifood VCs are undergoing structural changes with a growing orientation towards end consumers. Recently, the response to requirements of end consumers has improved with regard to quality characteristics of food products, assortment of varieties, packaging features and the way they are presented in a store. To a great extent, the improvement in meeting consumers' requirements can be explained by the increase in household incomes and the development of the retail sector. Motivated by growing competition in the sector, retail companies provide their customers with a range of offers in the style of items, store location and quality-related characteristics. Moreover, the importance of brand management has increased substantially. Nowadays the biggest players in the Ukrainian retail sector market up to 25 percent of their products under their own brand names (Эксперт Онлайн [Expert Online] 2007).

For retailers, it is more beneficial to work with large-scale suppliers (Swinnen, 2006). In Ukraine, however, most suppliers at the processing and farm levels are small to

medium-sized enterprises (SMEs). Nevertheless, there is some evidence of backward integration at these stages of the VC. The food processing industry is currently represented by a number of significant actors. Market shares of the ten largest actors in the meat processing, milk processing, flour milling, and sunflower-seed processing industries are 40 percent, 40percent, 50percent and 70percent, respectively, and showing tendencies to increase further (Галицькі Контракти [Galyts'ki Kontrakty] 2000; Dragon Capital (in Ukrainian) 2006). These sectors also exhibit some adoption of backward integration strategies toward their agricultural suppliers. At the same time, a specific feature of Ukrainian agriculture in transition is that more than 60 percent of gross agricultural output is produced by households (Державний комітет статистики України [State Statistics Committee of Ukraine] 2006).

Although vertical integration was an aspect of the planned economy prior to 1990 in Ukraine, today the majority of transactions in the agrifood VC are coordinated via the price mechanism as arm's length transactions (Гагалюк и Валентинов [Gagalyuk and Valentinov] 2009). Existing contracts are broken quite often to gain a short-term advantage. One contributing cause for this is poor contract enforcement mechanisms. Medium-sized processors appear to have suffered most in 2001 with some 12 percent of existing contracts are breached by suppliers. At the same time, small enterprises do not use any contracts at all (Gorton *et al*. 2003).

There are two reasons that contracts are breached in transition countries. Firstly, producers mistrust their buyers and are afraid of not being paid for production. Secondly, producers may not be able to fulfil a contract because they cannot access basic production factors (Swinnen 2006.

Again, as a result of the lack of necessary inputs, expertise, and know-how, a shortage of quality supplies occurred in Ukrainian agribusiness. Initially vertical ties did not aim to resolve this issue because most contracts between vertical partners omitted the issue of food quality. After all, processors usually offered commodity credits to their suppliers (agricultural enterprises) just to use their production capacities.

Nonetheless, foreign direct investments (FDI) into Ukrainian agribusiness are increasing. FDI can be found at the farm and processing levels as well as in the retail sector. These foreign enterprises bring their own business methodologies. In order to compete with them, local companies often imitate their strategies (Радаев [Radaev] 2005). An essential part of global retailers' and manufacturers' businesses is connected with producing or selling high-quality products. Several studies on the effects of FDI in Central and Eastern European Countries (CEEC) show that foreign investors work hard to raise the level of quality of their suppliers in order to meet their own global quality requirements. Further on, international retailers impose high (global) private standards to differentiate their products from those of the competitors, i.e., these standards work as strategic tools (Swinnen 2006).

Because households often produce the commodities, processors and retailers face problems determining the suppliers' levels of quality. An innovative solution can be seen in the dairy sector. The processors deal with the situation by organizing their own collecting stations in order to coordinate their suppliers and conduct random quality tests. Furthermore, milk processors improve quality supplies from agricultural enterprises by leasing cooling tanks to them as part of their contracts. These findings

correspond to those of other authors describing the positive impact of processors' assistance to farmers in other sectors and in other transition countries: in Moldova (Gorton *et al*. 2006); and in Bulgaria and Romania (Swinnen 2006).

The following example from Russia illustrates how foreign investors respond to the special challenges in transition countries. In comparison to the other countries within the CEEC, the development of a modern retail sector in Russia is still in its fledging stages. For example, while supermarkets, hypermarkets and discount stores can be found in almost all Russian cities with over one million inhabitants, the market share of the total retail food market for the top-10 retail chains constituted just 11.,1 percent in 2007 (PMR Report 2008). According to a study conducted by BBE Retail Experts in 2006, the leading shopping formats in Russia are still street shops and open markets (32 percent), small shops (26 percent) and other shops and kiosks (28 percent). Modern retail formats account for only 14 percent of total sales: supermarkets (6 percent); discounters (6 percent); hypermarkets (1 percent); and Cash and carry (1 percent). Even in the largest metropolitan areas, the share held by retail chains ranged between 16 and 17 percent in Moscow and between 18 and 20 percent in St. Petersburg (BBE 2006).

French retailer Auchan exhibited the highest growth of the top-10 retailers, jumping to the fourth-largest position as of end-2007. The German Metro Group, the second largest retailer in Russia, opened some 30 outlets and expanded into central and southern Russia and the Urals (A. T. Kearney 2008). After entering the country a few years ago, the Metro Group Russia installed a number of its own support service companies: Metro Asset Management; Metro Buying Group; Metro Advertising; Metro Group Logistics; and Metro Group IT. The 140 000 stock keeping units (SKUs) of the twenty-six Cash and carry markets and the three super centers are delivered by 2 500 suppliers. Only 5 percent of the suppliers are foreign manufacturers, while 20 percent of the SKUs are region-specific. The overall goal is for all of the suppliers to comply with the Metro global quality and supply chain standards.

However, in Russia, these international retailers met with an immediate competitive response from local players that were quick to learn modern retail trade methods and adopt modern business forms. Domestic retailers (such as market leader, the X5 Retail Group) are expanding their operations, building strength in their supply and distribution chains and working on customer relations to capture a larger and more robust share of the market (Belaya and Hanf 2009). One of the difficulties which many retailers experience when entering Russia is the uncooperative behaviour of Russian suppliers (Roberts 2005). Furthermore, Russian supply chains are characterized by distrust and an absence of professionalism (Sheresheva and Tretyak 2004). This is complicated further by the generally low level of suppliers' compliance with international norms or expected codes of conduct (Tarnovskaya *et al*. 2007). However, the increased competition in global markets has led to the rise of various forms of partnering and interfirm networks in the former Soviet Republics (Möller and Svahn 2006). The number of such networks is growing; in addition to traditional supplier-buyer relationships, firms collaborate within distribution channels (Möller and Halinen 1999; Ford *et al*. 2003; Möller and Rajala 2007).

As the example of the German Metro Group in Russia demonstrates, the reason

for this development is that foreign investors often "export" their business models (Palmer 2005; 2005; Hanf and 2007). Hence, "Western style"-business concepts are gaining importance. In the agrifood business, particular attention is paid to the establishment of modern procurement methods (i.e. supply chain management) as well as to management of food quality and product safety according to international standards (Dries *et al*. 2004). In this context, six changes are noted: i) a shift from local store-by-store procurement to (nationally centralized) large and modern distribution centers; ii) a shift to regionalization of procurement within countries iii) a shift from traditional brokers to new specialized wholesalers; iv) increasing use of global logistic firms; v) a shift to preferred supplier systems; and vi) a shift to more demanding proprietary standards of quality and safety (Dries *et al*. 2004). As a result of these changes, vertical coordination in agrifood chains is seen as an important and growing phenomenon in the countries of Eastern Europe and Central Asia (Swinnen 2006).

## Interviews and underlying hypotheses from previous study

In order to better understand the role of VC management, in general, and quality management, in particular, in the agrifood business of transition economies, interviews were conducted with experts (managers, academics and officials) in the field of Ukrainian agribusiness in 2007. Fifteen telephone interviews (each lasting from 15 to 30 minutes) were carried out as semi-structured in-depth interviews. A list of relevant topics of interest was prepared in advance. The interviewees were initially informed about the interviews via email, and then telephoned at a time agreed with the interviewees.

Given the research team's strong interest in the operational aspects of VC management strategies in Ukrainian agribusiness, a panel of experts was assembled whose experience and expertise in this area could be regarded as valuable. In addition, the interviewees were at the highest positions in their organizations. The organizations represented a cross-section of the retail, food processing, agricultural and agricultural equipment sectors, as well as research institutes and non-governmental institutions.

## Retail

Interviews from the retail sector included:

- two directors from the purchasing departments of two international retailers operating in Ukraine;
- Two chief technical officers (CTOs) responsible for total quality management in the same two international retailers operating in Ukraine.

These experts represented two of the three international retailers that were operating in Ukraine at the time of interviews. The purchasing directors and the CTOs responsible for quality management were selected because their departments are directly involved in VC management initiatives that address the issues of supply and quality. Given that quality management issues overlap the legal boundaries of the firms that constitute the VC, it was decided to solicit opinions along the entire agrifood VC.

Therefore, additional experts were interviewed from the business entities upstream of the retailers.

## Food processing

The interviews representing the food processing industry included:

- the managing director of an international meat processor;
- a director of account management responsible for working with major clients of an international confectionary company; (Note: This individual is a known expert in supply chain management);
- the managing director of a local beverage company;
- the managing director of a dairy company.

These experts were chosen mainly due to their role in VC management or in the general management of companies known for developing products with short time-to-market where quality represents a key factor. They were asked about the challenges their companies experience in procurement and marketing. Both foreign and local companies were included to account for potential differences as to the relevance of quality management.

## Agriculture

The interviews representing the agricultural sector were conducted with internal audit directors of the local agribusiness groups specialized in the production of cereals. Given their active participation in ongoing consolidation activities of their companies, they were asked about general management's perceptions of vertical integration/ coordination and supply chain management initiatives.

## Agricultural inputs

It was also decided to interview an expert in supply chain management from one of the companies specializing in agricultural equipment and supply of agricultural inputs. One of the best-known international companies was selected; they hold one of the largest market shares in Ukraine. Since agricultural input suppliers are normally concerned about the business success of their clients, they often put significant effort into improving supply chain performance. Within this context, the expert was interviewed about VC management issues in Ukraine.

## Non-governmental and research institutions

To add an external perspective to the survey interviews, several non-business actors were also interviewed. Specifically, they included:

- two managing directors of international standardization bodies;

- a project manager at International Finance Corporation (IFC) involved in a project on horizontal and vertical cooperation in the dairy industry of Ukraine (Note: This individual is a known expert in supply chain management);
- the managing director of an international institute focused on retailing

As with the experts selected from businesses directly involved in the operational aspects of VCs, these experts were selected to drawn upon their unique insights across a variety of agrifood VCs.

Based upon the theoretical framework of this study, the interview questions could generally be grouped into seven 'blocks,' orsets of characteristics corresponding to underlying hypotheses:

**Characteristics of transition economies:**

Country-specific problems hamper the introduction and implementation of VC management practices. Questions address issues of infrastructure, marketing and product quality;

**Level of actualisation and understanding of VC management issues in agribusiness:**

The use and understanding of VC management practices corresponds to the extent that the members of the agrifood VC adopt and implement inter-firm collaborations (i.e. the use of vertical integration or vertical coordination strategies). Additional questions examine how agrifood VC actors work together, who initiates this work and how actors perceive this work;

**Cooperation mechanisms being used:**

Because the task of supply chain networks is to achieve certain goals by a strategically driven but divergent inter-firm environment, the supply chain members' interests have to be aligned. To accommodate this alignment, a number of cooperation mechanisms exist. Therefore, some questions ask about the tools used for cooperation in the sector;

**Actual solutions to cooperation problems in the VC.**

This group of questions explores how the actions of the different supply chain actors inter-operate to achieve the overall goal of vertical integration or vertical coordination.

**Use of known VC management concepts in Ukraine**

This block is represented by questions regarding the extent of knowledge the agrifood actors have about VC management practices (e.g. business concepts such as Supply Chain Management; quality management models such as ISO 9000 and Total Quality Management);

**Quality management in relation to overall VC management**

These questions focus on how the quality of the supply chain is managed (e.g.

establishing quality control labs; use of contract specifications that include quality benchmarks in exchange for credit support, input support and other incentives).

The managerial tools used in business practice were emphasized in the questionnaire. During the interviews, the participants were given an opportunity to express their opinions without interruption. This supported the exploratory nature of the interviews and the goal of obtaining more detailed information.

## Discussion of the findings

The findings from the interviews provided a general pattern of the current level of vertical integration/coordination and VC management while offering insights on the overall business environment in Ukrainian agribusiness. All interviewees responded that they were either acquainted with or that they were personally involved in the adoption of vertical integration/coordination strategies. It was confirmed that the issue of quality management in Ukrainian agribusiness VCs is being addressed initially by foreign companies operating in the sector and by local export-oriented enterprises. The respondents acknowledged the underlying need for effective supply chain management to include quality management criteria.

However, the survey also clearly showed that even though quality management is important, its actual implementation is in its infancy. This does not necessarily imply that its importance is undervalued, but rather that it's perceived as a long-term goal. One reason for this is that most companies are primarily focused on providing basic infrastructure.

As one of the interviewees, the managing director of an international standardization body, noted, "Quality issues in Ukrainian agribusiness are mostly addressed by foreign investors. However, they face significant problems because local supply chains have old, rudimentary ." As further evidence of infrastructural problems, the managing director of the local dairy added that,"dairy production seems to be in a horrible situation. Stables, houses and warehouses are run down. There are no preconditions for any quality scheme. Even basic quality requirements are not in place because the whole dairy chain lacks appropriate infrastructure."

One of the infrastructural issues that hinders vertical integration efforts in the agrifood supply chain is connected with scale inefficiencies in the agrifood enterprises. Due to remnants from the former command economy, production facilities exhibit a certain degree of inconsistency with newly established market conditions. As a result, production capacities are often underutilised. This situation is exacerbated by a lack of adequate transport infrastructure (e.g. roads, transportation facilities). Additionally, due to the relatively small size of the enterprises and the prevalence of households in agricultural production, modern IT-infrastructure is seldom used. Such circumstances substantially impede effectiveness of relationship between chain actors.

The use of outsourcing strategies combined with concentration on core competencies is necessary to overcome such difficulties. However, these strategies require sophisticated logistics management and specific investments by firms. Because the

majority of Ukrainian agrifood firms are SMEs, the introduction of modern logistics management systems would be a financial burden to these firms. The interviewees indicated that one outcome of attempts to outsource has been the emergence of logistics service providers. Furthermore, as the managing director of an international standardization body noted, the emergence of huge agribusiness holding companies has also been a consequence of outsourcing initiatives. In agribusiness holding companies the focus of the enterprise is mostly on production operations. At the same time, though, management in the agribusiness holding companies must also address other business areas (such as strategic planning, procurement, marketing and sales).

However, despite an increase in the number of agribusiness holding companies, the interviewees still saw the need to integrate small- and medium-sized farms (even including household farms) and processors in the supply chain. , a number of consulting services have been established to provide SMEs with information on how to advertise their procurement requirements. In most cases, the requirements emphasize the quality specifics of products to be supplied. As the managing director of an international institute focused on retailing stated, “Evidence of international quality standardization is still rare because of the atomic structure of agriculture. Most agricultural suppliers do not focus much on achieving even basic quality due to the first priority of [overcoming] infrastructural issues. Taking into account that most foreign enterprises possess their own quality control and distribution divisions, many farmers may experience problems with marketing if they want to supply to foreign companies. In order to overcome such problems, a horizontal cooperation between farmers is necessary at least to provide them with appropriate information about requirements their potential clients place on food products.”Numerous efforts on horizontal cooperation between farmers have already been made. They have resulted in the creation of cooperatives supplied by the farmers’ own production.

However, as another respondent, the project manager from IFC stated, “In the transition period, a lack of liquidity in most cooperatives caused farmers to sell their products outside the [cooperative] network. Bypassing cooperatives, they sold their products to other structures that offered prompt payments or better prices. As a result, trusted relationships between cooperative members failed. Furthermore, because the formation of a majority of these cooperatives were initiated by local authorities, that led to their mistrust by the potential members.”Thus, the stressed that the formal and informal incentives for cooperation must co-exist alongside one another. Moreover, informal incentives may play an even greater role in transition countries.

In this context, the foreign respondents in particular made references to the effect of the reputation of the big multinational brands on local partners. As one of the purchasing directors of an international retail company explained, “Small to medium-sized suppliers are proud to work with us. In my opinion, they also like to cooperate with our company because they are confident that not renege on a contract.”Furthermore, prompt payment is perceived as a benefit obtained from such relationships. Very often suppliers have experienced long waits for payment or have even faced the risk of non-payment from local partners. Additionally, the prestige of being involved as

a supplier to one of the large multinational firms is highly important and seen as an advantage.

The respondents involved in retailing emphasized that VC management practices were just in the process of being installed. One CTO for quality management from an international retailer stated, “Our Company follows a uniform strategic framework to work with suppliers all over the world. Ukraine is not an exception in this respect. We are installing our global IT-standards and supply chain management techniques.”Generally, introduction of these practices differentiates international retailers from local competitors. Additionally, cooperation receives as much attention as vertical coordination because it provides operational as well as strategic advantages for retailers. On the operational side, securing appropriate partners makes the introduction of supply chain management less costly and less time-consuming. However, the main purpose of partnering with the upstream actors is the achievement of long-term competitive advantage based on sound quality management throughout the VC. Therefore, one of the main goals the vertical partnering is the standardization of quality characteristics amongst local farmers and food processors based on international quality standards. Regarding this issue, the purchasing director of an international retailer operating in Ukraine indicated that, “We are introducing quality standardization in Ukraine based on such international quality schemes as GLOBALGAP, ISO 9000 and HACCP. Currently, GLOBALGAP is being translated by a working group at one of the local universities. Additionally, the university spreads information about the standard.” effect of such activities is that retailers indirectly educate new managers that are currently in high demand to recognise the important role of quality in overall VC management.

In addition, as the managing director of an international retail institute, stated that, “The foreign retailers show that they are represented worldwide and are able to use their network of global sources to make substitutions for inconsistent local supplies. In turn, suppliers try not to lose such favorable sales markets. They, therefore, are working hard to comply with the requirements of retailers.” , as companies following brand management strategies, these retailers organise networks of firms that can conform to their requirements. All of the respondents also agreed that the activities of international retailers have spillover effects on local competitors because by imitation, they also force their suppliers to improve quality and start to address quality management throughout the VC.

## Conclusion and future outlook

The survey results show that concepts concerning vertical integration/coordination and VC quality management are emerging in Ukraine and driven by foreign investors. However, because VC quality management is a rather new tendency, it is in its initial stages. Since even basic VC quality management demands consideration of supply chain strategies, the interviewees stressed that even the few instances found in Ukraine do represent a strategic approach to VC management. Although these approaches might not be extremely sophisticated, they do include all relevant elements of strategic VC management. This observation leads us to some implications.

When entering transition countries, firms following brand management strategies are able (or even required) to install the VC management concepts applied in their home country.

Due to the environment in transition countries, even basic infrastructural requirements are often missing and must be overcome.

Additionally, due to the generally negative experiences with vertical integration/ coordination and forced cooperation in the past, a willingness to cooperate must first be established.

As the survey results highlighted, supply chain management frameworks have to be understood as loose patterns and not as one-size-fits-all templates. This is especially true in business environments that differ significantly from those of the home countries; existing VC management practices are likely to need modification.

Furthermore, the interviewees indicated that local retailers and processors attempting to emulate the success of their foreign counterparts are starting to adopt the business practices of foreign firms including VC management strategies. However, it seems likely that operational but limited approaches to VC quality management will increase in importance. In the medium term it's expected that these limited approaches will tend to dominate the scene in Ukraine, partly because there will be only a limited number of consumers demanding high-quality goods. At the same time, firms in Ukraine and similar markets face high costs to adjust to changing market conditions. Some of the costs will result from legal obligations imposed on the firms while others are necessary to support ongoing restructuring processes at the procurement and distribution stages. These issues lead to a strong focus on cost-containment in most firms and, therefore, could create the necessity to apply a basic but operational approach to VC quality management.

This study showed that, on the one hand, knowledge gained from 'western experience' can be exported and applied in transition contexts. On the other hand, this study and many other studies, also point out that modifications are needed. Additionally, it should be stressed that not all business cases emphasizing the need for adjustments are due to transition. Many studies on transition countries highlight the low levels of trust found in CEEC and CIS. For example,, in a study on the perceived levels of trust in different European countries it was shown that the highest level of trust was found in Scandinavia and the lowest level was found in Poland (TÁRKI 2005). However, within this range the picture is mixed and shows that 'willingness to trust one another' reflects the cultural characteristics of a specific country rather than broad characteristics shared by most transition countries. Other differences should also be taken into account (e.g. level of infrastructure, consumption preferences, number and type of retail outlets); often the differences between urban/metropolitan areas are not very large whereas tremendous differences exist when rural areas in transition and non-transition countries are compared. Therefore, if one discusses challenges and future prospects of vertical integration/coordination one has to differentiate between the various stages of transition of the countries (as proposed by Dries *et al*. 2004) and differences between urban and rural areas within the countries.

# Summary

Due to rising demand for higher-quality food products, increased quality in food production processes and increased competition in agrifood business, vertical integration/coordination has intensified in transition economies. In the literature review as well as in the survey, evidence was found that in transition countries local processors and retailers imitated the vertical integration/coordination and other VC management strategies used by Western investors.

Even though vertical integration/coordination is still in its fledging stages in many transition countries, it's assumed that over time the use of these strategies will increase and this will have have a severe impact on the agrifood business. However, in this context it should be stressed that there are large differences that exist between the different transition countries as well as large differences that exist within the countries and between various sectors. Hence for the future, researchers should devote additional effort toward more differentiated studies regarding the impact of vertical integration/coordination on specific regions or sectors; at the same time, and due to the increased importance of vertical integration/coordination in CEEC, firms must develop the expertise to take a more strategic approach in managing these types of issues.

# Bibliography


- Kearney, A.T. 2008. The 2008 A.T. Kearney Global Retail Development Index. Emerging Opportunities for Global Retailers,available at: www.atkearney.com/shared_res/pdf/GRDI_2008.pdf
- BBE 2006. *Retail-Expansion Osteuropa*Published Consulting Study.Cologne, BBE Unternehmensberatung GmbH.
- Belaya, V. & Hanf, J.H. 2009. Power Shifts along the Supply Chain: Managerial Implications for Russian Agri-food Business. *Paper at the 19th Annual World Symposium of the International Food & Agribusiness Management Association*, Budapest, Hungary, June 20-21, 2009.
- Brito, C. & C. Roseira, 2005. A model for understanding supply chain networks. *Journal on Chain and Network Science*, 5:55-63.
- Dragon Capital. 2006. www.dragon-capital.co
- Dries, L. & Swinnen, J.F.M. 2004. Foreign Direct Investment, Vertical Integration, and Local Suppliers: Evidence from the Polish Dairy Sector. *World Development*, 32:1525-1544.
- Dries, L. Reardon, T. & Swinnen, J.F.M. 2004. The Rapid Rise of Supermarkets in Central and Eastern Europe: Implications for the Agrifood Sector and Rural Development. *Development Policy Review*, 22:525-556.
- Ford, D. L. Gadde, E. Håkansson, H. & Shenota, I. 2003. *Managing Business Relationships.*Chichester, UK, John Wiley & Sons Ltd.
- Gorton, M. Dumitrashko, M. & White, J. 2006. Overcoming supply chain failure in the agri-food sector: A case study from Moldova. *Food Policy*, 31:90–103.
- Gorton, M. White, J. Chernyshova, S. Skripnik, A. Vinichenko, T. Dumitrasco, M. & Soltan, G. 2003. The Reconfiguration of Post-Soviet Food Industries: Evidence from Ukraine and Moldova. *Agribusiness: An International Journal*, 19:409-423.
- Gow, H.R. & Swinnen, J.F.M. 1998. Up- and downstream restructuring, foreign direct investment, and hold-up problems in agricultural transition. *European Review of Agricultural Economics*, 25:331-350.
- Hanf, J.H. & Pieniadz, A. 2007. Quality Management in Supply Chain Networks – the Case of Poland. *International Food and Agribusiness Management Review*, 10: 102-128.
- Jarillo, J.C. 1988. On strategic networks. *Strategic Management Journal*, 9:31-41.
- Möller, K. & Halinen, A. 1999. Business Relationships and Networks: Managerial Challenge of Network Area. *Industral Marketing Management*, 28(5), 413-427.
- Möller, K. & Rajala, A. 2007. Rise of strategic nets – new modes of value creation. *Industral Marketing Management*, 36(7), 895-908.
- Möller, K. & Svahn, S. 2006. Role of Knowledge in Value Creation in Business Nets. *Journal of Management Studies*, 43 (5), 985-1007 (23).
- Palmer, M. 2005. Multinational retailer expansion: learning from Tesco's experience. *International Journal of Retail and Distribution Management*, 33(1):23-48.

- PMR Report, 2008. *Russia ranked the most attractive country and Ukrainian Odessa most attractive city for retail investment in CEE*. Available at: http://www.pmrpublications.com/press_room/en_Russia-ranked-the-most-attractive-country-and-Ukrainian-Odessa-most-attractive-city-for-retail-investment-in-CEE.shtml
- Roberts, G.H. 2005. Auchan's entry into Russia: prospects and research implications. International Journal of Retail & Distribution Management, 33:1, 49-68.
- Sheresheva, M. & Tretyak, O. 2004. Developing relationships with suppliers in Russia: a network perspective. Paper at the 20th IMP Conference, Copenhagen, Denmark.
- Swinnen, J. 2006. The dynamics of vertical coordination in agro-food chains in Europe and Central Asia: Case studies. World Bank Publication,Washington DC, World Bank.
- Tarnovskaya, V. Ghauri, P.N. & Elg, U. 2007. Market driving supplier strategy: IKEA's global sourcing network in two developing markets, Paper at the International Conference "Novye napravleniya razvitiya marketinga: vzaimodeystviya i partneskie otnosheniya" [New directions of marketing development: interactions and partner relations], Moscow, Russia, November 15-16, 2007.
- TÁRKI Rt. 2005. A társadalmi tőke növelésének lehetőségei fejlesztéspolitikai eszközökkel(Means of improving social capital through develpoment-policy ways) pp. 14.
- Tóth, A. 2009. Social capital and collective agricultural marketing in food industry. Corvinus University of Budapest. (Thesis)
- Валентинов, В.Л. 2003a. Регулювання міжгалузевих відносин в системі аграрної політики. Київ: IAE. [Valentinov, V.L. 2003a. Regulation of inter-industry relationships in the system of agricultural policy. Kiev: ].
- Валентинов, В.Л. 2003b. Вертикальна координація як фактор розвитку міжгалузевих відносин в АПК. Економіка АПК, 6:26-30. [Valentinov, V.L. 2003b. Vertical coordination as a factor of the development of inter-industry relationships in agro-industrial complex. Ekonomika APK, 6:26-30].
- Гагалюк, Т.В. і Валентинов, В.Л. 2009. Роль вертикальної координації у збалансуванні міжгалузевих відносин в АПК. Актуальні проблеми економіки, 9 (в друці). [Gagalyuk, T.V. and Valentinov, V.L. 2009. Role of vertical coordination in balancing of inter-industry relationships in agro-industrial complex. Actual problems of economics, 9 (in print)].
- Галицькі Контракти, 2000. «Контракти» з'ясовують, чому саме переробка молока приваблює інвесторів. №36, вересень 2000 р., http://www.kontrakty.com.ua/ukr/gc/nomer/2000/2000-36/36prakt.html прочитано в березні 2007 р. [' , 2000. "Kontrakty" enquire why milk processing attracts investors. #36, September 2000, http://www.kontrakty.com.ua/ukr/gc/nomer/2000/2000-36/36prakt.html, retrieved in March 2007].
- Державний комітет статистики України, 2004. Сільське господарство України: Статистичний щорічник. Київ: Держкомстат. [State Statistics Committee of Ukraine, 2004. Agriculture of Ukraine: Statistical Yearbook. Kyiv: Derzhkomstat].
- Державний комітет статистики України, 2006. [State Statistics Committee of Ukraine, 2006]. www.ukrstat.gov.ua.
- Кущ С.П. и А.А. Афанасьев, 2004. Маркетинговые аспекты развития

межфирменных сетей: российский опыт. Российский журнал менеджмента, 2(1):33-52. [Kouchtch, S. P. & Afanasiev, A. A. 2004. Marketing Perspectives of Inter-firm Networks: the Russian Practice. Russian Management Journal, 2(1):33-52].

- Кущ С.П., Рафинеджад, Д. и А.А. Афанасьев, 2002. Сетевой подход в маркетинге: российский опыт. Вестник С.-Петербургского ун-та, Сер. 8(1):81-107. [, . ., , . & , .. 2002. Approach in Marketing: the Russian Experience. Vestnik of Saint Petersburg University, Series 8(1):81-107].
- Радаев В. В. 2005 Динамика деловых стратегий российских розничных компаний под воздействием глобальных торговых сетей. Российский журнал менеджмента, 3(3):3-26. [Radaev, V.V. 2005. Shifts in Business Strategies of the Russian Retailing Companies Facing the Invasion of Global Operators. Russian Management Journal, 3:3-26].
- Эксперт Онлайн, 2007. Ритэйл атакует производителей. 19 февраля 2007 г.,http://www.expert.ru/printissues/ukraine/2007/07/torgovye_marki_supermarketov/, прочитано в марте 2007 г. [Expert Online, 2007. Retail attacks producers. February 19, 2007 , retrieved in March 2007].

# A COMPARATIVE ANALYSIS OF THE FRUIT AND VEGETABLE DISTRIBUTION STRUCTURES OF CENTRAL EUROPEAN COUNTRIES

Yasushi Sembokuya[3], *Toshihisa Kanayama[2], Hiroichi Kono[2], Karol Wajszczuk*

## Abstract

This paper aimed at investigating the characteristics of the distribution structures for fruits and vegetables in Central European countries through a comparative analysis. The focus was mainly on Poland and Czech Republic around 2000 and the recent state of those two countries and Romania. The distribution structures for fruits and vegetables were reformed in those countries and exhibited significant diversity. The distribution structures reflected the different social and economic structures (including land ownership, the food control system and degrees of industrialization and urbanization) that existed under the former planned economies, and which still strongly affect the economy of these countries today.

The economic development of Poland, Czech Republic and Romania was remarkable in recent years. The primary players are not public, but private, sectors. The latter half of this study illustrates the remarkable activity of individual farmers trading with large retailers in Poland and with the private wholesale market in Romania.

## Introduction

Central and Eastern Europe can be divided into three groups (Lavigne 1999). One group comprises Poland, Hungary and Czech Republic. A second group includes the Balkan countries (e.g. Romania, Bulgaria, Albaniaand parts of the former Yugoslavia) with the CIS countries making up the third group. These groupings are based on

3 Poznan University of Agriculture, Poland

topography and degree of adaptation to a market economy in the 1990s. The level of economic development and reform in those countries during the last decade was significant. Therefore, the current position of each country can be better understood through use of comparative analysis. This paper compares the characteristics of the distribution structures for fruits and vegetables mainly in Poland and Czech Republic around 2000 with the recent state of those countries and Romania.

The characteristics that describe a cost-effective distribution structure for fruits and vegetables can be summarized as follows: The mechanism that requires middlemen (wholesalers) to act between producers and consumers should lead to a reduction in the overall number of transactions (i.e. the principle of minimum total transactions). The cost of monitoring should also be taken into consideration. . To limit the number of overall transactions, each one should include as many commodities as possible in the least possible number of transactions. Therefore, optimally, both buyers and sellers should be dealing with large quantities. This principle not only applies to domestic producers but also to importers of fruits and vegetables; both should deal with large quantities.

**TABLE 1:** BASIC INDICES

| | population[1] | area | density | GDP[2] | | Real GDP growth rate | |
|---|---|---|---|---|---|---|---|
| | | | | 1999 | 2008[3] | 1999 | 2008 |
| | Million | km² | #/km² | BN US$ | | % | |
| **Bulgaria** | 7.64 | 110 879 | 69 | 4.8 | 29.7 | 2.3 | 6 |
| **Czech Republic** | 10.381 | 78 867 | 130 | 12.4 | 20.4 | 1.3 | 3.2 |
| **Hungary** | 10.045 | 93 028 | 108 | 9.5 | 15.7 | 4.2 | 0.5 |
| **Poland** | 38.116 | 312 685 | 122 | 8.7 | 14.1 | 4.5 | 5 |
| **Romania** | 21.529 | 238 391 | 91 | 4.6 | 10.7 | -1.2 | 7.1 |
| **Slovakia** | 5.401 | 49 035 | 110 | 9 | 17.7 | 0 | 4.6 |
| **Slovenia** | 2.026 | 20 273 | 99 | 14.4 | 22.8 | 5.4 | 3.5 |

[1] at 1 January 2008
[2] purchasing power standard per inhabitant
[3] Forecast

At the same time, consumers are only able to optimize their purchases if they own cars and refrigerators. Without widespread use of cars and refrigerators, no retail supermarket chain could function or exist. Therefore, it can be said that certain types of retailing and certain categories of consumer behaviour depend on each other.

Given these issues, the design of cost-effective distribution structures for fruits and vegetables should consider the following five factors: 1) level of development of agricultural production (i.e. degree of independence and organizational structure of producers); 2) structure of wholesalers (e.g. size, degree of concentration); 3) structure of the retail food (and dine-out) industries; 4) consumer behaviour; 5) structure of fruit and vegetable importing industry.

The following sections summarize how the five defining factors differ between Czech

Republic and Poland, based on statistics and field surveys conducted in 2002 and 2003. This is followed by a comparative analysis of how the fruit and vegetable distribution structures of both counties operate in relation to the five defining factors. The latter half of this study describes the remarkable activities of individual farmers trading with large retailers in Poland and with the huge private wholesale market in Romania. In the conclusion, the 'five defining factors' are used to analyse the future impacts on distribution structures for fruits and vegetables.

## The transition economy and agriculture in Poland and Czech Republic

In 2008, the Czech Republic had: a population of 10.4 million; a GDP growth rate of 3.2 percent; an inflation rate of 6.3 percent; and an unemployment rate of 4.7 percent. . In 2008, Poland had: a population of 38.1 million; a GDP growth rate of 5.0 percent; an inflation rate of 4.2 percent; and an unemployment rate of 7.0percent. Around 38 percent of the Polish population lives in rural areas. While the Czech Republic is one of the most industrialized countries in Central Europe, Poland seems more agrarian. Table 1 compares data for the Czech Republic and Poland with five other Central and Eastern European countries based on population size, population density, purchasing power parity and GDP growth rate.

In the former Czechoslovakia, as in many other socialist countries, collectivization of agriculture was promoted, and state and collective farms were organized. In 1951, cultivated land controlled by collectivized farming accounted for 28.4 percent of the total. By 1970, the figure had risen to 87.9 percent, and by 1979 96.4 percent of cultivated land was used as state and collective farms.

Two things to be noted about the former Czechoslovakia's collectivised agriculture were that collective farms outnumbered state farms (by around 60 percent) and that the government did not abolish the ownership of the land used by collective and state farms. These ownerships were simply treated as 'non-performing.' In 1990 the new government enacted the "Land and Agricultural Assets Utilization Act", which returned land to its rightful owners or their heirs. This new law, though, resulted in an extremely small number of farms being owned and operated by the same individuals in the democratized Czech Republic (Yamamura 1999). By 1990, many of the farmland owners and their heirs had already moved to cities and had become engaged in other industries. These landowners had little interest in operating a farm and were willing to rent their land to others. This enabled the emergence of large farms based on rented land, a major characteristic of Czech agriculture that remains today.

In comparison, Poland was exceptional among the former socialist countries, in that a considerable degree of political and economic freedom remained, even under the socialist regime. The level of agricultural collectivization was low, and the number of individual farmers remained high. As of 1977, individual farmers owned and/or operated 78.6 percent of all cultivated land in Poland, while the ratio was only 4.7 percent in Czechoslovakia and 5.9 percent in Hungary (Kowalski 2002). The northwest region of Poland was more strongly collectivised. This may have been related to the

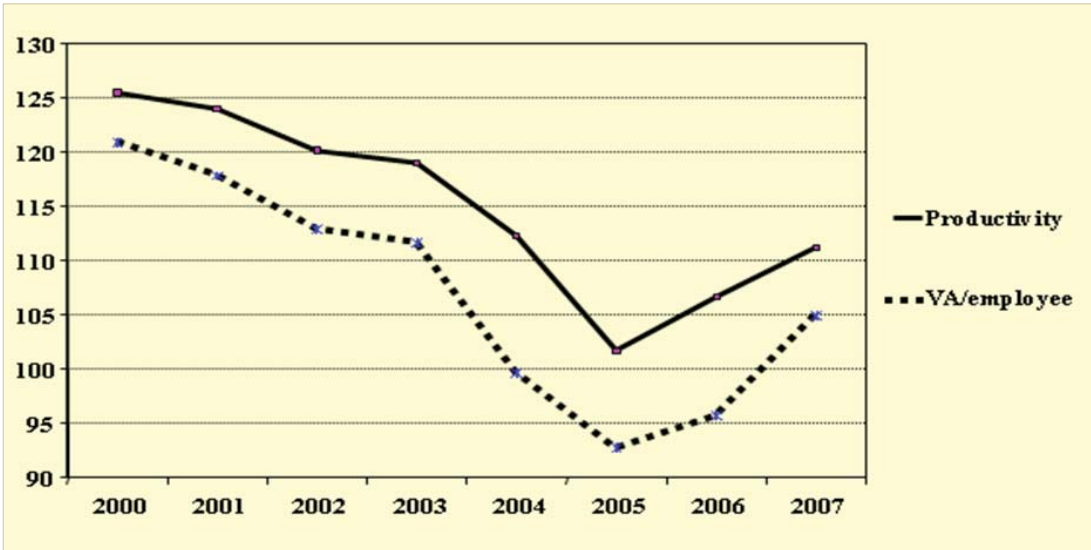
fact that the land was not good for fruit and vegetable production and is still used mainly for pasture today.

## Land accumulation and land use

In terms of trading capacity, large-scale farms can easily meet the needs of large supermarket chains without need for any middlemen or wholesalers who collect products from individual farms. The concentration of land use in larger-scale farms greatly contributes to an efficient distribution structure.

Agriculture makes up less than 4 percent of total GDP in the Czech Republic (while the average among all 15 EU nations is 2.5 percent.). Crop farming makes up 45 percent of agricultural production and raising livestock accounts for the remaining 55 percent. In contrast, the contribution of farming to the Polish GDP dropped from 11.8 percent in 1989 to 6.5 percent in 2000, although this percentage is still larger than that of many other EU countries. In 2001, 52.4 percent of Polish agricultural production was from crop farming and the remainder from livestock. One major characteristic of Polish agriculture is that the rate of subsistence farming is high: 12 percent of all Polish farms consume all farm products they produce; 49 percent consume the majority of their farm's production and only 36 percent sell the majority of their products (Kowalski 2002).

**FIGURE 1:** FARMS BY SIZE AND FARMLAND OCCUPIED BY EACH SIZE OF FARMS IN THE CZECH REPUBLIC




Source: Statistical Yearbook of the Czech Republic 2002

Figure 1 shows accumulation of farmland in the Czech Republic as of September 2000. As seen in the figure, 61.6 percent of the farms surveyed were less than five hectares, and 72.6 percent were less than ten hectares. Although these small farms comprise a majority of the total number of farms in the Czech Republic, they comprise only 1.3 percent and 2.5 percent, respectively, of total farmland. On the other hand, farms of 100 hectares or more comprise only 6.9 percent of total farms yet they represent 88.3 percent of total farmland. In short, the Czech Republic has an extremely bipolar

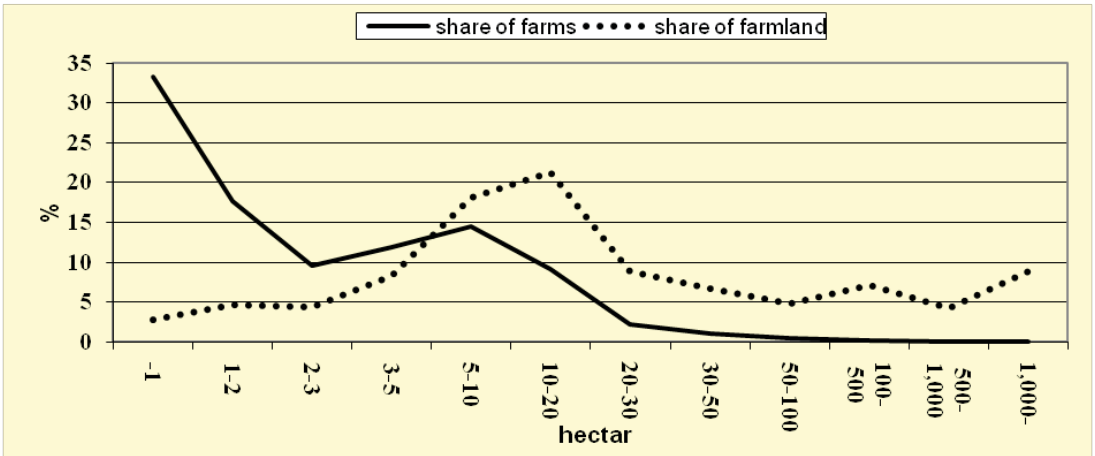
accumulation of farmland: small farms are numerous, but a few large farms occupy most of the farmland. In 1998, state farms comprised 1.2 percent of all farms, collective farms made up 34.5 percent, private companies held 40.6 percent and only 23.7 percent were held by private individuals (FADN CZ,2001; CSU 2002).

In comparison, Figure 2 shows the accumulation of farmland in Poland in 2002: private farms represented 83.7 percent of the nation's total farmland; 1.7 percent was used as collective farms (i.e cooperatives for agricultural production); 5.0 percent were other types of farming businesses; and 9.6 percent of the farmland was not in use. As for farm size, 72.4 percent of all farms were five hectares or less and 87.0 percent were ten hectares or less, while only 3.9 percent were 20 hectares or more. Farms of five hectares or less occupied around 18 percent of all farmland, while those with 50 hectares or more occupied some 20 of total farmland (Central Statistical Office 2002).

These figures show that there are many small farms of less than ten hectares in both countries. In Poland, however, the share of large farms is much smaller than that of the Czech Republic. Large-size private farms are especially popular in the Czech Republic, but there are only a few in Poland where the average size of a private farm is only one to two hectares.

The current distribution of farmland in Poland can be considered to be the result of: 1) Little accumulation of farmland took place, even under the former socialist regime; 2) Frequent food crises caused people to keep their land for their own food production; 3) Urbanization and industrialization are limited in Poland and therefore, this didn't attract labour away from the rural sector. The farmland accumulation of the two countries constrasts sharply: The Czech Republic has an extreme oligopoly of farmland with a few large farms dominating, whereas in Poland the overwhelming majority are smallsubsistence farms.

**FIGURE 2:** FARMS BY SIZE AND FARMLAND OCCUPIED BY EACH SIZE OF FARM IN POLAND




Source: Central Statistical Office of Poland 2002

# Development of wholesale markets in Poland and their problems

Even under the socialist government with a planned economy in Poland, people were allowed to freely buy and sell their fruits and vegetables. As a result, retail open-air markets in city squares and other places emerged where farmers sold fruits and vegetables grown on their own land. When the Polish economic system was reformed, some wholesalers gradually began to appear and some wholesale markets were established. However, their size and scope of business were limited.

Trying to modernize the nation's distribution system of agricultural products, the Polish government established large fruit and vegetable wholesale markets in the suburbs of major cities, following those of the West as a basic model. Markets were opened in the suburbs of seven cities: Poznan, Lublin, Wroclaw, Lodz, Gdansk, Warsaw and Krakow. The European Bank for Reconstruction and Development (EBRD) as well as many private foreign banks financed these markets. Many of the businesses that run these markets are real estate management companies, who operate as facilities managers, renting booths and other facilities for wholesalers but are never directly involved in the market transactions. Revenue for these firms comes from rentals of booths and other facilities and from admissions and parking fees charged to automobiles and trucks entering the markets for purchases. Of the seven markets, only one appears to be stable and enjoying good business. This is the Wielkopolskie market in Poznan, which has been working toward continuous improvement from early on,; the other six are suffering from sluggish business.

One such example is the Bronisze market in a suburb of Warsaw. This market was founded in 1995 with support from the EBRD and some other investors and run as a public stock company, with the Polish government owning some 60 percent of its shares. The location of this market is alongside the highway that runs from Warsaw to Poznan. This 62 hectare market is clearly capable of handling distribution over a large geographic area and includes a modern wholesale market with very large car parks and good general facilities.

At the same time, the city of Warsaw also has some wholesale markets founded by private organizations after 1989 that are still in operation today. When the Bronisze market was opened, its administration asked the wholesalers in the private markets to move into the new market. But many wholesalers remained in the private markets because they thought the new market was too far from Warsaw, making it hard for many of their customers to access. In addition, the new market's minimum number of transactions was too large for the wholesalers' businesses. As can be seen, the trading style in Poland doesn't need Western-style wholesale markets. Attempts to introduce them have failed in the end. There are many factors that contribute to the definition of distribution structure for fruits and vegetables. The structure of the wholesale market, preferred retail formats and consumers' behaviour all interact with one another.

## Import structure of fruits and vegetables

The supply structure of fruits and vegetables is one of the significant factors that characterize distribution. Even if domestic farmers are private individuals and their businesses are small, the importers also take a share of the domestic market. Yet, the agrifood import industry is operated by a small number of importers with large-size businesses; this should contribute to market efficiency.

In 2002, the Czech Republic's food supply balance (i.e. domestic production plus import less export) showed the following rates: 12.5 percent of apples; 14.8 percent of onions; 32.3 percent of grapes; and 65.3 percent of tomatoes were imported. Subsistence rates are high for farm crops and potatoes; however, 10 to 20 percent of fresh vegetables and around 50 percent of fruits are imported (CSU 2002).

Before transition, the central government controlled import distribution of agrifood commodities within Czechoslovakia. "COOSPOL" took care of imports and "OVOCE ZELENINA" managed domestic distribution. After transition, the system for import and distribution of fruits and vegetables changed dramatically.

The importers and distributors in today's Czech Republic are roughly divided into a two-tier system. One tier consists of a few large companies whose customers are predominantly the major retailers from Western Europe. These large importers and distributors have their warehouses in major cities of the Czech Republic and their distribution networks are throughout the country as well as outside the Czech Republic. Some examples of companies in this first tier are Ceroz, Hortim and Taroko. The second tier is made up of smaller businesses, which operate shops mainly within the wholesale markets, and which sell imported fruits and vegetables mainly to local retailers on a cash-and-carry basis.

Meanwhile in Poland, imports account for more than 60 percent of all fruit, yet only 4 percent of fresh vegetables are imported. However, a closer look at the fruits Poland imports shows that they are mostly limited to bananas and other tropical fruits, which do not grow in Poland. In contrast, apples and some other fruits produced in Poland enjoy a high reputation on European markets and many of them are exported. In Europe, Poland is positioned as a farm product exporter. Thus, it can be concluded that the import of fruits and vegetables into Poland is not significant enough to affect the nation's distribution structure of such commodities.

## Development of wholesale companies and large farms in the Czech Republic

The descriptions that follow represent typical examples of a wholesale company and a private farm based on rented farmland in the Czech Republic.

Cerozfrucht s.r.o. was founded in 1990 and is one of the two largest wholesalers in the Czech Republic. This wholesaler transports, stores, packs and conducts primary processing of fruits and vegetables. Ceroz employs more than 500 people and has

eight warehouses all over the country. Its annual sales reached US$120 million in 2002. Today, 60 percent of its transactions are with major supermarket chains, while the remaining 40 percent are with other wholesalers and retail businesses. Ceroz started their business in the wholesale market in the Lipence suburb of Prague. However, in 1999 the company moved its headquarters to an eastern suburb of Prague.

There are a number of domestic farms dealing with Ceroz, but "Farm B" represents a typical large-sized farm based on rented farmland. It occupies more than 1 000 hectares including 25 hectares of its own land. The manager of this farm inherited 25 hectares from his grandfather in accord with the "Land and Agricultural Assets Utilization Act" adopted in 1990. Annual sales from this farm were around 350 million Czech koruna[4] in 2002, but it has no legal commercial status. The farm employs more than 300 workers and its primary products are vegetables. Warehouses with refrigerators for storing potatoes, onions, and similar products were introduced in order to facilitate shipments.

The farm's primary business partner was Ceroz; however, since 1996 it began to sell directly to the supermarkets. Sixty to 70 percent of Farm B's present sales are to the supermarket retailers and the remainder are sales to Ceroz and other wholesalers. The farm's own products account for 75 percent of its sales and the balance are purchased from outside sources, including some importers.

Farm B is a typical large-scale farm based on rented land, established under the Czech land ownership laws, which makes it easy for a tenant to accumulate rented farmlands. Also, it is an example of a farm that has expanded its operations 'vertically' (i.e. it has adopted some of the wholesaling functions during its business expansion).

## Retail structures

High concentration of agricultural production, wholesaling, importing and other supply functions is one of the preconditions necessary for large supermarket chains to spread in a retail grocery market. In Western Europe, each retailer has a retail distribution center (RDC) at several locations in a country and centrally controls the logistics for its respective stores (Fernie and Sparks 1989). Fruits and vegetables are 'daily'commodities, and it is hard to differentiate such products in terms of functionality. Thus, they are often subject to price competition. As a result, in the fruits and vegetables market, retail stores tend to grow larger and oligopoly is commonplace.

For example, in France in 1999 and 2000, hypermarkets (whose retail floor space is 2 500 square metres or more) made up around 50 percent of the retail market, while smaller supermarkets had some 45 percent and traditional retailers (whose retail floor space is 400 square metres or less) had only 5 percent or so of the retail market. In the UK, hypermarkets made up some 45 percent of the entire retail market, with smaller supermarkets accounting for 45 percent and only 10 percent held by traditional retailers. Looking at the data in terms of possible oligopoly, the top three



4 In 2002, 100 CZK were equal to 3.7 euros.

players account for 66 percent of the French retail market and 52 percent of the UK market.

Another factor that helps supermarkets gain a larger market share is the behaviour of consumers, who became accustomed to the supermarket style of shopping. With the average family having fewer members and dual-career parents, many consumers prefer to buy the groceries they need for the week in bulk at the weekend. This trend was accelerated by the increase in ownership of cars and refrigerators. Supermarket retailing meets the demands of such consumers. Using statistics from the UK to illustrate this point, 70 out of every 100 UK households own a car and 99 out of every 100 own a refrigerator/freezer (HMSO 1998).

These trends are also apparent in the Czech Republic and Poland. In the Czech retail market, hypermarkets have an approximate 15 percent share, supermarkets have 60 percent and traditional retailers have the remaining 25 percent. In Poland, hypermarkets also have a share of around 15 percent, but supermarkets have only a 30 percent share and traditional retailers still enjoy an approximate 55 percent share of the domestic retail market (IGD 2001). In both of these countries, though, large stores have smaller market shares than they do in the UK and France. Still, the Czech market supports larger shares for the large stores than does Poland. In Poland, traditional retailers still enjoy the largest market share. In terms of concentration of retailers, the three largest retailers occupy 22 percent of the market in the Czech Republic and 16 percent in Poland. Among the grocery retailers operating in Central Europe, all of the ones holding the largest market share are from Western Europe, such as Macro (Germany), Tesco (UK), Ahold (the Netherlands), Carrefour (France) and others (IGD 2001).

With regard to the increased ownership of family cars and refrigerators, as of 1999 every 100 Czech households owned 149.4 refrigerators/freezers, compared with 64.5 in Poland. Every 100 Czech households owned 69.3 cars, while every 100 Polish households owned 18.8 cars.

These facts show that ownership of refrigerators/freezers and automobiles in the Czech Republic is higher than in Poland, and that Czech consumers behaviour is more like that of Western Europe than that of Polish consumers. As can be seen, these factors enable supermarkets in the Czech Republic to enjoy a larger market share than in Poland. In terms of supply structure, the Czech Republic has a greater concentration of suppliers, and therefore its retail structure supports a larger share of large stores than does that of Poland. It would appear that there is a distinct relationship between supply and retail structures.

## Comparative analysis of distribution structures for fruits and vegetables

The five factors (described in Section 1.) that characterize distribution structure for fruits and vegetables can be applied to the two countries: 1) Stage of development of agricultural production; 2) Structure of wholesalers; 3) Structure of the retail industries; 4) Consumer behaviour; and 5) Structure of imports. Table 2 compares

these five factors as they characterize the distribution structures for fruits and vegetables in Poland and the Czech Republic.

Poland, even during its years of socialist planned economy, had and still has many individual farmers. Concentration of agricultural production is still underdeveloped. In its fruits and vegetables market, retailers and wholesalers are still not differentiated. Many stores are run as small retail businesses. Even if the Polish fruits and vegetables market were efficient and reorganized on a wholesaling basis, such a (wholesale) market would not be used much because Poland has not developed its retailing and restaurant industries. In contrast, the Czech Republic has a high concentration in its agricultural production as well as an efficient distribution system.

**TABLE 2:** COMPARISON OF POLAND AND THE CZECH REPUBLIC ACCORDING TO CHARACTERISTICS OF A DISTRIBUTION STRUCTURE FOR FRUIT AND VEGETABLES

| FACTOR | Poland | Czech Republic |
|---|---|---|
| development of agricultural production | low | high |
| structure of wholesalers | small | small - large |
| structure of wholesale market (number of wholesalers) | small and many | small and many |
| structure of retailing(share of supermarket format) | low | middle |
| consumers' behaviour (bulk buying) | low | middle |

Wholesaling is often said to perform the following five functions: 1) assembling of commodities; 2) distribution of commodities; 3) pricing; 4) payments settlement; and 5) data collection and documentation. A large wholesaler would be capable of performing all five functions. Depending on business size and extent of competitive pressure; wholesalers perform varying degrees of the five functions.

At the same time, it could be said that some large farms and retailers would be in a position to acquire some of the functions of wholesaling. In other words, players currently representing either a production position and/or a retail position could acquire any or all of five the wholesaling functions. Farm B of the Czech Republic is an example of this. Another example is Tesco of the UK as well as some other supermarket companies.

## Development of strategies by private farmer in Poland

Economic development of Poland is noteworthy in recent years. The reasons for this development aren't the subject of this paper; however, the emergence of well-financed retail markets should be mentioned. Many supermarket chains from Western Europe entered into the Polish retail market. Now, some large-scale farms have tried to deal directly with those large retailers. These farms were not only producers but also wholesalers that collected agricultural products from other farmers. It can be said that Poland—following the example of the Czech Republic—is on its way to the establishment of a sophisticated distribution system for fruits and vegetables.

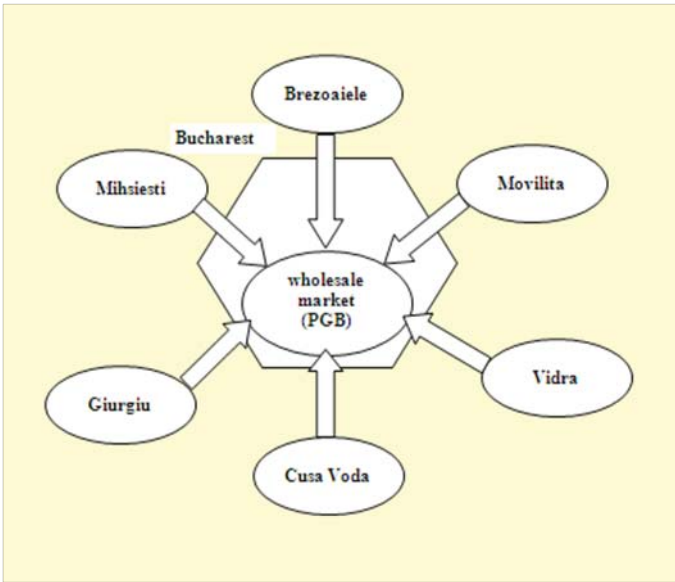


However, landownership in Poland is different compared with that of the Czech

Republic. There are some difficulties concerning land accumulation. The price of land is growing rapidly outside the urban areas; therefore, the market for land lease is limited.

## Emergence of a private distribution center in Romania

There was considerable confusion surrounding the dissolution of collective farms in Romania. A wholesale market (i.e. PBG) was introduced into Bucharest by the government to connect producers and retailers. Six vegetable-producing areas were designated around Bucharest. Plans were made to ship their products to the wholesale market. However, the market was positioned in a suburb of Bucharest with limited accessibility for customers. As a result, the retailers wouldn't use the market and the plan failed. However, there can be seen a point in common between Poland of the 1990s and Romania.




Economic development is also remarkable in Romania. One of the reasons might be that the population size is greater than that of the Czech Republic and Hungary combined. Supermarket chains from Western Europe have entered in recent years. Most wholesalers dealing with these supermarket chains are using a private wholesale yard in Voluntari, Bucharest. An estate company managed it since 1995. The site covered sevenhectares and accommodated around 200 cargo trucks per day. Most of the booths in the market have refrigerators and most of the commodities are imported.

Despite the fact that a number of consumers purchase their food at supermarkets, there are many open-air retail markets in Bucharest. Therefore, it could be said that a 'double structure' exists for the distribution of fruits and vegetables in Romania.

## Conclusion

Poland was one of the few examples of a planned economy in which individual farmers owned and/or cultivated most of the farmland. The only other similar country that combined a planned economy with individual farm ownership was Macedonia, part of former Yugoslavia. Nevertheless, some of the characteristics of Poland's agriculture and farm product distribution systems (such as underdeveloped cities, the non-agricultural sectors' inability to attract surplus population to farming villages,

agricultural production by subsistence farmers, underdeveloped commercialization of farm products) are shared by some other countries that previously promoted collectivisation of agricultural production under a planned economy. It could be said that the perspectives presented in this comparison of the distribution structures in the Czech Republic and Poland could also be applied to many other former socialist countries.

Also, with respect to distribution of fruits and vegetables through wholesale markets, certain points should be highlighted. The existence of a wholesale market in and of itself does not contribute to the efficiency of the distribution of fruits and vegetables. Wholesale markets based around small businesses are likely to fall behind in terms of scale of distribution. In contrast, large wholesalers are quite capable of meeting demands of mass retailers via both scale and scope, but can occasionally even be forced to withdraw from a wholesale market to facilitate greater efficiency of the market's operation. This change is not limited to the Czech Republic but is also seen in Western Europe. At both Covent Garden in London and Rungis in Paris, wholesale markets are rapidly declining in power.

Agricultural products are innately diverse based on growing season and geographical considerations. However, consumer demand is growing for increased diversity and nd expanded range of choice. In order to match supply and demand efficiently, at least one participant needs to adjust the transactions. Many of the existing wholesale markets lack this function.

In Japan, the share of fruits and vegetables sold through wholesale markets is higher than that of any other advanced economies. One reason for this is the existence of 'primary wholesalers'. The "Central Wholesale Market Law" enacted in 1923 classified wholesalers into two major categories: primary wholesalers as "consignment companies;" and secondary wholesalers as "brokers." This law established the Japanese system where a few (i.e. one or two) primary wholesalers collect and manage all the commodities brought into one wholesale market. Thus, in Japan, the law created the distribution system where wholesale markets trade in a great variety of fruits and vegetables. This distribution structure has also proved to be capable of dealing efficiently with the supermarket chains that emerged later.

The specific wholesaling functions are not limited to performance by wholesale markets. They are frequently carried out by brokers. In many countries other than Japan, the development of the distribution of fruits and vegetables requires integration of these brokers as wholesalers.

As can be seen, expanding only the size (i.e. scale) of wholesale markets has not proven effective without an emphasis on increased diversity (i.e. expansion of scope).

# Bibliography


- *Report on the Agricultural Census* 2002. The Central Statistical Office. Poland.
- *Statistical Year Book of the Czech Republic*. 2002. CSU Praha.
- FADN CZ 2001. Farm accountancy data network, VUZE, Czech Republic. Praha.
- IGD 2001. Market Focus, Central Europe. *IGD* Publications, international business analysis. UK.
- John Fernie, J. & Sparks, L. 1998. *Logistics and Retail Management*. Kogan Page, London.
- Kowalski, A. 2002. *Poland's Agriculture in the Context of Integration with the European Union*. IERiGZ, Warszawa, pp.5-16
- Lavigne, M. 1999. *The Economics of Transition – From Socialist Economy to Market Economy - second edition.*New York, Palgrave
- Shaw, S. A. Gibbs, L. & Gray, V. 1994. *The Strathclyde Wholesale Market Study Summary Report*. University of Strathclyde, Glasgow.
- Yamamura, R. 1999. *The analysis on transaction economies - a case study on Czech Republic, Slovakia.*Agricultural Policy research Committee. Inc., Japan.

# PRE AND POST-EU ACCESSION RESTRUCTURING OF THE SLOVENIAN FOOD INDUSTRY

*Aleš Kuhar*[5]

## Abstract

The main objective of this article is to present an overview of the Slovenian food industry's economic development in the period before European Union (EU) accession and during the first three years' of EU membership. Accession to the EU was certainly the most comprehensive change in the economic environment of the country since Slovenia gained its independence. Even during the pre-accession period the changes required by the EU intensified the restructuring of the food industry and increased pressure on the sector to improve its commercial performance. The agrifood industry, however, is one of the sectors in which EU enlargement traditionally brings the most radical change. Price level and cost differences, barely comparable production structures, but most of all, disparities in types of agricultural policies and differences in comprehension of the major adjustments required, all lead to significant economic pressure on the country. Using a framework of economic indicators, this paper will try to answer some of the most frequent questions related to the restructuring process of the Slovenian food industry during the last decade. Initially, the paper introduces past financial performance of the sector using the appropriate medium-term economic indicators. The central part of the paper analyses and comments on four key characteristics of the restructuring process. The characteristics can be formulated into four questions relevant to dealing with: 1) cost-price developments; 2) relationships within the Slovenian agrifood value chains; 3) developments in international trade; and, 4) trends in budgetary support intended to enhance industry competitiveness. The results confirm that the economic restructuring which had been slow to take effect in the Slovenian food industry during the decade preceding EU accession began to react radically in the post-accession phase. This brought to an end the favourable economic conditions enjoyed by participants in the highly protected domestic market. Business performance deteriorated dramatically, and today, only those food companies that proactively restructure can expect to find a sustainable position in the EU marketplace.

5 University of Ljubljana, Biotechnical faculty

# Introduction

Accession to the European Union (EU) triggered substantial changes in the business environment of the Slovenian food processing industry which intensified restructuring processes and increased pressure on the business performance of the sector. The agrifood industry is among the sectors in which EU enlargement traditionally brings radical change in the country's economic environment (Tangermann and Josling 1994). Price level and cost differences, barely comparable production structures, but most of all disparities in types of agricultural policies and differences in comprehension of the major adjustment needed in those policies, all lead to significant economic pressure (El-Agraa 1994).

In May 2004, the largest EU enlargement took place. Ten countries were involved, most of which had just completed their transition to market economies. In 2007 another two countries with similar attributes – Bulgaria and Romania –joined the Union. The enlargement of 2004 differed from previous ones in terms of the number of acceding countries but even more importantly in terms of the average level of economic development of the new Member States. The margin of economic prosperity was notably larger than any previous enlargement; this characteristic carried over in 2007. These disparities brought distinct challenges as well as opportunities both for the new member states and for the incumbent countries of the Union (Artis, Banerjee and Massamiliano. 2006).

Neither the scale of the 2004 EU enlargement nor the combination of the patterns and characteristics of agriculture, food processing and rural economies were comparable with past enlargements (Macours and Swinnen 1997; Herok and Lotze 2000). Therefore, the evaluation of EU enlargement and its implications for the agrifood sectors has drawn considerable research attention.

There are several existing studies evaluating in a rather detailed manner the effects of EU accession on various sectors of Slovenian agriculture (Erjavec, Rednak and Volk 1997; Bojnec and Münch 2001; Majcen and Buehrer 2001; Frohberg, Wahl and Weber 2002; Kavčič and Erjavec 2003). A literature review of the Slovenian food industry found few focused studies (e.g. FAO 1998; Erjavec and Kuhar 2000; OECD 2001; Kuhar 2003).

The main objective of this article is to provide an overview of the development of the Slovenian food industry in the period before Slovenia's EU accession and during the first years following accession. Based on a framework of economic indicators, this paper attempts to answer some of the most frequent questions related to development of the Slovenian food industry in the last decade. Four main research questions were developed:

- Is the agrifood industry facing a cost-price squeeze?
- Who is profiting from the reorganization of the agrifood value chain?
- Are the trends in the international food trade surprising?
- Has budgetary support to the sector stimulated competitiveness?

The paper is structured accordingly to these four main questions. Using data acquired from different sources (e.g. Statistical Office, Ministry of Finance, an agricultural institute, Chamber of Industry and Commerce) a series of economic indicators was developed to describe the characteristics of the Slovenian agrifood manufacturing sector's development.

In the first part of this paper the situation in the sector itself is presented using indicators of business performance, efficiency and profitability. The article then attempts to answer the four main research questions in terms of characteristics of competitiveness.

It is very clear that competitiveness is an important element in discussions and activities at different levels of the economic and policy environment. However, it is also evident that there is no consensus as to what exactly competitiveness is and what its most important attributes are (Martin 2003). In the literature, different definitions of competitiveness exist. The OECD defines it as the ability of companies, industries, regions, nations and supranational regions to generate relatively high levels of income and employment on a sustainable basis while being and remaining exposed to international competition (OECD 1996) The definition used by the European Commission states that it is the ability of an economy to provide its population with high and rising standards of living and a high level of employment for all those willing to work on a sustainable basis (EC 2003).

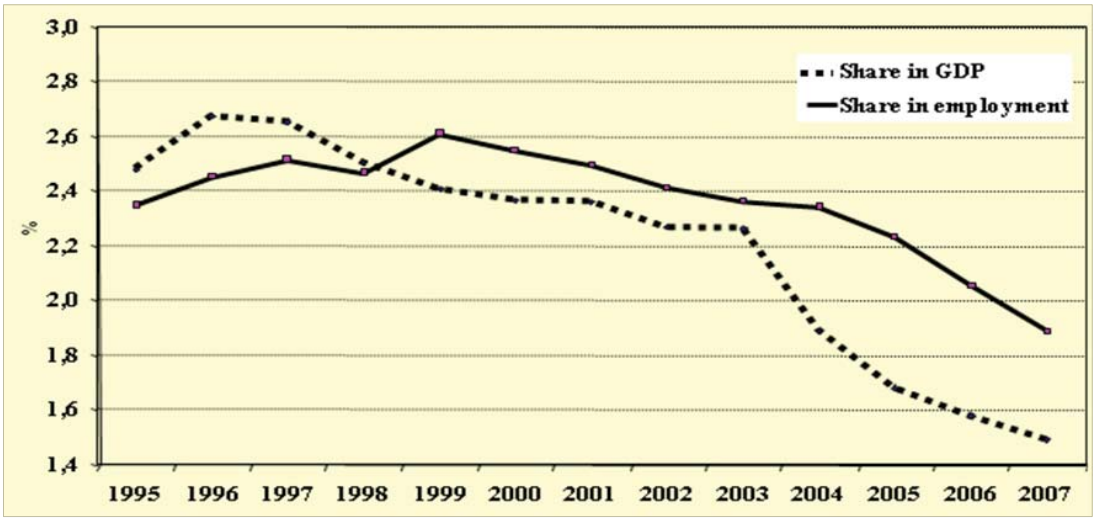
There is no generally accepted theoretical framework in economic literature for sectoral competitiveness; similarly there is no generally accepted definition. The concept of competitiveness is clearly multidimensional making it difficult to deal with theoretically, as well as empirically. In other words, competitiveness is a construct comprising different aspects of economic activity. Some of the leading authors suggest a composite approach specifically designed according to the focus of the analysis (e.g. Martin, Westgren and van Duren 1991; Trail and da Silva 1996; Porter 1998; Lall 2001). Also, the various approaches to the analysis of competitiveness can be split into two main groups: (i) analyses of competitive performance; and (ii) analyses of competitive potential. The first group measures profitability, growth, market share, trade, etc. The second group is concerned with explaining why performance is good or bad. The techniques also differ with the level of the analysis; techniques appropriate for measuring the competitiveness of individual firms or of the national economy are not necessarily valid for measuring the competitiveness of a sector. In a strict sense, there is no specific research methodology applied in this paper. However, specific indicators are computed according to standard principles of economic theory.

## Economic Performance

In Slovenia the food, beverage and tobacco manufacturing sectors represented about 1.5 percent of value added to GDP in 2007 and about 1.9 percent share of total employment (SORS 2008). Based on its value added contribution to overall manufacturing, the food industry is the third largest sector in Slovenia. However, in recent years the importance of the food industry declined according to all macroeconomic indicators. From 1995 to 2003, the food industry contributed

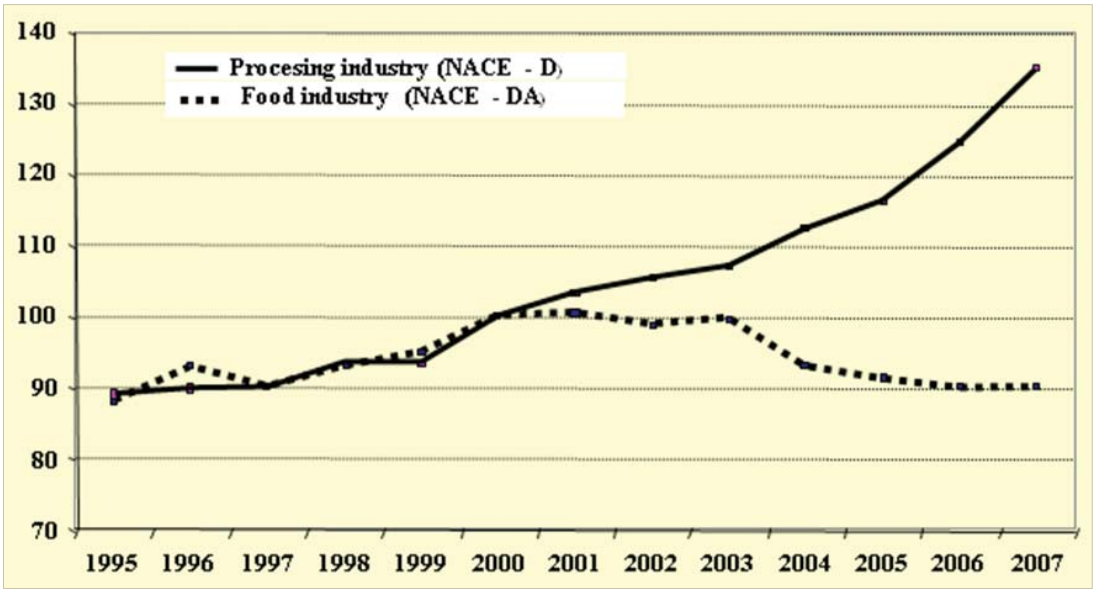
around 2.5 percent to Slovenian GDP and accounted for roughly 2.4 percent of total employment (Figure 1).

**FIGURE 1:** SLOVENIAN FOOD INDUSTRY'S CONTRIBUTION TO NATIONAL GDP AND TO TOTAL EMPLOYMENT IN THE PERIOD 1995-2007




Prior to year 2000, productivity of the food manufacturing industry mainly followed the same patterns as that of overall Slovenian industry. However, in the period after year 2000 the sector started to lag behind (Figure 2). Until 2003, production volume in the food industry remained roughly at the level of year 2000. But in 2004, volume dropped by more than seven percent and in 2005 by another two percent. After2005, the volume of production stagnated at the same level. The index of production for the total processing industry increased consistently during the 2000-2007 period, with volume for 2007 showing an increase of 35 percent over 2005.

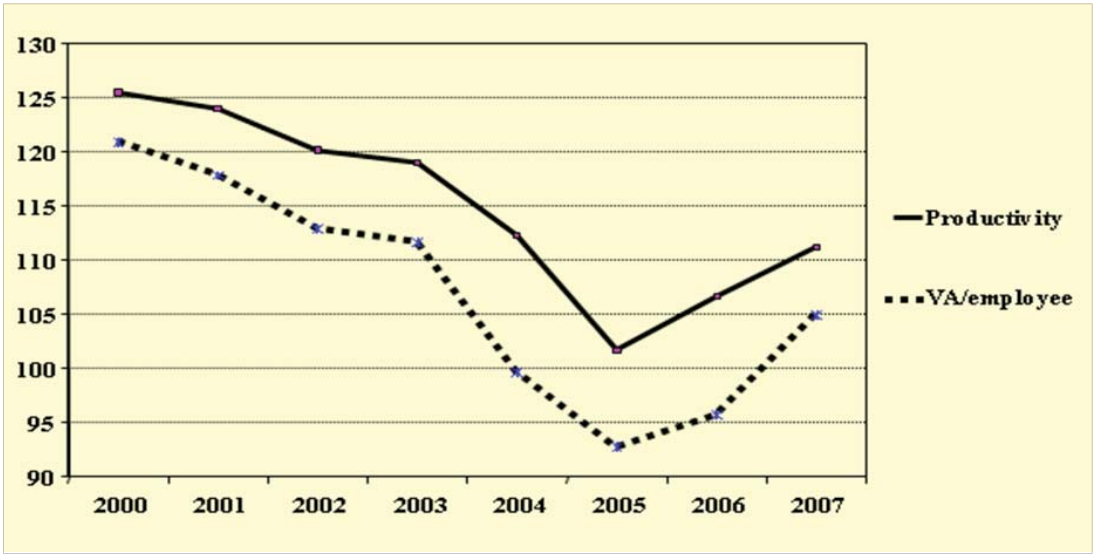
**FIGURE 2:** INDUSTRIAL AND FOOD PRODUCTION VOLUME INDICES FOR THE PERIOD 1995-2007 (2000=100)




Unfavourable conditions in business performance of Slovenian food, beverage and tobacco manufacturing are discernable also from trends in productivity (measured as revenue from sales per employee) and value added per employee. Figure 3 shows these two indicators for the food industry and compared with the same indicators

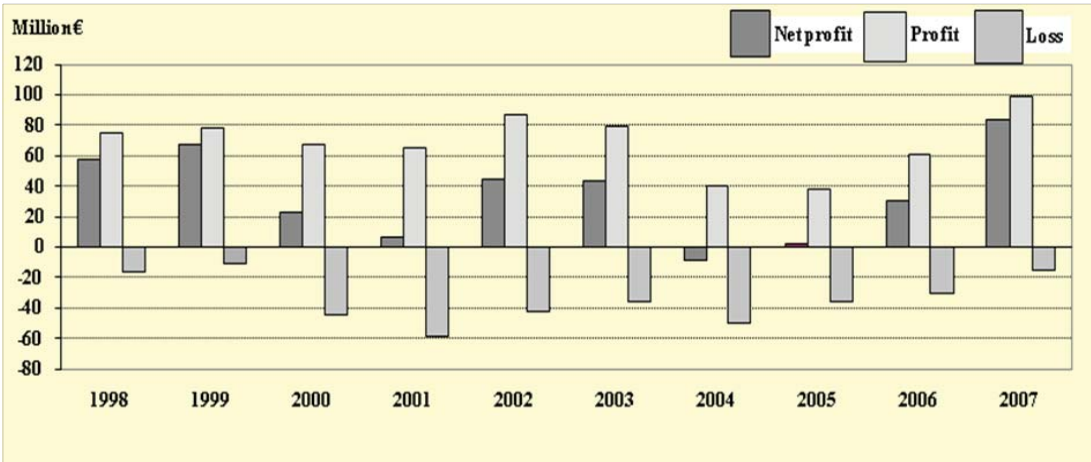
(expressed as an index) for total manufacturing. In the year 2000 food industry attained about 25 percent better productivity than the manufacturing average and about one-fifth higher value added per employee. However, the trends in the following years for value added per employee were generally negative and in 2004 the food industry figure fell below the average for manufacturing (i.e. index for 2005 = 97.5); yet, productivity was still slightly above the manufacturing average (2005 = 101.5). In 2006 and 2007, the food industry indicators showed some decent recovery: value added per employee rose to a level which is five percent above the processing industry average, whereas labour productivity was eleven percent higher. On average in 2007, an employee in the Slovenian food industry created 34 thousand euros of value added and 130 thousand euros in revenue from sales.

**FIGURE 3:** PRODUCTIVITY AND VALUE ADDED PER EMPLOYEE IN THE SLOVENIAN FOOD, BEVERAGE AND TOBACCO MANUFACTURING SECTOR 2000-2007 (TOTAL MANUFACTURING=100)



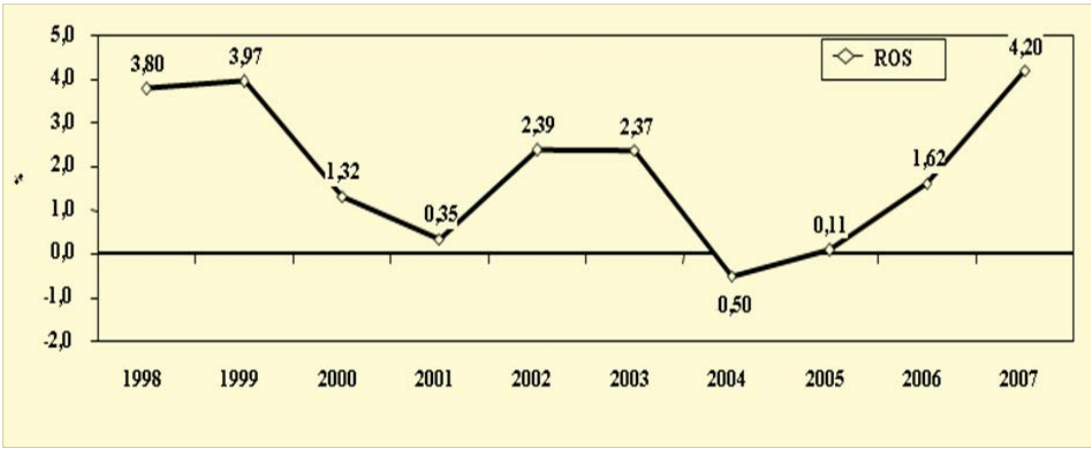

Consequently with worsening of productivity and value added creation, profitability indicators also dropped, however with oscillating patterns in recent years (as seen in Figure 4). While the food industry ended 2004 with a net loss, by 2007 total net profits of the industry was reported at 83 million euros—nearly triple the figure from 2006. The gross profit in recent years even exceeded the values of gross profit during the pre-accession period. However, it must be stressed that profitability is mostly concentrated in only a few subsectors, particularly the brewing and beverage industries.

**FIGURE 4:** NET PROFIT FOR THE SLOVENIAN FOOD, BEVERAGE AND TOBACCO MANUFACTURING SECTOR 1998-2007




Profitability trends from the period 1998-2007 and expressed as return on sales (ROS) are shown in Figure 5. In the last years of the previous decade ROS approached levels of 4 percent, but in year 200 and 2001 the value dropped considerably mainly due to to changes in accounting standards. In the pre-accession period the ROS was around 3.4 percent, but after accession the indicator fell to a negative value. Since that time the results constantly and steadily improved. In the last year of the analysis, ROS reached 4.2 percent which was higher than the average of the overall processing industry in Slovenia for the same period (ROS 2007=3.9 percent). However, considerable differences exist between the subsectors and companies.

**FIGURE 5:** RETURN ON SALES (ROS) FOR THE SLOVENIAN FOOD, BEVERAGES AND TOBACCO MANUFACTURING SECTOR 1998-2007



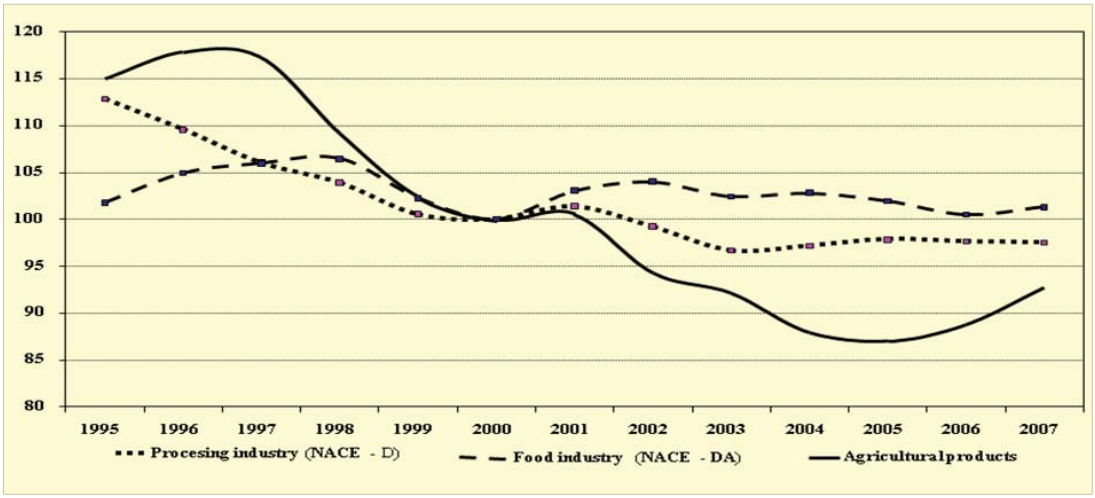

This brief overview of some key indicators of business performance (above) showed rather cautious changes in the Slovenian food, beverage and tobacco manufacturing sector. The sector has moved from one of the most prosperous industrial activities in Slovenia during the last decade to an average performer. However, in the last several years recovery seems evident. What are the characteristics behind these changes? In the following sections, this article attempts to answer this question by considering trends in the economic environment of the food industry that might help to clarify the developments.

# Evaluation of some characteristics

## 1. Is the food industry facing a cost-price squeeze?

A price trend comparison measured at different points in time reveals general information about the economic environment of an industrial sector. Figure 6 shows movements of real price indices for agriculturalcommodities, producer prices of food, beverages and tobacco and the producer prices of the overall processing industry in the period 1995-2007.

**FIGURE 6:** REAL PRODUCER PRICE INDICES FOR THE OVERALL PROCESSING INDUSTRY, THE FOOD, BEVERAGE AND TOBACCO SECTORS AND FOR AGRICULTURAL COMMODITIES 1995-2007 (2000=100)

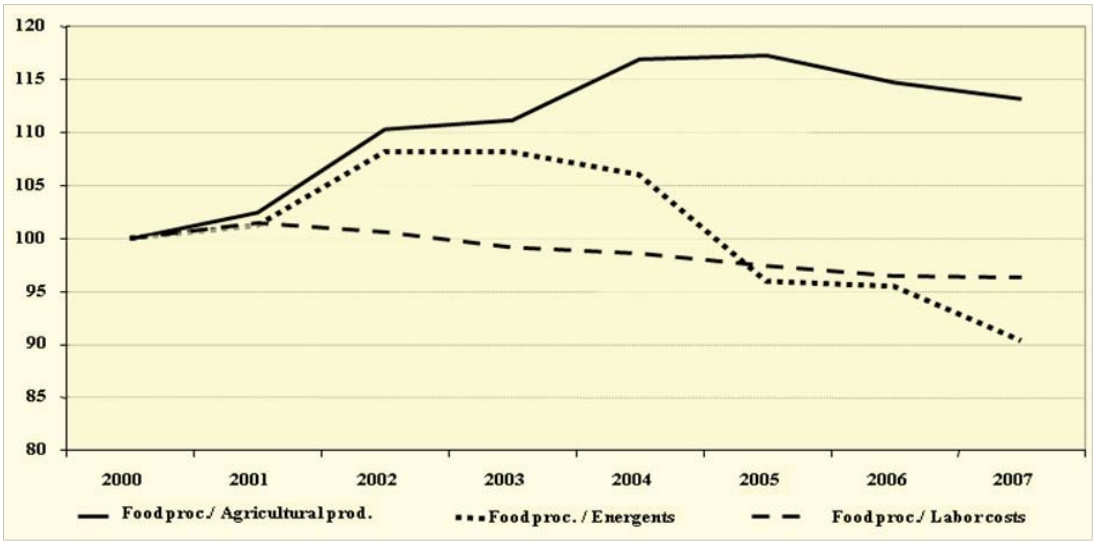



The most evident trend is a constant reduction in the real price of agricultural commodities until 2005. This was, however, an expected outcome of the agricultural policy reform initiated in year 2000 as a part of the EU accession process. Market price support measures of the agricultural policy were gradually replaced by income support measures. In comparison with year 2000, prices of agricultural commodities were 12 percent lower in real terms than in 2005. In the subsequent two years the real price began to increase and by 2007 the real value was within seven percent of its 2000 value. The composite index of producer prices for food, beverages and tobacco showed a somewhat more positive pattern in the pre-accession period. Producer prices were consistently higher in comparison with the reference year. However, after accession, the producer prices decreased initially (in 2006) to the level of year 2000, but started to strengthen in 2007.

The corresponding price parities of the producer price index for the food, beverage and tobacco manufacturing sector are compared with price movements of agricultural commodities, energy prices and labour prices are shown in Figure 7. It might be anticipated that price parity for agricultural commodities is favourable for food manufacturers; indeed the index reached 117.4 percent in 2005 compared with year 2000 representing 100 percent. But due to the (abovementioned) rise in agricultural producer prices, the price parity worsened slightly to 113.1 percent in 2007. Also the relationship with energy prices was favourable for food manufacturers in the first part of the analysed period. However by year 2005, any energy price advantage had been

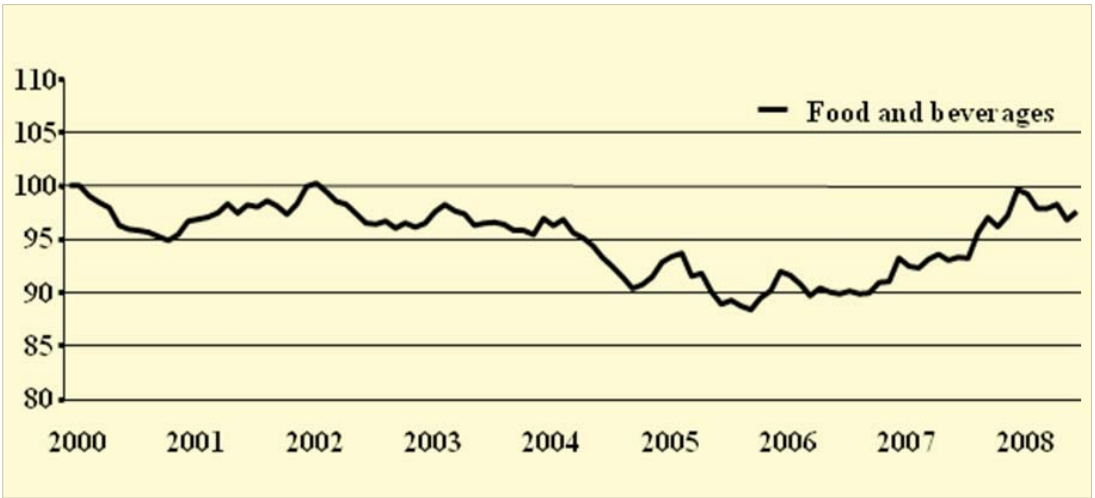
cancelled out due to a sharp rise in price and a corresponding drop in price parity to 95 percent. By 2007, the price parity for energy had dropped even further to reach 90 percent. Furthermore, if trends in labour prices are compared to the producer prices of food, beverages and tobacco the former exceeds the latter and therefore the price parity is unfavourable for producers. The parity value decreasing constantly since 2001 and in 2007 reached 96 percent. The especially labour-intensive sectors of the food industry are the most negatively influenced.

**FIGURE 7:** SELECTED PRODUCTION INPUT PRICE PARITIES FOR FOOD, BEVERAGE AND TOBACCO MANUFACTURING 2000-2007 (2000=100)




The price index of food, beverages and tobacco at the retail level generally fluctuate around the inflation rate if there is no radical structural change in the economic environment. To a large degree this was the case in Slovenia; however, after 2004 prices started to lag behind inflation and dropped by five percent in real terms (Figure 8). This might be explained almost entirely by EU accession and the inclusion of Slovenia to the internal EU market. Further, retail prices continued to fall in the subsequent period, having reached their lowest point by the end of 2006. A slight strengthening began in 2007, when food prices began to rise constantly. By the first months of 2008, retail food prices were at their highest level in a decade.

**FIGURE 8:** RETAIL PRICE INDEX OF FOOD, BEVERAGES 2000-2008 (2000=100)




From the price trends and parities described above, one cannot firmly state that for

the food, beverage and tobacco manufacturers in Slovenia experienced a radical cost-price squeeze during 2000 to 2008. The subsectors with intensive dependence on agriculture inputs (e.g. dairy and meat) or on agricultural commodities (e.g. bakery) benefitted from evident improvement of price parity; however, this was not confirmed by business performance. A great part of potentially positive cost-price development was absorbed within the supply chain. Anecdotal evidence points to intensive vertical pressure from the retailing sector in Slovenia (described in more detail below). In terms of producer–retailer business practices in Slovenia (and other economies with a highly-dominant retail sector), producer price is not the main element of a sales transaction that determines producer revenue. Retailers tend to apply a series of retrospective discounts (e.g. for marketing, internationalisation, new productson a quarterly, semi-annual or annual basis and these discounts are not captured within the statistics that constitute producer price. Retailers may mpose many other contractual and/or operational practices that can negatively influence suppliers. Other types of 'point of sale' expenses are borne by the producers (e.g. fee for access to shelf-space, micro-distribution, ullage, collection of unsold goods etc.) that erode net profitability.. The next section describes development of the Slovenian retail sector.

## 2. WHO WINS IN THE SLOVENIAN FOOD CHAIN?

The role and position of food retailing in the agrifood value chain has changed considerably in the last few decades. Food retailers are not merely passive intermediates between producers and buyers but a dominant factor in shaping the economic environment of producers and are actively involved in influencing food purchasing behaviour and food use.

Due to its basic economic characteristics, food retailing is the most flexible part of the agrifood value chain making it best able to swiftly respond to changes in market demand. Modern food retailing is therefore both reactive and proactive:it is capable to perceiving changes that affect all 'upstream' levels of the value chain; but above all, the retail sector is capable of effective stimulation andinfluence in customer purchases. Domination of retail trade in the agrifood value chain is a global phenomenon (Dobson, Waterson and Davies 2003). In a majority of developed economies, the retail grocery sector has become increasingly concentrated both at national and international levels. The sector is now dominated by a limited number of large multiple-store retailers that attract the majority of consumer spending on food. Slovenia is no exemption to this and it ranges among the European economies with the highest level of concentration in the food-retailing sector (Juhasz and Stauder 2005). A high degree of concentration is an important determinant of profitability in the retail sector, as the positive effects of the economy of scale are substantial. Because of the structure of costs and other basic economic characteristics, an increase in the scale of business translates into an immediate growth of profits. Table 1 illustrates the effects of a change in scale of business on the profitability of a retail company. If net profit margin of a retail company is one percent per value of sales of 100 units, it jumps to 26 percent if the volume of sales increases by only two percent (Fearne, Hughes and Duffy 2001).

**TABLE 1:** EFFECTS OF SALES VALUE CHANGES ON NET PROFIT MARGIN IN FOOD RETAILING (A HYPOTHETICAL CASE)

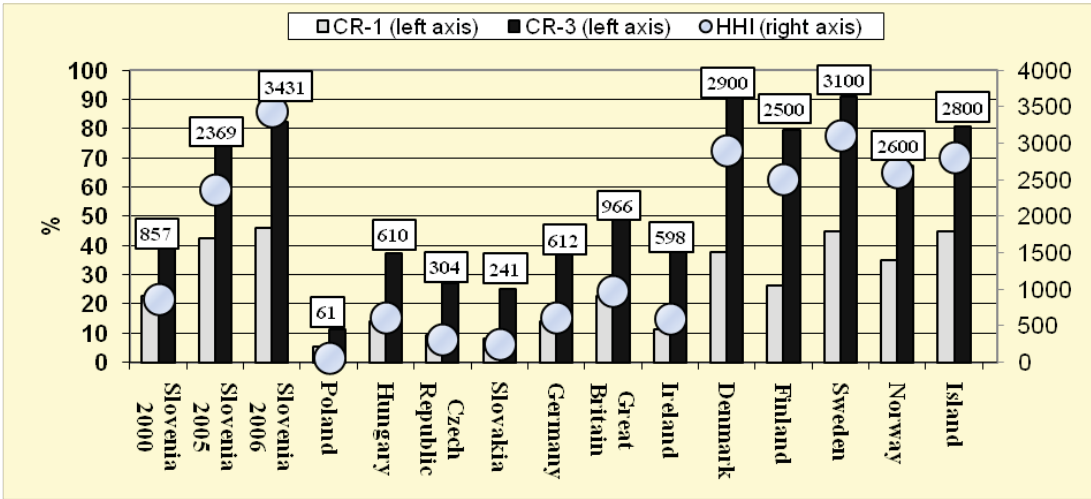
| | Case A | Case B |
|---|---|---|
| Sales value | 100 | 102 |
| Purchasing value of goods sold | 80 | 81.6 |
| Gross profit margin | 20 | 20.4 |
| Fixed costs | 13.3 | 13.3 |
| Variable costs | 5.7 | 5.8 |
| Net profit | 1 | 1.29 |
| Net profit margin (i.e. net profit/sales) | 1.00% | 1.26% |

Source: Fearne, Hughes and Duffy 2001

Although this case is simplified (yet based on the cost structure of a French retail company), it illustrates the mechanism of increasing sales volume by retailers in the process of concentration. Due to the high share of total costs represented by fixed costs and the characteristic of variable costs, to be a factor of the volume of revenue, the margins of the large-volume retailers are extremely responsive to changes in revenue from sales. Any rise in the latter leads to disproportionate change in net profitability, and the same goes for a drop in the revenue from sales.

An in-depth study of the retailing sector in Slovenia is beyond the scope of this article; however a basic analysis of sectoral data reveals some significant trends (Figure 9). Two fundamental indicators of market structure are shown for the Slovenian retail food sector and for selected European countries. The first indicator is the Herfindahl-Hirschman Index (HHI) that is a commonly accepted measure of market concentration. It is calculated by squaring the market share of each firm competing in a market, and then summing the resulting numbers (U.S. Federal Trade Commission). Markets in which the HHI is between 1 000 and 1 800 points are considered to be moderately concentrated, while those in which the HHI is in excess of 1 800 points are considered to be concentrated and usually raise antitrust concerns for governments. The data for the Slovenian retail food sector shows enormous growth of the HHI in the period between 2000 and 2006 when the index quadrupled (as seen by the specific HHI values in Figure 9). In 2006, the HHI reached a value of 3 431, a considerably higher value than those estimated for Sweden and Denmark which are among the countries with the highest HHI in Europe. Another indicator is the concentration ratio (CR), or the sum of market shares owned by one or more firms. A comparison of CRs can provide a measure of the extent to which the largest firms contribute to activity in an industry. According to a comparison of CRs, the Slovenian retail food sector is highly saturated. Figure 9 shows estimates of the CR for a single firm (CR1) and for the three largest firms (CR3) in the Slovenian retail food sector compared with selected countries. In 2006 the largest Slovenian retailer contributed 46 percent of the total sectoral revenue, while the three largest retailers contributed as much as 83 percent. Both figures are among the highest in Europe.

**FIGURE 9:** COMPARISON OF MARKET SHARES OF LARGEST FIRMS IN THE SLOVENIAN RETAIL FOOD SECTOR COMPARED WITH VARIOUS OTHER EUROPEAN COUNTRIES




In 2000, the CR3 concentration was considerably lower (39percent) than in 2006 and the sector was predominantly composed of small regional retailing groups and traditional independent retailers. Mergers and acquisitions driven mainly by a leading retailing group combined with organic growth of other major players caused the sector to become highly consolidated. The small independent retailers were marginalized and –in order to survive, are now restricted to act as convenience stores for top-up shopping. As would be expected, simultaneously with the increase in concentration, business performance rapidly improved for the leading retailers.

The retail food sector in Slovenia clearly underwent drastic structural changes between 2000 and 2006. Although modern business strategies and management practices were introduced, the consequences for suppliers were rather negative. Due to the substantial consolidation of the retail market the nature of the supply chain changed considerably.

The scale of operations of the major retailers and their control of purchases means that they are able to effectively dictate terms and conditions to producers. Through aggressive bargaining strategies, including the use of delisting tactics and the increased use of auctions for awarding contracts, retailers have been able to drive down the prices and margins that producers receive. Closely allied with these moves has been the increased use of vertical restraints placed on producers. These buyer-induced restraints generally take one of two forms—either aimed at further rent extraction, or limiting producers' freedom or incentives to supply elsewhere. The first form includes listing charges, shelf-space fees ('slotting allowances'), promotion support payments and retrospective discounts on goods already sold. The second form includes exclusive supply obligations and other 'non-compete' contract clauses, as well as most-favoured buyer contracts.

Heavy investment also allowed retailers to reap economies of scale through the operation of large-store formats and large chains of stores. This has been supported by the implementation of sophisticated logistics and distribution systems married with significant investment in new technology (such as e-POS). The result has been significantly improved efficiency with greater sales per outlet and per employee. But, in addition to a very successful modernization, introduction of contemporary

management practices and business conduct, solid profit growth of profit might be aattributed to the market structure, as well. A somewhat oligopolisticmarket structure enables economic domination by the Slovenian food retailers. A high degree of vertical power makes it possible for retailers to introduce business practices that can adversely affect the profitability of their suppliers and distort market competition.

Beside the evident negative effects on food suppliers' business performance, the results of this behaviour in Slovenia might also tend to cause suppliers to be less likely to invest in new product development and innovation, leading to lower quality and less consumer choice. The high level of concentration in Slovenian retailing has negative implications also on smaller entities in the sector itself. Some of the practices give the major buyers substantial advantages over smaller retailers, whose competitiveness is likely to suffer, and as a result, that could also lead to a reduction in consumer choice.

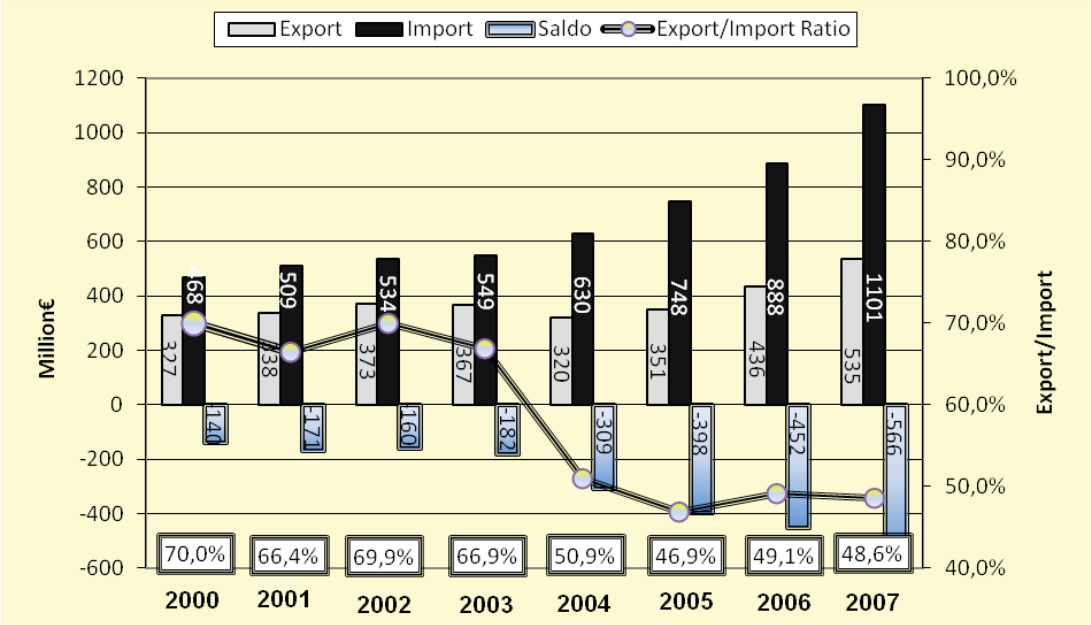
Negative occurrences in vertical relationships are not unique to Slovenia. However several structural deficits of the food sector make the situation for suppliers even more unfavourable. One of these negative features is a low level of integration of Slovenian food processors into the international marketplace.

## 3. Are the trends in the international food trade surprising?

Slovenia has traditionally been and will very likely remain a net food importer; however, the importance of agrifood trade within total international trade is limited. The aggregate of agrifood commodities accounted for less than 3 percent of total exports and about 6.5 percent of total imports of Slovenia (SORS 2008). By focusing on processed food as a single element in total trade, it can be seen that the ratio of imports to exports has been growing steadily between 2000 and 2007 (Figure 10). The value of imports reached 1.1 billion euros in 2007 which was some 235 percent more than in 2000. Although imports increased continually after independence, following EU accession the growth rate intensified noticeably due to significant reductions in market protection. (Please see additional detail below.)

The value of exported processed food oscillated somewhere around 350 million euros in the pre-accession period. Although in the year of accession (2004) exports decreased considerably, by 2005 they had begun to improve again—and by 2007, the figure reached more than half a billion euros.

**FIGURE 10:** SLOVENIAN INTERNATIONAL TRADE IN FOOD, BEVERAGE AND TOBACCO PRODUCTS 2000-2007




One of the significant features of the Slovenian international food trade until EU accession was a rather equal development of exports to imports; therefore the export-import ratio did not fluctuate considerably. Due to the increase in imports and decrease in exports after 2004, the net trade deficit nearly doubled. Consequently, the export-import ratio fell to its lowest point (47 percent) from levels of some 67-70 percent in the pre-accession period. Since 2005, the level improved slightly but the value of exports still remained roughly half of the value of imports (i.e. 48.6-49.1 percent).

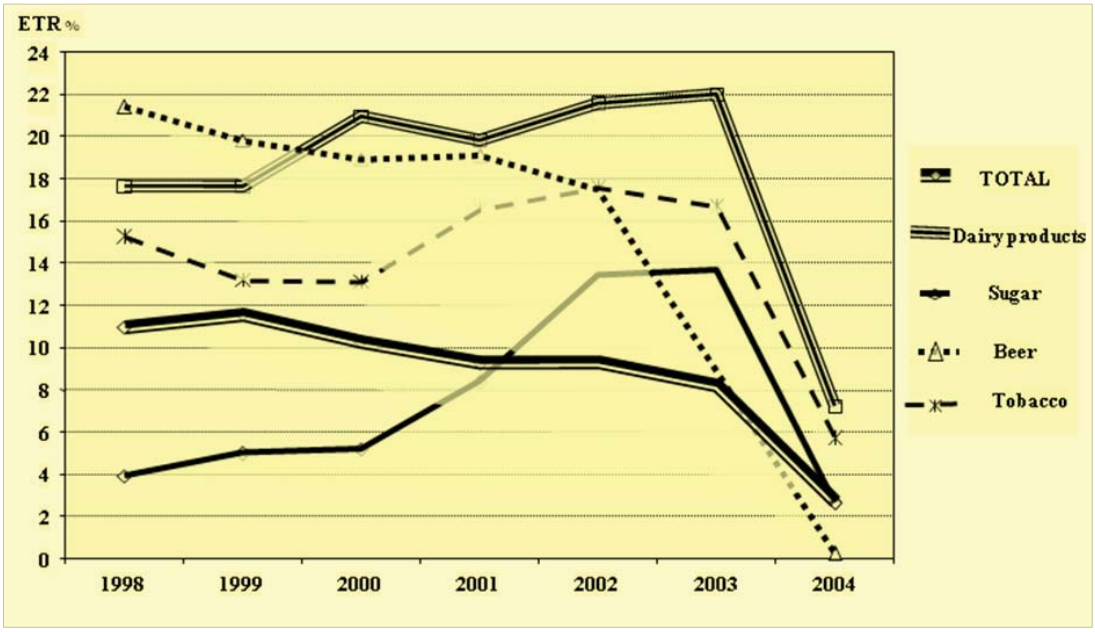
Before EU accession, Slovenia signed various bilateral and multilateral trade agreements which gradually opened its borders to a widening range of food commodities. At the same time these agreements increased the potential for better access to foreign markets for Slovenian food products. It appears that Slovenia's pre-accession trade policy might not have stimulated international competitiveness for the food industry and that resulting trade pressures were among the main determinants of decreased sectoral performance. However, unfavourable developments on both sides of the Slovenian food trade balance could have been anticipated if certain basic features had been considered.

Figure 11 shows the tariff for imported food, beverage and tobacco products as a group, as well as the tariff for selected subgroups between 1998 and 2004.

Despite the stated intention of the Slovenian government to liberalize international trade, food, beverage and tobacco products remained one of the very few protected markets prior to accession. The tariff on imported foods did actually fall from about 12 percent in 1998 to 8 percent in 2003, however, the prescribed liberalization in the year of accession considerably reduced import prices and thus made foreign food on the Slovenian market more competitive. As seen in Figure 11, some subgroups of imported products did show higher tariff levels than the average for the food, beverage and tobacco group as a whole. It should be noted that these products were the ones putting the most pressure on Slovenian domestic products. The tariff for

imported milk and dairy products, for instance, was as high as 22 percent in 2003, and had generally increased between 1998 and 2003. Similarly, the tariff on sugar increased continuously and finally reached a level of 14 percent in the year before accession. Interestingly, both tobacco and beer carried a tariff of some 18 percent in 2002; the tariff for tobacco was the second highest among imported food products in pre-accession Slovenia, while the tariff on beer—which had been the most protected food product between 1998 and 1999—rapidly decreased after 2002.

**FIGURE 11:** TARIFFS FOR IMPORTED FOOD, BEVERAGE AND TOBACCO PRODUCTS AS A GROUP AND FOR SELECTED PRODUCTS IN SLOVENIA 1998-2004




For most other food products, the import tariffs in the pre-accession period fluctuated around 10 percent (between 2000 and 2002), with lower tariffs for edible oils, processed fruits and vegetables, and nearer to accession, also for wine.

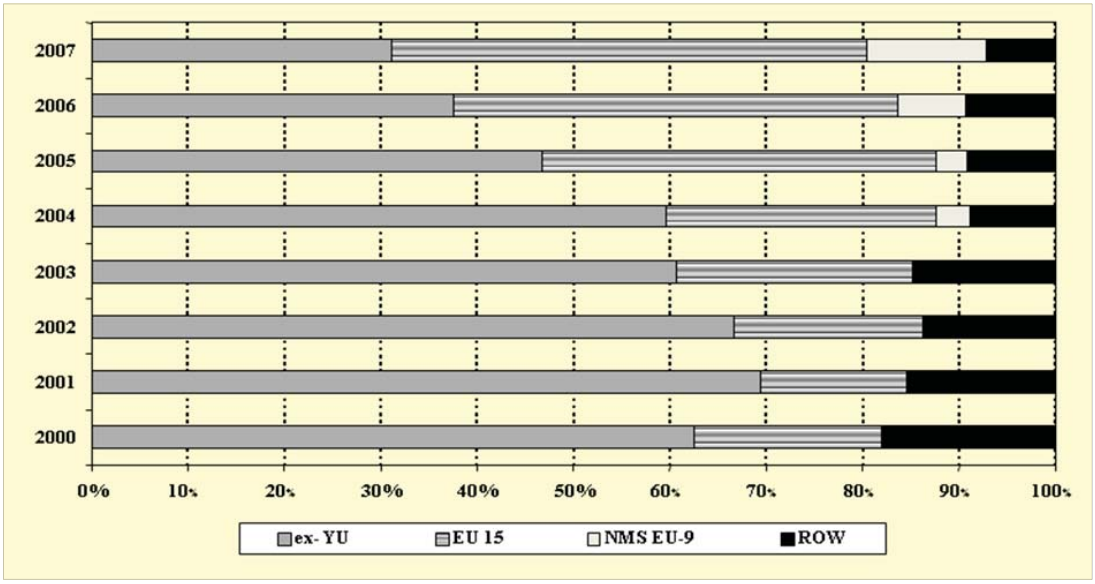
Based on the pattern of import tariffs, one could have anticipated the effects on the Slovenian agrifood industry following inclusion to the EU internal market. The Slovenian agrifood market was highly protected prior to EU accession; therefore, access by foreign competitors was impeded. After accession, the trade barriers (for products from the European Union) were abolished and the effect of "trade creation" appeared, which can be described as one of the results of free trade areas (El Agraa 1994). Import growth following accession also accelerated due to the regional nature of Slovenia's imports.

Prior to accession, agrifood exports to the European Union hovered around 18 percent (Figure 12). After accession, agrifood exports to the same countries (i.e. the EU 15) climbed from 27 percent to 50 percent by 2007. During the same period, agrifood exports to the other nine new EU members rose more rapidly (from 4 percent to 12 percent); the combined effect was a doubling of Slovenian agrifood exports to the EU internal market between 2004 (31 percent) and 2007 (62 percent).

Another issue concerning agrifood exports and EU accession had to do with the regional structure of Slovenia's agrifood trade (which shown as ex-YU in Figure 12).

Prior to accession, no less than 60 percent of Slovenian agrifood exports were destined for markets of the countries of the former Yugoslavia. Slovenia signed preferential trade agreements with these countries making agrifood products price-competitive in comparison with other imported products. However, after adoption of the EU's Common Customs Tariff (CCT) these preferential trade agreements were abolished and Slovenian agrifood exports were tariffed more highly and consequently, the prices of agrifood products imported to the former Yugoslavia increased. This immediately resulted in a decrease in exports to these markets y 15 percent in 2004 followed by a further drop of some 10 percent in 2005. By 2007, the share of agrifood exports to the countries of the former Yugoslavia was only slightly above 30 percent. The share of agrifood exports going to the EU internal market continued to increase each year following accession. In 2007 the EU share reached two-thirds of total agrifood exports, of which some 12 percent was earned on the markets of 'new member states' (including Bulgaria and Romania). Regarding the growth of agrifood exports, it should be noted that a considerable role was played by intensified export of standardized milk in bulk to the neighbouring states, particularly to Italy.

**FIGURE 12:** SLOVENIAN EXPORTS OF FOOD, BEVERAGES AND TOBACCO PRODUCTS BY REGION 2000-2007.



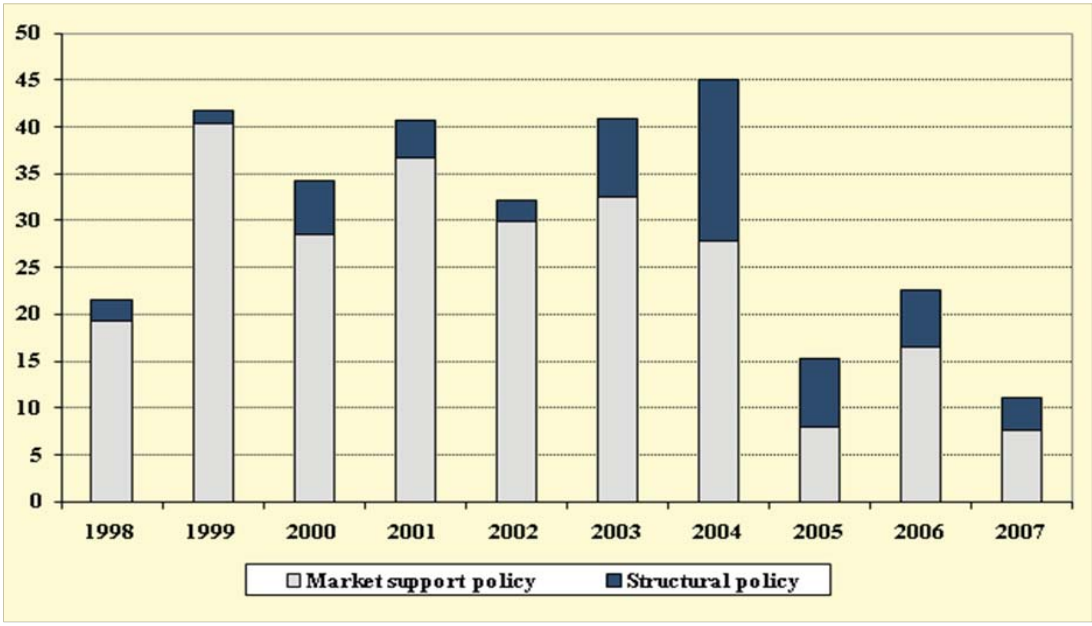

The change in tariff policy after accession was not likely to be the only factor that led to the constant decrease in agrifood exports to Slovenia's traditional markets. Beside adoption of the CCT, other factors also affected the shift in export flows. Some of the most influential were: revitalisation of domestic food production in the traditional (i.e. ex-YU) markets; investments in increased agrifood production capacities in countries of the former Yugoslavia; and not least of all, the government policies to promote Slovenian agrifood exports changed. (The next section describes the budgetary policy for Slovenia's agrifood industry during the pre-accession period).

## 4. HAS BUDGETARY SUPPORT TO THE AGRIFOOD SECTOR STIMULATED COMPETITIVENESS?

Agricultural policy remains a rather important determinant of the economic environment of the agrifood industry in a majority of modern economies. Especially affected are those subsectors that are closely related to volatile agricultural markets.

Budgetary transfers to the agrifood industry increased during 1998 through 2004, although with important changes in the structure of intervention (Figure 13). During the period 2000 to 2004, the Slovenian agrifood industry received between 30 and 45 million euros annually in the form of budgetary transfers. However, after EU accession, the figures decreased drastically. In 2005, the transfer to the agrifood industry dropped to 15 million euros (from 45 million euros in 2004), then rose to 22 million in 2006 and finally decreased to a mere 11 million euros in 2007.

**FIGURE 13:** BUDGETARY OUTFLOWS FOR THE FOOD, BEVERAGE AND TOBACCO MANUFACTURING SECTORS IN SLOVENIA 1998-2007




In Figure 13 total budgetary transfers are divided into two parts: market support; and structural policy measures. Market support mainly includes transfers in the form of export subsidies to the agrifood enterprises that export. The policy goal is to stabilize domestic agricultural commodity markets. The proportion of this type of support to total transfers to the agrifood industry was around 90 percent until 2003. Between 2003 and 2004, the value of export subsidies decreased, but simultaneously there was a considerably greater increase in the proportion of total transfers attributed to structural measures. About two-thirds of the funding for export promotion transfers was earmarked for stabilization of the dairy markets, whereas the majority of the remaining funds were distributed to meat and vine processors. The export promotion policy in combination with the preferential trade agreements had clearly distortive effects on the competitiveness of the Slovenian agrifood sector and significantly influenced the structure of exports. After EU accession, the policy of export promotion changed focus (e.g. consideration of eligible types of products, export destination and amount of support) while its administration became more demanding. Authority over these policy measures was subjugated to the European Commission. All these changes contributed to the radical drop in total transfers compared with the 2004 value (i.e. a decrease of 67 percent in 2005 and nearly 75 percent in 2007) in the post-accession period.

The second category of budgetary transfers to the agrifood industry (represented in Figure 13) is the structural support measures, which aim to strengthen industry competitiveness. Under different programmes (such as the National programme,

Special Accession Programme for Agriculture and Rural Development and the Rural Development Programme) the eligible food processors receive investment support for construction or renovation of production premises and /or purchase of machinery and equipment. The amount of funding increased considerably between 2003 and 2004 due to the launch of the EU co-funded SAPARD programme and the National programme. By 2005 nearly half of the transfers originating from the Regional Development Programme were, for the first time, prepared entirely according to the EU's structural policy procedures. The same holds true for 2006 and 2007 when the new financial period began. Although the Rural Development Plan 2007-2013 will only produce its first results in the coming years, it is already clear that the policy instruments directed toward the food industry have remained largely unchanged.

Despite the considerable level of budgetary transfers to the Slovenian food sector, the majority of the transfers were not directed at improving long-term competitiveness, but rather at stabilizing domestic agricultural markets and correcting price distortions. Only recently (i.e. especially in 2003 and 2004) has the share of structural measures increased. However, the processes required to build sustainable economic competitiveness are demanding and must be future-oriented.

## Conclusions

The accession of Slovenia to the European Union was certainly the most comprehensive change to the country's economic environment since gaining independence. This paper attempts to describe the economic trends in fthe agriood industry during the pre-accession period and in the initial post-accession years. Using selected economic indicators, this paper tries to answer four important questions faced by the Slovenian agrifood manufacturing sector. Addressing these questions systematically is fundamental to slow or prevent the constant deterioration of business performance experienced by some Solvenian agrifood manufacturers.

Price trends at all levels across the sector (i.e. cost of agricultural inputs and commodities, producer prices and retail prices) were examined and not found to be noticeably unfavourable. Especially the prices of agricultural inputs have dropped considerably before accession, whereas the producer prices of manufactured food in the analysed period surpassed the overall price growth. However, prices of food at the retail level (e.g. price of composite supply) reduced in real terms. This might be explained by reduction of import prices due to the abolition of tariffs, but the price competitiveness of Slovenian suppliers has therefore deteriorated. Analysed price parities are mainly favourable for the food manufacturers – producer prices are growing at decreasing or stagnant input costs; however producer price does not represent the whole revenue side. Especially not in the economies with highly concentrated retailing sector. The analysis confirmed evident trends of concentration in the retail sector of the Slovenian agrifood value chain. Food retailing in Slovenia has reached a very high level of market concentration with the four leading players now controlling over eighty percent of sales. During the time of increased concentration in the food retailing sector, there has been a simultaneous increase in pressures on suppliers by the retailers. This has taken several forms, but most commonly includes

an increased share of sales transaction and distribution costs, as well as an increase in other requirements and conditions for cooperation.

Therefore, the first question regarding cost-price squeeze in the agrifood manufacturing sector might be answered partially in the affirmative. But, the answer to the second question is much more certain. Vertical competition in the Slovenian retail sector undoubtedly dominates the agrifood value chain, while at the same time, the retailers' first vertical partner—the domestic agrifood manufacturing industry—is stagnating due to the retailers' abuse of market power. Domination by the retail sector is a global phenomenon. However, Slovenian agrifood manufacturers are in a special set of circumstances due to other structural deficits. Two of the important deficits are Slovenia's international trade structure and its distorted competitiveness on its traditional markets (in the countries of the former Yugoslavia). One of the main causes of Slovenia's low level of competitiveness was its pre-accession trade policy that consisted of high tariff barriers for imports from most of the world and free trade agreements with the countries of the former Yugoslavia. Consistent with EU accession, the liberalization of tariff policies triggered substantial import pressure that led to a reduction in sales on domestic markets. Changes in trade agreements were detrimental to competitiveness on the traditional export markets, as well; and there were only moderate effects on trade creation within the EU internal markets. Poor integration into the EU single market thus remains one of the major structural deficits of this industry, which became obvious very soon after joining the EU. The already foreseen change of conditions in traditional export markets, which were a consequence of adopting the CCT, radically reduced the historical market advantages of Slovenian companies, which ended with a slump in exports. The attempts of food-processing companies to compensate for this drop by establishing themselves in the EU single market have been rare so far. Moreover, in these markets, companies face problems of a more competitive and vertically integrated economic environment. Penetration into the market channels in the enlarged business arena with a markedly high concentration of supply will be extremely difficult for Slovenian companies to overcome.

Closely connected with the deficiencies in international competitiveness is the policy of government intervention in the sector through the budgetary transfers. The majority of transfers to the agrifood industry were made to a great extent as classical export subsidies, and carried similar weaknesses. Only a small part of the budget prior to 2003 was earmarked for restructuring and competitiveness. The considerable growth in structural funds in recent years is beneficial; however, the most opportune moment for the needed pre-accession restructuring of the industry was lost. As a result, the agrifood industry is now facing a substantial demand for sectoral restructuring some 15 years later than the rest of the manufacturing industries in Slovenia.

The agrifood sector is among the parts of the economy that have undergone the most fundamental changes, and therefore it can be expected that the long-term implications of EU accession would be most evident in this sector.

The economic restructuring that hindered the Slovenian agrifood industry during the last decade was triggered as a result of EU accession that brought to an end the favourable economic conditions in the country's highly-protected domestic market.

Competition from the EU internal market, but more significantly the reduction of export competitiveness to Slovenia's traditional markets (due to the abolition of free trade agreements), caused a significant long-term deterioration of economic performance in almost all subsectors of the Slovenian agrifood industry.

The government failed to implement a gradual transition to market liberalization of agrifood products that would have allowed better control over the dynamics of exposure of domestic suppliers to more sophisticated foreign competition. Instead, some key segments of the agrifood industry were protected up to accession, when the mandatory adoption of the CCT took place. It might thus be expected that the consequences of accession could be more negative than they would have been had a more gradual liberalization taken place. Establishing sales opportunities and business partnerships is an extremely demanding and long–term process, especially in the saturated and extremely competitive food markets of the European Union. As a general rule in manufacturing, capital intensity of production is the main generator of value added per employee; this, however, tends to depend on the use of new technologies. Innovation, development of new products and distribution methods are crucial for success to agrifood companies, with an added emphasis on consumer-friendly usage, products with positive nutritional effects and eco-products and the use of environmentally friendly production practices. Although recently Slovenian companies have begun to pay more attention to these issues, supply chain improvements and increased generation of value added remain low. Only those Slovenian agrifood companies that modernize their management practices, adopt more competitive marketing strategies and actively seek new business opportunities will be successful in the long term in the EU internal market.

# Bibliography


- Anderson, K. & Tyers, R. 1995. Implication of EU Expansion for European Agricultural Policies, Trade and Welfare. *In* R. Baldwin, P. Haaparanta, J. Kiander, eds. *Expanding Membership of the European Union*. Cambridge, Cambridge University Press.
- Artis, M. Banerjee, A. Massimiliano, M. 2006. *The Central and Eastern European Countries and the European Union*. Cambridge, Cambridge University Press.
- Bojnec, Š. & Münch, W. 2001. Some Implications of Slovenian Agricultural Accession to the European Union. *Eastern European Economics*, 39: 19 – 38
- Dobson, P. W. Waterson, M. Davies, S. W. 2003. The Patterns and Implications of Increasing Concentration in European Food Retailing. *Journal of Agricultural Economics*, 54: 111 – 123
- El-Agraa, A. M. 1994. *The Economics of the European Community*. Hertfordshire, Harvester Wheatsheaf.
- Erjavec, E. & Kuhar, A. 2000. *Slovenska živilskopredelovalna industrija in Evropska unija.*Domžale: Biotehniška fakulteta, Oddelek za zootehniko
- Erjavec, E. Rednak, M. Volk, T. 1997. *Slovensko kmetijstvo in Evropska unija*. Ljubljana, ČZP Kmečki glas
- European Commission 2003 *European competitiveness report*2003.
- FAO. 1998. *Policy Options for Slovenian Agriculture in an EU Accession Environment - TCP/SVN/6713-A*. Rome, FAO.
- Fearne A. Hughes D. Duffy R. 2001. Concepts of collaboration: supply chain management in a global food industry. *In*J Eastman, L. Sharples & S. Ball eds. *Food supply chain management*. Oxford, Butterworth Heinemann
- Frohberg, K. Wahl, O. Weber, G. 2002. The Impact of EU Accession on the Agricultural Production of Slovenia and Bulgaria. *In*G. Mergos, ed. *EU Enlargement and the CAP: A Quantitative Analysis for Slovenia and Bulgaria*Kiel: Wissenschaftsverlag Vauk.
- Herok, C.A. & Lotze, H. 2000. Implications of an EU Eastern Enlargement under a New Common Agricultural Policy. *Journal of policy modelling*, 22: 661 – 690
- Hughes, D, 2004. Food manufacturing. *In*M. Bourlakis, & P. Weightman, eds. *Food supply management*. Oxford: Blackwell Publishing.
- Juhász, A. & Stauder, M. 2005. Hungarian food retailing: concentration, polarisation and a new entrant *In*: *IAMO Forum 2005 "How effective is the invisible hand? - Agricultural and Food Markets in Central and Eastern Europe?" Proceedings*, IAMO, Halle (Saale), June 16 – 18, 2005 pp. 134 – 149
- Kavčič, S. Erjavec, E. 2003 Ocena učinkov pristopa Slovenije k Evropski uniji na dohodkovni položaj kmečkih gospodinjstev, *In.3rd Conference DAES: "Slovenian agriculture and the European Union" – Proceedings, Slovenian Association of Agricultural Economists,*Ljubljana, Moravske Toplice, May 10-11, 2005. pp 16-30.
- Lall, S. 2001. Competitiveness, technology and skills. Cheltenham: Edward Elgar.
- Macours, K. & Swinnen J.F.M. 1997. *Causes of Output Decline in Economic Transition: The Case of Central and Eastern European Agriculture*, PRG Department of Agricultural Economics, PRG Leuven. Working Paper No. 11.

- Martin, L. Westgren, R. van Duren, E. 1991 Agribusiness Competitiveness across National Boundaries. *American Journal of Agricultural Economics*, 73(5) 1456-1464.
- Martin, R. L. (ed.) 2003. *A Study on the Factors of Regional Competitiveness. A final report for the European Commission DG Regional Policy*. University of Cambridge, Cambridge.
- OECD. 2001. *Measuring productivity - Measurement of aggregate and industry-level productivity growth*. OECD manual.
- Porter, M.E. 1998 *Competitive Advantage of Nations*. Free Press, pp: 896.
- SORS. 2008. *Statistical Portrait of Slovenia in the EU*. Ljubljana: Statistical office of Republic of Slovenia.
- Tangermann, S. & T. Josling, 1994 *Pre-Accession Agricultural Policies for Central Europe and the European Union.*Study commissioned by DG I of the European Commission. Brussels, December.
- Trail, B. & da Silva. G. 1996. Measuring international competitiveness. The case of the food industry. *International business review*, 5: 151 – 166
- U.S. Federal Trade Commission

# LINKING FARMERS TO MARKETS IN THE WESTERN BALKANS: AN UNFINISHED JOB

*Nancy Cochrane*[6]

Since the break-up of the former Yugoslavia, the agricultural and food sectors of the new countries of the Balkans have taken widely divergent paths towards development. Only Serbia has emerged as a net agricultural exporter, and Serbia has been most successful in promoting a recovery of export markets lost during the 1990s. The other countries, particularly Montenegro, Macedonia and Bosnia and Herzegovina have become increasingly import dependent. This is not surprising—during the period of the former Yugoslavia, these republics were primarily industrial and did not have well developed agricultural sectors. But these three countries have been devoting huge efforts towards promoting exports and becoming less import dependent. Results have only been modest so far, and it is worth asking just what is the agricultural potential of these countries, and how can this potential become closer to realization.

## The problem: primary producers are isolated from markets

Since the late 1990s, there has been considerable growth in food processing output throughout the Western Balkans. But this has not been matched by growth in primary production. Meat and dairy processors frequently complain that they are operating under capacity because they cannot procure sufficient quantities of high quality raw materials. Primary agriculture throughout the region, even in much of Serbia, continues to be characterized by a small-scale, fragmented farm structure; many producers continue to produce mainly for self-consumption and those that try to market their products continue to face barriers.

Both the national governments and the international community are well aware of these problems. Governments have responded with a wide array of subsidies, import barriers and other policies to try to stimulate production. The international community has come forward with generously funded projects aimed at linking agriculture to markets, building value chains, promoting exports and similar goals. But government policies have been ad hoc and untargeted. International projects have had positive results at the level of the firm. However, the beneficiaries of these projects have tended to be small processing firms rather than producers of primary products. The

6 Economic Research Service, United States Department of Agriculture

beneficiaries continue to confront a number of barriers as they seek to expand their markets. Some of these barriers are institutional; but another constraint for many is difficulty in acquiring raw materials.

This paper will focus on the meat and dairy sectors of Serbia, Bosnia and Herzegovina, Macedonia and Montenegro. The objective will be to identify the most serious obstacles and outline some initiatives that could help overcome the obstacles. At the same time, we want to emphasize that before any measures should be introduced, it is essential to do some careful analysis in order to determine just where these countries' comparative advantage lies. It may be the case that Montenegro should not try to promote beef cattle, concentrating instead on dairy production. Perhaps fruit or vegetable production has more potential than livestock. With better analysis, domestic and international support can be targeted to the sectors with the best potential.

Conclusions in this paper are based on the author's experience implementing technical assistance in the region. The goal of the project was to build the capacity of government institutions and affiliated research institutes to analyze the supply and demand situation on important commodity markets. The paper draws from the studies completed by counterparts under these projects. It also synthesizes the results of numerous interviews with government officials, farmers and managers of processing plants.

## Some case studies

The cases (cited below) are drawn from the author's interviews with plant managers and are representative of the problem of the isolation of farmers from markets.

Two major pork plants in Macedonia illustrate the problems in the pork sector. One is a state-owned plant in the process of privatization; the other is a new private plant. The newer plant has implemented HACCP, uses the EU grading system and is expected to receive a licence for export to the EU very soon. But both plants have invested in their own pig farms rather than try to buy hogs from local producers. The managers insist this is the only way they can ensure consistent supplies of the requisite quality. The small producers either slaughter on-farm or sell to smaller slaughterhouses.

A major slaughterhouse in Montenegro slaughters pigs, cattle and sheep. The plant is recently built and modern. The managers said they would be implementing HACCP by the end of 2009, and they were hoping to be licensed for export to the EU very soon. But of the three species of animals slaughtered at the plant, only sheep were purchased in large scale from local Montenegrin producers. The plant imports all pigs and 90 percent of the live cattle from Serbia. Pig production is not economical in Montenegro and probably cannot be, since the feed must be imported. Cattle production is widespread in Montenegro, but production is pasture-based, most farmers own no more than two to three head of cattle, and buyers for the plant maintain that the domestic market cannot even supply enough animals for one day of production.

Dairy plants in the region do buy from local producers but complain that they are working under capacity because they cannot procure adequate supplies of raw milk. A Macedonian dairy near Bitola is a case in point. Again this was a modern plant; it was planning to implement HACCP at the end of the year, and it was already licensed to export sheep cheese to the EU. But it was one of three major dairy plants in the area, and it was facing intense competition for the purchase of raw milk. The manager complained that there just were not enough farmers producing sufficient quantities of high quality milk to supply all three dairies. The result was that the price of raw milk was very high, much higher than in Serbia, Croatia, or Greece, for example. The manager maintained that farmers needed a minimum of five head of cattle in order be able to meet the standards and still be profitable. The plant had cooperative arrangements with many of its suppliers, supplying capital and technical assistance in exchange for deliveries. But many of the farmers who wanted to expand were constrained by a lack of access to additional land.

## Stronger market linkages hindered by institutional shortcomings

As can be seen from the examples cited, there are a number of strong agrifood processing firms throughout the Western Balkans. Each year, more plants are licensed to export to the EU; implementation of HACCP and other food safety regimes is widespread. But a common complaint among plant managers is that they cannot procure enough raw products on the local markets that meets their quality standards. At the same time, primary producers complain of low prices and difficulties selling to local processors. The strength of the agrifood processing sector is a positive legacy from the former Yugoslavia, which had a long tradition of supplying high quality goods to Western markets. But there are also negative legacies, which manifest themselves in the isolation of many producers from the markets. Some of these are discussed below:

*Fragmented farm structure*. The average farm size throughout the former Yugoslavia is barely more than five hectares, a legacy from the Communist period when there was a ten-hectare maximum for private holdings. Most animal breeders own only a few animals and mainly for their own consumption; many cattle farmers have only two to three head of cattle. A large farm is considered to be 20 head of cattle. This situation greatly increases the transactions costs of purchasing raw materials.

*Weak land markets*. Most land in the former Yugoslavia was privately owned throughout the Communist period, and today over 90 percent is in private hands. But land markets are undeveloped. The ownership status of the former socialized farms remains unresolved in many cases and private owners often lack proper documentation of ownership. The result is that farmers who wish to grow larger are often blocked by the inability to buy additional land.

*Poor infrastructure*. Many roads, particularly in mountainous areas, are still in very poor condition. The main road from Serbia into Montenegro is a two-lane mountain road that is subject to numerous shutdowns for repairs or accidents. Irrigation is

inadequate throughout the region. Attempts to organize small producers into water associations have met with limited success. Wholesale markets are undeveloped; they tend to be large parking lots and lack any cold storage facilities.

*Lack of market information*. Accurate and timely price information is critical to smoothly functioning markets. Such information helps producers understand what is demanded on the market and allows buyers to source their raw materials more efficiently. The lack of such information makes it more difficult for buyers and sellers to find each other. While the agricultural ministries of Croatia, Serbia and Montenegro publish weekly reports of prices from agricultural markets, Macedonia has only begun to issue price reports, and Bosnia and Herzegovina still does not have a market information system. But even in those countries that have a market information system, dissemination remains inadequate. The information is available free of charge on the agricultural ministries websites, but many producers lack access to the Internet. Radio and newspaper dissemination of market information is mostly haphazard.

*Lack of quality and food safety standards*. There is no uniform system of quality standards in the region. Slaughterhouses must implement the SEUROP grading system in order to be licensed for export to the EU, and a number of plants throughout the region have implemented this system. But producers remain largely unaware of it. In most developed countries, slaughterhouses pay producers on a carcass weight basis after grading the carcasses. But throughout the Western Balkans, producers don't trust the slaughterhouses to pay on this basis, since they cannot directly observe the grading process that takes place inside the plant. Instead, most slaughterhouse buyers pay producers cash on a liveweight basis, basing their payment on a visual inspection of quality of the live animal.

*Weak tradition of farm associations and cooperatives*. This is a well-known problem among experts working in the region—many have observed that farmers have little trust in the idea of cooperatives because of their Communist past. In Serbia and other countries there still exists on paper a network of cooperatives from the Communist times. But many are close to bankruptcy and most of the others do not function well. There have been numerous international projects seeking to support the creation of true cooperatives, based on the premise that this is the only way for small producers to gain any market power. Most of these projects have not been successful—as soon as international donors withdraw their financial support, the cooperatives tend to collapse. A major problem is a lack of legislation regulating new cooperatives. In Serbia legislation was introduced as early as 2001, but still hasn't been enacted.

*Need for farmer training*. There is a critical role for agricultural extension in explaining the requirements of the markets to the farmers and helping them meet those requirements. While each of the countries in question has an extension service, these tend to be underfunded and unable to provide the needed services. Many of the extension staff continue to focus primarily on technical advice and do not offer adequate training in farm management or marketing. In some of the countries, such as Bosnia and Herzegovina and Montenegro, the extension staff is also responsible for distributing government subsidies and do not have time to devote to farmer training.

*Inadequate collection and reporting of basic agricultural statistics*. There is an urgent need throughout the region to upgrade the central statistical offices. Officials of Bosnia and Herzegovina complain that they have no clear idea just how much agricultural land is being cultivated. Serbia has no reliable data on poultry numbers, since there has been no attempt to count the chickens in people's gardens. The Montenegrin statistical office provides no information on raspberry production, a sector the Ministry is actively trying to promote.

*Haphazard, ad hoc policymaking.* Ministries are seeking to boost production through a complex array of subsidies, price supports, and border measures. These are introduced in response to pressure from producer groups and are often based on inadequate or wrong information. The Montenegrin Ministry is trying to subsidize beef cattle production in order to reduce imports from Serbia. But it is not clear that beef cattle can be profitable in the country, since feed must be imported. The Ministry is currently under pressure to subsidize feed production. No analysis has been done to evaluate the effectiveness of this support. Given that all raw materials must be imported, it seems unlikely that domestic feed production will ever be profitable. One major Montenegrin feed producer is seriously thinking about giving up production and becoming a distributor of imported feed.

The key to all these issues is more investment in some of the most basic market institutions—better farmer training, better statistics and market information, resolving ownership issues and freeing up land sales. Better analysis is needed to identify the comparative advantage of each country, and government support and international assistance needs to be targeted in a more coherent way to support those sectors.

## Conclusions

In the end, for all the countries of the Western Balkans, the future lies in the EU. Macedonia and Croatia are now candidate countries; Serbia, Bosnia and Herzegovina, and Montenegro soon will be. EU membership will bring needed investment to the region and will do much to boost farm income. But it will also bring more foreign competition and stricter quality standards. Many of the small slaughterhouses in Macedonia will likely close, and the small hog farmers will have to meet the requirements of the large buyers or cease producing for the market. A number of unique dairy products could be eliminated from the market if they don't meet the strict hygienic standards of the EU.

The EU has made substantial pre-accession funds available to farmers and agribusinesses in the candidate countries that can be used to overcome these problems. The current new member states benefited from the SAPARD programme (Special accession programme for **agriculture** and rural development). The Western Balkans are eligible for the similar IPARD programme (Instrument for Pre-accession Assistance for Rural Development) Program. Under the Priority Axes, Axis I of this programme (Improving Market Efficiency and Implementation of Community Standards), producers can apply for funds to invest in restructuring and upgrading their farms to meet EU standards.

However, IPARD funds are not easy to access. Application procedures are complex, there are co-financing requirements and beneficiaries do not receive payment until the completion of the project. The funds can be reduced, as well, if the beneficiaries do not adhere strictly to the terms of the project. Applicants for EU rural development funds in current member states often hire private consultants to help prepare the paperwork. For Polish extension advisors, it is almost a full time job to help farmers prepare applications. Programme requirements can thus pose a significant challenge to small farmers in the Western Balkans. Most cannot afford private consultants and extension services are not well-equipped to offer the needed assistance.

When these problems are pointed out, however, the typical response both from government officials and Western advisors is that the funds should be directed to the more market-oriented farms with the potential to become competitive. The underlying assumption is that the smallest farmers should not be encouraged. Yet there are examples of successful small producers throughout the region—dairy farms with just 20 head of cattle have proven successful, as have small-scale vegetable producers. The challenge is to identify those and target assistance appropriately. If the countries of the Western Balkans are to compete successfully in a single market, policymakers and international aid organizations need to give serious thought to determine the best way to overcome these obstacles.

# INVESTING IN LARGE FARMING VERSUS ESTABLISHING LINKAGES WITH SMALL SCALE FARMERS

*Goran Živkov*[7]

In former Yugoslavia, around 85 percent of the land was privately owned by small farmers. At the same time, the majority of the processing industry was part of the state economy and was state-owned. The production in such processing units, as well as the multi-process *combinate* production units, was market-oriented. Farmers, though, were involved in farming as a livelihood, marketing their products directly on 'green markets' or entering into contract production arrangements, either in direct negotiation or through cooperatives. Sales were organized through state-owned retail chains, at the city or municipality level, and were usually supplied by the state trading enterprises. The transition process of the 1990s was characterized by changes that included privatization of *combinates* and processing capacities, enlargement of private land holdings, closures of state trading enterprises, opening of supermarkets and retail shops and the decay of a large number of cooperatives. The new supermarket and retail chains were established on the basis of private farm production, market price transactions, significant variations in price and the absence of secure purchases and sales.

In reaction to such production and trading conditions, the largest retailers, either directly or through intermediaries, purchased primary agricultural products from private farms and processing units. In order to supply their own large retail chains, these retailers organized their own production and processing, forming large beef, pork or fruit production farms. This process was particularly prevalent in meat production, where there are big variations in price and strict standards requirements. As a result, the biggest retail chains in the Republic of Serbia and in the Republic of Croatia also own the biggest meat production farms. In such a manner they ensure predictable access to raw materials with relatively consistent prices that they then sell through their own retail facilities, implementing and controlling product standards. But, at the same time, this practice shrinks the market for independent farmers as they are exempted from access to the largest retail sales chains. Not only the large retailers, but other companies also initiate production on big farms, rather than developing supply relationships with small farmers.

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# A closer look at the market

Delta Holding is a multinational company based in the Republic of Serbia and dealing with a very diverse set of interests: advertising; financial and insurance services; real estate; the country's largest retail sales chain for clothes and cars; production of bicycles chemicals and pharmaceutical products; ownership of the largest chain of shops covering the entire range of retail facilities,with small shops of 400-square metres up to large supermarkets with sales areas exceeding 12 000 square metres. The subsidiary company, Delta Agrar d.o.o., also owns companies which use 15 910 hectares of land for agricultural production; five of their animal-breeding companies produce more than 100 000 fed pigs and 7 000 heifers each year. Meat is processed in their own butcheries, while flour and pastry are produced in the largest mill and bakery in Serbia—also under their ownership. Production inputs are supplied by "Delta Hemija," a subsidiary company with a 37 percent share in the market for pesticides and herbicides.

The second-largest landowner in the Republic of Serbia is the Matijević company, with holdings of 17 720 hectares. The company is the largest actor in the meat industry, as well. They produce their own pork and beef, and utilize Matijević's own network of 85 retail shops to sell 95 percent of the company's meat products.

Agrokor is the largest production and sales company in the Republic of Croatia, with 31 000 employees. Agrokor Holding, whose core activities are production and distribution of food and drinks, includes the largest Croatian producers of mineral water, ice cream, edible oils, margarine and mayonnaise, as well as meats. Agrokor owns the country's leading retail chain (Konzum), along with the country's leading agricultural industry capacity. Just Agrokor's PIK Belje alone—Croatia's largest agricultural facility—produces 160 000 fed pigs per year. In 2007, Agrokor received 14.4 million euros in state subsidies for primary production; this represented 4.5 percent of all subsidized funds available in the Republic of Croatia.

As these examples showed, it's clear that agricultural policy in the Western Balkans hasn't managed to fully integrate small producers into the supply chain. It was anticipated that small and medium-scale producers would have difficulties entering the supermarket supply chains without organizational modifications. However, many of the supermarket chains closed their doors altogether to independent commercial farms, preferring instead to become producers in their own right.

**TABLE 1:** TYPES OF PRODUCERS IN THE WESTERN BALKANS AND RELATED POLICY CHALLENGES:

| Type of producer | Description of characteristics | Policy challenge |
|---|---|---|
| **Small agricultural holdings** | Producer with a 1–2 hectares or small number of heads of cattle<br><br>No incentives for investment due to their physical impairments (such as age or capacity to work) or environmental disadvantage (e.g. being in a less favourable area) | Important in terms of household food and income security; therefore, it's important to ensure continued access to inputs, but may be excluded from commercial policies. |
| **Medium holdings** | From 2-10 hectares or medium number of heads of cattle;<br><br>Predominant group;<br><br>Their market chain is very short: Local direct selling or local 'green market'. | Encourage to switch to high-value crops and/or up-scale farm size, and/or improve horizontal organization to extend their market chain. |
| **Commercial farms** | Producer with appropriate size, investment and knowledge which can ensure competitive position on the Western Balkans, as well as international markets. | Ensure further development and enlargement. |
| **Cooperatives** | Three types of cooperatives exist:<br><br>"Old type" concentrating more on production than on marketing;<br><br>"Private cooperatives" without any democratic structure and formed by opportunistic traders with the objective of gaining access to the legal benefits provided to cooperatives;<br><br>"Modern cooperatives" concentrate on marketing and utilize a democratic decision-making process. | Establishment of democratic structure, transformation to modern cooperatives or other structures. |
| **Companies** | Mainly privatized;<br><br>Large land resources;<br><br>Often vertically connected with processing capacity and retail facilities. | Finalization of privatization, improvement of competitiveness and preparation for EU market. |

Here, one should consider the system that was previously functioning in former Yugoslavia. Companies were vertically integrated in non-trade chains (since prices among the linked companies were not fully determined by the market). The sole difference between then and now is that the owner of such production is no longer the state but a private entity, and there is no organized system of cooperatives which would manage purchases from small farmers, based either on market or non-market (such as subsidies or government coercion) principles.

# Reasons for intensive vertical integration in the Western Balkan countries

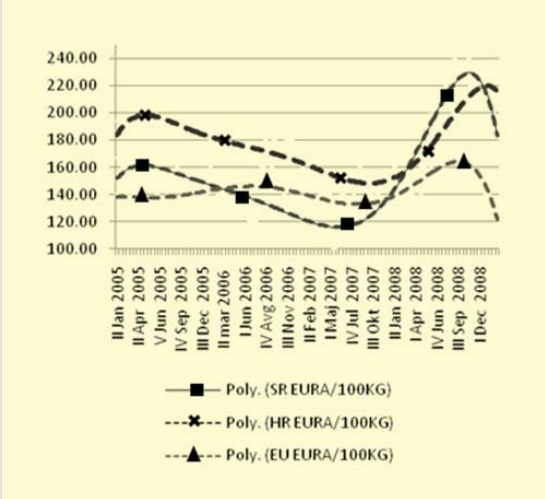
The large-scale takeover of production capacities by retailers and processing companies has failed to integrate small producers into modern supply chains. What are the reasons and consequences of this failure?

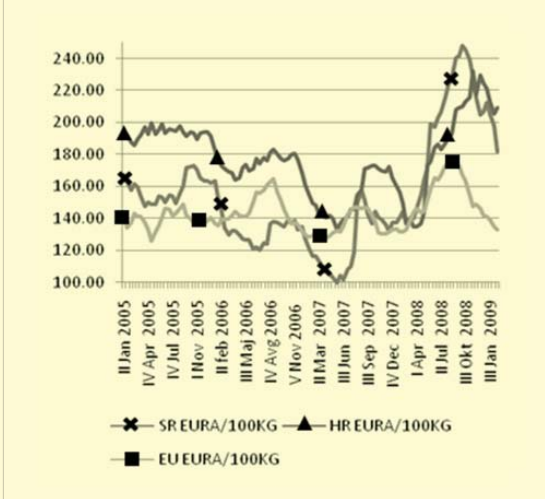
The reasons can be divided into four main groups related to economic circumstances, inadequate policy, heritage and expectations.

a) Economic reasons:

***Minimizing the risks related to*** : adoption of a full complement of standards; significant variation in prices: insufficient supply: lack of orientation towards other buyers;

Markets in the Western Balkan countries are characterized by significantly higher price variations when compared with other European markets. The reasons lie in: technically undeveloped production and, therefore, high variations in annual production; heavy dependence on weather conditions; dependence as well on tariff protection; small storage capacities; and very often, strong internal competition.




Price peaks are distinctive, which is not beneficial for traders who can be left, in periods of high price and low supply, with no goods. Apart from a need for continuously dependable supply, the traders require that variations in price are as small as possible. On the other hand, where strong vertical integration exists, the biggest producers are also the biggest sellers. This scenario does not result in less dramatic price variations but quite the opposite.

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Management of the supply chain through the adoption of standards requires a company to measure processes and audit performance according to the standards along the

entire supply chain. The cost associated with implementation and maintenance of such standards is probably higher compared with the cost of merely purchasing directly from the producers. However, the audit-and-control costs associated with direct purchase from producers, and especially the possible cost cases of non-compliance to the standards would be much higher.

**Low investment capacity of small farmers compared with high investment capacity of the companies;**

Although in recent years there have been significant achievements made on the rural credit market targeting small and medium-size farms, the Western Balkan countries still face numerous problems which negatively affect their investment potential. Nevertheless, valuable real estates, diverse activities and high turnover enable the processing and retail companies with sufficient investment capital—either directly from their own profits, or via loans from commercial banks or international financial institutions. Such investment potential, coupled with ownership of large market shares, allows them to decide more easily on further investments (such as an increase in production capacities).

**More favourable prices on local markets and in local butcheries.**

Farmers achieve better prices at local markets and butcheries where they have already established relationships. These long-standing client-farmer relationships make supply more difficult for big processing companies and forces them into situations with unstable price competition. The characteristics of unstable price competition for purchase of vegetables can be seen in Table 2. The left-hand side of the table indicates actual prices in Serbian dinars, while the right-hand side indicates the price variation against an index (based on prices in the local 'green markets'). As seen in the Index of Table 2, farmers may receive from eight percent to 45 percent more when they sell their produce in the local 'green markets' than when they sell to the wholesale markets or to a major supermarket, such as DELTA.

**TABLE 2:** COMPARATIVE PRICES OF VEGETABLES ON LOCAL MARKETS, WHOLESALE MARKETS AND IN SUPERMARKETS

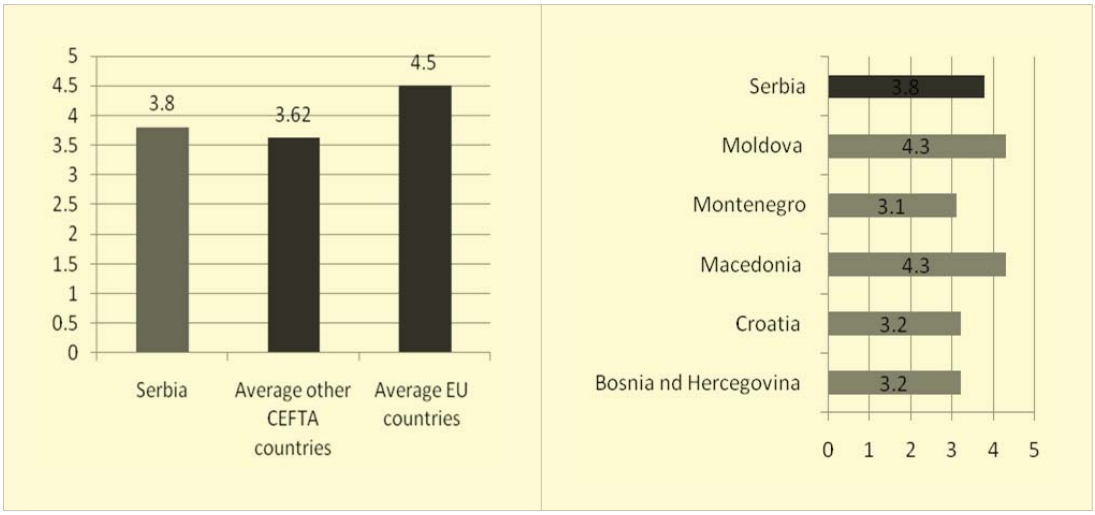
| Product | Prices (YUD) | | | Index | | |
|---|---|---|---|---|---|---|
| | 12 main local 'green' markets | 4 wholesale markets | DELTA supermarket | 12 main local 'green' markets | 4 wholesale markets | DELTA supermarket |
| Onion | 38.2 | 25.1 | 26.5 | 100 | 65.7 | 69.4 |
| Cabbage | 23.4 | 14.3 | 12.7 | 100 | 61.1 | 54.3 |
| Potato | 33 | 21.7 | 26.5 | 100 | 65.8 | 80.3 |
| Tomato | 72.2 | 56.7 | 63.6 | 100 | 78.5 | 88.1 |
| Lettuce | 23 | 19.8 | 21.1 | 100 | 86.1 | 91.7 |

**b) Failure or unwillingness of the state to fully establish a market and related support services suitable for small producers, and for their lack of integration into the supply chain:**

**Work in accordance with the law and honour contractual obligations;**

The level of compliance with the law and with contractual obligations is controlled by the state. This significantly affects the decisions made by the companies and farmers when they conclude mutual agreements. In comparison with the EU countries, there is obviously far less legal security in the Republic of Serbia. This places additional burdens on the partnership between farmers and processing companies. In most cases, the farmers feel insecure regarding their legal rights. In the cases when the legal rights may affect the buyers of their products, the farmers do not necessarily respect the concluded agreement.

**FIGURES 2 AND 3:** LEGAL ENFORCEMENT OF CONTRACTS IN THE WESTERN BALKAN COUNTRIES




*Source: World Bank, Doing Business Report*

**Undeveloped support institutions;**

The majority of small producers have no access to good quality advisory or extension services; this prevents them from obtaining the transfer of knowledge that could enable them to compete more effectively. These types of support services are necessary for achieving competitiveness in pricing and/or quality, as well as in gaining knowledge of the required standards.

**Undeveloped infrastructure;**

In many regions of the Western Balkans, the poor rural infrastructure (roads, drainage canals, market grounds/selling areas significantly complicates purchases of produce from farmers due to increased costs of transportation or uncertainties of production.

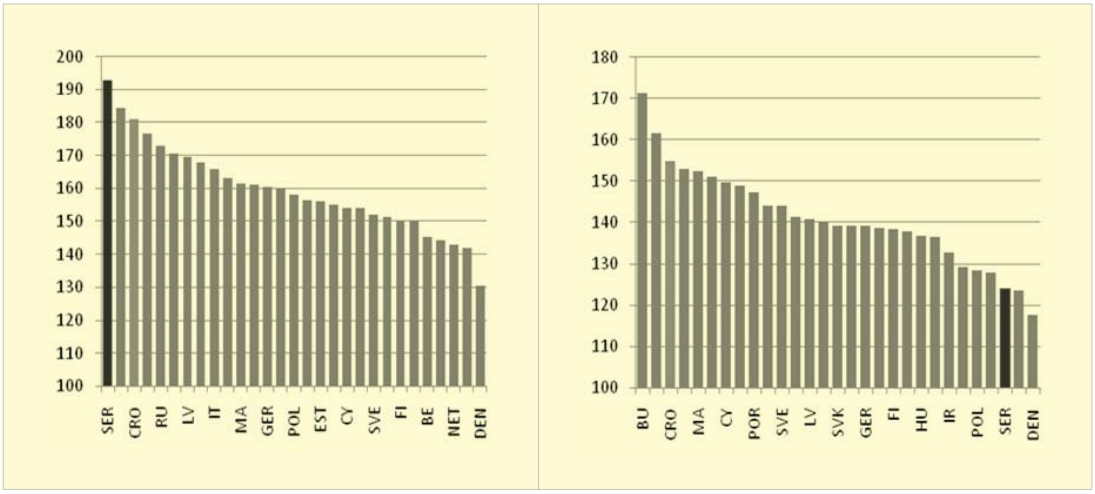
**c) Heritage of previous times and experience with privatization**

Vertically integrated agrifood value chains were typical of former Yugoslavia. It was, therefore, reasonable and common that *combinates* included both production and processing capacities. As a result, when these units were privatized, most of them were sold intact rather than organized into separate functional units; this put new owners in the position to maintain and continue with the concepts of socialism. In contrast, farmers—who individually owned more than 80 percent of the agricultural

land—were producing mainly for their own consumption, for local markets and local processing capacities or selling through very short market chains. Even after the market economy was fully established, the farmers continued this same behaviour. In short, the basic structure remained in place; the only change was that state ownership was replaced by private capital.

**d) Individual capacities and retailers and farmers' expectations.**

**FIGURE 4:** AVERAGE PRICE FOR WEANER PIGS IN THE EU COUNTRIES, SERBIA AND CROATIA IN 2008
**FIGURE 5:** AVERAGE PRICE FORWEANER PIGS IN THE EU COUNTRIES, SERBIA AND CROATIA IN 2007




The prospect of EU integration brought expectations of financial benefits;

Agriculture is one of the sectors that mostly benefits from the process of EU integration. As an example, when 2007 farmer income across all 27 EU Member States is compared with year 2000 farmer income, a rise of 115.9 percent can be seen. But during that same period of time, rates of increased farmer income for specific new Member States were as follows: Poland 213 percent; Czech Republic 186.2 percent; Hungary 144.8 percent; Latvia 308 percent; and Lithuania 250.2 percent. On average, the new Member States experienced an increase of 190 percent. The benefits of EU integration resulted from unfettered access to the large internal market, price adjustments, subsidies, investments and predictability. The very positive experience of these other countries has led to great expectations from the farmers and processing companies in the Western Balkan countries. There have been incidents of agricultural land being purchased as an investment in order to gain access to possible subsidies, and consequently, the opportunity to increase the value of the land itself.Furthermore; companies are already planning to exploit the added competitiveness brought by EU integration and to enter the EU market more aggressively. Figures 4 and 5 compare the average price for weaner pigs in 2008 with 2007. As can be seen, producers in the Republic of Serbia are competitive in years of low pork prices (such as 2007). This raises the possibility of market expansion once export barriers have been removed.

Habits of small producers.

Small and medium-scale farmers are very inconsistent in their production. They easily adjust to new market requirements, often changing not only their suppliers and sellers but their production, as well, if some other product promises to be more

profitable. This inconsistency leads to uncertainty on the part of the traders and processing companies.

## Conclusion

What are the main reasons that retailers and processing companies prefer to organize their own production rather than to buy from farmers? One reason might be to secure safe access to raw materials, at relatively low prices, for their own processing capacities and shops. Another possibility is that this practice is a strategy used by the retailers and processing companies in order to control the market and concomitant implementation of standards. Additionally, this practice may be due to the expectations retailers and processing companies have concerning EU integration. None of these reasons, though, is as important as the fact that the farmers are faced with a shrinking market owing to their exemption from selling to the largest retail sales chains. This process of exclusion significantly slows down the implementation of standards for small and medium-scale producers; their short sales chains, direct sales from home or at the local market, are often not included in main commercial flows. Consequently, these small and medium-scale producers aren't represented in the development of standards or their implementation.

Therefore, policymakers in the Western Balkan countries are faced with three serious challenges related to the development of supply chains in the near term:

- integration of small producers into modern supply chains;
- growing competition in the processing industry due to the creation of an enabling and attractive investment environment;
- Implementation of EU standards.

# CONTRACTUAL RELATIONSHIPS IN THE VEGETABLE SUPPLY CHAIN IN ROMANIA

*Cornelia Alboiu*[8]

## Abstract

The paper studies the role of business relationships in the Romanian vegetable supply chain. In this respect, the paper draws on Williamson's (1991) governance structure of non-formal and formal relationships that exist between farmers and buyers in order to determine what type of contractual relationship is prevalent in the vegetable supply chain. The analysis reveals that informal contractual relationships are prevalent on the market while in many cases, contractual enforcement is at stake. This situation leads to increased uncertainty in terms of which vegetable to produce, where to sell it and negatively impacts the farmers' revenues and investment decisions. The paper employs a qualitative analysis based on structured questionnaires to assess the main vegetable commercialization channels, including vegetable processing companies, and the type of contractual relationships between parties.

Keywords: contractual relationship, vegetable, supply chain.

## Introduction

Although several studies were carried out in order to analyse the type of contractual relationships and other characteristics of the vegetable commercialization channel at the European level, there is no empirical evidence about Romania. The analysis is necessary to assess the needs and constraints of the stakeholders involved both at the farmer-wholesaler-processor level ('upstream') and processor-retailer level ('downstream') of the vegetable production value chain.

As far as contractual relationships are concerned, there is a typology of relationship produced by a matrix of different strategic options concerning relationship-specific characteristics (e.g. independence, exclusivity) and vertical co-ordination (Gorton 1999). Gorton shows that relationships become more complex with increasing level of formality and of vertical co-ordination. While price, supply and demand are key

8 Institute of Agricultural Economics, Bucharest, Romania

issues at the core of spot market relationships, property rights, trust and negotiations increase with growing vertical collaboration.

This paper uses Williamson's (1991) governance structures, and accordingly two relationship types, formal and non-formal, are described:

1. Non-formal relationship types:

- ($\alpha$) Spot or 'open' markets (immediate transaction at actual prices);
- ($\beta$) Repeated market transactions with the same buyer/supplier with non-formal, non-written contracts.

2. Formal relationship types:

- **(a)** formal (written) bilateral contracts (i.e. contract terms and obligations are legally enforceable);
- **(b)** Financial participation arrangements included (i.e. both parties are legally independent entities).

In the last 20 years, the vegetable supply chain in Romania experienced a dramatic evolution following the destruction of the former fruit and vegetable commercialization companies. This led to a failure in the year-round domestic vegetable supply and production fragmentation.

Moreover, stricter quality requirements imposed by large retail chains are barely met by small-scale farmers. But, even when larger-scale farmers meet these requirements, contractual terms are not respected, or even worse, the hypermarkets avoid concluding the contract. In addition, farmers report that the main problem they face is with the non-execution of concluded contracts.

In contrast with producers in industrialized countries who benefit from appropriate infrastructure, effective institutional systems and agricultural policies that facilitate a widespread adoption of good agricultural practices and environmental standards, producers in emerging economies may encounter severe difficulties in complying with increasing levels of quality standards. These difficulties generally result from idiosyncratic market failures (such as those characterizing vegetable production) and the informational, financial and educational constraints of producers in these countries (Swinnen and Vandeplas 2007). In Romania, for instance, some farmers claimed that these types of constraints could be mitigated through increased vertical integration.

The objective of this paper is to study the contractual relationships that exist in Romania and to assess the main commercialization channels for vegetables.

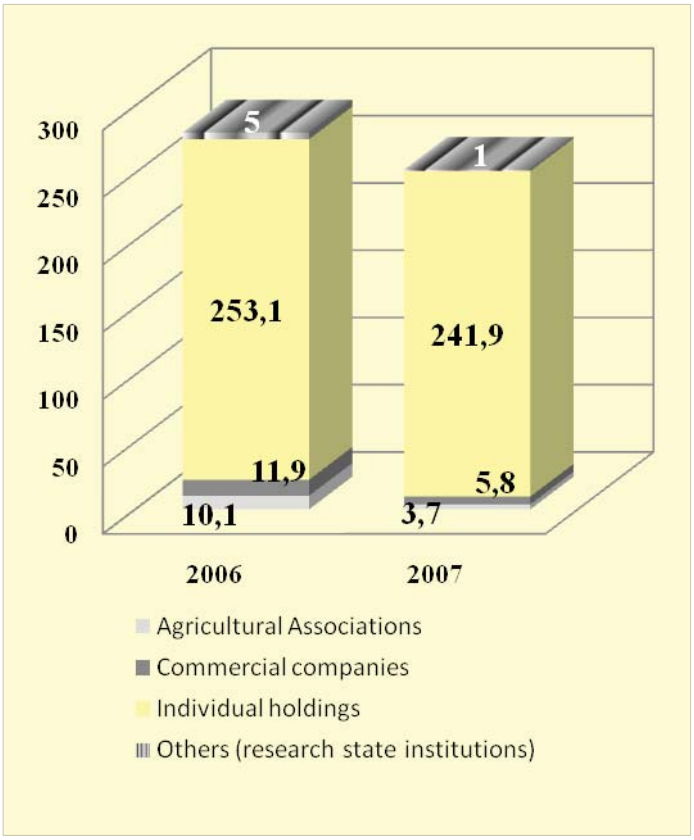
## Data collection and methodology

The paper is based on data provided by 30 farmers and eight processors located in the south-eastern region of Romania in response to a survey conducted in 2007. In total, 30 structured questionnaires were submitted to farmers and ten questionnaires to processors. The analysis was mainly a qualitative one and took into

consideration stakeholder answers to the questions regarding the types of existing contractual relationships along with a set of questions regarding the respondents' main commercialization channels. The opportunity for an open comment was also introduced in the questionnaire.

In economic terms, the production of vegetables in 2007 accounted for 24 percent of the value of Romania's total crop production. Nevertheless, following EU integration, the vegetable supply chain seems the most negatively affected agrifood sector; this is due to the high share of imports and the farmers' inability to maintain stable contractual relationships within the chain. In addition, many of the farmers are not able to enter into or to form producers' groups, either because of lack of trust or an unwillingness to cooperate.

**FIGURE 1:** SHARE OF CULTIVATED LAND BY TYPES OF HOLDINGS




Source: MAFRD, 2007

The land area under vegetable cultivation in 2007 accounted for 3.3 percent of Romania's total cultivated arable land. At the EU level, the share of area under vegetable cultivation is quite similar; the difference is that presently in Romania, the consumption needs are not fully covered by the current domestic supply. In the year 2007, roughly 50 percent of all cultivated vegetables were comprised of the following: tomatoes 18 percent; cabbage 17.7 percent; and onion 14 percent. Private independent farmers (i.e. individual holdings) produced more than 95 percent of all vegetables cultivated (Figure 1).Figure 1: Share of cultivated land by types of holdings.

Figure 1 depicts the national level; in the region where the analysis was carried out, vegetable production via individual holdings accounted for more than 96 percent of all vegetables produced in 2007.

The methodology used was based on statistical analysis of the stakeholders' answers to the questions addressed in the structured questionnaires. The description of the methodology and the data collection methods were structured as a set of criteria and questions that were answered and analysed by employing the framework proposed by Williamson's governance structures. In addition, a model (based on binary logic) was used in order to determine the characteristics of the relationship types.

# Empirical findings

## 1. Contractual relationships

The relationships types as described by Williamson were classified into two categories, i.e. formal and non-formal. Respondents were asked to identify which type of contractual relationship(s) they used in their business. Further, they were asked to choose which categories of the four relationships, (i.e. spot market, repeated market transaction, formal written contracts and financial participation arrangements) they represented their business relationships.

**TABLE 1:** PERCENTAGE OF FORMAL RELATIONSHIP

| Value chain stage: | Farmer–buyer (wholesaler) | Farmer-processor | Processor-retailer |
|---|---|---|---|
| Share of respondents using 'formal relationships'; shown as a percentage | 1/30 | 2/30 | 1/8 |
| | 3% | 6% | 12.50% |

Source: Field survey 2007

Table 1 shows the likelihood or preference for use of formal relationships for each of the three value chain stages. The answers show that the percentage of formal relationship is extremely low both at the farmer-wholesaler level and the farmer-processor stage. A higher percentage of formal relationships can be noted at the processor-retailer level. The formal relationships include formal written contracts and financial participation arrangements, including specification of prices, qualities, quantities and any other financial support. Retailers tended to choose more formal relationships with processors, in comparison with farmers, showing that downstream businesses are more likely to coordinate and organize their relationships more systematically and in a standardized way. Similar findings were also present at the European level (Fischer *et al*. 2007). An important difference between the European-level data and that of Romania is that the percentages were much lower in Romania's case, especially at the farmer-buyer and farmer-processor level.

As far as the relationship between business partners and related contractual aspects were concerned, the respondents were asked to rate on a scale of 1-to-4 (where 1represented 'extremely poor' to 4 represented 'very good') their opinions on certain aspects of the relationship between the partners concerning: the quality of the

relationship; trust;, contractual terms; and the level of enforcement of the contracts. Table 2 shows the answers from the participants interviewed.

**TABLE 2:** FARMER-BUYER RELATIONSHIP AND CONTRACTUAL ASPECTS

| Rating: | 4 | 3 | 2 | 1 |
|---|---|---|---|---|
| **Contractual aspect:** | **Very good** | **Good** | **Poor** | **Extremely poor** |
| **The history of the relationship with the buyer is…** | 7% | 13% | 33% | 50% |
| **The respect of contractual terms is…** | 0% | 13% | 43% | 43% |
| **The trust in our partner is…** | 3% | 13% | 33% | 50% |
| **The enforcement of our contracts is...** | 0% | 10% | 37% | 53% |

Source: Calculations based on the field survey 2007

The enforcement of their contracts were seen as a more frequent problem for the farmers, with 53 percent stating that contract enforcement was 'extremely poor'. This situation was reinforced with 43 percent of the respondents describing respect for contractual terms as 'extremely poor' and another 43 percent selecting 'poor'. For half of the respondents, the level of trust in partners and the history of the relationship were characterized as 'extremely poor'.

**TABLE 3:** PROCESSOR-RETAILER RELATIONSHIP AND CONTRACTUAL ASPECTS

| Rating: | 4 | 3 | 2 | 1 |
|---|---|---|---|---|
| **Contractual aspect:** | **Very good** | **Good** | **Poor** | |
| **The history of the relationship with the buyer is…** | 0% | 23% | 60% | 17% |
| **The respect of contractual terms is…** | 0% | 23% | 57% | 20% |
| **The trust in our partner is…** | 0% | 20% | 60% | 20% |
| **The enforcement of our contracts is…** | 0% | 13% | 60% | 27% |

Source: Calculations based on the field survey 2007

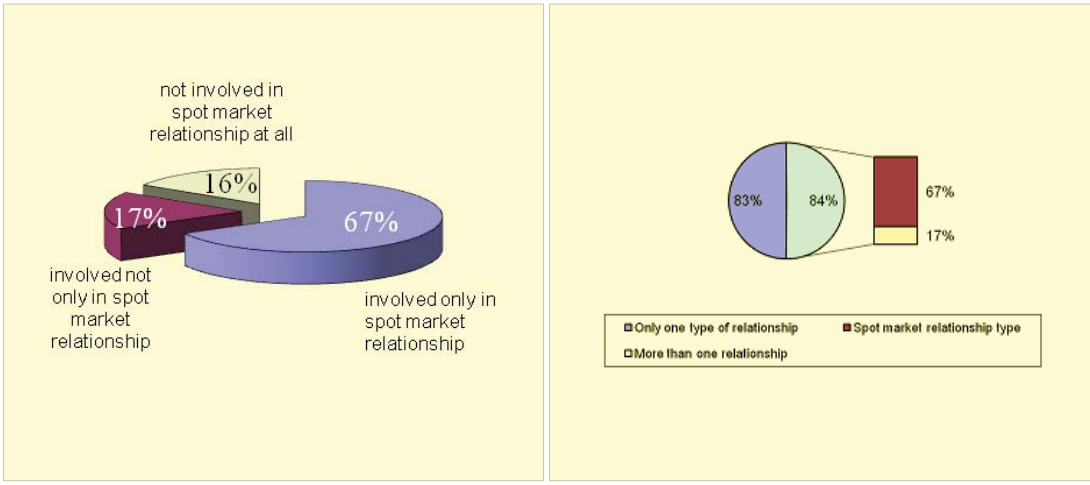
The respondents assessed the relationship between processor-retailer and the relationship's contractual aspects more positively than had the farmers concerning their relationships with buyers. But, there was still a lack of trust and poor opinion of the enforcement of contracts among stakeholders, with 60 percent of the respondents describing these two contractual aspects as 'poor'.

Farmers were also asked to choose the type of contractual relationship(s) in which they were involved. Results are seen in Figure 2; however 84 percent of the farmers were involved in a spot market relationship (i.e. sale at the farm gate to different wholesalers). In fact, 67 percent of all farmer-respondents were *only* involved in a spot market relationship. The vast majority of farmers (83 percent) were only involved in one type of relationship, while the rest (17 percent) were involved in more than one

type of contractual relationship categories (such as repeated market transactions, formal contracts and financial participation).

Another problem reported by the respondents, is represented by imports, the quality of which is not rigorously checked at present. For many vegetables, production has a seasonal nature, and the products must be consumed immediately after harvesting. As a result, prices fluctuate greatly throughout the year. In general, though, immediately after harvesting begins, prices decline rapidly. For example, the price of tomatoes, eggplants and peppers may decrease by up to 50 percent within the two weeks following their harvest.

**FIGURE 2:** TYPES OF CONTRACTUAL RELATIONSHIPS FOR FARMERS




As long as the area under heated greenhouses remains low, the producers cannot benefit from high prices during the winter; in this period of the year, most vegetables are imported, mainly from Greece, the Netherlands and Turkey.

## 2. Determinants of the choice of relationship type.

In order to see the determinants of the relationship type, the respondents were asked to rank (on a 1-to-4 scale, where 4 represents the highest importance) the following statements: 'the quality of the product is important'; 'the institutional framework is important'"; 'trust in the partner is important'. For this analysis, a model was used based on binary logistic, where the formal relationship was assigned (1) and the informal relationship was assigned (0). The results are presented in Table 3:

**TABLE 3:** REGRESSION RESULTS FOR FORMAL AND INFORMAL RELATIONSHIPS (BASED ON BINARY LOGIC)

| Variables | Parameters estimated |
|---|---|
| Quality | -0.27 |
| Trust | 0.18** |
| Institutional framework | 0.18* |

**Statistically significant at 1 %; * statistically significant at 5 %

The results reveal the importance of trust and good institutional framework in choosing a formal contractual relationship. Negative (positive) estimates indicate

that an increase of the value of the independent variables corresponds to decreasing (increasing) probability of choosing a formal relationship instead of an informal relationship. The negative sign of the variable 'Quality' is not the expected one, but this might be due to the insufficient number of observations, or the farmers placed less importance on this specific variable. The model correctly classifies 15 percent of the informal relationships and 90 percent of the formal relationships.

## 3. Distribution and sales analysis

The farmers interviewed stated that the formerly state-run enterprises for sale of vegetables and fruit were considered very important, but these spaces (at present) are only available to rent for any type of commodity *except* vegetables. Storage is very difficult and there are few storage premises. At present there are only a few storage units, which are not sufficient to cover current needs. As a result, it is extremely necessary to increase the number of greenhouses and cold storage facilities for specialized production.

The sale of production is the most difficult problem as no specific markets for the sale of vegetable production have been established. The farmers who produce only small quantities of vegetables are obliged to price their produce at considerably lower prices than competitors. This represents an economic disadvantage for those whose main activity is vegetable farming and who depend on earning a living from the sale of their production. Their production is sold at the market place or directly from the farm gate (spot market) through wholesalers.

The vegetable farmers are threatened as much by the large hypermarkets as there are by the massive volume of imports. On one hand, the large retail chain stores refuse to buy the products at a reasonable price; and on the other hand, the imports represent an unjustified competition for domestic production.

"In the hypermarket chains we can see many fresh fruit and vegetables. Just imagine how many of these products come from other countries and include the financial support that the respective countries provide to producers in their selling price" (farmer from Galati County).

"The lack of firm contracts and the production sale through wholesalers are the main problems we have to face. Now we sell peppers at Leu 0.6, and we find them at the marketplace at Leu 3. In this way both we and the consumers are disadvantaged" (farmer from Braila).

The distribution and sale of fresh vegetables also implies that access is available for producers to a complex support network: the fruit and vegetables stores; the distribution activities of the private processors; a great number of private traders (wholesalers); as well as, the supermarkets. Unfortunately, the producers state that they do not have access to any of these entities.

It should be noted though, that some products are traded through different channels. Although alternative types of trade exist, no accurate measurement can be made of the volume of commodities that pass through these different channels. The verbal

information can only indicate certain approximate estimates. It is estimated, for instance, that more than half of the quantity of vegetables traded are sold to a great number of intermediaries. In general, this occurs in two ways: direct sales from the farm gate (which is mostcommon); and, the direct sale to consumers at the roadside ('street trade').

Another problem the vegetable farmers face is the absence of a reliable production-marketing channel. The wholesale market was initially built-up in order to support the small-scale farmers to sell their products and to distribute the production at the producer price. "At present, the Wholesale Market is under the Authority for the State Assets Sale (AVAS) administration. All the products sold are imported products (any kind except vegetables) and the rent is extremely high for the Romanian producers, i.e. about 2 000 euro per month per stall".

Another sales channel is direct sale to stores and supermarkets. This marketing channel is based upon the daily demand required by the retail stores. Usually, as the analysis has already shown, no formal contracts are concluded with the stores and supermarkets (e.g. Mega Image). With regards to the hypermarkets, very few farmers can sell their products through this channel. It is estimated that less than five percent of the vegetables traded are sold this way. The hypermarkets demand quality products in large quantities. Even when the farmers comply with these conditions, the companies refuse to conclude contracts. "We even signed the contract with the hypermarket, accepting all their terms and conditions, and we have been waiting for a year to have this contract back. There is a slavery type of relation between the farmer and supermarket" (farmer from Braila). Most of the active traders in vegetables sell vegetables on the local markets themselves. Others act as intermediaries between the farmers and the sellers on the local markets. As a result, the marketing structure is highly fragmented.

## 4. Analysis of the processing sector

There were about 450 companies in the fruit and vegetables industry in year 2000 (NIS 2001).

A few foreign investments emerged in recent years. Despite investments of capital from both domestic and foreign sources, the volume of processed production is very low. Certain processing plants (Contec, Tecuci) prefer to import tomato sauce from China, even though quality is not sufficiently controlled. At present, among the processing companies, 27 are recognized as the most significant processors. A total of 60 million euros has been invested, thus far, in these processing plants. However, the main problems they face are: the lack of an adequate supply of raw materials; delivery of raw materials within the required timeframe; and delivery of raw materials under safe conditions.

The percentage of ensuring raw materials in the case of vegetables is 60 percent in summer time and 15 percent in winter time. Nevertheless, the rate of guaranteed deliveries is declining. That is what drives the processing plants to also get involved in the production of raw vegetables, so as to ensure a supply of raw materials to occur at the required time, at the desired quality and in a suitable quantity to meet

production needs. At the same time, the share of vegetables sold to the processing industry is very low. In most cases, the farmers supply the vegetables directly to the processing industry, with no intermediaries or traders.

An additional complication is that most formerly state-run agrifood manufacturing facilities lost their lands, and therefore, they are dependent on the quality and quantity of the products supplied by the farmers. Unfortunately, it is usually both farmers and processors that do not respect contract terms and conditions. Some processors do provide financial support and technology to farmers, though, based on formal contracts.

Nevertheless, as the analysis reveals, the relationship type between processors and retailers is better in terms of contractual arrangements and enforcement than at other stages of the value chain.

## Conclusions

Effective business relationships can help to reduce environmental uncertainty, e.g. by securing a more stable inflow of orders; contribute to better access to crucial resources, e.g. raw materials, capital, specialized skills; and/or result in higher business productivity, e.g. by enhancing loyalty among suppliers (Dyer and Singh 1998).

Nevertheless, the results obtained reveal that in Romania's case, there is a high degree of uncertainty among stakeholders both in terms of contractual relationships and contract enforcement. The share of formal contractual relationships is higher at the processing-retailing stage of the value chain, and this is in line with findings in other European countries, but much lower for both the farmer-buyer and the processor-retailer stages than was the case in the European countries studied (Fischer *et al*. 2007).

The vegetable production sector lacked a coherent strategy in the period 2000-2007. In fact, the sector could be characterized by a diminution of its capacity to compete in the marketplace. Furthermore, as a result of Romania's joining the EU, new competitors from the EU in the production and processing sectors appeared and are testing the Romanian market. If the Romanian vegetable sector is not able to reorganize and benefit from the intervention measures that are already available, the sector will not be able to withstand the strong competition coming from the single market.

# Bibliography


- Fischer, C. Gonzalez, M. Henchion, M. & Leat, P. 2007. Trust and economic relationships in selected European agri-food chains. Food Economics, 4 (1): 40-49.
- Fischer, C. Hartmann, M. Reynolds, N. Leat, P. Henchion, M. & Gracia, A. 2008. Agri-food chain relationships in Europe –empirical evidence and implications for sector competitiveness, EAAE CD-rom, 2008 .
- Gorton, M. 1999. Spatial variations in markets served by UK-based small and medium-sized enterprises (SMEs). Entrepreneurship and Regional Development, 11: 39-56.
- National Institute for Statistics (NIS). 2001. Results and performance of industrial and trade companies. Bucharest.
- Swinnen, J, Vercamme, J. & Rozelle, S. 2008. Standards and Development. Discussion Paper 199, KU Leuven (LICOS).
- Vincze, M. 2000. Regional and rural development –ideas and practices, Presa Universitara Clujeana.
- Williamson, O E. 1991. Comparative Economic Organization: The Analysis of Discrete. Administrative Science Quarterly, 36 (2): 269-296.
- ***Prospects for agricultural markets and Income 2006-2013; January 2007 available at http://ec.europa.eu/agriculture/publi/caprep/prospects2006b/summary.pdf, European Commission Directorate-General for Agriculture and Rural Development

# CONTRACTS, PAYMENT DELAYS AND GROWTH: EVIDENCE FROM BULGARIAN AGRICULTURE

*Johan F.M. Swinnen, Kristine Van Herck*[9]

## Abstract

Liberalization and transition to a more market-orientated economy has an important impact on all market transactions. In the Central and Eastern European Countries, unclear property rights, weak legal institutions and the break-up of the previously vertically coordinated agrifood supply chains, largely increased the chance of non compliance to contractual obligations in the first years after transition. This paper uses a unique dataset based on a survey of 305 dairy producing and supplying-households in the North and South Central Region of Bulgaria in 2003 to analyse the impact of credit constraints on farm growth. In particular, it analyses the impact of late payments for delivered products and of contract innovation over the period 1994-2003. The results of the dynamic panel analysis indicate that late payments have a negative influence on farm growth. In addition to this, the results also show that receiving contract innovations with farm assistance programmes had a positive effect on farm growth.

## Introduction

The transition process provides a natural experiment on various aspects of the role of contracting and vertical coordination in economic growth. One can use it to gain new insights on the effect of contract breaches (i.e. 'hold-ups') on growth as well as of the impacts of contractual innovations on growth in supply chains. In this paper an attempt is made to measure both effects drawing on micro-evidence from Bulgaria.

Firstly, in the 1980s and 1990s the liberalization and transition towards a more market-oriented economy had an important impact on all market transactions in former socialist countries and developing countries. In the Central and Eastern European Countries, unclear property rights, weak legal institutions and the break-up

9 LICOS Centre for Institutions & Economic Performance, Catholic University of Leuven (KUL)

of the previously vertically coordinated supply chains, largely increased the chances of non-compliance to contractual obligations in the first years after transition. These conditions contributed to a dramatic decline in (agricultural) output (Macours and Swinnen 2000).

A major problem in the early years of transition, was that in the absence of legal enforcement and the presence of newly emerged food processors that had not yet established a reputation, the opportunity increased for one of the transacting parties to perform a contract breach by ex-post renegotiating the contract's terms and conditions (Gow and Swinnen 1998). These 'hold-up' problems were frequently observed in the form of late payments by the processing firm.

Due to the combination of the 'normal' rural credit market imperfections[10] and late payments, farmers were unable to make basic investments and were restricted in their access to basic inputs (such as feed). However, while there is much ad hoc evidence on the occurrence of contractual breaches and late payments in the agricultural sector (Bigsten *et al*. 2000; Gow and Swinnen 2001; Fafchamps 2004), there is only little quantitative empirical evidence, especially on the impact of hold-ups on farm growth.

Secondly, in the mid-1990s when new investors entered the market, they were faced with the difficult task of establishing a supply base for quality production. The financially distressed farmers could not provide sufficiently high quality supply. Therefore, companies introduced a series of contract innovations, including farm assistance programmes (such as input supply programmes, credit and investment assistance programmes). By interlinking the input and output markets, enforcement of repayment for farm assistance programmes was typically doneby deduction of payments to the farmer at the time of delivery. Several studies (Gow *et al*. 2000; Van Berkum 2004; White and Gorton 2004; Dries and Swinnen 2004) find a substantial positive impact of these farm assistance programmes on farm performance.

This paper uses a unique dataset based on a survey of 305 dairy producing and supplying-households in the north and south central regions of Bulgaria in 2003 to measure the influence of hold-ups and the impact of farm assistance programmes on farm growth in the dairy sector. The findings on the impact of payment problems and farm assistance programmes are relevant beyond the Bulgarian dairy sector at the end of the 1990s and the beginning of the 2000s. Firstly, previous studies have shown that farmers in the EU and the USA also have a variety of contracts and are credit constrained which indicates the importance of timely payments and contracts for them. Secondly, although hold-up problems are largely resolved in the Central and Eastern European Countries that are currently EU Member States, hold-up problems, and more especially late payments, remain important in developing countries and those transition countries that are less advanced in the process of transition (Cungu *et al*. 2008). In many of these countries, late payments are expected to have a negative effect on farm growth and thus sector restructuring. Inversely, contract innovations and assistance programmes are increasingly important for them (Gulati *et al*. 2007).

10 One can argue that credit market imperfections occur more frequently in the agricultural sector compared with other sectors. For example, rural credit markets are usually more limited as in many cases there is only one credit supplier. Another possible reason is that credit suppliers are reluctant to provide credit to farmers as they all face the same regional climate conditions that implies the risk of non- repayment is highly correlated between farmers.

The paper is organized as follows: In Section 2, the empirical literature on the existence of contract enforcement problems and the restructuring of the supply chain in the agricultural sector is discussed. Next, the Bulgarian farm household data, which were collected during a survey in 2003, is described. In section 4, an econometric analysis of the impact of late payments and farm assistance programmes on farm growth is presented; and finally, Section 5 is the conclusion.

# Contracting and restructuring of the supply chain

## 1. Delayed payments and contract enforcement

Unclear property rights and weak legal institutions characterized the period of transition (Posner 1998). In combination with institutional changes, such as the introduction of hard budget constraints and the break-up of the previously vertically coordinated supply chain, this often caused non-compliance with the negotiated contract terms or "hold-ups" (Klein et al. 1978; Williamson 1985). A "hold-up" problem that is frequently observed in developing and transition countries is late payment by the processor. In case of high inflation, the processor captures quasi-rents in the form of interest-free loans by extending the payment period.

In developing countries, survey work by Bigsten et al. (2000) indicates that late payments are frequently observed in the African manufacturing sector. Similar results are found in swork on manufacturing firms in Ghana and Kenya by Fafchamps (2004). He finds that all surveyed firms experienced late payments and more than half of them even experienced non-payment. Fafchamps and Minten (2001) find that about 31 percent of all surveyed traders experienced late payments and about seven percent experienced non-payment in the grain market in Madagascar.

Likewise in transition countries, late payments were frequently observed. Survey work in Slovakia shows that in 1994 and 1995, the average delay in payments for delivered products –from agricultural producers varied between 77 days for commercial farms and 100 days for state farms (Slovak Ministry of Agriculture 1996). In a survey of Hungarian farms in 1998, Cungu et al. (2008) report that 60 percent of all farm enterprises find delayed payments to be important or fairly important. Gorton et al. (2000) find that, in 1998, late payments were the most important obstacle to farm growth in Slovenia and the Czech Republic and in Hungary; this factor ranks third out of 12 possible factors which delayed growth.

While there is much ad hoc evidence on the occurrence of contractual breaches, there is little empirical evidence on the impact on farm growth, especially related to hold-ups. Some evidence of the impact of late payments on investments can be found: using a dataset of Hungarian farms, contractual breaches, specifically in the form of delayed payments, have a nuanced effect on investment. Delayed payments have a significant negative effect if farmers consider delayed payments to be "important". However, if farmers indicate that they find delayed payments only "fairly important", no significant effect on investment is found (Cungu et al. 2008).

The impact of late payments on investments and farm growth is thought to have both a direct and an indirect effect (Cungu et al. 2008). Directly, late payments not only put the farm household budget under pressure, but also worsen the farm's credit constraints, cash flow and profitability (Gow and Swinnen 2001). In the short term, it limits the access to input supplies for future production, which has a negative effect on both output and quality. In the long term, the payment problems limit the investment capacity of the household. Indirectly, farm households that experience a late payment this year will expect a late payment next year, and will be reluctant to make asset-specific investments (Klein et al. 1978) This effectively slows down restructuring of the sector.

The macroeconomic instability and the malfunctioning of the rural credit market in the years after transition probably enhanced the impact of late payments on farm growth. Credit constraints were a major problem for growth and restructuring during transition (Swinnen and Gow 2000) and were still considered an important problem at the time of EU accession in several of the Central and Eastern European Countries (Bezemer 2003; Petrick and Latruffe 2003; Petrick 2004; Latruffe 2005; Bakucs et al. 2006). However, credit problems are not limited to developing and transition countries; as studies show, access to credit is constrained for farmers in the US and the EU, as well (Lee and Chambers 1986; Färe et al. 1990; Blancard et al. 2006).

## 2. Restructuring and contract innovations in the supply chain

When foreign investors entered the Eastern European food processing industry in the mid-1990s, they introduced contract innovations including farm assistance programmes (such as credit provision or input supply programmes), to the financially distressed farmers in return for guaranteed and quality supplies. Various studies have discussed the impact of these programmes on agricultural output and productivity (Gow et al. 2000; Leat and Van Berkum 2003; White and Gorton 2004), quality and investments (Dries and Swinnen 2004).

For example, the introduction of farm assistance programmes in 1993 by the largest Slovakian sugar processor caused significant improvements in output and yield. Output grew on average by 33 percent annually, whereas average yields increased from 33 metric tonnes per hectare with 13 percent sugar content in 1993 to an estimated 45 metric tonnes per hectare with 16 percent sugar content in 1997 (Gow et al. 2000). Based on survey results in Armenia, Georgia, Moldova, Russia and Ukraine, the introduction of various contract support measures caused an average increase in yield of 9.6 percent (White and Gorton 2004).

More specifically, dairy farmers in Romania can achieve better performance even when they have access to only modest farm assistance (Leat and Van Berkum 2003). In Poland, farm assistance programmes have a positive impact on farm growth, investment and quality, even in the case of small dairy farmers (Dries and Swinnen (2004).

# Data and key variables

The empirical analysis of the impact of late payments and farm assistance programmes on farm growth is analysed based on survey data of dairy farmers that were collected in the autumn of 2003. The survey included retrospective questions on late payments by dairy companies, household and farm characteristics, contract characteristics and investment behaviour and milk quality over a ten-year period (i.e. 1994-2003).

## 1. The survey

The two main dairy areas in Bulgaria — were surveyed (i.e. the north and the south central regions). In 2001, these regions represented 43.8 percent of all Bulgarian milk-supplying households and 48.7 percent of all cows. The surveyed counties included: Veliko Tarnovo, Pleven and Gabrovo in the north; and Plovdiv, Haskovo and Stara Zagora in the south. In these counties, 22 villages were chosen at random. A set of 305 farm households were randomly selected from all households which had at least some commercial dairy production during the ten-year period (from 1993 to 2004), in those villages in the north and south central regions. This implies that in addition to households that had continuous commercial dairy production from 1994 to 2003, households that either stopped production or households that began commercial dairy production in that period, were also included in the sample.

Farmers that supply to domestically owned companies as well as farmers that supply to foreign-owned companies were both included in the survey. This allows the possibility to establish a control for testing whether foreign processors have better access to technology and a better reputation than domestic processors, which could influence farmers that contract with a foreign processor to invest more compared with farmers that contract with a domestic processor. The survey also included questions on other contract characteristics such as contract type, which were used as control variables in the empirical analysis.

## 2. Descriptive statistics and key variables

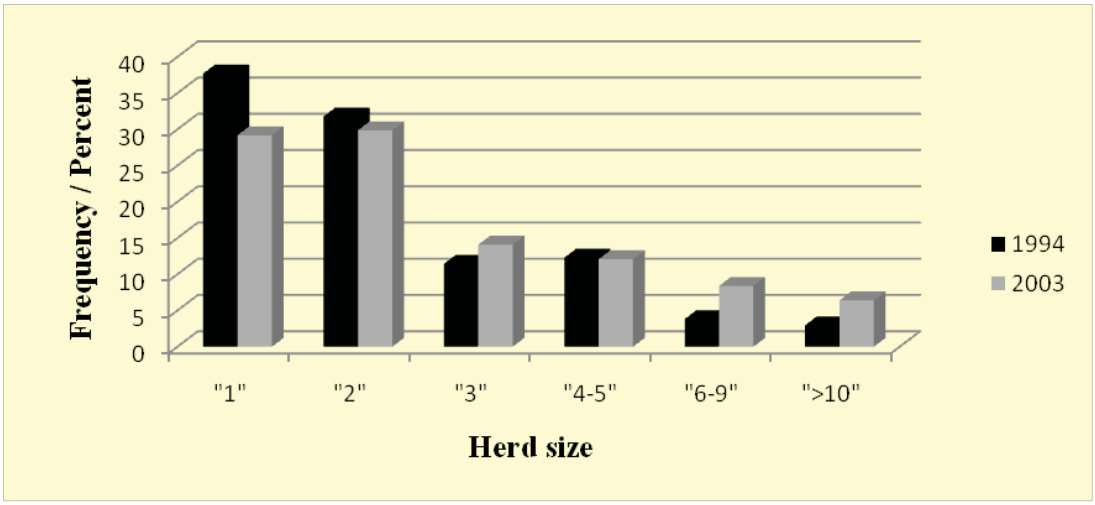
# Farm growth

The survey includes farms that had some degree of commercial dairy production throughout the period from 1994-2003. In addition, the survey also includes households that discontinued production and households that began commercial dairy production during that same period. About one quarter of all farms surveyed (23.7 percent) started their dairy processing activities before 1990, with half of all farms surveyed having started production in the first years after transition (i.e. 1990-1994). Approximately 20 percent of all surveyed farm households began production in the last half of the 1990s. An increase in farming activities is a rather exceptional phenomenon in the EU, where the agricultural population has been steadily decreasing for the last 20 years. One explanation could be that household farming

was a mechanism to attain food and social security in the years after transition in Bulgaria and Romania (Swinnen et al. 2005). Only seven of the farmers surveyed (2.3 percent) quit the dairy business in the period from 1994 to 2003; this was due to personal, non-economic reasons.

The size distribution changed significantly (as seen in Figure 1). In 1994, 81 percent of all household farms had fewer than four cows. In 2003, the number of small household farms was reduced to 73 percent, indicating that a large proportion of the farms had upgraded production to a larger herd size. By 2003, more than 14 percent of the household farmers had a herd size of more than five cows, whereas in 1994 this was only seven percent (also seen in Figure 1).

**FIGURE 1:** SIZE DISTRIBUTION OF THE DAIRY FARMS, 1994-2003




Source: Survey Results

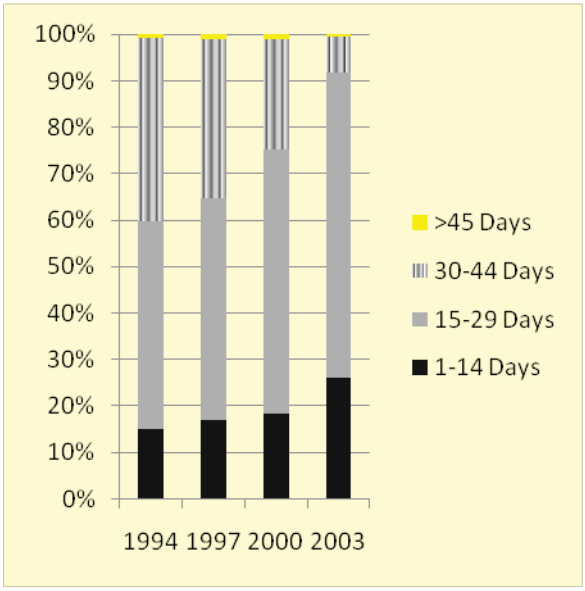
These data suggest that most small dairy farms survived the restructuring period very well. In general, they were not eliminated and some increased their production by expanding their herd size. For the statistical analysis GROWTH represents the difference of the natural logarithm of the number of cows owned in period t and the natural logarithm of the number of cows owned in period t-1.

## Payment problems

Late payments were an important characteristic of the Bulgarian dairy market in the period from 1994-2003; however, there was improvement over time. The survey results indicate that the average time between delivery and payment in the Bulgarian dairy sector decreased significantly (as seen in Figure 2). In 1994, some 40 percent of farmers experienced a payment time of more than 30 days, where in 2003 this number decreased to only 8 percent.

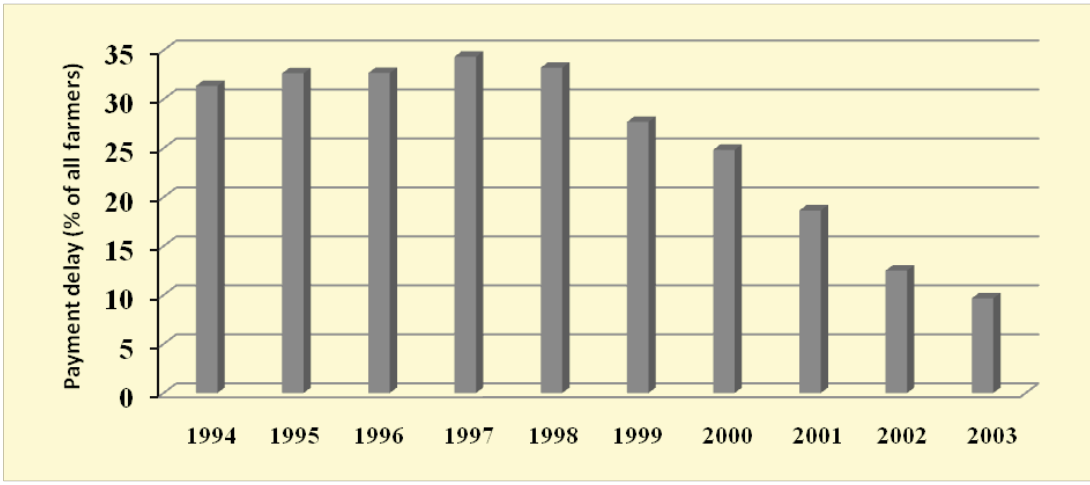
In 1994, payment delays were reported by 31 percent of all farms (Figure 3) with delays extending up to 74 days. However since 2000, the percentage of farms facing payment delays and the average maximum payment delay has decreased to 10 percent (Figure 3) and 25 days, respectively.

**FIGURE 2:** AVERAGE LENGTH OF THE PAYMENT TIME (%OF ALL FARMERS), 1994-2003




Source: Survey Results

**FIGURE 3:** EVOLUTION OF THE NUMBER OF FARMS THAT EXPERIENCE PAYMENT DELAYS, 1994-2003




* Farmers that are never paid are excluded from the estimation

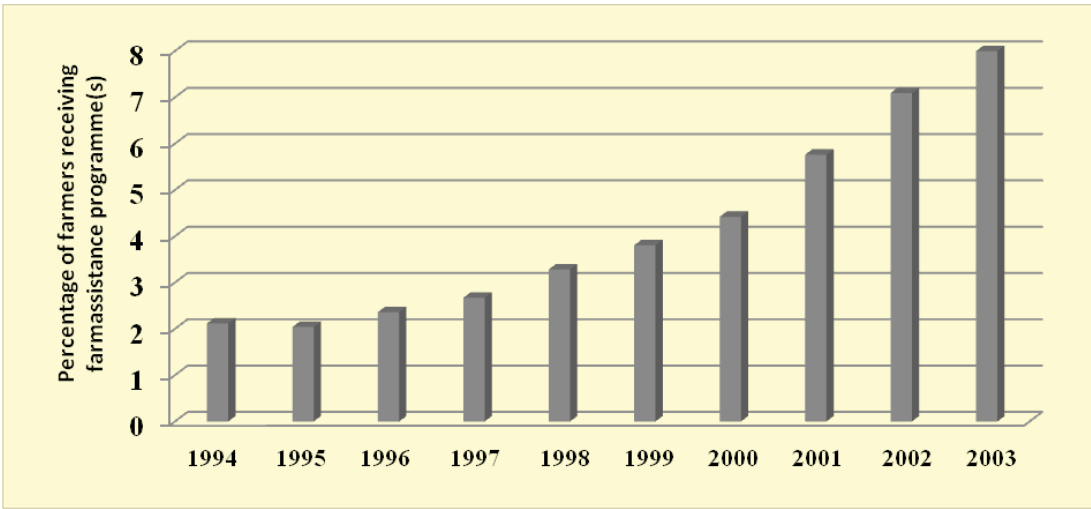
In the econometric analysis, the impact of late payments is measured by PAYTIME, which is specified as the natural logarithm of the time until payment (in days) reported by the farmer in period t-1. The expected sign of the variable PAYTIME is negative, as late payments are thought to limit the investment capacity of the farm household. This effect is probably enforced by the fact that the household farms were credit-constrained due to the malfunctioning of rural credit markets during transition.

## Contracting and farm assistance programmes

In several transition countries, privatized and restructured companies played an important role in the growth of the farms by providing contracts that included farm assistance programmes as a strategy for quality improvement (Dries et al. 2009). Examples of such programmes are extension services; veterinary assistance; forward credit for investments; forward credit for buying inputs; milk collection at the farm; and bank loan guarantees. In Bulgaria, the foreign-owned processor, Danone,

was the first dairy processor to introduce an assistance policy, as early as 1995. In 2006, Danone provided assistance to approximately 150 farmers. The other foreign processor, Meggle, started to offer farm assistance programmes from 2001 onwards and also most domestically owned companies offered such programmes by that time, as well (Noev et al. 2009).

**FIGURE 4:** EVOLUTION OF FARM ASSISTANCE PROGRAMMES, 1994-2003




Source: Survey Results

The increase in the importance of the farm assistance programmes can be seen in Figure 4. However, the survey results also indicate that the number of small household farmers which received such contracts with farm assistance was limited (also shown in Figure 4). In 2003, only 8 percent of the Bulgarian dairy households received assistance, moving upward from only 2 percent in 1995. As Table 1 shows, the most frequent benefit offered to the dairy households was from milk collection at the farm gate. Extension services represented of the second most freq1uent programme offering that are used whereas bank loan guarantees, veterinary assistance and credits for general agricultural investments were the least frequent (Table 1).

**TABLE 1:** NUMBER OF FARMS WITH FARM ASSISTANCE PROGRAMMES

| | 1994 | 1997 | 2000 | 2003 |
|---|---|---|---|---|
| **Agricultural extension service** | 3 | 5 | 5 | 6 |
| **Veterinary assistance** | 0 | 0 | 0 | 1 |
| **Forward credit for dairy specific investments** | 1 | 1 | 1 | 2 |
| **Forward credit for general agricultural investments** | 1 | 1 | 1 | 1 |
| **Forward credit for buying cows** | 1 | 2 | 2 | 4 |
| **Forward credit for buying inputs** | 1 | 1 | 2 | 4 |
| **Milk collection at the farm** | 5 | 7 | 13 | 22 |
| **Bank loan guarantees** | 1 | 1 | 1 | 1 |
| **Forward credit to buy forage,animal medicine, etc.** | 2 | 2 | 3 | 5 |

Source: Survey results

The impact of the investment and production support offered by the dairy company is measured by the variable referred to as PROGRAM. PROGRAM takes a value between 0 and 9 and indicates the number of programmes offered by the dairy company in period t-1. The possible programmes (as shown in Table 1) are agricultural extension services, veterinary credit, forward credit for dairy specific investments, forward credit for general agricultural investments, forward credit for buying cows, forward credit for buying inputs, milk collection at the farm, bank loan guarantees and forward credit to buy forage, fuel, medicine for the animals, etc. Farm assistance programmes are expected to have a positive influence on farm growth (Swinnen and Dries 2004).

In addition to the variable PROGRAM, three other variables were included that relate to the contract, namely FDI, CONTRACT and WRCON. To test whether there is an impact of FDI on the growth of farm households, the variable FDI was included. FDI is a dummy that takes a value of 1 if the dairy company is foreign-owned in period t-1 and a value of 0 otherwise. Farms contracting with foreign firms may be more likely to invest compared to farms contracting with domestic firms because foreign firms have characteristics that could influence a farmer's investment decision; for example, the foreign firms might have better access to technology and a better reputation than domestic processors. Hence, it's expected that FDI will have a positive effect on farm growth.

To test whether security of milk delivery has an impact on growth two variables were included related to the contract base. CONTRACT is a dummy variable that takes a value of 1 if the farmer has a written or oral contract with the milk company in t-1 and a value of 0 otherwise. An additional dummy variable WRCON was included that takes a value of 1 if the farmer has a written contract with the dairy company in t-1 and a value of 0 otherwise. WRCON estimates whether there is a supplementary impact of having a written contract. It's expected that having an oral agreement with the dairy company will have a positive impact on farm growth and that there is an additional positive effect of having a written contract.

## 3. Memory recall bias

Some of the variables used in the analysis of the effect of late payments and farm assistance programmes on farm growth are based on retrospective questions. This raises issues on the accuracy of the data, because it is inherently more difficult to recall information about the past. There are three types of potential problems. Firstly, respondents may forget some events or not be aware of the fact that an event took place (Sudman & Bradburn 1973; Kennickell and Starr 1997). Secondly, respondents may have the tendency to recall events in terms of commonly used increments or multiples of time or quantity (Brennan et al. 1996). Thirdly, respondents have the tendency to displace events towards the present. This effect is referred to as "forward telescoping" (Neter and Waksburg 1964). , recall problems tend to bias results downward relative to true values (Kennickell and Starr 1997).

**TABLE 2:** ANOVA RESULTS TO ANALYSE THE RECALL BIAS IN THE VARIABLE PAYTIME

| Year | Source | SS | df | MS | F | Prob > F |
|---|---|---|---|---|---|---|
| 1995 | Between groups | 44.1 | 52 | 0.9 | 5.8 | 0 |
| | Within groups | 26 | 178 | 0.2 | | |
| | Total | 70 | 230 | 0.3 | | |
| 1996 | Between groups | 35.5 | 52 | 0.7 | 4.5 | 0 |
| | Within groups | 28.5 | 188 | 0.2 | | |
| | Total | 64 | 240 | 0.3 | | |
| 1997 | Between groups | 34.1 | 51 | 0.7 | 4.6 | 0 |
| | Within groups | 28.9 | 198 | 0.2 | | |
| | Total | 62.9 | 249 | 0.3 | | |
| 1998 | Between groups | 47.6 | 58 | 0.8 | 5.8 | 0 |
| | Within groups | 28.5 | 200 | 0.1 | | |
| | Total | 76.1 | 258 | 0.3 | | |
| 1999 | Between groups | 48 | 62 | 0.8 | 4.3 | 0 |
| | Within groups | 37.1 | 208 | 0.2 | | |
| | Total | 85.1 | 270 | 0.3 | | |
| 2000 | Between groups | 48.2 | 57 | 0.9 | 3.9 | 0 |
| | Within groups | 48.5 | 222 | 0.2 | | |
| | Total | 96.5 | 279 | 0.4 | | |
| 2001 | Between groups | 60.5 | 59 | 1 | 8.5 | 0 |
| | Within groups | 27.9 | 230 | 0.1 | | |
| | Total | 88.4 | 289 | 0.3 | | |
| 2002 | Between groups | 33.5 | 51 | 0.7 | 4.8 | 0 |
| | Within groups | 32.5 | 238 | 0.1 | | |
| | Total | 66 | 289 | 0.2 | | |
| 2003 | Between groups | 32.7 | 45 | 0.7 | 7.4 | 0 |
| | Within groups | 24.6 | 249 | 0.1 | | |
| | Total | 57.2 | 294 | 0.2 | | |

Source: Survey Results

Given the focus of the analysis, these concerns should be taken seriously, particularly for several key variables (such as GROWTH, PAYTIME and PROGRAM). The dependent variable, GROWTH, is based on information on the number of cows that a farm owned in a specific year. As at the time of the survey the majority of the Bulgarian farm households possessed only one or two cows, selling or buying a cow was an important event for a farm and one can expect the information to be quite accurate. A similar argument holds for the independent variable, PROGRAM. As indicated in Section 3.2, farm assistance programmes were only provided to a limited number of dairy household farms and in most cases farmers only received one or two types

of programmes. Therefore, it could be expected that receiving such a programme was not easily forgotten or misplaced in time, so any recall bias should be limited. One could argue that there are potentially more problems related to recall bias for the variable, PAYTIME. Since payment delays were decisions made by companies and from company interviews it was learned that these were typically the same for all suppliers (at least for all household farms). It should be expected that the information covers a wider interval and has fluctuated more over the years. However, it should be pointed out that the type of delays reported by farmers was "two months"—which should enhance their memory, according to Brennan et al. (1996).

Furthermore, in order to form an estimate of the potential importance of recall bias, a test was performed so that in a given year, farmers delivering to the same dairy company would have a similar time until payment. Afterward, an ANOVA test was used to compares the variance between groups with the variance within a group. In this case, the treatments groups are the different dairy companies were treated as representative of a 'group' and the variance within the group was the recall bias. If the variance within the group was found to be smaller, or much smaller, than the variance between groups, this can be interpreted as support for the accuracy of the recall data. Table 2 shows that for all years, the variance within the group was statistically found to be significantly lower than the variance between the groups. This can interpreted as an indication that the recall data was relatively accurate on this variable, as well.

## Basic econometric framework and empirical results

In the next section, the restructuring process is analysed further and econometric estimates are made of the impact of late payments and farm assistance programmes on farm growth.

### 1. Model specification

In the firm growth theory, the growth function is generally defined (Nelson and Winter 1982; Evans 1987; Weiss 1999; Rizov and Mathijs 2003; Dries and Swinnen 2004; Das 1995; Nurmi 2004) to be:

$$G_{i,t} = \ln(S_{i,t}) - \ln(S_{i,t-1}) = \mathrm{h}\left[F(X_{i,t-1}, Y_i, S_{i,t-1})\right] + \mathrm{e}_{i,t}$$

(1)

where $G_{i,t}$ is the dependent variable GROWTH of farm *i* in year *t*; $S_{i,t}$ and $S_{i,t-1}$ denote the size of the farm in term of its number of cows at time *t* and *t-1;* respectively, $X_{i,t-1}$ represents a vector of contract characteristics at *t-1*, including the variables of interest, PAYTIME and PROGRAM; $Y_i$ denotes a vector of time invariant farm household characteristics and $\varepsilon_{i,t}$ is the disturbance term, which is assumed to be normally distributed with zero mean.

Three different estimation approaches were used. Firstly, as a basic empirical approach, the following pooled OLS model was estimated:

$$\ln(S_{i,t}) - \ln(S_{i,t-1}) = a_0 + a_1 PAYTIME_{i,t-1} + a_2 PROGRAM_{i,t-1} + a_3 \ln(S_{i,t-1}) + a_4 \ln(S_{i,t-1})^2 + \sum_{j=1}^{k} b_j X_{i,b,t-1} + \sum_{j=1}^{l} c_j Y_{i,c} + \delta_t + \varepsilon_{i,t}$$

(2)

where vector $X_{i,b,t-1}$ is a vector of *k* variables related to the contract, including contract type and dairy processor ownership; vector $Y_{i,c}$ is a vector of *l* variables related to time invariant household characteristics; vector $\delta_t$ is a vector of time dummies and $\varepsilon_{i,t}$ is the error term.

However, there is a problem with estimating this pooled OLS model. This model implicitly implies that the individual household effects are homogeneous and all sources of heterogeneity among farms are assumed to be fully reflected in the observed variables. However, the presence of some other non-observed farm specific effects that are correlated with the variables of interest or the control variables, can bias the results of the regression. To control for unobserved heterogeneity across farms, the following fixed effects model was estimated, as in Bigsten and Gebreeysesus (2007):

$$\ln(S_{i,t}) = \mu_i + a_1 PAYTIME_{i,t-1} + a_2 PROGRAM_{i,t-1} + (a_3 + 1)\ln(S_{i,t-1}) + a_4 \ln(S_{i,t-1})^2 + \sum_{j=1}^{k} b_j X_{i,b,t-1} + \delta_t + \varepsilon_{i,t}$$

(3)

where vector $\mu_i$ captures unobserved and time constant farm household specific effects, vector $X_{i,b,t-1}$ and vector $\delta_t$ are defined as in equation (2) and $\varepsilon_{i,t}$ is the error term.

Thirdly, a generalized method of moment method (GMM) was used to estimate the model (3). The reason is that the introduction of the lagged dependent variable as an explanatory variable causes problems in the fixed effects estimation. Since $ln(S_{i,t})$ is a function of $\mu_i$, also $ln(S_{i,t-1})$ will be a function of $\mu_i$. The estimation by a fixed effects model will yield biased and inconsistent estimates since within the estimation,

$$E\left[(\ln(S_{i,t-1}) - \ln(\bar{S}_{i,-1})),(\varepsilon_{i,t} - \bar{\varepsilon}_{i.})\right]$$

does not equal 0, because ln (Si,t-1) is correlated with εi. by construction[11]. The bias in the fixed effects dynamic specification only diminishes when the number of time periods approaches infinity, which is clearly not the case in this data.

To address these types of problems, one can use an instrumental variable estimation model. Arrelano and Bond (1991) proposed the GMM approach that yields consistent and efficient estimation results. They developed a GMM method that uses lagged levels of the explanatory and the dependent variable as an instrument for the first differenced equation. Given the poor performance of the GMM models, especially in

the presence of high serial correlation, Blundell and Bond (1998) proposed a system-wide GMM that uses lagged first differences of the explanatory variables and the dependent variable as instruments in addition to the level instruments. Therefore, the system-wide GMM model was used to estimate equations (3).

## 2. Additional variables

Table 3 provides an overview of all variables used in the econometric analysis. The first set of explanatory variables includes variables related to the contract, namely PAYTIME, PROGRAM, FDI, CONTRACT and WRCON. These variables are discussed in Section 3.2 and are all lagged by one year, meaning that these dependent variables are measured in period t-1.

**TABLE 3:** DESCRIPTION OF THE VARIABLES

| Variable name | Description | Mean | Std. dev |
|---|---|---|---|
| **Outcome variables** | | | |
| GROWT | Difference of natural logarithm of herd size in period t and in period t-1 | 0.03 | 0.24 |
| LNSIZE | Natural logarithm of the herd size in period t (in number of cows) | 0.8 | 0.68 |
| **Contract variables** | | | |
| PAYTIME | Natural logarithm of the time until payment (in days) | 2.85 | 0.53 |
| PROGRAM | Number of farm assistance programs | 0.08 | 0.55 |
| FDI | Dummy for foreign investment from the dairy company | 0.14 | 0.35 |
| CONTRACT | Dummy for having a oral or written contract | 0.64 | 0.48 |
| WRCON | Dummy for having a written contract | 0.05 | 0.21 |
| **Household variables** | | | |
| AGE | Natural logarithm of the age of the household head | 58.27 | 12.16 |
| EDU | Natural logarithm of the number of years of education of the household head | 9.58 | 2.64 |
| HHSIZE | Number of household member | 3.46 | 1.72 |
| COOPMEMB | Dummy for membership by a household member of a cooperative | 0.45 | 0.49 |
| NEWFARM | Dummy for farms that started in the period 1993-2004 | 0.22 | 0.42 |
| SOUTH | Dummy for the region of the farm | 0.46 | 0.5 |
| **Size variables** | | | |
| SIZE | Natural logarithm of the herd size in period t-1 (in number of cows) | 0.79 | 0.66 |
| SIZEQ | Squared value of the natural logarithm of the herd size in period t-1 (in number of cows) | 1.06 | 1.54 |

There could be potential correlation between several of these variables. This correlation could cause problems related to multi-collinearity. Therefore, Table 4 presents the correlation coefficients between the different variables. These results show that some problems might be expected related to the correlation between the contract type variables, CONTRACT and WRCON, and the variables of interest, PAYTIME and PROGRAM. To test for the possible impact of multi-collinearity problems in the estimation, different restricted models were run in which the varaibles FDI, CONTRACT and WRCON were excluded.

**TABLE 4:** CORRELATION MATRIX OF THE INDEPENDENT VARIABLES RELATED TO THE CONTRACT

| | PAYTIME | PRO | FDI | CONTRACT | CON |
|---|---|---|---|---|---|
| **PAYTIME** | 1 | | | | |
| **PRO** | -0.057 | 1 | | | |
| **FDI** | -0.048 | 0.111 | 1 | | |
| **CONTRACT** | 0.222 | 0.11 | -0.014 | 1 | |
| **WRCON** | -0.122 | 0.443 | 0.222 | 0.169 | 1 |

Source: authors' calculations based on the survey sample

The second group of explanatory variables are those related to household characteristics, namely AGE, EDU, HHSIZE, COOPMEMB, NEWFARM and SOUTH. AGE measures the natural logarithm of the age of the household head in years. AGE can have two different effects. On the one hand, if younger farmers are more dynamic and entrepreneurial, it can be expected that AGE could have a negative effect on farm growth. Alternatively, if experience is very important, AGE can have a positive effect on farm growth.

To measure the effect of the education level of the household head, EDU was included and represents the natural logarithm of the number of years of education of the household head. This variable is expected to have a positive effect on farm growth.

HHSIZE represents the number of household members. It should be expected that small households invest less as they have less labour resources than farming household with more members.

COOPMEMB is a dummy variable that takes the value of 1 if at least one of the dairy household members is a member of a cooperative and 0 otherwise. Previous studies in Bulgaria (Mathijs and Noev 2004) find negative relationships between membership in a cooperative and commercialization. Therefore, it can be expected that COOPMEMB will show a negative effect on farm growth.

NEWFARM is a dummy variable that takes a value of 1 if the farmer started farming activities after 1994, and 0 otherwise. Following Jovanovic's model (1982), younger firms grow faster than older firms. Jovanovic relates this to the manager's ability to estimates the firm's efficiency. As the firm ages, the manager's estimate of efficiency will become more accurate and this reduces the probability that next year's output will be very different from this year's. It can therefore be expected that there is a positive effect of NEWFARM on farm growth.

To control for regional differences in investment behaviour, a regional dummy variable (SOUTH) was included. SOUTH takes a value of 1 if the farm is situated in the south of Bulgaria and 0 otherwise.

Finally, a variable was also included as a proxy for farm size. SIZE represents the natural logarithm of the number of cows owned by the household in period t-1. This variable will allow us to test Gibrat's law, which states that farm growth is independent of the initial farm size. To capture non-linear effects of farm size, the variable SIZESQ, the squared value of SIZE, was included.

## 3. Regression results

In this section, the regression results of the different model specifications (Pooled OLS, Fixed Effects and SYS-GMM) are presented. For each model specification, the estimation and test results are reported for at least two different restricted versions of the basic model and the basic model itself. These results are presented in Tables 5-8.

In the SYS GMM model specification (Table 7) it was assumed that all variables related to the contract ($X_{it-1}$), including PAYTIME, are predetermined[11]. The GMM estimator was found to be consistent as the instruments are valid and the error term was not serially correlated[12]. Table 8 provides a comparative overview of the regression results of the different model specifications.

The estimated coefficients of two key variables are consistently significant across the three models. Firstly, the results indicate that late payments (PAYTIME) have a significant and negative impact on farm growth. The econometric analysis confirms that farm households that experience fewer payment delays are more likely to invest and expand their farm size compared with farm households that experience more payment delays.

Secondly, assistance programmes (PROGRAM) that dairy companies provide for their supplying farms are found to have a highly significant and positive impact on farm growth. The farm households that receive programmes grow more than farm households that do not receive any programmes. This confirms earlier results by Dries and Swinnen (2004).

The contract variables, CONTRACT and WRCON, have no significant impact on farm growth. Farm households that have an oral or written agreement with the dairy company are not found to grow more than farms without any contract. These results suggest that it is not so much the contract as such, but rather what is contained in the contract (i.e. farm assistance programmes) that affects growth. Also FDI did not

11 In the case of predetermined variables Zi,t, the whole vector of differences of observed Zi,t cannot be included into the instrument matrix. Only those levels of Zi,t for those time periods that are assumed to be unrelated to Δεit.can be included. Note that the variable Xit is predetermined if E(Xisεit) = 0 for s < t and E(Xisεit) ≠ 0 for s > t.

12 Two tests exist to verify these assumptions. The first test is the Sargan test of over-identification, which indicates the validity of instruments in which t-1 time lags are not rejected at a reasonable confidence level. The validity of instruments with t-1 and earlier lags did not pass the Sargan test at a 5% confidence level. Therefore, only the SYS-GMM model with t-1 lags as a set of instruments will be reported. The second test examines the hypothesis that the error term εi,t is not serially correlated. Tests were performed to determine whether the differential error term is second-order serially correlated and no strong evidence of second-order correlation was found.

significantly affect farm growth. This result implies that farm households delivering to foreign dairy companies are equally likely to invest and to increase their farm size as households delivering to domestic dairy companies.

**TABLE 7:** REGRESSION RESULTS: SYS-GMM MODEL

| | Model A | | Model B | | Model C | |
|---|---|---|---|---|---|---|
| **Dependent variable: farm size** | **Coeff icient** | **z-value** | **Coeff icient** | **z-value** | **Coeff icient** | **z-value** |
| **Dairy Company** | | | | | | |
| PAYTIME | -0.026 | (-1.70)* | -0.025 | (-1.69)* | -0.026 | (-1.65)* |
| PRO | 0.235 | (4.41)*** | 0.235 | (4.62)*** | 0.238 | (3.65)*** |
| FDI | | | 0.024 | -0.88 | 0.042 | -1.56 |
| CONTRACT | | | | | 0.073 | -1.34 |
| WRCON | | | | | -0.061 | (-1.42) |
| **Farm characteristics** | | | | | | |
| SIZE | 1.038 | (21.52)*** | 0.993 | (22.66)*** | 1.004 | (20.22)*** |
| SIZESQ | -0.034 | (-1.55) | -0.02 | (-0.92) | -0.022 | (-1.04) |
| **Time dummies** | **Yes** | | **Yes** | | **Yes** | |
| Constant | 0.104 | -1.41 | 0.12 | -1.53 | 0.067 | -1.36 |
| $R^2$ | | | | | | |
| Observations | 2366 | | 2366 | | 2366 | |
| Sargan test | 70.41 (0.15) | | 93.29 (0.06) | | 88.21 (0.75) | |
| $m_1$ | -9.92 (0.00) | | -9.83 (0.00) | | -9.79 (0.00) | |
| $m_2$ | 0.67 (0.50) | | 0.68 (0.49) | | 0.73 (0.47) | |

*significant on 10%, **significant on 5% and *** significant on 1%

Note. The standard errors are robust finite samples corrected on two-step estimates derived from Windmeijer (2000). The Sargan-Hansen test and the serial correlation test are reported as respectively Sargan, m1 and m2 and the latter two represent respectively the AR(1) and AR(2) tests under the the null of no serial correlation. The p values of these different tests are reported in brackets.

Source: Survey Results

The pooled OLS estimates allowed some inferences to be drawn on the impact of household characteristics. No significant effect of AGE or EDU on farm growth was found. However, a positive affect wasfound of HHSIZE on farm growth. This suggests that large households tend to invest more in farm growth than smaller households because they have more labour resources than households with fewer members. The COOPMEMB variable has a significant negative effect on farm growth. This can indicate that membership of a cooperative leads to a reduction in agricultural activities of the cooperative members due to the prerequisite of allocating some assets to the cooperative as suggested by Mathijs and Noev (2004). The positive, significant coefficient of NEWFARM indicates that younger farms tend to grow faster. This result is consistent with Jovanovic's model and earlier results on the relation between farm growth and age (Rizov and Mathijs 2003). The impact of the regional dummy, SOUTH, was found to be significant, which suggests that there are regional differences in the

investment behaviour of farm households.

The estimated coefficients of two key variables are consistently significant across the three models. Firstly, the results indicate that late payments (PAYTIME) have a significant and negative impact on farm growth. The econometric analysis confirms that farm households that experience fewer payment delays are more likely to invest and expand their farm size compared with farm households that experience more payment delays.

Secondly, assistance programmes (PROGRAM) that dairy companies provide for their supplying farms are found to have a highly significant and positive impact on farm growth. The farm households that receive programmes grow more than farm households that do not receive any programmes. This confirms earlier results by Dries and Swinnen (2004).

The contract variables, CONTRACT and WRCON, have no significant impact on farm growth. Farm households that have an oral or written agreement with the dairy company are not found to grow more than farms without any contract. These results suggest that it is not so much the contract as such, but rather what is contained in the contract (i.e. farm assistance programmes) that affects growth. Also FDI did not significantly affect farm growth. This result implies that farm households delivering to foreign dairy companies are equally likely to invest and to increase their farm size as households delivering to domestic dairy companies.

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**TABLE 5:** REGRESSION RESULTS POOLED OLS MODEL

| | Model A | | Model B | | Model C | | Model D | |
|---|---|---|---|---|---|---|---|---|
| **Dependent variable: farm growth** | **Coefficient** | **t-value** | **Coefficient** | **t-value** | **Coefficient** | **t-value** | **Coefficient** | **t-value** |
| **Dairy Company** | | | | | | | | |
| PAYTIME | -0.02 | (-2.24)** | -0.02 | (-2.24)** | -0.02 | (-2.00)** | -0.03 | (-2.66)*** |
| PRO | 0.047 | (5.35)*** | 0.047 | (5.27)*** | 0.042 | (4.44)*** | 0.035 | (3.60)*** |
| FDI | - | - | 0.006 | -0.43 | 0.002 | -0.15 | -0.01 | (-0.84) |
| CONTRACT | - | - | | | -0 | (-0.31) | -0 | (-0.13) |
| WRCON | - | - | | | 0.04 | -1.42 | 0.058 | (2.01)** |
| **Household characteristics** | | | | | | | | |
| AGE | - | - | | | - | - | -0.04 | (-1.46) |
| EDU | - | - | | | - | - | 0.016 | -0.67 |
| HHSIZE | - | - | | | - | - | 0.008 | (2.64)*** |
| COOPMEMB | - | - | | | - | - | -0.03 | (-2.73)*** |
| NEWFARM | - | - | | | - | - | 0.046 | (3.21)*** |
| SOUTH | - | - | | | - | - | -0.03 | (-2.73)*** |
| **Farm characteristics** | | | | | | | | |
| SIZE | -0.16 | (-9.05)*** | -0.16 | (-9.05)*** | -0.16 | (-8.95)*** | -0.16 | (-8.64)*** |
| SIZESQ | 0.051 | (6.46)*** | 0.051 | (6.47)*** | 0.05 | (6.23)*** | 0.045 | (5.48)*** |
| Time dummies | | Yes | | Yes | | Yes | | Yes |
| Constant | 0.154 | (4.63)*** | 0.154 | (4.63)*** | 0.152 | (4.55)*** | 0.272 | (1.82)* |
| $R^2$ | | 0.06 | | 0.06 | | 0.06 | | 0.08 |
| Observations | | 2366 | | 2366 | | 2366 | | 2321 |

*significant on 10%, **significant on 5% and *** significant on 1%

Source: Survey Results

**TABLE 6:** REGRESSION RESULTS FIXED EFFECTS MODEL

| | Model A | | Model B | | Model C | |
|---|---|---|---|---|---|---|
| **Dependent variable: farm size** | **Coeff icient** | **t-value** | **Coeff icient** | **t-value** | **Coeff icient** | **t-value** |
| **DairyCompany** | | | | | | |
| PAYTIME | -0.03 | (-1.96)** | -0.03 | (-1.90)* | -0.03 | (-1.92)* |
| PRO | 0.121 | (4.34)*** | 0.12 | (4.31)*** | 0.12 | (4.25)*** |
| FDI | - | - | -0.03 | (-1.63) | -0.03 | (-1.42) |
| CONTRACT | - | - | - | - | 0.075 | -1.4 |
| WRCON | - | - | - | - | -0.04 | (-1.00) |
| **Farm characteristics** | | | | | | |
| SIZE | 0.674 | (25.92)*** | 0.677 | (25.97)*** | 0.676 | (25.85)*** |
| SIZESQ | 0.032 | (2.73)*** | 0.03 | (2.58)*** | 0.031 | (2.65)*** |
| **Time dummies** | **Yes** | | **Yes** | | **Yes** | |
| Constant | 0.296 | (6.39)*** | 0.294 | (6.34)*** | 0.249 | (4.42)*** |
| $R^2$ | 0.87 | | 0.87 | | 0.86 | |
| Observations | 2366 | | 2366 | | 2366 | |

*significant on 10%, **significant on 5% and *** significant on 1%

Source: Survey Results

From the Pooled OLS and the FE results it can be concluded that farm size has a significant effect on farm growth and that small farms grow faster than large farms. The results of the GMM model no longer support these findings and there was no strong evidence to reject Gibrat's law, which states that farm growth is independent of initial farm size.

**TABLE 8:** REGRESSION RESULTS POOLED OLS, FE AND SYS-GMM

| | OLS | | FE | | SYS-GMM | |
|---|---|---|---|---|---|---|
| **Dependent variable: farm size** | **Coeff icient** | **t-value** | **Coeff icient** | **t-value** | **Coeff icient** | **z-value** |
| **Dairy Company** | | | | | | |
| PAYTIME | -0.02 | (-2.00)** | -0.03 | (-1.92)* | -0.03 | (-1.65)* |
| PRO | 0.042 | (4.44)*** | 0.12 | (4.25)*** | 0.238 | (3.65)*** |
| FDI | 0.002 | -0.15 | -0.03 | (-1.42) | 0.042 | -1.56 |
| CONTRACT | -0 | (-0.31) | 0.075 | -1.4 | 0.073 | -1.34 |
| WRCON | 0.04 | -1.42 | -0.04 | (-1.00) | -0.06 | (-1.42) |
| **Farm characteristics** | | | | | | |
| SIZE | 0.843 | (47.33)*** | 0.676 | (25.85)*** | 1.004 | (20.22)*** |
| SIZESQ | 0.05 | (6.23)*** | 0.031 | (2.65)*** | -0.02 | (-1.04) |
| **Time dummies** | **Yes** | | **Yes** | | **Yes** | |
| Constant | 0.152 | (4.55)*** | 0.249 | (4.42)*** | 0.067 | (1.36)** |
| $R^2$ | | 0.87 | | 0.86 | | 0.86 |
| Observations | | 2366 | | 2366 | | 2366 |
| Sargan test | | | | | | 88.21 (0.75) |
| $m_1$ | | | | | | -9.36 (0.00) |
| $m_2$ | | | | | | 0.72 (0.47) |

*significant on 10%, **significant on 5% and *** significant on 1%

Note. The standard errors are robust finite samples corrected on two-step estimates derived from Windmeijer (2000). The Sargan-Hansen test and the serial correlation test are reported as respectively Sargan, m1 and m2 and the latter two represent respectively the AR(1) and AR(2) tests under the the null of no serial correlation. The p values of these different tests are reported in brackets.

Source: Survey Results

# Conclusion

There is only little empirical evidence of the effect of delayed payments and contracting on farm growth. This paper uses a unique dataset based on a survey of 305 dairy producing and supplying-households in the north and south central regions of Bulgaria in 2003 to provide econometric evidence of the influence of payment delays and contracting on farm growth in the dairy sector over the period from 1994-2003.

This study indicates that contract breaches, especially late payments, had a negative impact on the farm growth. Directly, late payments put pressure on the farm household budget and worsened the farm's credit constraints, cash flow and profitability. In the short run, this limits the farm's access to inputs, which has a negative effect on quantity and quality produced. In the long run, it limits the investment capacity of farmers. Indirectly, farm households that experienced a late payment this year, will also expect a late payment next year and will be reluctant to make asset-specific investments, which slows down the restructuring of the sector. In the years after transition, the impact of late payments is expected to be enhanced by the macroeconomic instability and malfunctioning of the rural credit market.

In addition to this, the results also show that contract innovations, in particular farm assistance programmes received from the dairy company contributed to a higher farm growth. Currently, the number of farm households receiving this type of assistance is relatively low (eight percent of the farm households surveyed), but since the 2000s, there has been a significant increase in the number of farm households receiving support, and this is expected to continue. The positive impact of farm assistance programmes on farm growth indicates that there are positive spillover effects of investments, which give rise to contracting and vertical coordination in the Bulgarian dairy industry.

The findings in this study on the impact of payment problems and farm assistance programmes are relevant beyond the Bulgarian dairy sector at the end of the 1990s and the beginning of the 2000s. Firstly, previous studies have shown that farmers in the EU and USA also have contracts and are credit constrained; and thus, timely payments and assistance by the processing industry are important for these farmers, as well. Secondly, in the Central and Eastern European Countries that are currently EU Member States, most problems of the transition to a market economy are largely resolved. However, hold-up problems and more especially payment problems remain important in developing countries and those transition countries that are less advanced in the process of transition. Therefore, the introduction of timely payments and farm assistance programmes could be expected to have a positive impact on farm performance in these countries.

# Bibliography


- Arellano, M. & Bond, S. 1991. Some Tests of Specification for Panel Data: Monte Carlo Evidence and an Application to Employment Equations, The Review of Economic Studies, Vol.58 (2), pp. 277-297.
- Bakucs, L. Z. Fertő, I. & Fogarasi, J. 2006. Investment and financial constraints in Hungarian agriculture, Paper for presentation to conference "Transition in Agriculture – Agricultural Economics in Transition III", November 10-11, Budapest.
- Bezemer, D.J. 2003. Credit Allocation and Farm Structures in the Czech Republic, 1993-1997", Comparative Economic Studies, Vol. 45, pp.25-43.
- Bigsten, A., Collier, P., Dercon, S., Fafchamps, M., Gauthier, B., Gunning, J.W., Isaksson, A., Oduro, A., Oostendorp, R., Patillo, C., Soderbom, M., Teal, F. and A. Zuefack (2000), Contract Flexibility and Dispute Resolution in African Manufacturing, Journal of Development Studies", Vol.36 (4), pp. 1-37.
- Bigsten, A. & Gebreeyesus M. 2007, The Small, the Young and the Productive: Determinants of Manufacturing Firm Growth in Ethiopia, Economic Development and Cultural Change, Vol. 55(4), pp. 813.
- Blancard, S., Boussemart, J.P., Briec, W. & Kerstens, K. 2006. Short- and Long-Run Credit Constraints in French Agriculture: A Directional Distance Function Framework Using Expenditure-Constrained Profit Functions", American Journal of Agricultural Economics Vol. 88, pp. 351–364.
- Blundell, R. & Bond, S. 1998. Initial Conditions and Moment Restrictions in Dynamic Panel Data Models, Journal of Econometrics, Vol. 87, pp. 115-143.
- Brennan, M., Chan, J., Hini, D. & Esslemont, D. 1996. Improving the Accuracy of Recall Data: A Test of Two Procedures. Marketing Bulletin, Vol. 7, pp 20-29.
- Cungu, A., Gow, H., Swinnen, J.F.M. & Vranken L. 2008. Investment with weak Contract Enforcement: Evidence from Hungary during transition. European Review of Agricultural Economics, Vol. 35(1), pp. 75-91.
- Dries, L. & Swinnen J.F.M. 2004. Foreign Direct Investment, Vertical Integration, and Local Suppliers: Evidence from the Polish Dairy Sector. World Development, Vol. 32(9), pp. 1525-1544.
- Dries, L., Germenji, E., Noev, N. & Swinnen, J.F.M. 2009. Farmers, Vertical Coordination, and the Restructuring of Dairy Supply Chains in Central and Eastern Europe, World Development, Forthcoming.
- Evans, D. 1987. Tests of Alternative Theories of Firm Growth, Journal of Political Economy, Vol. 95, pp. 657–674.
- Fafchamps, M. & Minten, B. 2001. Property Rights in a flea economy. Economic Development and Cultural Change, Vol. 49(2), pp. 229-268.
- Fafchamps, M. 2004. Market Institutions in Sub Saharan Africa: Theory and Evidence, Comparative Institutional Analysis series, MIT press.
- Färe, R., Grosskopf, S. & Lee, H. 1990. A Nonparametric Approach to Expenditure-Constrained Profit Maximization. American Journal of Agricultural Economics Vol. 72, pp. 574-581.
- Gorton, M., Buckwell, A. & Davidova, S. 2000. Transfers and distortions along CEEC food supply chains, In Tangermann, S. & Banse, M. (Eds), Central and

Eastern European Agriculture in an Expanding European Union, Wallingford: CABI Publishing, pp. 89-112.

- Gow, H. Streeter, D.H. & Swinnen, J.F.M. 2000. How Private Contract Enforcement Mechanisms Can Succeed Where Public Institutions Fail: The Case of JUHOCUKOR a.s.", Agricultural Economics", Vol. 3(23), pp. 253-265.
- Gow, H. & Swinnen, J.F.M. 2001, Private enforcement capital and contract enforcement in transition economies, American Journal of Agricultural Economics, Vol. 83, pp. 686-690.
- Gulati, A., Minot, N., Delgado, C., & Bora, S. 2007. Growth in high-value agriculture in Asia and the emergence of vertical links with farmers, In: Swinnen, J.F.M. (Ed), Global Supply Chains, Standards and the Poor, Oxford, CABI publishing.
- Jovanovic, B. 1982. Selection and the Evolution of Industry, Econometrica, Vol. 50, pp. 649-70.
- Kennickell, A.B. & Starr, M. 1997. Retrospective Reporting of Household Wealth: Evidence from the 1983-1989 Survey of Consumer Finances, Journal of Business & Economic Statistics, Vol. 15(4), pp.452-463.
- Klein, B., Crawford, R. G. & Alchian, A. A. 1978. Vertical Integration, Appropriable Rents, and the Competitive Contracting Process. Journal of Law and Economics, Vol. 24, pp. 297-326.
- Klein, B. 1996. Why hold-ups occur: the self enforcing range of contractual relationships. Economic Enquiry, Vol. 34, pp. 444-463.
- Latruffe, L. 2005. The Impact of Credit Market Imperfections on Farm Investment in Poland. Post-Communist Economies Vol. 17(3), pp. 349-362.
- Leat, P. & Van Berkum, S. 2003. Dairy Sector Analysis, In: Van Berkum S., Davies, S. & Popov, S. (eds.) The Romanian Agrifood Chain: On the Road to Accession", Ministry of Agriculture, Forests, Water and Environment, Bucharest.
- Lee, H. & Chambers, R.G. 1986. Expenditure Constraints and Profit Maximization in U.S. Agriculture", American Journal of Agricultural Economics, Vol. 68(4), pp. 857-865.
- Macours, K. & Swinnen, J.F.M. 2000. Causes of Output Decline in Economic Transition: The case of Central and Eastern European agriculture. Journal of Comparative Economics, Vol. 28 (1), pp. 172-206.
- Mathijs, E. &. Noev, N. 2004. Subsistence Farming in Central and Eastern Europe: Empirical Evidence from Albania, Bulgaria, Hungary, and Romania. Eastern European Economics, Vol. 42 (6), pp. 72-89.
- Nelson, R. & Winter, S. 1982. An Evolutionary Theory of Economic Change, Cambridge, MA, Harvard University Press.
- Neter J. & Waksberg, J. 1964. A study of response errors in expenditures data from household interview. Journal of the American Statistical Association, Vol. 59, pp. 18-55.
- Noev, N., Dries, L. & Swinnen, J.F.M. 2009. Institutional Change, Contracts and Quality in Transition Agriculture, Eastern European Economics, Vol. 47(4), pp. 63-86.
- Petrick, M. 2004. Farm investment, credit rationing, and governmentally promoted credit access in Poland: a cross-sectional analysis. Food Policy Vol. 29, pp. 275–

294.

- Petrick, M. & Latruffe, L. 2003. Credit Access and Borrowing Costs in Poland's Agricultural Credit Market: A Hedonic Pricing Approach. IAMO Discussion Paper No. 46, Halle: Institute of Agricultural Development in Central and Eastern Europe (IAMO).
- Posner, R. A. 1998. Creating a legal framework for economic development. World Bank Research Observer, Vol. 13 (1), pp. 1-53.
- Rizov, M. & Mathijs, E. 2003. Farm Survival and Growth in Transition Economies: Theory and Empirical Evidence from Hungary. Post Communist Economies, Vol. 15(2), pp. 227-242.
- Slovak Ministry of Agriculture. 1996. Green Report, Bratislava
- Sudman S. & Bradburn, N.M. 1973. Effects of time and memory factors on response in surveys, Journal of the American Statistical Society, Vol. 68, pp. 805 - 815.
- Swinnen, J.F.M., Dries, L. & Macours, K. 2005. Transition and Agricultural Labour, Agricultural Economics, Vol. 32(1), pp. 15-34.
- Swinnen, J.F.M., Dries, L., Noev, N. & Germenji, E. 2006. Foreign Investment, Supermarkets, and the Restructuring of Supply Chains: Evidence from Eastern European Dairy Sectors. LICOS Discussion Paper 165/2006.
- Van Berkum, S. 2004. Dynamics in Vertical Coordination in the Romanian Dairy Sector, Report for the World Bank Study on Dynamics of Vertical Coordination in ECA Agrifood Chains: Implications for Policy and Bank Operations, LEI-WUR, The Hague/ Wageningen.
- Weiss, C. 1999. Farm growth and survival:econometric evidence for individual farms in Upper Austria. American Journal of Agricultural Economics, Vol. 81, pp.103-116.
- White, J. & Gorton, M. 2004. Vertical Coordination in ECA Agrifood Chains as an Engine of Private Sector Development: Implications for Policy and Bank Operations. World Bank, Washington D.C.
- Williamson, O. 1985. The Economic Institutions of Capitalism. Free Press, New York.

# AGRIFOOD MARKETS IN CENTRAL AND EASTERN EUROPE: WILL CHANGES IN TRADE CONDITIONS LEAD TO A NEW PAN-EUROPEAN ALIGNMENT?

*Oleksandr Zhemoyda*[13] *and Natalia Gerasymenko*[14]

## Introduction

Over the past decade, the common agricultural policy (CAP) of the European Union (EU) has undergone a number of changes to accommodate new market opportunities and to respond to challenges such as climate change, water management and bioenergy. These challenges are addressed in the so-called 'Health Check' of the CAP reform process. In the context of aspirations to change some aspects of the CAP, the main proposal of the European Commission (EC) is to establish common rules for direct support schemes under the CAP.

At the same time, the economies of some of the new EU countries (i.e. the EU-10 and

$$\mathrm{RCA} = \left( \frac{Xin}{Xiw} \Big/ \frac{Xmn}{Xmw} \right) * 100 \qquad \textbf{(1)}$$

the new $Xin$ EU-2) depend much on agricultural production and food processing. Furthermore, their main competitors in the broader agrifood market are the so-called 'Neighbouring countries' to the EU (i.e. ten Near Eastern and seven former Soviet countries). These Neighbouring countries exert particular effort at finding new market opportunities within the EU market. In this paper, the Neighbouring countries will be referred to as the 'Non-Member States'.

These various types of competitive pressures raise several questions regarding future developments and the possible adoption of changes in trade conditions. First of all, "What will the outcome be for the European agrifood markets from preferential

13 Ph.D., Associate Professor, Chair of State Management, National University of Life and Environmental Sciences of Ukraine, Kyiv, alzhemoyda@gmail.com.
14 Ph.D. student, Chair of State Management, National University of Life and Environmental Sciences of Ukraine, Kyiv, natali_gerasimenko@ukr.net.

treatment of Non-Member States?" Secondly, "Can European producers (i.e. farmers and small and medium-scale processors) be more competitive than non-European ones?" Lastly, "Can the CAP reform have similar performance implications for the Non-Member States compared with its impact on the EU Members?"

In order to answer these questions, this study attempts to analyse the advantages, actual conditions and possible impact of policy changes on development in the agrifood market. The main underlying premise is that the business environment itself represents one of the most important drivers of competitiveness for domestic and export-oriented agrifood enterprises and industries.

An anticipated result is that Non-Member States can play an important role in the EU markets, primarily due to long-term comparative advantages in production of unprocessed products (such as wheat, corn, sunflower seeds and rapeseeds) and in the production of minimally processed products (such as sunflower-seed oil and rapeseed oil). To remain competitive, Eastern European countries will have to change their present role in agrifood value chains, shifting from being primary producers of commodities toward becoming secondary processors and striving to improve their ability to compete in export trade activities. Furthermore, the potential changes in tariffs and trade conditions (according to WTO negotiations and CAP policy) can facilitate recovery of the former trade relationships between traditional partners (such as the countries of Central and Eastern Europe). Finally, changes in the structure of trade can lead to formation of a new framework of agrifood markets in both the EU Member States and the Non-Member States.

The Sanitary and Phytosanitary Standards (SPS) and the Technical Barriers to Trade (TBT) Agreements, that are part of the overall WTO commitments, regulate food safety and consumer protection. Both the SBS and TBT are binding agreements that require that the Codex is the reference point for standards of protection of humans, animals or plants as well as consumer protection and prevention of trade barriers. The Codex guidelines recommend the use of good manufacturing practices (GMPs), good agricultural practices (GAPs) and/or good hygienic practices (GHPs) to preserve food safety. When application of GMPs/GAPs/GHPs are not sufficient to ensure food safety, Codex guidelines recommend the use of a Hazard Analysis Critical Control Point (HACCP) plan. While there could be many benefits if all WTO members implemented the Codex guidelines, it should be noted that these guidelines are merely recommendations—and not required standards. However, if all members were to implement the Codex guidelines, one very significant benefit in addition to Where improved food safety would be better uniformity of quality assurance across all production processes of each agrifood value chain; and this, in turn, would lead to improved quality in the final product. Therefore, an improvement in the management of production quality has implications not only for food safety, but for the added value of agrifood products, as well.

The WTO accession for some of the Non-Member States (i.e. Egypt, Israel, Morocco and Tunisia in 1995; Georgia and Jordan in 2000; Moldova in 2001; Armenia in 2003; and Ukraine in 2008) led to some changes in internal policy approaches according to the requirements for new members (e.g. decrease of import taxes, decrease in the level of state support and a cancellation of export subsidies). All of these

measures influenced the trade structure and opportunities for the Non-Member States. As a result, most of them, for the present time, have become net-importers of most agrifood products. Only a few of them are exporting a number of traditional commodity products (e.g. barley, wheat and maize). An attempt was made to analyse

$$TC_i = \frac{X_{ij}}{M_{ij}} \quad (2)$$

the possible impacts of the Non-Member States on the EU agrifood market, based on the list of products $M_{ij}$ and countries seen in Appendix 1. But, as Appendix 1 shows, the list of countries that are not WTO members is still quite long and some of the Non-Member States (such as the Russian Federation) have a very significant impact on world trade, including agrifood production as a whole.

**TABLE 1:** THE MAIN INDICES OF ECONOMIC AND SOCIAL DEVELOPMENT

| Country | GDP (in millions of USD) | HDI | GCI Rank/ Score |
|---|---|---|---|
| EU-25 | 18 394 115 | - | - |
| Bulgaria | 51 989 | 0.83 | 76 / 4.03 |
| Romania | 199 673 | 0.83 | 68 / 4.10 |
| Algeria | 159 669 | 0.75 | 99 / 3.71 |
| Armenia | 11 928 | 0.78 | 97 / 3.73 |
| Azerbaijan | 46 378 | 0.76 | 69 / 4.10 |
| Belarus | 60 288 | 0.82 | - |
| Egypt | 162 164 | 0.72 | 81 / 3.98 |
| Georgia | 12 870 | 0.76 | 90 / 3.86 |
| Israel | 201 761 | 0.93 | 23 / 4.97 |
| Jordan | 20 030 | 0.77 | 48 / 4.37 |
| Lebanon | 28 939 | 0.8 | - |
| Libya | 100 071 | 0.84 | 91 / 3.85 |
| Moldova | 6 124 | 0.72 | 95 / 3.75 |
| Morocco | 86 394 | 0.65 | 73 / 4.08 |
| Occupied Palestinian Territory | - | 0.73 | - |
| Russian Federation | 1 676 586 | 0.81 | 51 / 4.31 |
| Syria | 54 803 | 0.74 | 78 / 3.99 |
| Tunisia | 40 348 | 0.76 | 36 / 4.58 |
| Ukraine | 179 725 | 0.79 | 72 / 4.09 |

Certain aspects of the current liberalization of trade relationships between the EU and some of the Non-Member States gives rise to the supposition that during the next few decades EU enlargement will be extended to these countries. Some of the policy changes that support this line of thought concern the establishment of free trade zones, an easing of entry requirements to the countries and facilitation of visas granted for non-nationals These examples of policy change are characteristics of the free movement of capital, labour and commodities, financial support of social

development programs and infrastructural development within the broader European Development Programme.

Each of these countries has its own Action Plan and the support of the EU in social and economic aspects of national development. Table 1 compares the level of economic and social development in each of the countries. As can be seen, a number of the Non-Member States surpass the newest EU Member States (i.e. Bulgaria and Romania) when compared in these terms.

# Methodology

Regional specialization and geographic concentration of industries can be generally defined in relation to production structures (Ricardo 1817; Heckscher 1919; Ohlin 1933). Regional specialization refers to the distribution of the industry shares in total manufacturing in a specific region compared with a norm. A region is considered to be specialized in a specific industry if this industry represents a high share in the manufacturing of the region (Krugman 1979, 1980, 1981; Helpman and Krugman 1985; Krugman and Venables 1990; Porter 2003). The manufacturing structure of a region is 'highly specialized' if a small number of industries have a large combined share in the total manufacturing. Geographic concentration is the measure of the distribution of regional shares in a specific industry. A specific industry can be considered as 'concentrated' if a large part of production is carried out in a small number of regions.

To analyse and compare agricultural specialization among various countries, common methodologies for determination of the main indicators of regional specialization and geographic concentration of industries have been used in this paper:

## Classical TCI, RCA (Balassa 1965);

Balassa's method of revealed comparative advantage (RCA) indicates a level of competitiveness that is revealed, based on the export performance of the country. Therefore, the main policy recommendation to this type of finding would be the development of the country's export potential in goods for which a high export specialization has already been achieved (Balassa 1989). Balassa's method includes the following indicators: Revealed Comparative Advantage; Trade Coverage Index (TCI); Relative Revealed Comparative Export Index; Relative Import Penetration Index; and Relative Trade Advantage Index.

**The Revealed Comparative Advantage**

Where  refers to the value of exports of commodity i from the country n, Xiw refers to the value of exports of commodity i from all countries in the world; Xmn refers to the value of exports of all goods m from the country n and Xmw refers to the value of exports of all goods from all countries in the world. Values above 100 indicate a favourable RCA and vice versa.

**Where The Trade Coverage Index**

Where: $X_i$ represents the export of commodity (or group of commodities) i to the reference country j; represents the import of commodity (or group of commodities) i from the reference country j; i is the commodity group and j is the reference country.

## Indicators of regional specialization and geographic concentration of industries – Herfindahl index;

The Herfindahl index of regional specialization is an absolute measure of specialization often used in industrial economics. It sums the squares of industry shares in the total (employment) activity in the region. Values ranging between zero and one indicate a positive relationship to regional specialization. Given the absolute nature of the Herfindahl index, the sum of the squares of shares is biased toward the larger regions.

**Regional Specialization Measure**

$$H_j^S = \sum_i (S_{ij}^s)^2 \quad \textbf{(3)}$$

As a measure of absolute concentration of activity in an industry *i* across regions *j1…jn*, the Herfindahl index of geographical concentration is calculated as the sum of the regions' shares in national employment in the particular industry. It is positively related with the geographical concentration of industries.

**Geographical Concentration Measure**

$$H_i^C = \sum_j (S_{ij}^c)^2 \quad \textbf{(4)}$$

## The dissimilarity indices of specialization (DSR) and concentration (DCR) (Krugman 1991; Aiginger et al. 1999; Devereux et al. 1999; Midelfart-Knarvik et al. 2000),

The main indices used in this paper were the indicators of regional specialization and of geographical concentration of industry. The formulas used in this paper to analyse regional specialization and concentration of industries were defined in a manner that is similar to Aiginger, K. *et al*. (1999):

Where *E* = employment, *s* = shares, *i* = industry (sector, branch) and *j* = region;

$S_{ij}^s$ = the share of employment in industry *i* in region *j* within the total employment of the region *j*, as seen in formula (5);

$S_{ij}^c$ = the share of employment in industry *i* in region *j* within the country employment of the industry *I*, as seen in formula (6);

$S_i$ = the share of country employment in industry *i* within the total country employment, as seen in formula (7);

$S_j$ = the share of the total employment in region *j* within the country employment, as seen in formula (8).

$$S_{ij}^{s} = \frac{E_{ij}}{E_j} = \frac{E_{ij}}{\sum_i E_{ij}} \quad (5)$$

$$S_{ij}^{c} = \frac{E_{ij}}{E_i} = \frac{E_{ij}}{\sum_j E_{ij}} \quad (6)$$

$$S_i = \frac{E_i}{E} = \frac{\sum_j E_{ij}}{\sum_i \sum_j E_{ij}} \quad (7)$$

$$S_j = \frac{E_j}{E} = \frac{\sum_i E_{ij}}{\sum_i \sum_j E_{ij}} \quad (8)$$

Regional specialization and geographical concentration of industries are defined in relation to production structures Overviews of different measurements for specialization and geographic concentration of industries include: Ellison and Glaeser (1997); Aiginger *et al*. (1999); Devereux, Griffith and Simpson (1999); and Hallet (2000). The dissimilarity index used in this paper was a modified version of the index proposed in Krugman (1991b).

In absolute terms, a region *j* is 'specialized' in a specific industry *i* if this industry has a high share in the manufacturing activity of region *j*. The manufacturing structure of a region *j* is 'highly specialized', if a small number of industries have a large combined share in the total manufacturing of region *j*. In relative terms, regional specialization is defined as the distribution of the shares of an industry *i* in total manufacturing in a specific region *j* compared with a benchmark.

## Specialization measure (DSRj)

$$SPEC_J = \sum_i |S_{ij}^{s} - S_i| \quad (9)$$

In absolute terms, a specific industry *i* is 'concentrated', if a large part of its production is carried out in a small number of regions. In relative terms, geographical concentration of industries is defined as the distribution of the shares of regions in a specific industry *i* compared with a benchmark. Several absolute and relative measures of specialization and concentration are proposed in the existing literature, each having certain advantages as well as shortcomings. For the analysis in this paper, a relative measure was selected (i.e. a dissimilarity index derived from the index proposed by Krugman, 1991a).

## Concentration measure (DCRi)

$$CONC_i = \sum_i |S_{ij}^{c} - S_j| \quad (10)$$

In the research methodology, the authors employed the methodological approach used by Fischer (1998) and by Traistaru and Iara (2002.

## Data

The main supposition in this paper is that the business climate represents one of the most important drivers of competitiveness for domestic and export-oriented enterprises within the agrifood industry sector. An anticipated result of the research and analysis applied in this paper is that Non-Member States can play an important role in the EU market, primarily due to long-term comparative advantages in production of unprocessed products (such as wheat, corn, sunflower seeds and rapeseeds) and minimally processed products (such as sunflower-seedoil and rapeseed oil).

Data on regional average wages was used to calculate regional relative wages, which become the dependent variable in regressions estimating the impact of trade liberalization and the role of transport costs on the regional structure of wages. Data on GDP was used in the analysis of the relationship between regional specialization and growth. While the variables introduced thus far were used for descriptive purposes or as dependent variables in econometric analysis, the following variables were used for the purpose of controlling various demographic and economic characteristics of the regions in the econometric analyses: the distance between pairs of country capitals; numbers of domestic firms; number of firms with foreign participation; number of self-employed persons; density of national public roads; number of personal cars; number of students enrolled in higher education; number of telephone lines, population and public expenditure.

Most data was taken from regular publications of national statistical offices. Data that is not officially reported was collected from other sources. In particular, among others, some countries' labour market data was collected from national labour offices or similar institutions, whereas firm-level data was partly collected from commercial registers. In the case of Slovenia, due to a lack of commercial data from official sources, the data set was extended by data gathered from companies' balance sheets.

The countries analysed were grouped according to geopolitical characteristics: Near East countries (i.e. Algeria, Egypt, Israel, Jordan, Lebanon, Libya, Morocco, Occupied Palestinian Territory, Syria and Tunisia); the former Soviet countries (i.e. Armenia, Azerbaijan, Belarus, Georgia, Moldova, Ukraine and the Russian Federation); and the EU-2 (i.e. Romania and Bulgaria).

The European Neighbourhood Policy (ENP) was developed in 2004, with the objective of avoiding the emergence of new dividing lines between the enlarged EU and neighbouring countries. The objective, instead, was to concentrate on strengthening the prosperity, stability and security of all concerned.[15] The ENP was directed at the 17 Non-Member States (including the Russian Federation as a strategic partner). . This paper proposes to compare the advantages of the Non-Member States with the EU-2 on the basis of regional specialization and competitive advantage.

According to the Health Check Programme for the CAP, the EU focus over the next five years will be on the cancellation of production limits and creation of a more competitive environment in the EU agrifood market. Specific initiatives include: simplifying and better targeting of direct support to farmers; removal of supply controls in order to better respond to market opportunities and price crises; ; and strengthening the rural development policy to respond to new challenges[16].

For the Non-Member States, while this approach offers some general opportunities for market access, the rural development policy provides the chance to improve quality of life in the Non-Member States.

***Classical TCI and RCA (Balassa 1965).*** Analysis of the Relative Revealed Comparative Export and Import Indices provided the results for four groupings of countries: World (i.e. with regard to EU trade with the rest of the world), the EU-2 the Near Eastern countries; and the former Soviet countries.

The results of the calculations for the Revealed comparative advantage of exports XRCA (as seen in Table 2) indicate the relative advantage of most of the European products (i.e. cereal, corn, sunflower seeds and rapeseeds; and sunflower-seed oil and rapeseed oil) on the world market. Compared with the former Soviet and Near Eastern countries, the European product loses its advantage in such items as sunflower seeds, rapeseeds and rapeseed oil. The reason for such changes is the high volume of production of those products by some of the countries in the region. The same reason accounts for the loss of export advantages in sunflower seeds and rapeseeds relative to Romania. The XRCA indices for the former Soviet countries are rather similar and indicate that the Ukrainian export of cereal products, corn, rapeseeds and sunflower seeds has comparative advantage.



15 http://ec.europa.eu/world/enp/policy_en.htm
16 http://caphealthcheck.eu/

**TABLE 2:** THE INDEX OF REVEALED COMPARATIVE ADVANTAGE OF EXPORTS (XRCA)

| Commodity | World | Near Eastern | Former Soviet | EU-2 |
|---|---|---|---|---|
| Sugar | 0.334 | 1.35 | 0.207 | 0.191 |
| Cereal | 7.591 | 2.579 | 9.103 | 8.262 |
| Corn | 4.894 | 1.521 | 7.629 | 6.688 |
| Oil seeds | 1.726 | 0.073 | 0.765 | 0.641 |
| Seeds for technical crops | 3.861 | 0.841 | 4.426 | 3.007 |
| Sunflower-seed oil | 39.835 | 1.584 | 101.19 | 45.81 |
| Rapeseed oil | 1.1897 | 1.847 | 0.564 | 0.548 |

The results of the Relative Revealed Comparative Import Index (Table 3) compare the different degrees of competitiveness for different types of commodities at the country and world levels. Only sunflower seeds show a disadvantage; other products show more positive results.

**TABLE 3:** THE INDEX OF REVEALED COMPARATIVE ADVANTAGE OF IMPORTS (MRCA)

| Commodity | World | Near Eastern | Former Soviet | EU-2 |
|---|---|---|---|---|
| Sugar | 0.464 | 0.006 | 0.455 | 0.421 |
| Cereal | 0.019 | 0.001 | 0.027 | 0.026 |
| Corn | 0.637 | 0.013 | 0.956 | 0.906 |
| Oil seeds | 4.368 | 0.033 | 2.408 | 2.155 |
| Seeds for technical crops | 0.484 | 0.006 | 0.494 | 0.479 |
| Sunflower-seed oil | 0.049 | 0.001 | 0.036 | 0.034 |
| Rapeseed oil | 0.006 | 5.576 | 0.004 | 0.003 |

The MRCA results obtained for the Near Eastern countries indicate that cereal crops (such as wheat) and oil (from sunflower seeds) have disadvantages. The results for the EU-2 show a weakness only in the rapeseed oil product category, while the same product has almost no comparative advantage for the former Soviet countries.. The results can be explained by the structure of agrifood production (i.e. that focuses on plant production in the most efficient sectors) and proper attention of the governments toward support programmes. In contrast, the increased demand for agrifood products on the world markets contributes to such results.

The comparison of Trade coverage indices (TCI) for the various countries analysed shows (in Table 4) the strong position of the former Soviet countries relative to their main competitors (i.e. the European participants in the world market). Only rapeseed oil is in a weak position. Amongst the Non-Member States, Ukraine is traditionally the main exporter of sunflower seeds, sunflower-seed oil and cereal.

**TABLE 4:** THE TRADE COVERAGE INDEX (TCI)

| Commodity | World | Near Eastern | Former Soviet | EU-2 |
|---|---|---|---|---|
| Corn | 3.42 | 0 | 125.42 | 6.27 |
| Rapeseed oil | 1.31 | 1 | 0.03 | 2.86 |
| Sunflower-seed oil | 25 | 937 | 86.75 | 9.61 |
| Sunflower seeds | 4.72 | 0.08 | 42.11 | 3.93 |
| Cereal | 15.7 | 1 | 88.38 | 52.95 |

**The Grubel-Lloyd (GL) index of intra-industry trade.** The size of intra-industry trade in relation to the absolute net export of a product indicates the extent of economic integration of a single country. The Grubel-Lloyd index was used to analyse the degree of economic integration existing in the EU-2, the Near Eastern countries and the former Soviet countries. As can be seen in Table 5, the economic integration in the countries is similar. However, and as also seen in Table 5, the former Sovietand the Near Eastern countries have higher levels of integration (GL index values of 18.3 and 23.8, respectively). The results for other countries are impacted by the structure of economic and geopolitical positions.

**TABLE 5:** GRUBEL-LLOYD (GL) INDICES OF INTRA-INDUSTRY TRADE

| Country | GL Index Value |
|---|---|
| Romania | 23.8 |
| Bulgaria | 42 |
| Near Eastern countries | 18.3 |
| Former Soviet countries (total group) | 61 |
| Moldova | 54.7 |
| Belarus | 48.2 |
| Ukraine | 46.5 |

**The dissimilarity indices of specialization (DSR) and concentration (DCR).** The main indices used in this paper analyse regional specialization and concentration of industries were indicators of dissimilarity of regional specialization and geographical concentration defined in relation to production structures. indicators themselves were defined in a way that is similar to Aiginger et al. (1999). The dissimilarity index was a modified version of the index proposed in Krugman (1991b).

**TABLE 6:** THE DISSIMILARITY INDICES OF SPECIALIZATION (DSR) AND CONCENTRATION (DCR) 2000 – 2004

| Country or region | DSR | DCR |
|---|---|---|
| Romania | 0.263 (0.248) | 0.0015 (0.0017) |
| Bulgaria | 0.249 (0.279) | 0.0003 (0.0275) |
| Near Eastern countries | 0.334 (0.321) | 0.0085 (0.0091) |
| Former Soviet countries (total group) | 0.368 (0.409) | -0.0012 (0.0075) |
| Moldova | 0.982 (0.982) | 0.0037 (0.0037) |
| Belarus | 0.293 (0.166) | 0.0092 (0.0014) |
| Ukraine | 0.326 (0.288) | 0.0062 (0.0035) |

Overviews of different measurements for specialization and geographic concentration of industries are given in: e.g. Ellison and Glaeser (1997);, Aiginger *et al*. (1999); Devereux *et al*. (1999); and Hallet (2000). The research for this paper showed the important role of agriculture in economic development in all of the analysed countries. For some of them (such as Egypt, Georgia, Moldova, Morocco, Romania and Ukraine), agriculture is one of the most important economic sectors. The manufacturing structure of all the regions is 'highly specialized' in that a small number of industries have a large combined share in total manufacturing.

## Discussion

The results discussed in this paper will hopefully be conducive to determination of the most efficient production patterns for specific regions and for specialization of industries. During the last ten years, the level of specialization in different countries has changed, but not always with the same set of dynamics. The two new members of the EU began to differentiate the structure of their economies. In contrast, Ukraine, Moldova and Belarus were unable to change the structure of their economies as rapidly; all three countries continue to consider agriculture as one of the leading sectors. On one hand, this tendency is quite negative relative to the pace of development of the neighbouring EU countries. On the other hand, the agricultural specialization gives these countries an opportunity. For example, Ukraine now has the chance to become a major actor in some segments of the world agricultural market (such as cereal crops, corn and rapeseeds), By leveraging these trends in the world market, Ukraine has the opportunity to develop its domestic agriculture and rural areas, financed via business opportunities rather than the system of subsidy-supported agriculture in other parts of Europe.

Based on regional specialization, peculiarity of geographic location and climate, national and culturally specific features, most of the countries analysed offers some degree of interest to the European and world agrifood market. Nevertheless, some of the new EU countries (i.e. the EU-10 and the new EU-2) also depend on agricultural production and food processing for their economic development. The main competitors for them in the EU agrifood market are the Non-Member States, which exert considerable effort into finding new opportunities on these same markets.

It should be noted that there are two sides to this problem: from one side, there is concern about the importance of the EU market for the Non-Member States; from the other side, there are the concerns about the food security of the European Union as described in the new edition of the Check and CAP reform[17]. The most important goal of the Non-Member States is to secure each one's position within the EU agrifood market, particularly in consideration of the internal support for some new member states (i.e. Bulgaria, Romania and some of the EU-10).

The biodiversity program of the EU is aimed at the conservation of the rich species of vegetation, protection and maintenance of grasslands. Conservation measures include no application of fertilizer and pesticides on that agricultural land that have been deemed to hold high natural value for integrated and organic production. Over the next decade it's expected that all will observe the increasing popularity in organic production. For Non-Member States these kinds of issues become the reference point for orientation of their own agrifood production practices.

## Conclusions

Despite the use of different approaches to the regional specialization of agriculture and toward comparative advantage of Eastern European countries, some of the results of this paper lead to similar conclusions. First of all, the Non-Member States have their own commodities and market shares in the EU and world markets; they are in a very favourable situation o improve their positions. Some positive trends in agricultural specialization exist in some of these Non-Member States, especially relativel to their main competitors (i.e. their neighbouring countries). The research in this paper also shows that as far as long-term trends in comparative advantage are concerned, some countries (such as Azerbaijan, Bulgaria, Egypt, Georgia, Moldova, Morocco, Romania, Russia, Syria and Ukraine) will have a larger advantage in the production of unprocessed products (such as wheat, corn, sunflowers and rapeseeds) and minimally processed products (such as sunflower-seed oil and rapeseed oil). Regional specialization of agriculture is heavily dependent on the level of employment (e.g. in some states more than 30 percent of the population is employed in agriculture) and on historical trends (i.e. in some economies, agriculture is the main industry but GDP is extremely low). These same tendencies can be observed in some of the EU Member States analysed (i.e. Romania and Bulgaria). Finally, for large countries with substantial differences in regional conditions, it would be more useful to conduct the competitiveness analysis based upon groupings of regions.



17 http://caphealthcheck.eu/

# Bibliography


- Aiginger, K. *et al*. 1999. and (geographic) concentration of European manufacturing. E*nterprise DG Working Paper N*$^{o.}$ *1, Background Paper for the The competitiveness of European industry*: 1999 Report. Brussels.
- Balassa, B. 1965. liberalization and 'revealed' comparative advantage. *The Manchester School of Economic and Social Studies* 33: 92-123.
- Balassa, B. 1989. 'Revealed' comparative advantage revisited. In: B. Balassa, ed., *Comparative advantage, trade policy and economic development*, pp. 63-79. New York, New York University Press.
- Brilhart, M. 2001. 'Growing Alike or Growing Apart? Industrial Specialisation in EU Countries'. In C. Wyplosz (ed.). *The Impact of EMU on Europe and the Developing Countries*. pp. 169-194. Oxford, Oxford University Press.,
- Devereux, M., Griffith, R. & Simpson, H. 1999. 'The Geographic Distribution of Production Activity in the UK', Institute for Fiscal Studies Working Paper, W99/26.
- Fischer B. 1998. *Globalization and the Competitveness of Regional Blocs in Comparative Perspective*. Hamburg HWWA-Institut für Wirtschaftsforschung. ISSN 1432-4458.
- Heckscher, E. 1919. *The effect of foreign trade on distribution of income*. Economisk Tidskrift, pp. 497-512., reprinted in H.S. Ellis and L.A. Metzler (Eds) (1949) A. E. A. Readings in the Theory of International Trade, Philadelphia: Blakiston, pp. 272-300.
- Helpman, E. & Krugman, P. 1985. *Market Structure and Foreign trade: Increasing Returns, Imperfect Competition and the International Economy*. Harvester Wheatsheaf: Brighton.
- The European Union's Common Agricultural Policy, available at http://caphealthcheck.eu/
- The European Neighbourhood Policy, available at http://ec.europa.eu/world/enp/policy_en.htm
- Krugman, P. 1979. Increasing returns, monopolistic competition and international trade. *Journal of International Economics*, vol. 9, pp. 469-479.
- Krugman, P. 1980. Scale economics, product differentiation, and the pattern of trade. *American Economic Review*, vol. 70, pp. 950-959.
- Krugman, P. 1981. Intra-industry specialization and the gains from trade. *Journal of Political Economy*. vol. 89, pp. 959-973.
- Krugman, P. 1991a. *Geography and Trade*. Cambridge, Massachusetts. MIT Press.
- Krugman, P. 1991b. Increasing returns and economic geography *Journal of Political Economy*. vol. 99, pp. 484-499.
- Krugman, P. & Venables, A. 1995. and the inequality of nations. *NBER Working Paper No. 5098.*
- Midelfart-Knarvik, H., Overman, F., Redding, S. & Venables, A. 2000. Location of European Industry. *Economic Papers no. 142* – Report prepared for the Directorate General for Economic and Financial Affairs, European Commission.
- Ohlin, . 1933. *Interregional and international trade*. Cambridge, Massachusetts. Harvard University Press.

- Porter, M. 2003. *The Economic Performance of Regions*. Regional Studies 27(6&7) Aug./Oct.: 549-578.
- Ricardo, D. 1817. *On the Principles of Political Economy and Taxation*. London.
- Traistaru, I. & Iara, A. 2002. *European Integration, Regional Specialization and Location of Industrial Activity in Accession Countries: Data and Measurement*. CEIS. Rheinische Friedrich-Wilhelms-Universität Bonn.
- Wolfmayr-Schnitzer, Y. 1999. *Economic integration, specialization and the location of industries: A survey of the theoretical literature*. WIFO Working Paper No. 120 WIFO-Austrian Institute of Economic Research. Vienna.


## **APPENDIX 1:** LIST OF MAIN AGRICULTURAL PRODUCTS EXPORTED AND IMPORTED SHOWN BY EXPORTING AND IMPORTING COUNTRIES

| Product | Country of Export | Country of import |
|---|---|---|
| Bananas | Egypt, Lebanon | Algeria, Belarus, Bulgaria, Georgia, Jordan, Romania, Russia, Syria, Ukraine |
| Barley | Bulgaria, Moldova, Romania, Russia, Ukraine | Algeria, Armenia, Belarus, Bulgaria, Israel, Jordan, Lebanon, Libya, Morocco, Romania, Russia, Syria, Tunisia, Ukraine |
| Maize | Bulgaria, Georgia, Moldova, Romania, Ukraine | Algeria, Armenia, Azerbaijan, Belarus, Egypt, Georgia, Israel, Jordan, Lebanon, Libya, Morocco, Romania, Russia, Syria, Tunisia, Ukraine |
| Rice | | Armenia, Belarus |
| Rapeseeds and rapeseed oil | Romania, Ukraine | Algeria, Israel |
| Rye | Ukraine | Israel, Russia |
| Sorghum | Ukraine | Israel |
| Soybeans | Ukraine | Egypt, Morocco, Syria |
| Sweet potatoes | Israel | |
| Wheat | Azerbaijan, Bulgaria, Egypt, Georgia, Moldova, Morocco, Romania, Russia, Syria, Ukraine | Armenia, Azerbaijan, Belarus, Bulgaria, Egypt, Georgia, Israel, Jordan, Lebanon, Libya, Moldova, Morocco, Occupied Palestinian Territory, Romania, Russia, Syria, Tunisia |

Source: FAO

# INFLUENCE OF FOREIGN DIRECT INVESTMENTS ON SUPPLY CHAIN MANAGEMENT IN THE RUSSIAN AGRIFOOD INDUSTRY

*Vera Belaya and Jon H. Hanf*[18]

## Abstract

Recent developments in the Russian economy have proven to be one of the key motives for international companies to enter the country. Economic growth, combined with the changing spending habits of the Russian consumer, creates opportunities for successful retail development in the country. Rapid growth of the Russian food industry has attracted active investments into the agrifood sector. In addition, growth of consumer spending and food consumption in Russia has further fuelled investments in the agrifood processing industry and in food retailing.

Metro Group Russia entered Russia in 2000. After entering the country, Metro Group Russia established Metro Asset Management, Metro Buying Group, Metro Advertising, Metro Group Logistics, as well as, Metro Group IT. The 140 000 articles (stock keeping units) sold by Metro's twenty-six Cash & Carry markets and the three super centres are delivered by 2 500 suppliers. Only five percent of the suppliers are foreign manufacturers while 20 percent of the articles on sale are region-specific. Through its focus on regional goods, the Metro Group exerts a strong influence on the Russian agribusiness in general, and on the local agrifood sector, as well. Today Metro is already the second largest retailer in Russia operating in almost all large cities (i.e. those with populations greater than one million). It is also very interesting to observe that the largest retailer—the Russian X5 Group—is copying the business model of its foreign rivals.

When retailers, as well as processors, enter a new country they face the challenge to build up their procurement and distribution systems. In this context it is observable that the retailers and processors take their known business models from their home countries into the newly entered markets. Thus, one can say modern management

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concepts are exported. It's particularly important to note that within this context, value chains, which include management concepts such as supply chain and chain-wide quality management, are also being exported.

The aim of this paper is to analyse the influence of foreign direct investment (FDI) on supply chain management in Russia based on the example of the agrifood industry. Firstly, the main features of the Russian agrifood industry are outlined to describe the current situation. Secondly, FDI in the Russian agrifood industry is discussed. Thirdly, the influence of FDI on supply chain management in the Russian agrifood industry is described. Following this, the paper discusses future prospects and the outlook on the development of the Russian agrifood sector.

**Key words:** Foreign direct investment (FDI), Supply Chain Management (SCM), Russian Agrifood Business

## Introduction

Besides being among the world leaders in terms of the pace of economic growth in the past seven years, Russia attracts foreign investors and companies looking for opportunities to expand. Low maturity and low saturation of the Russian market make it attractive for global actors. spite of the financial crisis and freezing of some projects, such international retailers as Metro and Auchan are successfully operating in Russia, and Carrefour and Wal-Mart are seeking targets on the Russian market. As for international manufacturers, such companies as Danone, Campina and Mars already operate their production facilities in Moscow suburbs and other large regions of the country. According to a study of A.T. Kearney (2009), Russia is considered to be an attractive target for global expansion of retail business and provides one of the best opportunities for food retailers, heading the list of 30 emerging worldwide (as seen in Table 1).

**TABLE 1:** RUSSIA'S POSITION ACCORDING TO A.T. KEARNEY'S GLOBAL RETAIL DEVELOPMENT INDEX (GRDI)

| Year | Position |
|---|---|
| 2009 | 2 |
| 2008 | 3 |
| 2007 | 2 |
| 2006 | 2 |
| 2005 | 2 |
| 2004 | 1 |

Russia witnessed an increase in consumer spending and demand for consumer products that ultimately led to considerably increased retail sales. Consumer spending has risen rapidly for the past two years, fuelled by an income growth rate of 10 percent last year and 11 percent the year before. More spending by Russian consumers has led to the overall retail growth rate of 13 percent in 2007 (A.T. Kearney 2008). Russia's GDP grew by 8.5 percent in the first quarter 2008 and is on pace to deliver the highest

growth since 2000 (Russia Food and Drink Report Q4 2008). Though wages and salaries are still considerably below Western levels, they have nevertheless increased more than sevenfold since the year 2000. The monthly pay in Russia, in 2007, was US$589 on average. The rise in income generates spending among consumers. In the past, Russians endured considerable negative experience with inexpensive and low quality products; therefore, they appreciate higher quality Western products and are prepared to spend money for them. Household spending habits of Russia's urban population (particularly for food), illustrate the role of the primary retail channels in Russia's grocery stores, produce markets and supermarkets.

Some of the motives to expand in Russia may be due to 'push' and 'pull' factors (Kacker 1985). The 'push' factors include saturation of domestics markets, legislation blocking expansion, shareholder pressures for growth, high operating costs and market-driven pressures for growth. The 'pull' factors involve attractive conditions in the host market and represent economic growth, consumer spending and general attractiveness of the foreign markets. Limited and saturated markets in home countries cause foreign retailers to expand internationally. When the desire to expand internationally is combined with favourable conditions for retail trade in Russia, these same retailers recognize the opportunity to explore new market opportunities in the Russian market. In addition, the collapse of the centrally planned economy in the former Soviet Union created an additional economic vacuum, which could be filled with new 'Western' ideas about new retail systems followed by initial attempts to establish such systems.

Foreign Direct Investment (FDI) became an increasingly important element in global economic development and integration during the 1990s (UNCTAD 2003). This development occurred during the process of transition from socialism to capitalism and the integration of the Central and Eastern European countries (CEEC) into the world economy through trade and capital flows (Di Mauro 1999; Buch *et al*. 2003). These developments led to a large inflow of FDI in the region since the mid-1990s (Konings 2000). When the first wave of FDI in Russia began, also it was accompanied by issuance of the law on joint ventures with firms from capitalist countries. Initially, there was little FDI. Later, by the year 2003, Russia attracted huge FDI and was placed third in FDI projects in the worldwide, beating out both China and the US. Moscow City and Moscow Oblast, in particular, have both been major hosts for FDI in Russia (Broadman and Recanatini 2001). There are obviously a number of reasons why companies establish a presence in a foreign country (Ahrend 2000). These companies can be divided into those that are mainly interested in selling goods and services (produced elsewhere), and those companies that invest into production facilities in a country, either to serve the local market or for export. This second category of FDI-investing Company can be observed in the agrifood retail sector in Russia.

Most international retailers and branded food processors operating in Russia introduce their business models through their work with local suppliers as this proved to be successful in their home countries. Furthermore, it is known that international food producers and retailer companies entering new markets try to bring their established supplier relationships with them. However, imports of ready-for-consumption products in Russia keep decreasing and most foreign companies prefer to invest in their own production and open new production facilities in Russia in order to make

products affordable for the large number of Russian consumers. Such international manufacturers as Danone, Campina and Mars provide examples of this.

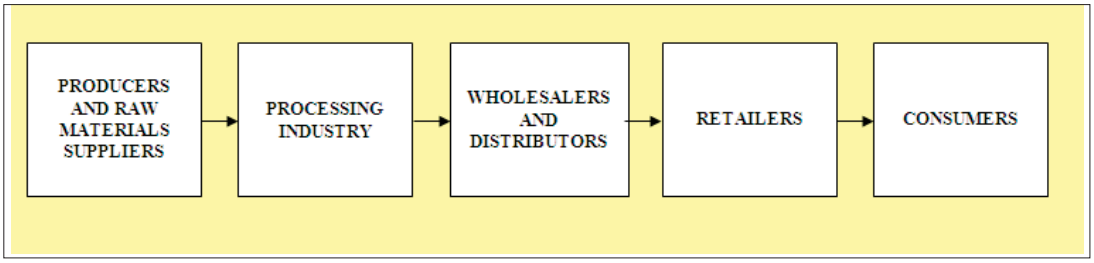
When retailers, as well as, processors enter a new country they face the challenge to build up their procurement and distribution systems. Within this context it is observable that they are taking their known business models from their home countries into the newly entered markets. Thus, one can say modern management concepts are exported. Of particular importance, it can be seen that value chain models addressing management concepts such as supply chain and chain-wide quality management are introduced to the new country, as well.

# Russian agrifood industry

## Agricultural Production

The classical value chain describes a series of firms involved in the transformation of raw materials into a finished product; as the partially-finished good passes from one firm to the next, through wholesale and distribution activities, value is added incrementally by each firm until the process ends when the retailer sells the finished good to the consumer (Porter 1985). Porter's value chain can be adapted to describe the agrifood value chain in Russia: a series of firms involved in the production of raw commodities, processing raw commodities into finished food products, wholesaling and distribution of those products, followed by retailing the products to the final consumers (Menkhaus, Yakunina and Herz 2004). This agrifood value chain can be seen in Figure 1.

**FIGURE 1:** AGRIFOOD SUPPLY CHAIN IN RUSSIA




Source: Menkhaus, Yakunina and Herz 2004.

(More detailed value chain/supply chain structures from the Russian agrifood industry based on only three stages, i.e. agricultural production, food processing and food retailing, are presented in Appendix 1. In general, wholesalers and/or distributors are included in the value chain because the services they provide add value to the product. Distributors are usually found as participants in a supply chain, while wholesalers may be found among the participants. However, both of these actors have been eliminated from the diagram in Appendix 1, for the sake of simplicity).. While it is possible to find situations in which wholesalers source from the processors, direct sourcing by retailers from secondary processors is more often the case (e.g. the Russian dairy chain). In those instances where the processing stage does not exist, such as in the case of fresh produce,the products are supplied directly to retail outlets

or other (traditional types of retail) formats.

Russia has nearly 200 million hectares of agricultural land, of which about 120 million is planted to grow crops (chiefly grains, annual or perennial forage, sunflowers, potatoes and other vegetables) or may be temporarily fallow. The remainder is devoted to permanent meadow or pastureland or may simply be out of production at the moment. The major combinable crops grown in Russia are wheat, barley, sunflower, oats, rye and corn.

As Table 2 shows, Russian agricultural production is organized in various forms. One important group is the large agricultural enterprises that grew out of the former cooperatives and state farms. They dominate production of most agricultural commodities in Russia, including roughly 85 percent of grains. Agricultural enterprises tend to be big in Russia, with an average size of nearly 5 000 hectares (roughly 12 500 acres), and are larger in the spring wheat region (mainly Siberia) than in European Russia. As seen in Table 2, 24 thousand of these farms (or just 0.15 percent of all farms in Russia) have on average some 6 000 ha and employ 150 people. At present these large farms use a little over two-thirds of the agricultural area in Russia. Still, the share of production coming from these farms is 43.4 percent. These large farms concentrate mainly on combinable crop production (such as cereals and oilseeds), yet recently they have increasingly entered into meat production.

**TABLE 2:** SOURCES OF AGRICULTURAL PRODUCTION IN RUSSIA

| Indicator | Agricultural enterprises | Individual households | Private (peasant) farmers |
|---|---|---|---|
| Number of farms | 24 000 | 16 000 000 | 255 400 |
| Share of land | 79.89% | 5.70% | 12.88% |
| Average farm size | 5920.8 ha | 0.44 ha | 81 ha |
| Share in production | 43.40% | 49.60% | 7.00% |

*Source: Russian State Statistics Committee, available at: www.gks.ru.*

In fact, a share of these large farms form a group generally referred to as 'agroholdings'. It could be observed after the 1998 financial crisis that Russian corporate farms began to merge into large units cultivating between 10 000-250 000 ha (Rylko and Jolly 2005). This new organizational form is referred to in different terms in the literature: new agricultural operators (Rylko and Jolly 2005); giant enterprises (Hockmann 2005); integrated agro-industrial formations (Petrikov 2005); vertically integrated holdings, or agroholdings (Oganesov 2004). The large producers are often vertically integrated with processors in finance-industrial agribusiness entities within holding company-like structures (Menkhaus, Yakunina and Herz 2004). It is also reported that such big producers either have their own retail outlets or possess long-term retail supplier contracts with retailer firms.

The biggest group of agricultural producers are the 16 million individual households. Although these farms use only some 5.7 percent of all farmland, that represents more than seven million hectares. Traditionally, these were livestock farms (van Berkum 2007). These private household plots produce an astonishing 89 percent of the country's potatoes and nearly 80 percent of the vegetables (seen in Table 3), either for personal consumption or for sale at local markets. The smallholders are

able to obtain many inputs (such as fertilizer, fuel, animal feed and land for grazing) from the farms of their parents, friends and other relatives at little or no cost, which explains their high productivity relative to their small size.

Around half of all cattle and pigs in Russia are held on these farms. These small producers do not usually process their products but may, for example, slaughter cattle and hogs and bring their carcasses to the retail outlets. Some households sell their produce on street markets with little processing. Therefore, the sale of some fruits and vegetables is seasonally dependent.

Private (peasant) farms tend to be much larger, with an average size of about 81 hectares, but they account for a growing percentage of Russia's commodity production. These types of private farmers and individual agricultural entrepreneurs contribute around 7 percent to the country's total agricultural production.

Table 3 shows the type of products produced by each of the three categories of farmers. As can be seen in Table 3, the large agricultural enterprises produce mostly grain (78.5%) and sugar beets (87.5%). Livestock and poultry production is spilt between agricultural enterprises (51.6%) and individual households (45.5%). Interestingly, although the agricultural enterprises account for 44 percent of milk production, the individual households produce the majority (52%) of the country's milk. The share of production by private farms (4%) is not considerable.

**TABLE 3:** STRUCTURE OF AGRICULTURAL PRODUCTION IN RUSSIA IN 2007

| Agricultural product | Agricultural enterprises | Individual households | Private (peasant) farmers |
|---|---|---|---|
| | % | % | % |
| Grain | 78.5 | 1.3 | 20.2 |
| Sugar beets | 87.5 | 1.2 | 11.3 |
| Sunflower seeds | 70.1 | 1 | 28.9 |
| Potatoes | 7.4 | 89.2 | 3.4 |
| Vegetables | 14 | 78.9 | 7.1 |
| Livestock and poultry | 51.6 | 45.5 | 2.9 |
| Milk | 44 | 52 | 4 |
| Eggs | 75.1 | 24.1 | 0.8 |

Source: Russian State Statistics Committee, available at: www.gks.ru.

The main trend in the structure of Russia's agriculture is the severe polarization of both large farming enterprises and small family farms (Serova *et al*. 2006). Part of the producers are actively developing and modernizing, whereas the other part is becoming more and more marginalized.

## Food Processing

Currently there are 1 700 dairy processors in Russia, ranging from small local operators to large national and multinational firms. The largest firms are: the Russian company Wimm-Bill-Dann, which has 30 factories across Russia; the German Ehrman; French Danone; Dutch Campina; and Petmol owned by Russian Unimilk (Ylä-Kojola 2006).

Food processors in Russia can be divided into the following main groups: (1) large vertically integrated holdings focused on development of their production facilities using their own raw materials; most began in the mid-1990s (such as Cherkizovsky meat processing plant, Wimm-Bill-Dann juice and dairy producer); (2) international manufacturers having their production facilities in the suburbs of Moscow and other large regions of the country; started to appear in early to mid-1990s (such as Danone from France, Campina from the Netherlands, Mars from the USA, Dirol Cadbury from the UK and San Interbrew from Belgium; (3) Russian holding companies with participation of foreign capital (such as OJSC "Baltika" Brewery Company, KamposMos and others); (4) regional food processing companies that started their activity in the Soviet era and successfully passed through the transitional period of restructured management and reorganization of production in the second half of the 1990s; (5) small regional producers or entrepreneurs, most of whom produce and sell their products in the same region where they are locatedfocus (USDA 2005).

Russia's food processing industry keeps growing very quickly, with an annual increase of 15-20 percent. The number of food processing plants in Russia is estimated to be between 8 000 to 10 (Oshidar 2007). Domestic sources of raw materials and specialized ingredients for meat, bakery, confectionary, juice and dairy processing have not kept pace with the expansion of the sector. Food processors often build their production facilities close to a source of raw materials. Rapid consolidation of all sectors of the food industry continues a process of integration of smaller companies into bigger holdings (Serova *et al*. 2006).

Pressure from the retail sector to improve quality, combined with competitive pressures from foreign multinationals, is pushing the sector toward change. Many of these firms have upgraded their technology and equipment. Many Russian food processors are now focusing on international quality standards and seek quality ingredients. A combination of domestic and foreign investment has produced a fairly dynamic sector providing a significant market for inputs and ingredients (Oshidar 2007).

Because the quality of some agricultural supplies is not sufficient for production by foreign food processors, some of the processors import their supplies from abroad. Milk processing companies often have to collect milk from many small farms. The quality of milk is diverse and cannot be relied upon when producing according to the specifications required for new technologies. In addition, collection from so many small farms in such small quantities leads to difficulties with efficiency.

For example, German confectionery manufacturer, Alfred Ritter, closed its production facilities in Russia in 2008 (Schlindwein 2008). The reason for stopping production the insufficient quality of raw supplies in Russia. Another example is Petmol, a big milk

processor in St. Petersburg, which buys raw milk from the Finnish Valio. In the bakery sector, the raw materials for bread are easily available from Russian suppliers. But when high quality is required, it is necessary to use imported materials (Ylä-Kojola 2006). Meat companies use as much as 80 percent imported raw materials (Tiusanen and Malinen 2006).

In the meat sector Cherkizovsky is the biggest meat processing enterprise in Russia with an estimated 10-12 percent market share in the processed meat sector. controls more than 30 meat processing companies located in various parts of the country. Tsaritsyno and Mikoyan in the Moscow area, as well as the Spanish Camponos—the largest foreign-owned meat processing company—are the next largest meat processing companies in Russia (Ylä-Kojola 2006). However, when evaluating the market share of companies in the meat sector, one needs to take into account that processed meat accounts for up to a quarter of all meat consumed in Russia. Thus, companies might hold a large share in the processed meat segment, but their overall market share could remain quite insignificant (van Berkum 2007).

As Table 4 shows, the top ten food processing companies in Russia in 2005 included such foreign entities as Baltika Brewery (from Denmark and Scotland), Sun Brewery (from India), Mars (from the USA) and Coca Cola (from the USA).

**TABLE 4:** THE TOP TEN FOOD PROCESSORS IN RUSSIA IN 2005

| Processor | Product types | Russian vs. foreign ownership | Sales, in millions USD |
|---|---|---|---|
| Wimm-Bill-Dann | Dairy, juice | Russia | 1 189.3 |
| Baltika Brewery | Beer | Denmark, Scotland | 994.0 |
| Sun Brewery | Beer | India | 859.1 |
| Razgulyai-Ukrros Holding | Sugar, grain | Russia | 700.0 |
| United Confectionery | Confectionery, snack food | Russia | 571.9 |
| Mars | Chocolate, snack food | USA | 570.8 |
| Cherkizovsky | Meat | Russia | 524.6 |
| Group Tsaritsyno | Meat | Russia | 444.0 |
| Coca Cola | Soft drinks | USA | 434.1 |
| Sunny Food | Mayonnaise, etc. | Russia | 383.3 |

*Source: Russian State Statistics Committee, available at: www.gks.ru.*

Danone became active in the Russian market in the early 1990s. Fermented milk products have always been popular and in great demand in Russia. The first Danone store opened in Moscow in 1992 and became popular very quickly. In 1994, the Danone Group bought the controlling stake of the Bolshevik company, one of the oldest Russian confectionery plants with a production capacity of about 30 thousand metric tonnes per year. In May 1995, the first Danone dairy plant in Togliatti began producing Danone yoghurt (IFC).

Campina Melkunie, a large farmer-owned Dutch cooperative specializing in dairy products, began importing long shelf-life yoghurt into Russia through a subsidiary in 1992. Campina's share of the Russian yoghurt market quickly grew to greater than

50 percent, but the Russian financial crisis of August 1998 caused the currency to plummet, making imported dairy products too expensive for the average consumer. The market for those products dramatically declined almost overnight. To retain market share, Campina accelerated its early plans to produce yoghurt and other dairy products 100 percent in Russia to maintain its brand and take advantage of the market opportunity left by the reduction in foreign imports.

Another tendency in the food industry is consolidation of assets: Major companies of the sector tend to acquire the smaller actors. For retailers however, the main target group for sourcing raw materials remains the agricultural enterprises, because it is easier for them to adjust to new quality and production requirements of international retailers. However, the lack of large-scale wholesalers means that retailers are forced to rely on many small suppliers.

Changes in the food-processing sector have a positive impact on the agricultural sector in Russia pushing the need for production of more raw materials. However, the current status of agriculture in Russia is far from meeting demand for raw materials in the local food processing sector. Due to the fact that the import of goods by foreign companies is complicated by the existing tax and customs regulations in Russia, international supermarket chains are forced to use locally-produced resources and goods. This only serves to exacerbate the shortage of raw materials.

## Food Retailing

The Russian retail market is dominated by small and medium-scale traditional stores, open-air markets, kiosks or other specialized stores with convenient locations and low prices. A large portion of the population still continues to shop in open-air markets. The leading shopping formats in Russia are still street shops and open-air markets (32%), small shops (26%), other shops and kiosks (28%). Organized retail stores account for only 14% of total sales, with distribution roughly as follows: supermarkets (6%); discounters (6%); hypermarkets (1%); and cash & carry (1%). The majority of purchases, 32 percent, is still conducted at wholesale produce markets (or farmers' markets). The remaining share is divided between small shops (26%) and shops of other formats (28%) (BBE 2006). Therefore, the Russian retail sector still is considered to be fragmented and underdeveloped in comparison to Western countries. While supermarkets, hypermarkets and discount stores have sprouted up all over the country, their market share is significantly lower than that seen in most advanced retail markets.

One of the trends of the retail food sector is increasing consolidation, based mostly on mergers and acquisitions. It's expected to continue as some of the regional chains will most likely be absorbed into the Moscow-based retail chains (Bezrukova 2005). As a result of the increasing consolidation, the number of retail chains is decreasing and the turnover of the largest retail food chains is growing rapidly. Market share for the top ten retail chains of the entire retail food sector in Russia constituted only 11.1% in 2007 (PMR 2008).

The retailers operating in Russia can be divided into three main groups: global, national and local. Global retailers (such as Metro and Auchan) operate not only in Russia, but

also globally. The national retailers (represented by X5 Retail Group, Kopeyka and Dixy) operate in Russia and have outlets all over the country. Some national retailers, though (such as X5 Retail Group), show a tendency to expand to the neighbouring countries, such as Ukraine and Kazakhstan. At the same time such local or regional retailers as Asbuka Vkusa, Kora, or Maria-Ra work only in one region, covering just a few cities in close proximity.

**TABLE 5:** THE TOP TEN FOOD RETAILERS IN RUSSIA IN 2007

| Name of retailer | Year established | Country of origin | Format | Space 000m2 | Turnover MillionUS$ |
|---|---|---|---|---|---|
| X5 Retail Group | 2006 | Russia | Multi-format | 609.1 | 5 284 |
| Metro | 2000 | Germany | Cash & Carry | 487 | 4 801 |
| Magnit | 1994 | Russia | Discounter | n.d. | 3 676 |
| Auchan | 2002 | France | Hypermarket | n.d. | 3 400 |
| Lenta | 1993 | Russia | Discounter | 307 | 1 559 |
| Kopeyka | 1998 | Russia | Discounter | 410.3 | 1 490 |
| Dixy | 1992 | Russia | Multi-format | 150.9 | 1 431 |
| Sedmoi_ Continent | 1994 | Russia | Multi-format | 370 | 1 400 |
| O'Kei | 2002 | Russia | Multi-format | 145 | 1 200 |
| Viktoria | 1993 | Russia | Multi-format | 177 | 1 200 |

Source: Kommersant, 11 April 2008.

As Table 5 shows, the main food retailers in Russia are (X5 Retail Group, Metro, Magnit, Auchan and Lenta). Metro is one of the top retailers in Russia. It's the market leader in the cash-and-carry format in Russia. It opened about 30 outlets and has expanded into central and southern Russia and the Urals (A.T. Kearney 2008). Since entering the market in 2000, Metro has invested more than 1 billion euros in Russia. The company uses both large suppliers with nationwide interests in Russia, and smaller suppliers who only operate locally. It helps local companies and agricultural operators in several ways, e.g. by providing free audits. This gives suppliers the opportunity to assess their own standards, with a view to bringing them up to international levels and increasing their own competitiveness[19].

French retailer Auchan has exhibited high growth that brought it to the position of fourth-largest retailer, as of end-2007. Auchan opened the hypermarket segment in Russia, and brought change to Russian retailing with its entry; prices set at a low level (some 10-15% below other chains), was just one example (Lorentz 2003). Auchan opened its first hypermarket in Moscow in 2002. After entering the booming market of Russia, Auchan expanded rapidly: in 2005, Auchan already had seven hypermarkets operating in Russia, all in Moscow region; two more stores were opened in 2006 in Moscow; and four more in other Russian cities (Tiusanen and Malinen 2006).

A number of Russian retailers have demonstrated similar growth rates. In Russia, the international retailers were confronted by an immediate response from local retailers who were quick to learn modern retail trade methods and forms. Domestic retailers are expanding their operations, consolidating strength in their supply and distribution



19 Available at http://www.metrogroup.de/servlet/PB/menu/1080660_l2/index.html.

chains, and working on customer relations to capture a larger and more robust share of the market[20]. Russian retailers continue to dominate the growth of the market, headed by X5 Retail Group, which experienced the highest growth rate of all the retailers in 2007.

X5 Retail Group resulted from the merger in 2006 of two retailers Perekriostok and Pyaterochka. Now the company is in the process of building a solid multi-format foundation to continue its further expansion as the main consolidator in the Russian retail food market. The group plans to develop a hypermarket format, with the aim of a massive roll-out starting in 2009. The hypermarket segment is expected to be the most attractive and fastest-growing in the next five years, which offers enormous potential for growth. However, as inflation hit 11.9% in 2007, after being forecast at around 8% and with inflation of food prices being one of the main culprits, many retailers have postponed some store openings (Russia Food and Drink Report 2008[21]).

However, despite the rapid development of the retail sector, such factors as an inefficient distribution network and poor infrastructure may disturb the overall trend of retail growth. The fact that the ability of local producers to penetrate urban markets and compete with international suppliers depends on the quality of road infrastructure (that connects these markets with food-producing areas in the country) may considerably slow the development of food supply chains in rural and some suburban areas of Russia. Therefore, the long distances combined with bad road infrastructure remain major challenges for Russian rural suppliers and result in high costs for logistics.

## Influence of foreign direct investments on supply chain management in the Russian agrifood industry

### Foreign direct investment (FDI)

FDI in transition economies is seen in a positive light in the literature. Bevan and Estrin (2004) mention that FDI may facilitate growth, promote technical innovation, and accelerate enterprise restructuring in addition to providing capital account relief. FDI is assumed to play a crucial role in economic restructuring and enhancing growth in the Central European transition countries (Hooley 1998; Barrell and Holland 2000). Damijan (2003) states that FDI provides probably the most important and cheapest channel of direct technology transfer to developing countries and serves as an important source of intra-industry spillovers to local firms without foreign participation. There are several studies that offer empirical proof on the importance of FDI flows for economic growth in developing countries (Aitken and Harrison 1997; Borensztein et al. 1998; Blomström and Sjöholm, 1999). Broadman and Recanatini (2001) call FDI an important engine of growth. They continue to state that FDI provides a package of financial capital, technology, managerial skills, information and goods and services that can make an economy more competitive in the world marketplace, promoting growth and reducing poverty.

20 Retailers set to prosper as Russian packaged food market grows, available at: www.just-food.com
21 Available at: www.researchandmarkets.com/reports/662673/russia_food_and_drink_report_q4_2008.pdf

There seems to be considerable evidence about the positive impact of FDI on managerial techniques in the host country. According to Bergsman et al. (2000), FDI brings not only capital, productive facilities and technology transfers, but also employment, new job skills and management expertise. Yudaeva et al. (2000) asserts that it is supposed to be easier for domestic firms to copy technologies of foreign-owned firms located nearby than trying to reproduce a technology used in manufacturing imported goods. She calls this phenomenon "a potential spin-off" of western managerial techniques. According to her, if there was no business culture in the Western sense of the word, then foreign-owned firms serve as an example for domestic firms of how managers should behave.

As Dyker (2000) points out, FDI transfers not only 'hard' technology, (e.g. process control and production technology) but also ‚soft' technology (e.g. managerial concepts). He states that investing companies have to impose their own corporate organizational structures on subsidiaries or partners. Those organizational structures are based on the disposition of hierarchies, lines of responsibility, the use of intra-firm e-mail systems, etc. Even if an investing company did not want its management technology to be transferred, it would not be able to stop it. The implication is that, even where there is no soft technology gap as such, soft technology will be transferred in the course of FDI transfers.

FDI in Russia started in 1987 (Kadochnikov 2004). The economic reforms of the late 1980s permitted limited foreign investment in the Soviet Union. The first joint-venture law from June 1987 restricted foreign ownership to 49 percent of the venture and required that Soviet administrators fill the positions of chairman and general manager. By 1991, however, the Soviet government allowed foreign entities 100 percent ownership of subsidiaries in Russia.

In 1995, there were two big investments in the food processing industry: the Mars factory at Stupino (Moscow region) and the Coca-Cola plant in Stavropol (Krasnodar region) with a combined value of US$150 million (Dyker 1999). In 1995, the total FDI inflow to food processing was US$250 million. This figure more than doubled (to US$506 million) in 1996, but experienced a decline in 1997. By 1998, total FDI to the food processing sector was no less than US$1.192 billion.

In 1998, the food industry had a predominant position in the Russian FDI inflow: more than one third of the overall foreign direct investment took place in that branch. In 1999-2003, there was a decline in investment flows – (i.e. in 2003, FDI accounted for only US$345 million). In 2000, the food industry received about 18.5 percent of all FDI, but in 2003 the equivalent figure was just over 5 percent (Russian State Statistics Committee)

The first FDI in the retail sector in Russia was made by Migros Turk (Turkey) in 1997. Other major foreign retailers (such as SPAR, Metro and Auchan) began their investments after 1998. Edeka made its first investment in 2003. Most FDI has been into the retail sector of the capital, but Metro is also a major retailer on the St. Petersburg market. In 2003, sales of these foreign-owned retail chains accounted for 36 percent of the supermarket sector in Moscow; and for 19 percent of the supermarket sector in St. Petersburg (FAO 2005).

According to Dries and Swinnen (2004), the spread of foreign retailers takes place in three waves and Russia belongs to the 'third wave' countries. The areas where the spread of foreign retailers really started in 2002, are growing very rapidly now (Reardon and Swinnen 2004). The reasons for such "waves" were the state of economic development in Russia and saturation of the market in the retailers' home countries, or traditional markets. There are also waves that can be observed within the country, and referred to as "diffusion over space within a country" by Reardon and Berdegué (2005). The first wave was directed toward Moscow and St. Petersburg, Russia'stwo largest cities. During the second wave, retailers began to expand to the next (12) largest Russian cities with populations of roughly one million (such as Novosibirsk and Nizhniy Novgorod). The third wave was directed at even smaller cities (i.e. with populations less than one million), and began when the saturation of the second-wave cities made the retailers search for other places where they could situate their outlets (Dries et al. 2004).

FDI results from various company strategies with different objectives: e.g. a strategy might be aimed at gaining market share by meeting unmet consumer demand (such as serving local markets when trade constraints limit imports); or by recognizing an opportunity to use existing economic advantages of production or procurement from the target country for export to the home market of the foreign company, or to its other markets (Swinnen et al. 2006). Today a strong competition can be observed in the Russian food sector among the foreign-owned food processors operating there and the large domestic processors like Wimm-Bill-Dann. This is especially true for the regions of Moscow and St. Petersburg.

## Russian management style

When many foreign companies entered Russia, they encountered such obstacles as complicated title registration procedures, unreliable quality of supplier products, a lack of production know-how on the part of farmers, as well as a lack of financing for farmers and supply chains characterized by distrust and absence of professionalism (Sheresheva and Tretyak 2004). Apart from these obstacles, there were problems encountered with the Russian management style that was so different from Western management practices. Managers in Russian companies inherited the style from the Soviet system that was characterized by dominant leaders making authoritarian decisions. Russian companies, in comparison with Western ones, could be viewed as 'functionally incomplete' organizations (i.e. lacking, for example, sales and marketing departments or modern finance departments) which lacked competitive knowledge and skills (Fey and Mills 2007).

A number of authors have underlined this point (Beamish 1992; Bollinger 1994; Puffer 1994; Arino et al. 1997; Michailova 2000; Kadochnikov 2004; Fey and Mills 2007). They state that the Russian working environment is very complex and that the Russian culture is significantly different from Western cultures. Arino et al. (1997) also points out that the two main sources of differences between Russian and Western management style are associated with operational and cultural differences; the culture has a major impact on the operational behaviour of Russian managers. Russians differ from Westerners, not merely in terms of culture (Hofstede 1993), but

also in terms of economic, political (Rosten 1991), ideological, religious and social systems (Michailova 2000).

One important difference was the economic system of the Russian state. In planned economies the behaviour of managers is absolutely different from that in market economies. Under the Soviet system, the state controlled almost every economic activity. The state determined what was to be produced, how much, for what price and by whom and then allocated capital, raw materials and supplies and labour. Managers were required to meet planned targets for production quantity (based on the allocated resources) instead of focusing on how best to maximize the firm's profits. This had an impact on the way management was done in Russia and served as a source of incentives for managers that doesn't fit with Western business goals (Kadochnikov 2004).

To Western managers, the purpose of a company's is to provide some desirable product or service and, in so doing, to make some profit. In the Soviet system and prior to the recent changes, the purpose of a company was to serve a centralized and planned economy by complying with a set of production standards (Yakovlev and Kokorev 1995). Managers were only responsible for fulfilling production plans and did not care whether the goods being produced were useful, required or even wanted.

Considering the fact that Russian managers were often severely punished for making mistakes, managers became cautious of taking initiative, making independent decisions or offering solutions to problems (Arino *et al*. 1997). Even minor decisions were passed up the chain of command to become the responsibility of senior managers (Fey and Mills 2007). As a result, senior managers were overwhelmed with work and middle managers did not develop decision-making capabilities, while ordinary workers became demoralized, losing their ambition and initiative (Michailova, 2000).

Some of the examples of such behaviour are described in the literature. In one study it was shown that workers in the production line did not want to take responsibility for fixing problems in the line or that the general manager's driver had difficulty to decide whether to fill the car with gas (Arino *et al*. 1997). Another example can be seen in looking for instructions, even in the simplest situations, such as which colour telephones should be ordered (Shekshnia 1994).

Traditional Russian companies did not need to be customer-oriented. If customers experience a problem with a product just purchased, often they must solve the problem themselves (Fey 1995). Therefore, the marketing strategy used is different from that of Western companies, which aims at understanding the consumer needs and finding ways to attract customers and develop their loyalty. Instead, Russian managers were loyal to the boss, whose personal approval they regarded as a decisive factor for their well-being in the company—and far more important than their own performance. As a result, you almost never see Russian employees confronting the boss or even openly questioning his/her opinion (Puffer 1994).

Culture and mentality were the reasons why Western and Russian managers often saw the same things differently. For example, unlike Westerners, many Russian managers didn't understand for whom they worked. The concept of corporate ownership was

totally foreign to them (Shekshnia 1994). Russian managers often thought that since a joint venture didn't belong to the state, they could run it any way they wanted (e.g. raise their salaries, extend benefits, reduce working hours). This vision was quite different from the one of their Western partners.

A wide-spread belief amongst Russian managers was that business was something illegal or not ethical; thus, all means of doing business were justifiable. Unlike their Western counterparts, Russian managers have very vague ideas about the concepts of honesty, bribery, proprietary information, etc. (Shekshnia 1994). Such differences in management behaviour accounted for another source of misunderstanding and potential conflicts.

There are also some specific cultural differences that characterize the way communications function in Russian firms. Traditionally, Russian companies have been very good with vertical information flow, yet the horizontal flow of information (i.e. from one department across departmental boundaries to other groups) has traditionally been difficult (Fey 1995). For example, it is very common to leave a telephone message for someone and not have the call returned for three or four days, if at all. In the West this situation would simply be unacceptable. Furthermore, much time and effort are required to obtain information. Russians do not seem to feel the time pressure or to be diligent in taking steps to achieve that goal (Arino *et al*. 1997).

As was described, there were extreme differences in culture, value systems, work habits and communication flows in the management approach used in Russia and with that used in Western companies. Particular areas in which business practices differed included setting prices, investment policies, cost analysis and control, quality control and a recognition and understanding of the company's organizational structure (Arino *et al*. 1997). Other characteristics of Russian workers which have been observed by researchers include: difficulty in proactively managing change (Fey and Denison 2003); a lack of adaptability, or the inability to easily fit into restructured organizations (Husted and Michailova 2002); a tendency to be obedient, passive and inclined to respond favourably to authority (Ivancevich *et al*. 1992); and a preference to withhold opinions (Michailova 2000).

## FDI influence on management

The existing tax and customs regulations in Russia complicate the import of goods by foreign companies. Therefore, although international retailers might prefer to bring their already established-supplier relationships with them to Russia, they are forced to start working with local suppliers. Most retailers try to introduce business models that proved successful in their home countries into their work with Russian suppliers.

While the market influence of the retailers steadily increases, their requirement for suppliers to comply to standards becomes more and more rigid in terms of both quality and price. Small and medium-scale local agricultural producers must also comply with the new standards in order to remain in the supply chain; this puts pressure on them due to their poor financial condition. Since farmers might not deliver the

agreed quality or quantity, processors often faced severe problems in obtaining sufficient supplies. As a result, the food processing companies, often as part of their own restructuring, started contracting with the farms and providing inputs in return for guaranteed quantity and quality of produce. Such interactions with farmers begin to change their old business approaches that were formed under the Soviet system. Agricultural producers become more accustomed to the new management techniques and learn the way to do business with foreign companies.

Although the majority of suppliers to the international retailers are Russian, when retailers enter a new country they often bring some of their established supplier relationships with them to the new country. This can also be observed in Russia. Foreign food processors—with existing relationships to the international retailers—have established plants in Russia to produce private label and international brands, as well as, the retailers' store brands.

For example, when Metro entered Russia, Hochland AG followed and built a dairy plant near Moscow. In fact, Hochland Russland was the first Western European cheese manufacturer to establish a factory in Russia. Hochland began in September 2000 with processed cheese in small boxes, expanding in 2001 to manufacture processed cheese slices at its new facility in the Moscow region. In November 2003, Hochland put its own newly constructed plant into operation in Raos near Moscow[22]. Hochland AG's market was initially protected; however, over the course of time, local producers started to achieve comparable levels of quality and standardized process management practices; this left Hochland AG to become 'normal competition' for the local Russian suppliers.

Another example is the Dutch company Campina. In 1998 when Campina built its first processing plant and entered the local Russian dairy-production market, it faced a number of significant obstacles, including an unstable supply of low-quality raw milk. In the first few years, Campina continued to import dairy products to keep up with consumer demand. Then, by supporting, investing and implementing 'Western' quality management approaches, the company was able to increase the local supply of high-quality milk and overcame its initial obstacles.

There is also a tendency that Russian processors copy Western business practices introduced by foreign companies, as described in the following example: A triangular relationship exists in the collaboration between the dairy processor, Wimm-Bill-Dann, and the Swedish dairy equipment seller, De Laval, in the region of Nizhniy Novgorod. Since dairy farmers must modernize and upgrade their equipment, but only a few have the financial resources to do so, the dairy processor (Wimm-Bill-Dann) introduced a programme that allows dairy farms to lease milking equipment (Swinnen et al. 2006).

International retailers (such as Metro and Auchan) successfully operating in Russia have also imposed their management models on their suppliers. For example, Metro has already established its supplier portal in Russia, including all of the elements of its 'Western' supply chain and quality management practices, and to be adopted by all of with all of its suppliers in Russia (Lebensmittelzeitung 2007). This means that Russian suppliers must be willing to accept that Metro is the 'chain captain'that sets

22 From Hochland Russland OOO; available at: www.hochland-group.com.

the process standards throughout the whole supply chain.

The Russian X5 Retail Group tends to copy the business models of its foreign rivals. For example, the strategy of the X5 Retail Group includes optimizing its regional supermarkets portfolio, rationalizing assortment, enhancing quality and freshness of products, facilitating promotional activities, enhancing private label sales and improving service, all of which indicates that this Russian retailer is also working according to modern management concepts.

There seems to also be an impact from foreign retailers on the way local food processors manage their business. For example, interviews with dairy companies indicate that dairies have substantially diversified their product range as a result of demands and opportunities at the retail level. Furthermore, dairy companies that used to be limited to selling their products locally are now distributing nationwide through the retail sector. Since the spread of the major retail chains to the provinces happened before investments to modernize dairies occurred, in these regions it is the retailers that are the frontrunners and who are driving change (Swinnen et al. 2006).

Because modern value chain management (including management of both supply chain and quality assurance) demands significant investment in information technology and technological infrastructure, only a minority of Russian suppliers will be able to remain in the value chain in the medium and long term. However, this development also demands that retailers and processors must motivate their Russian suppliers to comply with rules and standards. Incentives for cooperation can include an opportunity for both international and national growth, the prompt payment for supplied goods, enhanced reputation and goodwill, etc. Additionally, retailers must provide mechanisms for coordination with their suppliers. The great distances in Russia combined with a bad road infrastructure, present major challenges.

## Summary and conclusions

Russia represents the largest and fastest growing retail market opportunities amongst the Central and Eastern European economies. Economic growth combined with the changing spending habits of the Russian consumer creates opportunities for the successful retail development of the country. Rapid growth of the Russian food industry has encouraged active investment into the food sector. More specifically, growth of consumer spending and food consumption in Russia has further fuelled investments into the food processing industry and retailing. International retailers and food processors have accelerated their activity in Russia, in keeping with the trend toward increased globalization. The success of foreign-owned retailers and manufacturers in Russia is mirrored by the fact that such companies as Metro and Auchan are powerful market leaders.

Foreign retailers and manufacturers are exporting their business strategies and concepts not only to their own set of suppliers, but to other Russian companies, as well. Overall, this results in a strong influence on the development of supply chain management in Russia. One can observe that FDI influences supply chain management

at all stages of the chain. Foreign retailers introduce their new procurement and management concepts while working with food processors, as well as when working directly with primary producers, as in the case of procurement of fresh produce. Food processing companies impose their management concepts on Russian producers and motivate them to improve the quality of their supplies. At the same time number of Russian retailers and processors begin to copy the management strategy of foreign companies, so there is a spill-over effect on Russian companies and their management style.

Since it was essential for Western companies (retailers, processors, etc.) to maintain their original business models (e.g. supply chain management structure and quality management) when entering Russia (Roberts 2005), in the long run, these companies expect their suppliers to meet the global requirements of retailers for food quality and safety, as well as for delivery terms. Therefore, products must be produced according to the global quality standards of the retailers and they are mostly positioned in the lower price-product categories. Because these suppliers are currently forced to produce according to the private (global) standards, they have the opportunity to supply not only the Russian market but also the global market. Thus, Russian producers are able to expand internationally if they can achieve cost-effective production. Or put another way, these Russian producers have the opportunity to compete based on cost advantage and with a quality product.

# Bibliography


- Kearney, A. 2008. The 2008 A.T. Kearney's Global Retail Development Index. Emerging Opportunities For Global Retailers. Available at:www.atkearney.com/shared_res/pdf/GRDI_2008.pdf
- Kearney, A.T. 2009. The 2009 A.T. Kearney's Global Retail Development Index. Windows of Hope for Global Retailers. Available at: http://www.atkearney.sk/images/global/pdf/2009_Global_Retail_Development_Index.pdf
- Ahrend, R. 2000. Foreign Direct Investment into Russia – Pain without Gain? A Survey of Foreign Direct Investors, RECEP Discussion Paper
- Aitken, B.J. & Harrison, A.E. 1997. Do domestic firms benefit from direct foreign investments? Evidence from Venezuela. Am. Econ. Rev. 89, 605–618.
- Arino, A., Abramov, M., Skorobogatykh, I., Rykounina, I., Vila, J. 1997. Partner selection and trust building in west European-Russian joint ventures: a western perspective. International Studies of Management & Organization, Vol. 27.
- Barrell, R. & Holland, D. 2000. Foreign Direct Investment and Enterprise Restructuring in Central Europe. Economics of Transition 82, pp. 477-504.
- BBE 2006. Retail-Expansion Osteuropa [Retail expansion Eastern Europe], Published Consulting Study (Cologne, BBE Unternehmensberatung GmbH).
- Beamish, P.W. 1992. Multinational Joint Ventures in Developing Countries. London: Routledge.
- Bergsman, J., Broadman, H.G., Drebentsov V. 2000. Improving Russia's Policy on Foreign Direct Investment, The World Bank, Europe and Central Asia Regional Office, Poverty Reduction and Economic Management Sector Unit, Policy Research Working Paper 2329
- Bevan, A.A. and Estrin, S. 2004. The determinants of foreign direct investment into European transition economies. Journal of Comparative Economics 32. pp. 775–787.
- Bezrukova, O. 2005. Bitva za regioni. Moll, no. 3 (17), 4/2005. Available at: http://www.retail.ru/biblio/actual31.asp.
- Blomström, M., & Sjöholm, F. 1999. Technology transfer and spillovers: does local participation with multinationals matter? Eur. Econ. Rev. 43, pp. 915–923.
- Bollinger, D. 1994. 'Four cornerstones and three pillars of the House of Russia management system'. Journal of Management, 13, 2, pp. 49-54.
- Borensztein, E., De Gregorio, J., Lee, J.W. 1998. How does foreign direct investment affect economic growth? J. Int. Econ. 45, pp. 115–135.
- Broadman, H.G. and Recanatini, F. 2001.Where Has All The Foreign Investment Gone In Russia?(July 2001). World Bank Policy Research Working Paper No. 2640. Available at SSRN: http://ssrn.com/abstract=274319
- Buch, C., Kokta, R., Piazolo, D. 2003. Does the East get what would otherwise flow to the South? FDI diversion in Europe. Journal of Comparative Economics 31, pp. 94–109.
- Damijan, J.P., Knell, M., Majcen B., Rojec M. 2003. The role of FDI, R&D accumulation and trade in transferring technology to transition countries: evidence from firm panel data for eight transition countries, Economic Systems 27, pp. 189–204.

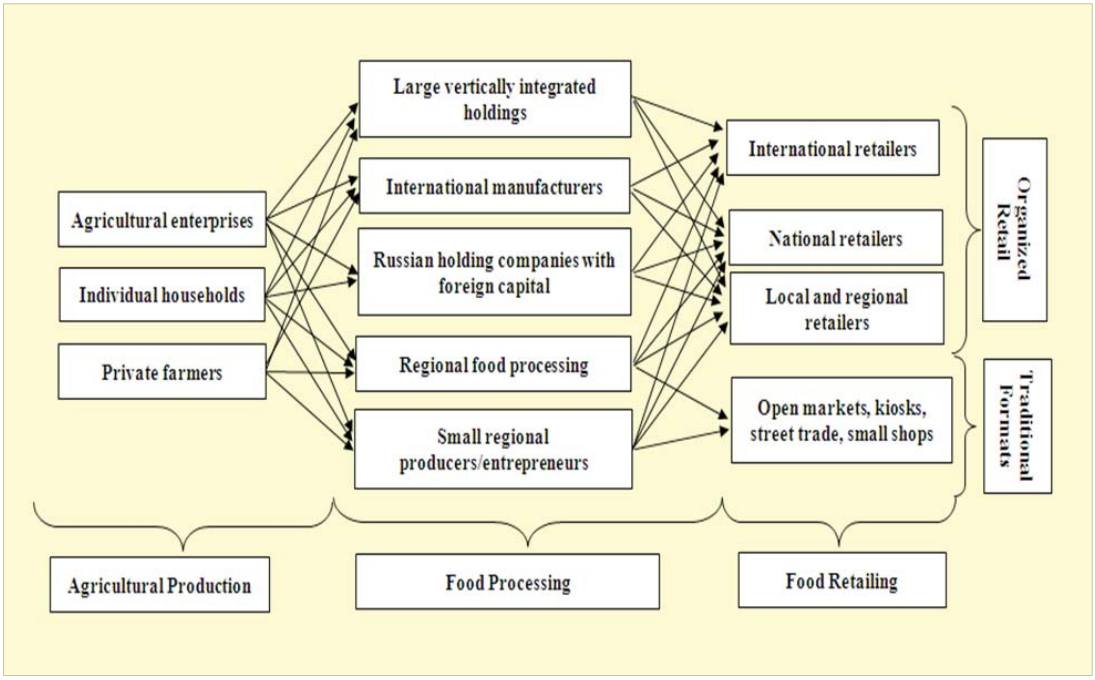
- Di Mauro, F. 1999. The effects of economic integration on FDI flows: an empirical analysis and comparison with trade. Document paper No. 134. Center for European Policy Studies, Brussels.
- Dries, L. & Kojakovic, V. 2004. The Economic and Transitional Impact of Food Retail Investments: The Example of the Czech Republic and Russia, WB-CEI-FAO Workshop on Agriculture, Agri-business and the Retail Sector in South-East Europe 24-27 May 2004, Sarajevo, Bosnia-Herzegovina.
- Dries L. & Swinnen, J.F.M. 2004. Foreign Direct Investment, Vertical Integration, and Local Suppliers: Evidence from the Polish Dairy Sector, World Development, Volume 32, Issue 9, September 2004, pp.1525-1544.
- Dries L., Reardon T. & Swinnen, J.F.M. 2004. The Rapid Rise of Supermarkets in Central and Eastern Europe: Implications for the Agrifood Sector and Rural Development, Development Policy Review, Volume 22 Issue 5, pp.525-556.
- Dyker, D.A. 2001. Technology exchange and the foreign business sector in Russia, Research Policy, 30, pp. 851–868.
- Dyker, D.A. 1999. Foreign direct investment in transition countries - a global perspective. In: Dyker, D.A. (Ed.), Foreign Direct Investment and Technology Transfer in the Former Soviet Union. Edward Elgar, Cheltenham, pp. 8-26.
- Euromonitor International, available at http://www.euromonitor.com/
- FAO Investment Centre / EBRD Cooperation Programme. Central and Eastern Europe Impact of Food Retail Investments on the Food Chain, Report Series - N. 7 - February 2005
- Fey, C.F. & Denison, D. 2003. Organizational culture and effectiveness: Can American theory be applied in Russia? Organization Science, 14, 6, pp.686-706.
- Fey, C.F. & Mills, T. 2007. Understanding the Transformation of Local Russian Firms From Entrepreneurial to Professional Organizations Stockholm School of Economics in Russia Working Paper 04 – 101R2
- Fey, C.F. 1995. Success strategies for Russian-foreign joint ventures, Business Horizons, 38(6), pp. 49-54.
- Hochland Russland OOO, available at: www.hochland-group.com
- Hockmann, H. 2005. Giant Enterprises in Russian Agriculture: a Promising Model for Russia, IAMO, Halle, pp. 37-42.
- Hofstede, G. 1993. Cultural Constraints in Management Theories. The Executive, Vol. 7, No. 1 (Feb., 1993), pp. 81-94.
- Hooley, G.J., Cox, A.J., Beracs, J., Fonfara, K., Snoj, B. 1998. The Role of Foreign Direct Investment in the Transition Process in Central and Eastern Europe, In: G. Hooley, R. Loveridge and D. Wilson, eds., Internationalization: Process, context and markets. Academy of International Business Series. New York: St. Martin's Press; London: Macmillan Press, 1998, pp. 176-200.
- Husted, K. & Michailova, S. 2002. Knowledge sharing in Russian companies with Western participation, International Management, 6(2), pp. 17-28.
- International Finance Corporation, World Bank Group, available at: www.ifc.org.
- Kacker, M. 1985. Transatlantic Trends in Retailing, Quorum, Connecticut.
- Kadochnikov, S. 2004. Pryamye zarubeshnye investitsii v sovremennoi teorii instotutsyonalnoy ekonomiki I teorii meshdunarodnoy torgovli: osnovnye podhody

I empiricheskiy analiz. Ekaterinburg.

- Konings, J. 2000. The Effects of Direct Foreign Investment on Domestic Firms: Evidence from Firm Level Panel Data in Emerging Economies, William Davidson Institute Working Paper 344.
- Lebensmittelzeitung (LZ). 2007. Metro Baut Lieferanten-Portal aus [Metro extends suppliers portal]. Lebensmittelzeitung 15 June 2007.
- Lorentz, Harri 2003. Chain Organizations' role in Russian Food Retailing. An Industry Review Utilizing Open Systems Aprproach with Content Analysis. Master's Thesis, Turun Kauppakorkeakoulu, Turku.
- Menkhaus, D.J., Yakunina, A.V. & P.J. Herz 2004. Food Retailing and Supply Chain Linkages in the Russian Federation, Journal of East-West Business, Vol. 10(3), pp. 55.
- Metro Group Russia, available at: www.metrogroup.de.
- Michailova, S. 2000. Contrasts in Culture: Russian and Western Perspectives on Organizational Change. The Academy of Management Executive (1993), Vol. 14, No. 4, Themes: Strategy, Culture, and Change (Nov., 2000), pp. 99-112
- Oganesov, R. 2004. Agroholdingi v selskom khoziaistve Rossii [Agroholdings in Russian agriculture] (in Russian). Ekonomika selskokhoziaistvennykh i pererabatyvaiushchikh predpriiatii, 10, pp. 52-53.
- Oshidar, S. 2007. Agriculture and Agrifood Sector Profile - Russian Federation, available at: http://www.ats.agr.gc.ca/europe/4588-eng.htm
- Petrikov, A. 2005. Tendencii razvitiya integrirovannykh agropromyshlennykh formirovaniy, in: APK, No. 1, pp. 26-32.
- PMR report 2008. Russia ranked the most attractive country and Ukrainian Odessa most attractive city for retail investment in CEE, available at: http://www.pmrpublications.com/press_room/en_Russia-ranked-the-most-attractive-country-and-Ukrainian-Odessa-most-attractive-city-for-retail-investment-in-CEE.shtml
- Publications of International Finance Corporation, World Bank Group, available at: www.ifc.org
- Puffer, S. 1994. Understanding the bear: a portrait of Russian business leaders. Academy of Management Review, 8, 1, pp. 41-60.
- Reardon, T. & Berdegué, J.A. 2006. The Retail-Led Transformation of Agrifood Systems and its Implications for Development Policies. available at: http://www.rimisp.org/getdoc.php?docid=6432
- Reardon, T. & Swinnen, J. 2004. Agrifood Sector Liberalization and the Rise of Supermarkets in Former State-controlled Economies: Comparison with Other Developing Countries, Development Policy Review, Vol. 22, No. 5, pp. 515-524.
- Rosten, K.A. 1991. Soviet-U.S. Joint Ventures: Pioneers on a New Frontier. California Management Review. 33, 1, pp. 88-108.
- Russia Food and Drink Report Q2 2008, available at: www.researchandmarkets.com/reports/612727/russia_food_and_drink_report_q2_2008.pdf
- Russia Food and Drink Report Q4 2008, available at: www.researchandmarkets.com.
- Russian Federation Food Processing Ingredients Sector Annual Report 2005, USDA Foreign Agricultural Service

- Russian State Statistics Committee, available at: www.gks.ru.
- Rylko, D. & Jolly, R. 2005. Russia's New Agricultural Operators: Their Emergence, Growth and Impact, Comparative Economic Studies 47(1), pp. 115-26.
- Schlindwein, S. 2008. Schokoland Russland enttäuscht den schwäbischen Edelproduzenten, Eurasisches Magazin. 2, available at: http://www.eurasischesmagazin.de/artikel/?artikelID=20080210
- Serova, E.V., O.V. Shick & Karlova, N. 2006. Russian Agribusiness Perspectives: the Results of a Survey. Institute for the Economy in Transition, Moscow, 2006.
- Shekshnia, S. 1994. Managing People in Russia: Challenges for Foreign Investors European Management Journal, Vol. 12, No. 3, pp. 298-305.
- Sheresheva M. & Tretyak, O. 2004. Developing relationships with suppliers in Russia: a network perspective. The paper published at the 20th IMP-conference in Copenhagen, Denmark in 2004.
- Swinnen, J.F.M., Dries. L., Noev N., Germenji, E. 2006. Foreign Investment, Supermarkets, and the Restructuring of Supply Chains: Evidence from Eastern European Dairy Sectors, Discussion Paper 165/2006, LICOS Discussion Papers
- Tiusanen, T. & Malinen N. 2006. Foreign Retailers in Russia, Publication 34, NORDI series
- United Nations Conference on Trade and Development (UNCTAD). 1999–2003. World Investment Report. UN, Geneva.
- van Berkum, S., Roza P. & Belt, J. 2007. Long-term perspectives for the Russian agrifood sector and market opportunities for the Dutch agribusiness. Agricultural Economics Research Institute (LEI).
- Yakovlev, A. & Kokorev, R. 1995. State Wholesale Firms in Russia amid Economic Reform. Changes in Management and Organization. Intemational Studies of Management & Organization, 25, 4 (1995), pp. 59-7.
- Ylä-Kojola, A.-M. 2006. Assessment of Russian Food Processing Industry – Finnish Perspective. Publication 29, Lappeenranta University of Technology – Northern Dimension Research Centre, 2006.
- Yudaeva K., Kozlov K., Melentieva N., and Ponomareva, N. 2000. Does Foreign Ownership Matter? Russian Experience, Social Science Research Network Electronic Paper Collection: http://papers.ssrn.com/paper.taf?abstract_id=257081

**APPENDIX 1:** SUPPLY CHAIN STRUCTURES IN RUSSIAN AGRIFOOD BUSINESS (3 STAGES: PRODUCTION-PROCESSING-RETAILING)




Source: Authors' own model based on research findings

# MANAGEMENT AND PERFORMANCE OF AGRIBUSINESS VALUE CHAINS IN THE REPUBLIC OF MOLDOVA

*Galina Lyashenko*[23]

## Introduction

It's a general opinion that there are many gaps in every agrifood value chain in the Republic of Moldova, all of which need financial, technical and information support. At the first stage of the value chain, farming, among current problems, farmers specifically point to a lack of working capital, lack of sales markets, difficulties in getting loans from banks, extremely high interest rates and the inability of processing enterprises to pay for raw materials. Some other problems faced by farmers are the lack of financial resources to purchase fertilizers, phytosanitary products and seed material needed for springtime works. The crop insurance system is not developed. Farmer associations aren't feasible due to a lack of trust on the part of the farmers. Small and medium-scale (i.e. less than ten hectares) producers of cereals don't consider grains as high value commodities. At the same time, the larger producers (i.e. those with more than 5 000 hectares, as well as some exceeding10 000 hectares) are export-oriented and already make effective use of all channels of the value chain, including both the processing and retail stages.

As a result of these two different types of farmer behaviour, the organizational structure of business relationships along the entire value chain remains mostly independent, instead of being interdependent. Information-sharing is little or none. There is a lack of co-ordination and partnering among the actors in the various value chain stages. Local farmers cannot penetrate the local retail system. There is a definite need for a change from traditional business relationships to an overall value chain-approach— a shift from supply 'push' to demand 'pull'—that requires seeking out new opportunities on international markets for value chain-products with export potential. Even with positive signs of development in certain sectors (e.g. organic farming), it is difficult to manage an agrifood value chain without government support, especially in the situation of the current world economic crisis.

23 CCIPAM, www.ccipam.tk (the Republic of Moldova Center for Food Safety and Quality (MCFSQ)

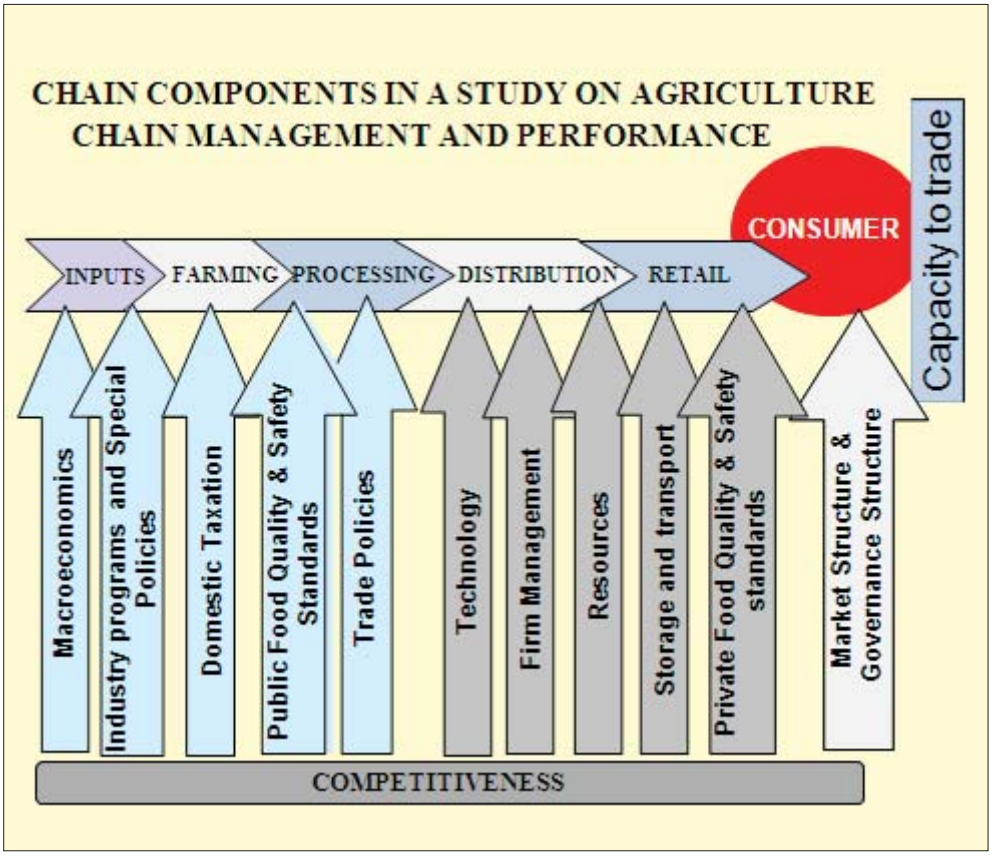
A value chain should be demand-driven rather than supply-driven. To be effective, its primary focus should be to respond to the needs of the marketplace, through cooperation, communication and coordination. Table 1 shows some of the differences between a traditional approach and that of a value chain with a stronger orientation toward quality and value for the consumer.

**TABLE 1:** COMPARISON OF TRADITIONAL AND VALUE CHAIN BUSINESS RELATIONSHIPS

| Characteristic | Value Chain | Traditional |
|---|---|---|
| Information sharing | Extensive | Little or none |
| Primary focus | Value/Quality | Cost/Price |
| Orientation | Differentiated product | Commodity |
| Market power relationship | Demand 'pull' | Supply 'push' |
| Organizational structure | Interdependent | Independent |
| Philosophy | Chain optimization | Self optimization |

The document will describe the current situation in selected agrifood chains, analyse the factors that are influential to the development of agrifood value chains in Republic of Moldova, showing the impact of different institutions along the value chain (see Figure 1) and provide recommendations on how to manage the situation. The paper provides some guidelines for identification, analysis and management of agrifood value chains in the Republic of Moldova.

**FIGURE 1:** IMPACT ON COMPETITIVENESS AND CAPACITY TO TRADE FOR DIFFERENT INSTITUTIONS ALONG THE VALUE CHAIN






It is important to analyse the enabling environment, both at the macro- and micro-

levels, which impacts the agrifood chains' performance and can have an influence on the competitiveness of the Republic of Moldova's products.

Moldova is an agricultural country, with 33 percent of its labour force involved in agricultural production. The Republic of Moldova grows a variety of temperate fruits and vegetables, including tomatoes, cucumbers, peppers, peas, cabbage, onions, apples, peaches, apricots, plums and cherries that are either sold fresh or become raw materials for the food processing industry. The country also traditionally grows wheat, yellow corn, sunflower seeds, sugar beets and grapes. The sunflower seeds are the primary source of raw material for the domestic vegetable oil production. Sugar beets are processed by five sugar refineries into approximately 110 000 metric tonnes of sugar each year. About 20 percent of sugar is exported to neighbouring countries. The Republic of Moldova, although geographically small, is one of the most important Eastern European wine-producing countries due to its favourable climate for viticulture, and the potential for wine quality and the versatility of the wine industry. The Republic of Moldova remains the largest supplier of walnuts to France over the last ten years.

The analysis of agricultural markets made by the World Bank (WB) in 2005 showed that in the 15 years since the adoption of the Land Code (i.e. the legal basis for initiation of agricultural reform), radical changes occurred in the agricultural sector. The positive side of the privatization process is that implementation of the agricultural post-privatization programmes has led to the development of a credit system for agricultural producers through existing financial institutions and development of the non-banking financial sector, including savings and loan associations, as well as implementing the mortgage lending programme. The Land Code facilitated the development of a market infrastructure for agribusiness through the: creation of service cooperatives that ensure input supply and output marketing for members; opening of a network of farm stores; the extension of an information network, training and consulting services for agricultural producers regarding legal, technological, marketing, ecological issues and others (IMF 2007).

The process of privatization and liberalization caused dramatic changes, such as reduced control of the state over markets for food and agriculture and opening of markets to private investment. As a result, private investment—both domestic as well as foreign—in the production, processing, marketing and transportation of agricultural and food commodities became increasingly important.

Out of the Republic of Moldova's 1.974 million hectares of total agricultural land, 86.5 percent is privately owned. Some 40.7 percent of that is owned by 390 380 individual farmers (=644,127 ha). The plot size for the average farmer is about 1.65 hectares, with 86 percent used to support annual crops and the remaining 14 percent for perennial crops. An area of 879 200 hectares or approximately 52.3 percent of the total agricultural land is used by 1 883 agricultural cooperative units (i.e. agricultural cooperatives, peasant farms with more than 100 ha).

The privatization of the infrastructure of the former collective and state farms resulted in fragmentation of fixed assets (such as irrigation systems and storage facilities).

The government of the Republic of Moldova addresses the challenges in agriculture

through various national programmes and the Strategy for Agricultural Development that focuses on improving the situation in the agrarian sector during the post-privatization period. The period was characterized by production decline and the loss of the country's leading position on traditional and international markets (e.g. the import ban on wines to Russia in 2006; ban of products of animal origin to Romania after January 2007). After severe drought and floods in 2007, the Strategy for Agricultural Development was revised following recommendations of the Food and Agriculture Organization of the United Nations (FAO) assessment mission. International experts recommended that Republic of Moldova's strategy should include not only its market access interests, but also plans for sustainable development and economic growth.

The high priority sectors in the Strategy of Agricultural Development for 2008-2015 were defined as follows:

- cereals (in order to provide food security for the country);
- fruits and vegetables, and grapes, in particular as examples of 'High Value Agricultural' products (HVAs);
- Wines (as traditional export products).

The current tasks for the Republic of Moldova are to retain export potential, develop new products and find new market niche and to substitute imported vegetables with traditionally grown vegetables. With regard to this set of tasks, great attention must be paid to business relationships and markets.

# The enabling environment for improved performance of agrifood value chains

## Macroeconomic factors/determinants

The Republic of Moldova's economy remains dependent on the country's external environment, its natural resources and in particular, on external financing.

The last three years were characterized by the following main negative factors for Republic of Moldova:

- high energy prices for gas, fuel and electricity;
- closure of the Russian market to Republic of Moldova's products, in particular wine and spirits, and closure of the EU market for honey; trade restrictions with Romania for products of animal origin;
- unfavourable weather conditions (the drought of 2007 which was described as 'the most severe in living memory'; and floods of 2008 that added to the damage of the previous year;
- Beginning of the world economic crisis which began to be noticed in late 2008, initially limited to the banking sector.

However, despite all of the negative impacts, the Republic of Moldova's economy managed to grow by about four percent in 2007. Domestic demand was a major source of growth. Household consumption and construction was fuelled by large

remittances from workers abroad, officially estimated at 33 percent of GDP in 2006 (unofficially pegged at 40 percent). Overall economic performance was expected to improve in 2008:

- The GDP was estimated to increase by 7.5 percent.
- The budget deficit was targeted at 0.5 percent of GDP.
- Poverty was expected to decline to 26 percent (from 30 percent in 2006).

The Republic of Moldova's economy was strongly driven by remittances. Economic migration and remittances are important to many transitional countries and, indeed, in 2006, Republic of Moldova, together with Tajikistan, received the highest levels of remittances (as a percentage of GDP) in the world. Total remittances were US$ 1.5 billion in 2007 (36 percent of Republic of Moldova's GDP) and were growing in the first half of 2008 prior to the economic crisis[24]. Migration has mainly come from rural areas. In the mid-1990s the proportion of the population employed in the agricultural sector was more than 50 percent; in 2007, it was only 33 percent.

The huge inflow of foreign exchange exerts significant pressure on the Republic of Moldova's currency, leading to its appreciation. During the last two years, the Moldovan Leu appreciated by more than 25 percent against the US dollar. In turn, this affected the competitiveness of Republic of Moldova's exports. As a consequence, the country has a continuously growing trade deficit. This rapid appreciation of the Moldovan Leu creates a major constraint for producers of fresh and processed horticultural products, who lead the country's food industry, and is a primary reason for insolvency of the industry.

The Government of the Republic of Moldova, along with the National Bank, initiated strong programme to fight inflation. The increase in international prices for energy and food, combined with the significant inflow of foreign exchange, made the fight against inflation extremely difficult. Nevertheless, the annual inflation rate was reduced from 16.9 percent in May 2007 to 10.7 percent by September; at the end of 2007, the annual rate of inflation was 13.4 percent. The annual rate of inflation in 2008 was considerably improved, having been reduced to 7.3 percent.

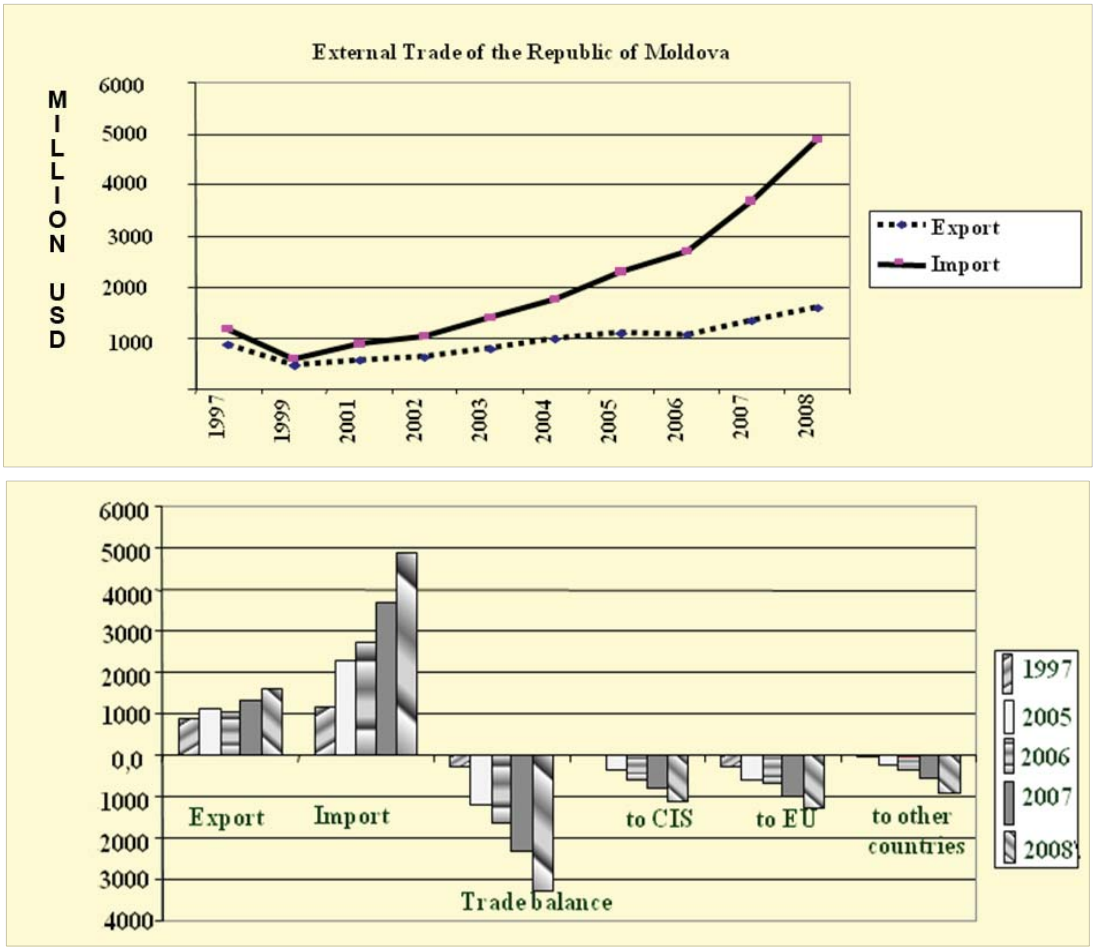
The nation's fiscal performance, according to the Ministry of Finance, has been strong. The revenues flowing into the National Public Budget increased from 38.6 percent of GDP in 2005 to 41.8 percent in 2007. Strong revenue performance allowed the Government to implement a three-fold 'liberalization' initiative that included capital legalization, tax amnesty and the introduction of a zero corporate tax-rate on reinvested income. The reforms aimed at reducing the tax burden and creating a better environment for business investment.

In the meantime, the Republic of Moldova is continuing public expenditure reforms with the objective of improving resource allocation for investments and to increase the efficiency and accountability of public spending. The public external debt-to-GDP ratio was forecast to be reduced from 22 percent in 2005 to 12 percent in 2008.

The balance of trade since 1999 remains negative, with a growing trend toward increased imports.

24 http://www.undp.md/presscentre/2009/Lovita_Nick_article/index.shtml

**FIGURE 2:** THE BALANCE OF TRADE FOR THE REPUBLIC OF MOLDOVA, 1997-2008

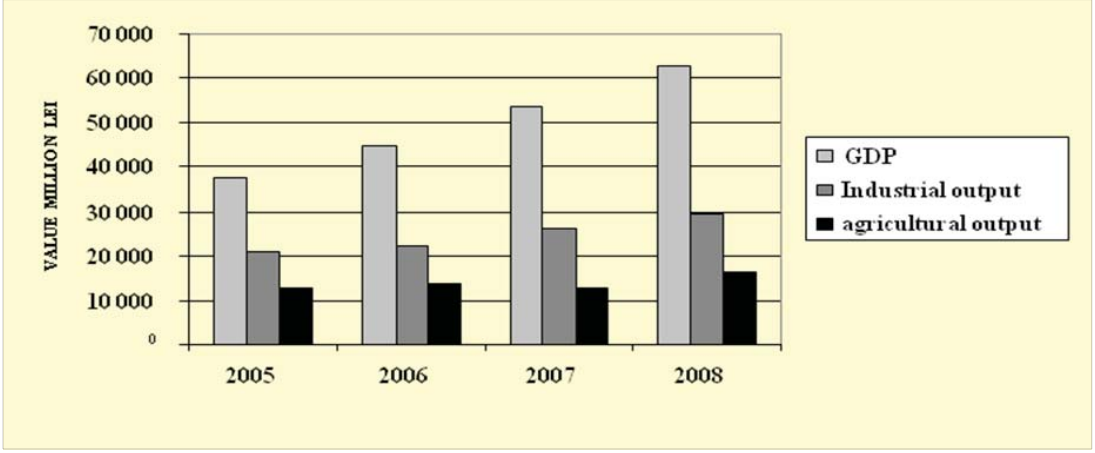



*Source: the Department of Statistics 2008*

Agriculture is the largest sector of the economy of the Republic of Moldova, employing nearly 33 percent of the labour force and generating some 60 percent of total exports (together with the food and drinks industry).

The share of agriculture in total output was reduced by around half over the last two decades and accounted for just 18.4 percent of GDP in 2007. There was an increase of 31.9 percent registered in 2008, though, compared with 2007.

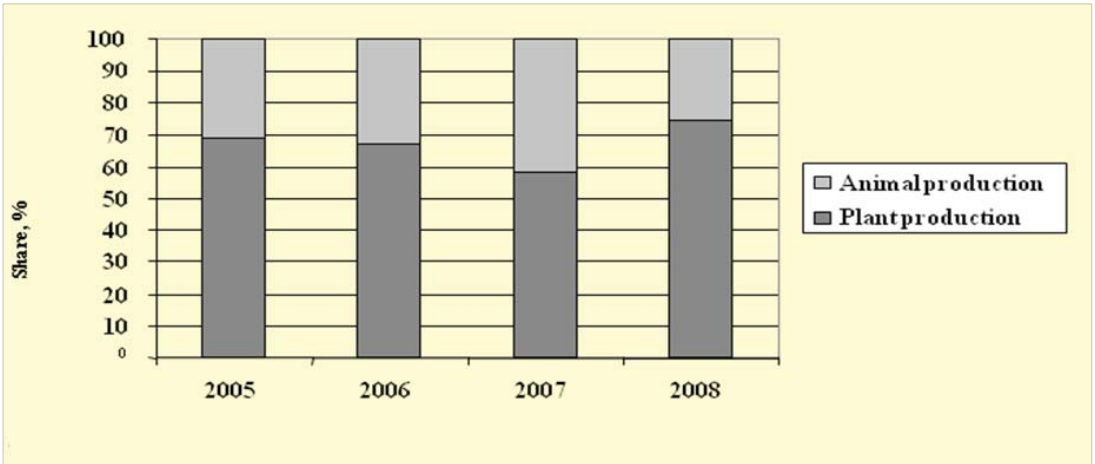
**FIGURE 3:** SELECTED MACROECONOMIC INDICATORS 2005-2008 (ESTIMATED; SHOWN IN MOLDOVAN LEU MILLIONS)




Source: Department of Statistics 2008

According to data from the Department of Statistics, in 2008 the share of horticultural production within total agricultural production, constituted 74.4 percent (compared with 58.1 percent in 2007) of which cereal grains and legumes –were 25.0 percent (versus 9.5 percent in 2007), technical crops were12.3 percent (8.1 percent in 2007), potatoes, vegetables and squash –were 12.4 percent (versus 10.7 in 2007) and fruit and grapes –were 20.4 percent (versus 24.3 percent in 2007). Animal production returned to 25.6 percent (from 41.9 percent in 2007), of which livestock and poultry –was 12.6 percent in 2008 (yet 22.1 percent in 2007), milk –was 9.1 percent (versus 13.3 percent) and eggs –were 3.1 percent in 2008 (and 5.3 percent in 2007). The decrease of livestock production (and its share of total agricultural production) in 2008 from the previous year was caused by the significant reduction of cattle herds in the second half of 2007 and the first half of 2008, as a result of the drought in 2007.

**FIGURE 4:** STRUCTURE OF AGRICULTURAL PRODUCTION 2005-2008




Source: Statistical Year Book of the Republic of Moldova 2008

The Republic of Moldova's canning industry produces an average of 300 000 metric tonnes of processed/canned vegetables and fruits within a product range of some 200 different line items. Half of all exports from canneries are usually juice and juice concentrate; one-third is vegetable-based products and some five to ten percent are jams. Russia, which was previously one of the main destinations for Republic of Moldova's juices, currently purchases only ten percent of the product. Over a third

of all juice concentrate is shipped to Germany, followed by Austria, the Baltic States and Canada. The industry is seasonal with peak production levels occurring during the harvesting period of summer and autumn and peak sales in the winter and spring. Canneries purchase fruits and vegetables from a large number of farmers, with quantities and price being influenced by crop level. As a result, the total industry output experiences swings that may amount to as much as 50 percent in a single year. To mitigate supply risks, many canneries have started to invest in farming, by either buying or renting plots of land in their regions.

Recently, the Republic of Moldova lost its position on the external markets for its canned fruits and vegetables. There are growth opportunities in the canning industry by penetrating other segments, though, such as frozen products and baby foods, but based on building sound branding and developing effective distribution strategies.

Export trends last three years have followed a decreasing trend, and mostly connected with the ban introduced by Russia. Import trends for fruits are not fluctuating much, and remaining at almost the same level. Fruits dominate fresh produce exports, claiming 90 percent of the value of fruit and vegetable exports. The main exported products are: apples (54 percent of total fruits and vegetables), followed by table grapes (15 percent) and plums and peaches (at 5 each). The main importer of fresh products from Republic of Moldovais Russia (65 percent), followed by Belarus (25 percent). The European Union share of Moldovan exports is extremely small (5 percent), with Romania being the only important destination being.

Although the agricultural sector accounts for a significant proportion of the livelihoods of the rural community, its overall contribution to the national economy remains low and the sector is especially vulnerable to climatic and structural conditions.

Given the changes in land use and cropping patterns, the migration from villages of the more able workers, the break-up of the intensive livestock production units and a shift to rain-fed crops, labour productivity has been halved. This has further eroded the profitability of agriculture and the welfare of rural communities.

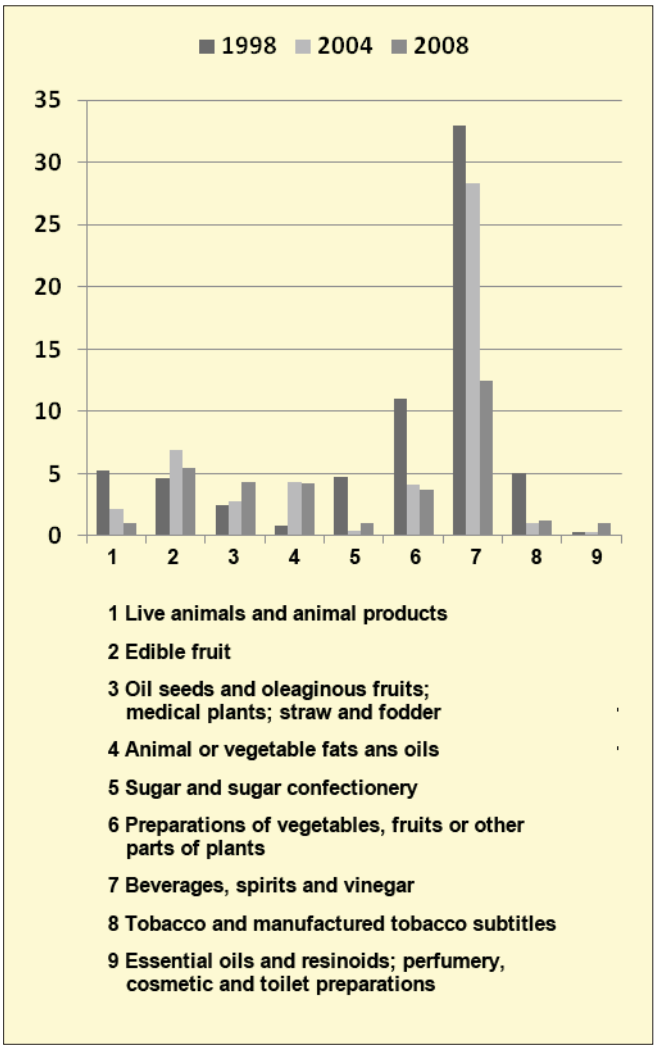
The monetary policy of Republic of Moldova during the world economic crises doesn't favour export trade. This has made prices for Moldovan products non-competitive on external markets.

## Trade policies

The goal of the national trade policy is to support adaptation of the agricultural sector to new market possibilities. The export and import activities of the Republic of Moldova are liberal, without quantitative restrictions. In order to ensure and establish a new framework for the development of domestic trade activities, the Republic of Moldova's Government approved the strategy: Concept for the Reform of Domestic Trade for the period 2006-2009. The Concept constitutes the basic platform for programmes and action plans drafted and implemented by the central and local public institutions that are involved in the coordination and monitoring of business activities related to domestic trade.

Moldova actively developed an external trade policy. The Republic of Moldova signed the Free Trade Agreement in 1994 involving all CIS countries (i.e. Azerbaijan, Armenia, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Russia, Turkmenistan, Ukraine and Uzbekistan).

**FIGURE 5:** CHANGES IN AGRICULTURAL EXPORT STRUCTURE AS A SHARE OF TOTAL EXPORTS 1998-2008




In 2001, the Republic of Moldova became a member of the World Trade Organization (WTO) and in the same year unilaterally adopted the Memorandum of Understanding on Trade Liberalization and Facilitation under the Stability Pact. As a WTO member, Republic of Moldova applies WTO-compliant rules for determination of the country of origin. The Republic of Moldova's law distinguishes between preferential and non-preferential rules of origin. Starting in 2006, the Republic of Moldova's Chamber of Commerce and Industry began phasing out its powers of issuance of certificates of origin for the Republic of Moldova's exporting companies and transferring this right to the Customs Service. The Customs Service issues type A certificates of origin for exports bound for the EU and type Eur1 certificates for shipments bound for CEFTA.

In 2003 Republic of Moldova initiated work on the Individual Plan of Actions within the framework of the Wider Europe Strategy for countries bordering the EU. This is focused at further integration into European structures by aligning national policy, legislation and trade practices with European neighbours. The Action Plan, and the reform process dealing with trade and regulatory reform, includes Sanitary and Phytosanitary issues. This element specifically will deal with the "increase in food safety for Republic of Moldovan consumers and facilitation of trade through reforms and modernization of the sanitary and phytosanitary sector". In 2003, Republic of Moldova began the 'EU Third Country Status' application process, which is aimed at getting approvals for import to EU markets for products of animal origin.

In 2006, the Republic of Moldova joined the Central European Free Trade Agreement (CEFTA) after completing free trade agreements within the Stability Pact for Southeastern Europe. CEFTA members, as of 2009, include Albania, Bosnia and

Herzegovina, the Republic of Croatia, Autonomous Province of Kosovo, The Former Yugoslav Republic of Macedonia, the Republic of Moldova, Montenegro and the Republic of Serbia. The CEFTA agreement separates its work based on the following three Subcommittees: Agriculture, Sanitary and Phytosanitary issues; non-tariff barriers; and, issues concerning customs and rules of origin.

In 2008, according to the European Neighbourhood Policy Action Plan (ENP Action Plan) for Republic of Moldova, the European Commission adopted Regulation (EC) No 55/2008 of 21 January 2008 on the introduction of autonomous trade preferences for the Republic of Moldova, provided that the country substantially improved its system of controls and certification for origin of goods. The Regulation entered into force on 1 March 2008. By extending autonomous trade preferences to the Republic of Moldova, the EU removed all remaining tariffs for industrial products and simultaneously improved access to the EU common market for agricultural products.

The Moldovan Government adopted Government Decision No. 262 of 7 March 2008 concerning the administration of the tariff quota for export of goods into the European Union. This decision appointed the Ministry of Economy and Trade as the competent authority for the administration of the quota. The Republic of Moldova adheres to the principle of the 'first come-first served' system of quota allocation. Under this approach, the Ministry of Economy and Trade authorizes the allocation of the quota without payment of any fees. There is a limit for each economic operator of ten percent of the quota.

According to the 2008 ruling on autonomous trade preferences, the following products may be imported to the EU exempt from any tariff: fresh and frozen tomatoes; garlic; fresh or frozen cucumbers and cabbage; courgettes; some fruits (such as fresh and dried grapes, fresh apples, pears and quince, apricots, cherries, plums and peaches). However, export volumes are very small. Walnut export is likely the most stable and competitive item of the country's agricultural exports. The Republic of Moldova is the third largest supplier of shelled walnuts to the EU and has retained its share of this market since 1998. Presently, the Republic of Moldova cannot fully utilize the capacity of the quotas provided by the EU due to some restrictions. For example, the Republic of Moldova is not eligible to export milk and diary products, nor meat products, to the EU.

There are no customs tariffs on exported goods and services. The customs tariff for imported goods and items is set in Annex I to the Law on Customs Tariff N 1380 XIII of 20.11.1997. Custom duties vary from null percent to 20 percent. Raw materials and equipment are exempt from customs taxes.

Due to the 1994 Free Trade Agreement among CIS countries, the Republic of Moldova benefits from a null-percent-tariff rate for its products that enter the Russian market. However, since May 2005, Russian authorities imposed a ban on the country's vegetal products (due to some phytosanitary problems) that has not yet been lifted.

The Republic of Republic of Moldova has entered into a number of bilateral and multilateral agreements to promote, facilitate and develop commercial exchanges and economic co-operation based on equity and comparative advantage in trade. However, it should be noted that the current EU trade policy doesn't allow the

Republic of Moldova to benefit from its trade agreements with the EU to the full extent.

Prior to Romania's accession to the EU on 1 January 2007, the Republic of Moldova had a free trade regime with Romania. On the whole, the effect of the 2007 EU enlargement was negligible for Republic of Moldova, but it had a negative impact on a few key exports to Romania (such as raw milk and eggs). The importance of the EU, as a trade partner to the Republic of Moldova, increased mainly due to Romania's accession to the EU; elimination of Romania thus strengthened the EU's position, allowing it to become the largest trading partner of the Republic of Moldova. Much of the success of trade with the EU (including Romania), depends on implementation of the EU Action Plan and the reform process dealing with trade and regulatory reform (including sanitary and phytosanitary issues).

Currently Russia is closed to some of the Republic of Moldova's agrifood products (wine, fresh fruits and vegetables). If Republic of Moldova succeeds in improving the quality of the products it supplies, its likely that the country will be able to satisfy the requirements and standards of both the EU and the Russian Federation (thus eliminating the phytosanitary concerns of the Russian authorities). In addition, there is an added impetus to believe that Russia will lift the existing ban, given its approaching accession to the WTO.

## Domestic taxation

The current taxation system pertaining to agriculture includes the following main components: land tax; social fund payments; income tax; value added tax (VAT); and excise taxes. Agricultural producers and landowners must also pay other taxes and duties (such as real estate tax, customs duties, water tax). Property tax is levied on the estimated value of properties in villages, and the estimated market value of properties located in cities and municipalities. tax is calculated by initially assigning points (based on land location, fertility, purpose, hectares) and then multiplying the number of assigned points by the specific land tax rate. Value added tax is an indirect tax charged at the point of sale of goods and services and represents the central element of the indirect taxation system.

As of 1 January 2008, the Republic of Moldova introduced the 'null percent' corporate rate of income tax for reinvested profits applicable to all businesses in the Republic of Moldova. However, previously dividends were tax exempt; Republic of Moldova now taxes dividend distributions at the rate of 15 percent. This tax policy will continue throughout the 2009 fiscal year.

Personal income tax: In 2009, employers received a one percent reduction on social security contributions, lowering the rate from 24 percent in 2008 to 23 percent. Agribusinesses received a preferential tax treatment of 22 percent, of which 6 percent will be contributed from the State Budget. Employers who were exemplary tax payers in 2008—and able to prove that in 2009 they paid at least ten percent more in social security contributions compared with 2008—are entitled to an overall social security contribution rate of 20 percent, rather than 23 or 22 percent. The state now plans to recover that one percent reduction granted to employers by shifting the tax burden

onto employees' salaries by way of individual social security contribution that shall now be withheld from salaries at the rate of six percent compared with five percent in 2008.

Another required payment affecting employment relationships is the mandatory health insurance contribution. In 2009 it was decided that seven percent of gross payroll (i.e. 3.5 percent plus+3.5 percent) should be paid to the national Health Insurance Fund.

The major changes that occurred in tax legislation over the past several years focused on:

- Increasing the efficiency of VAT administration by raising the threshold for obligatory registration of VAT taxpayers. Previously, taxpayers whose rate of turnover was between Moldovan Leu 50 000 to 100 000, were required to register. A phased-in increase over 12 consecutive months raised the threshold to Moldovan Leu 200 000;
- Decreasing the tax burden on individuals by reducing the maximum rate of income tax from 32 percent to 28 percent, and then to 25 percent, while increasing annual personal income exemptions from Moldovan Leu 2 100 to 2 20 and then to Moldovan Leu 3 600;
- Decreasing the tax burden on businesses by granting small businesses income tax exemptions for a three-year period and application of a maximum corporate income tax of 22 percent.

| Beneficiary | Description | Tax type | Duration |
|---|---|---|---|
| Small business entities | Average annual number of employees not exceeding 19 people | Corporate income tax exemption of 100% | 3 years |
| | Annual sales revenue not exceeding Moldovan Leu 3 million | 35% exemption from the corporate income tax rate of 15% | 2 years |
| Agricultural producers | The main activity is related exclusively to the manufacture of agricultural products | Corporate income tax exemption 100% | 5 years |

- Supporting farmers' households, regardless of their turnover and number of employees, by granting them income tax exemptions for a three-year period;
- Creating a more favourable climate for business development by increasing the capitalization on expenses related to repair of fixed assets, which permits deductions of five percent to ten percent of the value of the fixed assets from the beginning of the year;
- Simplifying the documentation requirements for export of goods and services by merging the transportation invoice and the VAT invoice into a single document.

The Government doesn't grant any tax exemptions to the food processing industry. The only benefit to the industry comes to the producers of dried fruits that are permitted a null rate of VAT for export trade (i.e. the VAT is refunded by the government to the exporting enterprise).

The main issue causing concern for exporters is related to the difficulty, time and effort required to obtain VAT refunds for export sales. It is reported that the VAT authorities apply very laborious and time-consuming procedures that typically

involve the cross-checking of all VAT invoices (attached to VAT refund claims) against the original supplier's VAT account. The smaller exporters do not have the staff or the resources to undertake this degree of follow-up and simply accept that they won't be able to obtain their refunds. It is estimated that this can cost up to two percent of FOB price for smaller fresh fruit exporters, while it can range from one to two percent for agrifood processors.

Among the few viable agrifood processors and smaller enterprises that are upgrading their production equipment, many have reported the charging of import duties (often around 20 percent) on spare parts imported (primarily from Western Europe); this is a major constraint to the necessary process of technology improvement. The cost of this constraint to agrifood processors will naturally depend on the type of equipment purchased, the country of its origin and the production capacity of the plant. However, taking into account low utilization of production capacities, even amongst the more efficient processors, it is likely that this constraint can add approximately one to two percent cost to the total value of the product (WB).

In a 2009 comparison of economic and business freedoms, Republic of Moldova scored just above the world average in trade, business, and taxation freedoms and has achieved relatively steady economic growth over the past five years. The average tariff rate is low, but non-tariff barriers are significant. However, Republic of Moldova's "Tax rates are competitive" (Heritage Foundation and Wall Street Journal 2009)[25].

## Food safety and quality

Moldova, like other transition countries, is facing the challenge to satisfy the increasingly strict compliance requirements that accompany international food trade.

Compliance with sanitary and phytosanitary measures is required under the Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement) which came from the Uruguay Round of negotiations to liberalize agricultural trade and established WTO. The SPS Agreement calls for harmonization of national norms based on international standards. standards were developed to control all food hygiene and food safety measures in agricultural and agrifood products and to prevent and control the spread of harmful diseases. The WTO Committee on Sanitary and Phytosanitary Measuresis by the work of three organizations: the International Plant Protection Convention (IPPC) for plant safety; the International Office of Epizootics(OIE) for animal health; and Codex Alimentarius Commission (CAC or Codex) to address issues of food safety in general.

In 2001, the Republic of Moldova became a WTO member; from that time, the country initiated regulatory reform. of the EU/Moldova Action Plan is focused on the approximation of the Republic of Moldova's legislation, norms and standards to those of the European Union.

The Government of the Republic of Moldova has treated the issue of meeting SPS requirements as a high-to-medium priority issue. As a result, a number of actions

25 Source http://www.heritage.org/index/country/Moldova; accessed 11 November 2009.

have already been taken in the area of legislation harmonization. For example, the adoption of: the Food Law in 2004 based on Hazard Analysis Critical Control Point (HACCP) principles and applied along all agrifood value chains; the main regulations concerning food control; the used of the so called 'hygienic packaging'; labelling requirements (including whether or not GMOs are present); the Sanitary Veterinary Law (in 2007). Development of concomitant institutions took place, as well. The country became an IPPI member, and two agencies were formed: the Veterinary Agency for Animal Health and Food Safety; and the General Phytosanitary and Seed Control Inspectorate.

Significant governmental regulations on food safety cover the following components and subsystems of agrifood value chains: organic farming; horticulture; fruit-growing; viticulture; seeds; plant protection; fertilizers, pesticides, chemicals, post-harvest handling; animal identification; and traceability system for all agriculture and agrifood products. Resolution № 957 passed by the government on 21 August 2007, approved "Technical Regulation of Fresh Fruits and Vegetables for Human Consumption"that defines minimum requirements for food safety and quality of fresh fruits and vegetables that are destined for human consumers, rather than animals. The Regulation defines general requirements for packaging, transportation and storage conditions for fresh fruits, vegetables and mushrooms in order to preserve the safety of fresh agrifood products.

In spite of some progress (mentioned above), the latest WB assessment made in 2008 concludedthat lagging harmonization of SPS measures and food safety legislation by Republic of Moldova have been a serious impediment to increased export trade. The assessment described Republic of Moldova's economic development level as 'Low-to-moderate' while food safety and SPS capacities were estimated to be 'Weak'. Available financial resources were considered 'Scarce'. Markets are few. The Republic of Moldova lost its markets in Russia and Romania and has no access to the EU because of the country's non-compliance with SPS norms and standards. Moldova still uses GOST-based standards for agriculture and food safety established under the former Soviet Union, which severely limits access to more lucrative international trade markets.

There are serious constraints in the area of plant health protection: threat of introduction of pests due to weakened border control; weak capacity to detect mycotoxins and pesticide residues; little capacity to deal with disease and pest outbreaks; and a weak capability to provide plant quarantine.

There are however, a number of existing tests for checking the basic safety of fruits and vegetables. These include tests for detection of:

- nitrates in fresh fruits and vegetables;
- heavy metals in imported and exported fruits;
- pesticide residues, and in particular DDT, HCH and Aldrin in fruits or in the preparation of fruits;
- radioactivity (Cs, Strontium) in fresh fruits;
- mycotoxins (aflatoxin B1, zearalenon, deoxinivalenol, T-2 toxins) in preparations of fruits;

- Toxic elements (such as mercury, arsenic, copper, lead, cadmium, zinc, antimony) in fresh and dried fruits.

The imposition of a new regime for fresh produce residue testing, imposed by the Russian Federation from 1 January 2009, is likely to have a severe impact on exports of fresh produce at the outset. The capability for residue testing is likely to take two years to be fully put into place, based on experience in the wine sector. It should be kept in mind, though, that the maximum residue limits of pesticides and veterinary drugs (MRLs) and quality standards systems in the respective trading blocs are different; in particular, the Russian Federation is more stringent with regard to the MRLs. Therefore, the capability for residue testing will be an important initiative in terms of meeting the SPS requirements for exports to the EU.

Over the past 20 years the number of standards and certification programmes for agricultural production has grown rapidly. The certification of producers is not limited to facilitating sustainable farming practices, but also is encouraged so that growers can benefit from a variety of marketing opportunities. Producers who want to export are confronted not only by a number of import regulations, but also within importing countries by different niche markets for which specific requirements must be fulfilled.

However, many producers in the Republic of Moldova feel that the market for certified products is very complex and that the opportunities and requirements associated with the certification programmes are not always clear. In addition, producers do not always know if the requirements are compulsory (i.e. created as an official law or regulation of the importing country) or voluntary (i.e. producers or exporters may choose to comply with the requirements or not). They also do not know the advantages and limitations for the various types of certification.

On international markets the major voluntary certification schemes are: Organic Farming; Fairtrade; GLOBALGAP; International Standards Organization (ISO 14001, ISO 22000 and ISO 9001), British Retail Consortium (BRC) Global Standard; and others. The Republic of Moldova's producers are acquainted with only a limited number of standards (mainly Organic Farming, GLOBALGAP and ISO22000. The Republic of Moldova was a major supplier of fresh produce to the former Soviet Union, but none of it's the country's current companies can supply the EU with the volume of fresh produce exports that would warrant investment in the comprehensive and stringent GLOBALGAP or British Retail Consortium's Code of practice. Moreover, nearly all fresh and processed food companies in Republic of Moldova lack the infrastructure and organizational capacity needed to meet the basic requirements for Good Manufacturing Practices (GMPs) as recognized in the EU or the USA.

The shift of Republic of Moldova's trade to the EU market would require a transition to new quality standards, which in turn would require stricter management of production processes. Most European food retailers will accept only fresh fruits and vegetables that originated from GLOBALGAP-certified producers. In 2008, several horticultural producers received GLOBALGAP and HACCP Certificates from SGS Republic of Moldova; these were: "Plaiul Borlădean" located in the village of Borlădeni, Ocnița region (cultivated area of 1 270 ha, 280 ha of orchards); "Viva Igna" located in the village of Grimăncăuți, Briceni region (cultivated area of 370 ha, 100 ha of orchards

and air conditioning-refrigeration units of 700-ton capacity); ”Cap Săgetătorul SRL” located in the village of Niorcani, Soroca region (32 ha of orchards); and ”Medfarma,” a medicinal plants producer in Chisinau.

On the local market, unfortunately, the international supermarket chains (e.g. Metro) don’t accept certifications such ‘certified Organic’ or ISO 22000.

The certification process for HACCP as a part of ISO 22000 was initiated in 2007 by the Food Law (Resolution № 957) and is mandatory in Republic of Moldova. The process of HACCP implementation at food establishments is very slow; this is connected with lack of financing for upgrading food facilities.

During the WB assessment of 2008, the following observations were made:

- Lack of capital for new applications of technology;
- Lack of means–financial, technological, standards and operational practices—necessary to support plant protection, in general, and in regard to certain key aspects of plant protection (such as application of standards and processes, appropriate packaging,; proper transportation);
- Non-compliance with SPS, difficulty in implementing technological processes to support SPS capacities;
- Lack of application of good hygienic practices (GHPs), good manufacturing practices (GMPs) good agricultural practices (GAPs);
- Lack of training in GHPs, GMPs and HACCP;
- Underestimation of food safety in general;
- Lack of understanding of the value of quality and its various characteristics (such as size, shape, texture, colour and smell);
- Lack of understanding of the need for consistency.

The Government of the Republic of Moldova needs to achieve the objective of minimizing the risk of a multi-year ban on the country’s products due to the unknowing exportation of a devastating pest or disease to one of the country’s export partners. In particular, the government should focus its efforts on closing the specific gaps identified and in implementing the recommendations required to support certification, inspection and diagnostics.

The establishment of food quality systems requires external support, as well as public and private cooperation. There is a need for innovation in production technologies, as well as the adoption of new practices such as traceability and improved standards for health and hygiene.

The growing requirement for use of food safety and quality control systems, such as HACCP and ISO standards, results in a shift of responsibility, primarily to the private sector, for effective management of production processes. Compliance with international requirements regarding the quality and safety of food is a prerequisite for access, on a product-by-product basis, to global markets.

Adoption of GAPs is essential for agricultural producers. Vertical integration and supply chain coordination, whether through vertical ownership, formal contracts, or informal agreements, can improve quality, safety and supply in the food processing sector.

## Programmes and special policies for selected agrifood value chain

Applying a number of concrete measures could significantly strengthen agriculture in the Republic of Moldova. Some examples of such measures include: development of agricultural infrastructure and services; improvement of irrigation; improvement of seed technology; facilitating access to fertilizers and other inputs; enhancing access to storage facilities and markets.

Many of these problems are being addressed by the government of the Republic of Moldova within the framework of the implementation of the Agricultural Sustainable Development Strategy, recently developed in cooperation with the FAO and within the UNDP Project *Relief and Technical Assistance Response to the Drought in Moldova*. (UNDP 2008).

The overall economic losses of the 2007 drought were estimated to be in the region of US$1.2 billion (per official Republic of Moldova Government statistics). These had a particularly devastating effect on the livelihoods of the rural population, and more importantly the small independent private farmers, which are the backbone of the country's agricultural sector who produce around 72 percent of the agricultural GDP (UNDP 2008).

At the end of 2007, the Government of the Republic of Moldova approved the Strategy for the Development of the Agricultural Sector for 2008-2015(ROM Ministry of Agriculture 2007). In 2008, the government began the implementation of the Strategy. The document recognizes the vulnerability of the country's agriculture in to drought and other climate-related hazards, particularly Republic of Moldova's technical ability to cope with weather-related shocks, farmer awareness about various adaptation technologies, varietal differences and cultivation methods and the availability of financial and insurance mechanisms that can reduce losses to the sector.

The Strategy emphasizes continuous improvement in the development of agrifood value chains so as to obtain the highest measure of value added. At the national level, the Strategy provides for cooperation and integration of various economic units from agriculture, the agrifood processing industry and the trade areas within national programmes for different specialized fields (such as cattle breeding or vegetable production).

The Strategy is aimed at development of the country's agricultural market; measures include:

1. Development of market infrastructure and improvement of distribution channels;

- Establish wholesale agrifood markets (based on tenders for agricultural products) through modernization of marketing structures, increase of agrifood trade security, integration of small and medium-scale producers within the distribution network

and satisfaction of market requirements (in terms of both quantity and quality).

- Establish marketing cooperatives oriented toward increasing product quality and production volume, allocation of marketing investments (i.e. facilities for packing, sorting, processing, and storage) and enhancing the negotiation position and skills of agricultural producers.
- Support investments in processing and marketing for small and medium-sized enterprises (SME) in order to increase the value of agricultural products, to monitor quality and food security conditions, to ensure market requirements, as well as, to establish new working places.

2. Improving agricultural producers and entrepreneurs' marketing capabilities.

- This measure is meant for provision of marketing information to agricultural producers and entrepreneurs. An Agrifood Information and Marketing Centre (AIMC) would be established that would offer consulting services and technical assistance regarding the development of agrifood value chains, with particular emphasis on the processing and trading aspects of the chains.

The Strategy for the Agricultural Development of the Republic of Moldova for 2008-2015 stated that the development of the legislative framework represents one of the state's fundamental priorities within the framework for regulatory reform. The main priorities are the implementation of actions related to food safety and product quality. These priorities will be addressed using the following key actions:

- harmonizing national legislation with EU legislation, especially through the development and harmonization of technical regulations from the field of agrifood, sanitary-veterinary and phytosanitary norms;
- defining the boundaries concerning political, regulatory, control and state inspection functions of the Ministry of Agriculture and Food Industry from functions dealing with services provided for payment;
- streamlining licensing and certification procedures for new varieties of plants;
- Simplifying export-import procedures.

The Strategy and the relevant implementation of the Action Plan serve as unique tools to support the integration of the current strategic framework, alignment between the budgeting process and the policy framework, and assimilation of external technical and financial assistance (Stratan 2008).

The Republic of Moldova became involved in the implementation of internationally agreed development goals, including the Millennium Development Goals, on the basis of the country's main national priorities for equitable and sustained economic growth. By incorporating these goals into the national development policies and strategies, especially those related to poverty reduction, the Republic of Moldova could align its national efforts with internationally accepted development goals.

Primary donor projects and programmes providing assistance to the agricultural sector include:

The Agribusiness Development Project (ADP) was launched in June 2004 and finished in September 2009. Using funding from USAID, the ADP aimed to increase rural

incomes and employment by improving the international competitiveness of the country's sector for 'High Value Agriculture' (HVA) and boost its export potential and trade capacity. The HVA sector consists of fruits and vegetables from five product groups: fresh; frozen; dried; canned/pickled; and niche market (e.g. walnuts, essential oils, honey, organic produce, herbs). This work included providing support for planting high-yield intensive and super-intensive orchards as well as the introduction of new and upgraded cold storage facilities. Proper post-harvest handling is essential for maintaining quality and increasing shelf life needed to compete effectively in EU markets as well as in the emerging CIS supermarket trade. Beneficiaries of ADP assistance were: commercially oriented small-scale HVA producers; commercially significant and export-oriented HVA agribusinesses; exporters or wholesalers of HVA products; and associations of HVA producers, agribusinesses and exporters.

*The Competitiveness Enhancement and Enterprise Development* (CEED) project was funded by USAID will remain active until September 2010; the total project life covers a period of five years. The budget for the project has been extended recently and is now roughly US$4.3 million. The CEED project operates at both the industry and company levels and is targeting three sectors, one of which is the wine industry.

*The Competitive Enhancement Project* (CEP) was financed by the WB and the Japanese Government. It ran from February 2005 through 2009, and had four components: a) regulatory reform (aimed at improving the business environment); b) modernization of measurements and standards; c) matching grants for implementation of ISO standards; and, d) improving access to finance.

*The Millennium Challenge Corporation* (MCC) project was introduced by the USA and focuses on the development of high value agriculture. The project is now in its preparatory phase to clarify the needs of the sector. However, the MCC project will be focused primarily upon infrastructure development including the rehabilitation of irrigation systems and roads. If financing is approved, implementation would likely commence in 2011.

*The Rural Business Development Programme* (IFAD III) is the third investment in the Republic of Moldova by the International Fund for Agricultural Development of the United Nations (IFAD). The budget allocation for the programme's implementation is approximately US$13.5 million. Launched in July 2006, IFAD III is expected to be finalized in September 2011. Concurrently, IFAD III has established the Revolving Fund, the proceeds of which are being used to provide lending to finance eligible activities. The programme's objectives are to stimulate the growth of strategic and rural business activities in Republic of Moldova. To support these objectives, the Programme consists of three main components: Rural Financial Services; Rural Enterprise Intermediation Services; and Competitive Grants for Development of the Market-Derived Infrastructure Component.

Despite these international initiatives, there is a very little direct government support being provided to improve exports and production of agricultural products in Republic of Moldova. Support is provided by the Government of the Republic of Moldova in the form of subsidies for the establishment of top fruit, stone fruit and walnut plantations; nurseries and greenhouses; and irrigation systems. The subsidy system typically covers ten to twenty percent of investment costs, which is primarily

intended as an offset against the value added tax of 20 percent.

The Republic of Moldova is limited in its capacity to subsidize the agricultural sector. Within the State Budget Law, the government regulates agricultural subsidies. The level of subsidies provided to the agricultural sector is determined by a parliamentary decision on an annual basis. The Ministry of Agriculture and Food Industry administers the funds that support the agricultural producers.

In 2009, the Government of the Republic of Moldova provided subsidies for the promotion and development of organic farming. The development of organic farming was allocated Moldovan Leu 5.5 million under an executive order signed in February.

Subsidies worth some Moldovan Leu 150 million will be allocated for stimulating capital investments in the agricultural sector as follows: 45 million for encouraging investments in growing vegetables on protected land and for purchase of equipment by the rural small and medium-sized enterprises that process, dry and freeze fruit and vegetables; Another 45 million for subsidies for planting gardens; 30 million for buying irrigation equipment; –10 million for covering the costs of pumping water for irrigation; and 23.5 million for purchasing agricultural machinery for technological servicecentres.

Overall sectoral support includes planting nut and fruit trees, based on the National Program for the development of nut growing in Republic of Moldova until 2020.[26] The programme for nut growing aims to extend the basic nut-crop plantations, upgrade the technologies used in processing and increase export competitiveness of these highvalue products.

# Analysis of agrifood value chain components

## Farming segment

At the 'upstream' part of the agrifood value chain, farmers (i.e. primary producers) point to a number of current problems in the sector: lack of working capital; lack of sales markets; difficulties in getting loans from banks; extremely high interest rates; and the inability of the processing enterprises to pay for raw materials. This puts additional pressure—not only on the farmers (who face such problems as lack of financial resources to purchase fertilizers, phytosanitary products and seed material needed for spring works)—but also on the input providers who supply the farmers.

## Resources and technology

**Natural resources**: Republic of Moldova is characterized as a country with a rich landscape and an agricultural tradition. In fact, Republic of Moldova's single natural resource is its fertile soil. According to an assessment made by USAID, Republic of Moldova's natural resources and biodiversity were strongly impacted by the Soviet



26 Government Resolution No. 8 of 3 January 2006 and Monitorul Oficial No. 005 of 13 January 2006.

Union's strategy of developing large-scale agricultural operations based on pesticides, fertilizers and irrigation systems in the 1970s. When these systems collapsed, they left a legacy of residual pollution problems, a decaying infrastructure and a socio-economic crisis that continues to the present (USAID 2007).

**Water:** The water resources are limited in some areas of Republic of Moldova. This physically restricts development of the irrigation system —apart from the issue of investment constraints—for horticulture, as water is available only along the Prut and Dniester rivers. The quality of water requires improvement, as well. Therefore, this presents an issue for the water supply for human consumption in rural areas as well as for farms and pastures.

**Land**: The privatization process, including land privatization, is one of the major challenges for Republic of Moldova's agriculture development. After the completion of land privatization at the end of 2000, the land lease market in Republic of Moldova developed rapidly and led to significant adjustments in the initial farm sizes, thus addressing the critical issue of land fragmentation.[27] Land consolidation is one of the major problems for better development of the agricultural segment of the agrifood value chain.[28]

**Labour**: Patterns of employment have changed dramatically in Republic of Moldova over the past ten years. Between 1999 and 2007, out of a total population of 3.8 million, some 340 000 people left jobs in agriculture either to take up employment in trade or construction or to work abroad. As of mid-2006, approximately one-quarter of the economically active population of Republic of Moldova was working abroad. This suggests that 345 000 individuals are migrant workers representing 25.4 percent of Republic of Moldova's economically active population (IOM 2008). Migration has been mainly from rural areas.

**Inputs**: Suppliers of chemicals and other means for soil treatment have changed considerably during the last decade. All of the products are now imported; as a result, licensing costs are high and only large companies can compete in the inputs market. Chemicals, fertilizers and pesticides are bought directly from official suppliers, as are seeds and seedlings. Seed suppliers offer mostly foreign seeds. This occurs despite the fact that there are two research institutes in Republic of Moldova supplying domestic seeds for growing vegetables; these institutes were unable to remain competitive for industrial production. The domestic research in the Republic of Moldova is under financed and many seed varieties are lost or replaced by imported seeds. The restructuring of agriculture in Republic of Moldova, as well as the Law governing seed production,[29] didn't favour domestic seed varieties simply because there was no state support for the research institutions. Moreover, new business start-ups apply new foreign technology that typically includes the use of imported seeds.

Suppliers of fruit seedlings offer both local and foreign varieties. There are a number of legal entities providing seedlings and services in the area of planting design. Some of them have their own nurseries, but some offer imported seedlings of fruit trees, including grapes and walnut trees. The state played an important role in agricultural

27 Land lease is regulated by Law 198 XV of 15 May 2003.

28 Law 1107 XII of 6 June 2002 of the Civil Code and Law 1308 XIII of 25 July 1997 refer to matters of land price and regarding the buying and selling of land.

29 Law on seeds, 2008

production and marketing 25 years ago. These government institutions were often monopoly buyers of agricultural products, especially for basic food crops and important export crops. In addition, there was a monopoly for supply input. The Institute for Fruits held a monopoly for supply of seedlings for years. The privatization process and reform of administration has opened markets for private companies. Today, seedling and planting materials are supplied by a number of entities, where the largest suppliers of fruit seedlings are Bulgaria, Germany, France, Italy, Hungary, Sweden, Holland and the countries of former Yugoslavia (Department of Statistics 2008). Presently, the positive aspect is that there is a wide choice of suppliers for seedlings; the disadvantage is that the quality of seedling material is not high as the certification process has not been established properly.

**Information**: Currently such local agencies as ACSA (a state agency), Agroinform (an NGO) and CNFA (an NGO funded by USAID are providing marketing advice to selected stakeholders. Access to market intelligence placed on their Web sites is free of charge. But it is important to note that all of these service providers are supported by international donors and are, therefore, sustainable entities. The local support mechanism is still lacking. At the enterprise level, marketing is better organized at companies with foreign capital. From interviews, it's understood that farmers face a variety of problems making use of these services. For example, they don't use the information properly; or don't have access to Internet; or they only turn to the extension services at a very late date (e.g. during the production phase rather than in the initial stages of business establishment); or worse, they seek out the extension services when mistakes are very difficult or impossible to correct.

"Information exchange and trust will be additional keys to the creation and maintenance of a successful value chain. Retailers do not generally play a role in the actual production of an agrifood product. The retailer offers benefits to the value chain by providing access to large volumes of consumers and their observations (through data collection and research) of consumer demands. To maximize the success of a value chain, this information must be communicated to the rest of the chain. The dissemination of operations and sales information through the value chain is a change that partners will need to adjust to, trust, and embrace" (Devanney 2006)[30]

By comparison, it could be noted that sharing of information in Republic of Moldova is very little, or none at all. In particular, the agrifood value chains are characterized by:

- application of old methods of production, marketing and quality systems;
- fragmented market information system and access to it;
- little trust in extension services;
- Lack of mechanisms for communication.

**Infrastructure:** The assets that comprised agricultural infrastructure went through the same privatization process as occurred with land during the 1990s. As a result, the assets of large state-run agricultural farms, including cold storage, machinery, and other tools were distributed in the form of shares between ex-collective farmers. For example, a single cold storage facility became the jointly-owned property of 400 shareholders after privatization of one state farm.



30 Source: http://www.gov.ns.ca/agri/bde/econ/Valuechains.pdf; accessed on 12 November 2009.

Major investments in infrastructure are required to bring Republic of Moldova's agriculture to levels of international competitiveness. In 2004, it was estimated that at least US$2 billion is needed to: rehabilitate orchards, vineyards, and irrigation systems; transition farmers from the 'low investment-low return' field crops to HVA production; and to develop infrastructure that enhances value added (such as storage, packing and processing facilities). Though this figure is still much lower than the investment required to build an internationally competitive manufacturing or technology sector for the country, it is still quite significant and requires that public and private sector investments be carefully targeted to address key strategic constraints in order to achieve the greatest impact (USAID 2004).

Following the request submitted by the Government of the Republic of Moldova, the Food Security Program of the European Commission (FSP) provided financial support in the amount of EUR 2 million within 2005-2006, through the State Budget, for the development of Small-Scale Irrigation System in the Republic of Moldova. The support provided through the budget was used for: (a) purchasing new irrigation equipment through the Project for the Increase of Food Production 2KR; and (b) developing and repairing the irrigation water supply infrastructure of the Republican Concern "Apele Moldovei" (Moldovan Waters). Development of a small-scale irrigation system has become a crucial element for development and was assessed for a surface of 36 030 hectares. The purpose of the FSP programme was to expand the irrigated surfaces for the value added crops by 7 000 hectares, according to the Action Plan for the Development of Small-Scale Irrigation System of the Ministry of Agriculture and Food Industry for 2005-2006 (EC 2006).

A study on cold chain distribution (i.e. a temperature-controlled supply chain) was prepared by the Cold Chain Association with support from CNFA and USAID. The study described the state of Republic of Moldova's infrastructure in terms of cold chain support for HVA products (Cold Chain Association 2007). This same study formed the basis for preparation of the Republic of Moldova's Government strategy for post-harvest handling of HVA products, *A Program to Revitalize the Post-Harvest Handling System for Fresh Fruits, Table Grapes and Vegetables 2008-2015*(Ministry of Agriculture 2008). The study concluded that, in the future, the specialized sorting, grading and packaging equipment must become an integral part of all cold storage facilities that export these HVA products. At the same time, the construction, renovation and equipping of the cold storage facilities must be carried out in accordance with international food safety and environmental protection standards and requirements. For example, a large number of the cold storage facilities do not have suitable access roads or lack continuous water supply and sewage systems, both of which constitute essential elements for complying with international food safety requirements.

Currently, the country's operational cold storage totals 75 780 tonnes and represents 42 percent of the total installed storage capacity. Although the share of non-operational cold storage is decreasing, it is still significant (at 30 percent). Presently, only five cold storage facilities have certified food safety management systems (such as HACCP or ISO 22000) and only two companies have GLOBALGAP certificates. That means the Republic of Moldova doesn't meet the requirements of the international market and the competitiveness of fresh produce from Republic of Moldova is very limited.

**Access to finance:** It is especially difficult for agricultural producers to obtain credit. The land in Republic of Moldova is not valued very highly; therefore in many cases it cannot be used as collateral. Of the total amount of credit offered by the commercial banks, the proportion offered to the agriculture and food industry was only 13.85 percent at the end of 2007 compared with 28.76 percent in 2003. Poor access to credit and the fact that foreign investors are prohibited from buying agricultural land have been serious impediments to the development of agriculture (ENPI 2009).

## Processing segment

The Republic of Moldova's canning industry consists of 17 large and over 50 small canneries. Only six of the large canneries are operational, among these, the leading ones are Natur Bravo, Alfa Nistru, Orhei Vit and Cosnita. The six canneries produce over 80 percent of the entire output of the canning industry. Annual output of the canning industry averages 300 000 metric tonnes of processed and/or canned fruits and vegetables, fruit and vegetable juices and apple juice concentrate.

Currently fruit and vegetable processors are in an unfavourable position. The main causes for this could be considered to be: Production costs are very high. Products are not diversified. Products are not price-competitive on traditional markets (due to wide differences in exchange rate and foreign currency devaluations). Producers do not comply with public and private food quality and food safety requirements.

In addition, the strategies for market positioning of the products offer little in terms of competitive advantage. In general, the products have been mainly positioned as 'commodities' in the market. This leads to the following set of competitive weaknesses:

- Difficult to compete on international markets with the same, undifferentiated commodity products (e.g. canned corn, green peas).
- Moldovan canned products haven't achieved competitive advantage because they are unable to offer clear signs of differentiation (such as advantage in price, product, packaging or promotion).
- Lack of resources for R&D.
- Lack of brand management strategies.

## Market structure

Republic of Moldova is in the early stages of transition from a centrally planned economy to a market economy. The process is characterized by liberalization of trade, strategic interventions on the part of the government, driven by the wish to access the EU market that can play an important role in fostering the development of agro-industries and the enhancement of their value chains.

The dual nature of the country's farm structure inis exhibited by the existence of a relatively small number of large corporate farms at one extreme, and a very large number of small and very small family farms at the other. Medium-sized family farms, the backbone of any market agriculture, effectively, do not exist in Republic of Moldova. Moldovan agriculture is characterized by a much greater concentration of

land in large farms than the agricultural sector in most market economies. The small individual farms on the whole are more productive and more efficient than the large corporate farms. They produce higher incomes for rural families than corporate farms (Lerman, Zvi, Cimpoies *et al*.)

**TABLE 2:** RANKINGS OF MAIN EXPORT COMMODITIES IN 2005

| | 2005 |
|---|---|
| ***Sour cherries** | *11* |
| ***Walnuts** | *13* |
| ***Grapes** | *20* |
| **Plums** | *28* |
| ***Apples** | *31* |
| **Sheep milk** | *42* |
| **Garlic** | *43* |

Note: Items shown with asterisk represent one of the five main product groups (Only peaches and apricots were missing).

Source: FAOSTAT 2007

The changes in agrifood systems have significant implications for growth, poverty and food security. The positive impact of trends is a rapid increase of opportunities to increase value added in agribusiness, especially related to primary production. The negative side is that the changes pose risks for small-scale farmers, traders, processors and retailers. As this paper has discussed, the small-scale farmers, traders, processors and retailers can barely participate in export trade. Moreover, farmers are mainly able to sell their produce locally, either at local spot markets, or to intermediate buyers who pay them at the farmgate. The small farmers at the local markets can be characterized as 'price takers'. The organization of the two (so-called) wholesale markets in Chisinau require sale of the farmers' produce to intermediates at the markets, or provide the small farmers with limited opportunity to trade on the spot (and only in season). Supermarket chains are rapidly developing their activities in Republic of Moldova. This appears to be an excellent source of revenue for foreign investors (such as Ukrainian, Romanian, Chinese and others), especially when Republic of Moldova's currency is strong.

Market structure also defines the boundaries for the supply chain. It describes the level of fragmentation of separate chain segments in a country, the size of the home market and the trade balance (Weindlmaier 2000). These figures are important to assess the competitiveness of an agrifood chain. For example, the level of fragmentation is a determinant for chain coordination; the (possibilities for) economies of scale can establish cost efficiencies; and the level of organisation at producer level can outline possibilities for upstream chain coordination.

According to research findings, there are good prospects for fresh horticultural products with export potential and competitive advantage on international markets; fresh apples were named by almost all participants of the value chains as an example of such a product. Within the fruits sector, apples were followed by table grapes, sour cherries, (sweet) cherries, peaches and apricots. Walnuts and dried fruits—prunes in particular—traditionally bring revenue from export trade. The major export destinations for these products have been EU states (such as Germany and the Netherlands). These products accrue additional value added by being certified as organic. Among vegetables, tomatoes were named first, followed by cabbage (some early varieties) and dried peas (also as organic) [31].

31 Data provided by the Ministry of Agriculture of the Republic of Moldova.

The rank of Republic of Moldova amongst all other countries for each agricultural commodity is shown in Table 2. As can be seen, sour cherries hold the leading position, followed by walnuts. As such it can be used not just to see where a countries standing is today but can show changes over time.

The next section describes the Republic of Moldova's market structure for each of the five key product groups. As can be seen, the structure varies widely.

**Sour cherries:** Cultivation, processing and marketing of cherry fruit and sour cherries is a profitable business for producers, and processors and traders of these fruits. The factors that have a positive impact on the profitability of these crops comprise: high market prices (€3.50-4.00 per kg for sour cherries; and €5.00-€8.00 Euro per kg for cherries); increased demand for cherries and sour cherries on the markets in the neighbouring countries; and high domestic consumption of fresh fruits and processed fruit products (such as juices and jams). In Republic of Moldova, the average annual production of (sweet) cherries is about. four thousand metric tonnes, while production of sour cherries –averages some seven thousand metric tonnes.

**Walnuts:** International trade statistics for 2007 indicate that the Republic of Moldova was the world's sixth-largest exporter of shelled walnuts in terms of value, and the world's fifth-largest exporter in terms of volume (constituting US$46.7 million and 9 077 metric tonnes, respectively). These numbers represent 6.4 percent of the world's shelled walnut exports and place Republic of Moldova among the leaders of European walnut export. On average for the last few years, more than 80 percent of Republic of Moldova's walnut exports were destined for the EU. Exports of in-shell walnuts represented only 2.5 percent of total export value. This figure is indicative of the high value-added nature of the Republic of Moldova's walnut exports. Low cost labour, combined with high output of quality kernels and preferential EU tax treatments have created unprecedented advantages for the Republic of Moldova in this sector.

**Apples:** This fruit has brought revenues to the country for many years. It should be noted that the products that cause apples to be considered an HVA product are fresh apples and apple juice concentrate. This is one of the sectors where investments have been made to upgrade the infrastructure –(e.g. the number of cold storage facilities was increased)In this sector, the growers are committed to solve problems together; they united to form an association of the major apple exporters. By the late 1990s, the volume of apple juice concentrate exported to the EU represented ten percent of all imports of apple juice concentrate into the EU. Apples are the fourth most widely produced fruit in the world after bananas, oranges and grapes.[32]. Globally, apple consumption rebounded, primarily driven by China's increased apple availability. As the Chinese become more aware of apple varieties and quality, their demand for premium apples will grow (USDA).

**Garlic** consumption on local market is very high, but it is almost for 100% covered by import from China. The same situation is with tomatoes and greenery (e.g. dill, parsley). Garlic is a vegetable from which bulbs, false stem and young leaves are consumed. The demand for garlic is high throughout the year thus this chain is high valued. Garlic is very rich in nutrients. It is used as additive in the food industry. Due to high content of essential oils in it, garlic is used in the pharmaceutical industry.

32 Apple Industry. Key Facts 2008, Belrose, Inc.

Nowadays the local garlic consumption is covered by imports from China. It is explained by lack of advanced technologies and cultivation in Republic of Moldova, as well as high costs for production. But calculations show that the garlic growers can get high profit from this crop cultivation. Even to achieve only the harvest of 6 t / ha the profit is over $20,000 / ha.

**Milk.** Dairy sector had high export volumes of powder milk to external market and raw milk in particular to Romania before it joined EU. The potential can be restored if to manage this value chain properly. There is the opportunity to significantly improve Republic of Moldova's food security by increasing the domestic production of meat and milk protein, by improving pasture management.

Moldovan general trade and food balance position over recent years were defined by FAO mission[33] assessing the impact of drought on agriculture in 2007 as follows: percent coverage of imports by exports: from 56.3% in 2003 to 39% in 2006; deficit can be made up from commercial imports.

## Chain coordination

Coordination ensures that interactions between firms and/or farms along a chain exhibit some reflection of organization rather than being simply random. There are key actors in the chain who take responsibility for the inter-firm division of labor, and for the capacities of particular participants to upgrade their activities. To be effective, key actors must have the power to coordinate and the capacity to sanction desired behavior. In general chain coordination can be divided in mechanisms of governance build by the chain participants (contracts) and informal norms (trust). The type of contracts and the level of trust depend on the structure of the chain.

Basically, three structures prevail in agrifood chains:

- One way of chain coordination is by achieving ownership over all the chain parts.
- A dominant chain segment can coordinate the chain.
- The chain can be coordinated more or less equally by the partners in the chain. All chain segments are equal in terms of power relations.

There are no strictly coordinated chain organisations in place in the agrifood sector in Republic of Moldova. There is a lack of collaboration between the suppliers and retailers in most cases. Retailer is often a focal firm, and coordinates the network firms in a hierarchical style setting the price and using the best price buying policy for making purchase. The producer is in the position of price taker.

**Sour cherries:** A dominant chain segment coordinates the chain: the value chain is governed by intermediate buyers who collect the product from population and export it abroad.

**Walnuts:** A dominant chain segment, foreign retailer, is coordinating the chain.

**Apples:** It is coordinated more or less equally by the partners in the chain. The chain is coordinated by local leading producing companies which also organize trade.

33 FAO, 2007

**Garlic:** This chain is coordinated by importer.

**Milk:** This is a dominate chain segment. The value chain is coordinated by processors.

Business relations between the value chain segments in Republic of Moldova have independent organizational structure. The observations during the research have been as follows:

- Lack of trust
- Lack of associating
- Lack of cooperation
- Lack of co-ordination
- Don't share risks and rewards
- No system for monitoring/ analysis of the situation
- Lack of interrelations between public and private sector

## Conclusions

Important task for Republic of Moldova is to maintain macroeconomic stability as the foundation for the revival of agriculture and poverty reduction. The legal framework is not that conducive to agricultural development and growth. Overregulation, inconsistency in policy making and implementation resulted in the growth of irregular economy, obstacles to market access, deterioration of investment climate. It is necessary to improve the legislation framework to have a positive effect on investment flow, trade development and economic growth.

Like most countries in the region, Republic of Moldova has been hit hard by the global economic crisis. Real GDP is projected to shrink by at least 9 percent in 2009, and there are worrying signs of deflation. Export markets have shrunk and foreign direct investments and remittances have fallen sharply. The current account deficit is expected to remain large despite the rapid import contraction. A large external financing shortfall is emerging due to low capital inflows.

Without additional measures, the budget deficit will increase to above 11 percent of GDP in 2009, a level which cannot be financed without putting severe strains on the economy. The heavy foreign exchange interventions of more than US$500 million to defend the leu have eroded competitiveness and drained liquidity from the financial system, weakening the banks' ability to provide credit to the economy. Pressures on the leu have eased recently due to depressed import demand, allowing some foreign exchange purchases by the National Bank of Republic of Moldova.

The immediate priorities should be to safeguard macroeconomic stability. An urgent budget rectification by parliament is needed to bring about a better balance between government consumption and available resources. Given the downturn, it will be important to preserve social spending and strengthen the investment budget to ensure rapid recovery when growth in the region is restored. Monetary policies need to be consistent with the fiscal stance and urgent legislative changes are needed to

tackle the challenges posed by the ongoing crisis. Unless the budget rectification and the legislative changes are implemented, the prospects for a deep and prolonged recession will continue to grow.

The government's expectations are that progress in structural reforms supported by the increased budget allocations for the development of market institutions will improve the business climate. Some progress has already been achieved, but the perception of the business environment in the Republic of Republic of Moldova is still perceived as not conducive to attracting large investments[34].

It is a common opinion that there are many gaps in every agrifood value chain in Republic of Moldova which needs financial, technical and information support. Some drivers for creating the enabling environment are not controlled, among which are trade barriers and exchange rate. Such drivers as interest rate and taxes are controlled by the government but not in favour of agrifood value chains. Market relations are hierarchical, driven by retailers and intermediaries and institutional marketing is very weak.

There is a strong necessity of increasing the governmental role in making decisions as to monetary and fiscal policy, especially in the situation of the world crisis. The business environment in attraction of FDI and local investments should become of special attention. The situation with access to affordable financing in the country is worsening.

The increased importance of food safety compliance with international requirements is underestimated both by government and private sector. There is a lack of resources (financial, human) for R&D. Migration entailed lack of qualified labour resources thus making it more expensive.

Chain governance is not favourable: there is a lack of collective policies, chain representativeness is very low, and chain information flow is poor. Sector data source are not transparent and shared between value chain participants.

34 Implementation of the European Neighborhood Policy in 2007' Progress Report Republic of Moldova

# Bibliography


- Brinza, O. 2009. Moldovan walnut sector: constraints analysis – toward the formation of a durable competitive sector agribusiness development project. USAID/CNFA.
- Cold Chain Association. 2007. Development of cold chain in Moldova. CNFA & USAID. Republic of Moldova.
- Devanney, M. 2006. The benefits of agri-food value chains. Nova Scotia. (Also available at www.gov.ns.ca).
- EC. 2006. Development of a small-scale irrigation system implementation process analysis, the Food Security Program of the European Commission (FSP). Brussels.
- ENPI. 2009. Black Sea labour market reviews: Moldova country report. No. 08-14; Working document January 2009.
- Heritage Foundation & Wall Street Journal. 2009. 2009 Index of economic freedom, the link between economic opportunity & prosperity. (Available at www.heritage.org).
- IOM. 2008. Migration in Moldova: a country profile.
- Lerman, Zvi, Cimpoies & Dragos. 2006. Duality of farm structure in transition agriculture: the case of Republic of Moldova. Hebrew University, Department of Agricultural Economics and Management. Jerusalem.
- Republic of Moldova Department of Statistics. 2008. State statistics for international trade.
- Republic of Moldova Ministry of Agriculture and Food Industry. 2007. The strategy for agricultural development for years 2008-2015. (also available at www.maia.gov.md).
- Republic of Moldova Ministry of Agriculture and Food Industry. 2008. A program to revitalize the post-harvest handling system for fresh fruits, table grapes and vegetables (2008-2015).
- Stratan, A. 2008. High level segment of the 2008 substantive session of the economic and social council of the United Nations. New-York. Statement made 1 July 2008.
- UNDP. 2008. Rural community empowerment and livelihoods enhancement, Beyond the 2007 Drought Emergency Response, August 2008.
- USAID & PFCP. 2004. Moldovan HVA agricultural export competitive study. Washington, D.C.
- USAID. 2007. Biodiversity report. Washington, D.C.
- USDA. World markets and trade: world apple situation. USDA/Foreign Agricultural Service, Office of Global Analysis. (also available at www.usda.gov).
- Van Hofwagen, G., Becx, G. & van den Broek, J. 2005. Drivers for competitiveness in agrifood chains: A comparative analysis of ten EU food product chains. Wageningen. Social Sciences Group

# CONSUMER PERCEPTIONS OF ORGANIC FOOD IN ROMANIA: A QUALITATIVE APPROACH

*Popa, A.*[35,36], *Hubbard, C.*[36], *Gorton, M.* [36], *Petrovici, D.*[37]

## Abstract

Drawing on Keller's (1993) theory of brand knowledge, this study assesses awareness and associations of organic foods in Romania. Given the lack of previous research on the Romanian market, an exploratory, qualitative study based on focus groups was utilized. Awareness is limited by confusion between the different terms used for organic food (ecologic, eco, biologic, bio and natural). Content analysis reveals that consumers perceive two types of organic produce: certified, labelled products available from large retailers; and uncertified, 'unintentionally' organic foods from small-scale producers in the countryside. While both types are associated with health benefits, participants regarded local 'unintentional' organic produce as more authentic and favourable. This is likely to limit the growth of the certified-organic market.

Key words: organic food, consumer behaviour, focus group, Romania, marketing strategy.

## Introduction

From the early 1990s onwards, the organic food market grew significantly in most Western European countries and organic production benefited from support at the European Union and member state levels. In 2007, the European market for organic products was valued at €16 billion, with Germany, the UK, France and Italy being the most important markets (Forschungsinstitut fuer biologischen Landbau 2009). In the same year, Denmark and Switzerland had the highest annual per-capita consumption of organic food in Europe, with national markets equivalent to €106 million and €105

35 Corresponding author: Alexandra.popa@ncl.ac.uk
36 School of Agriculture, Food and Rural Development, Newcastle University, UK
37 Kent University, UK

million, respectively. This growth in organic food sales (particularly from 2000 onwards) stimulated a number of studies that sought to understand consumer behaviour and perceptions toward this market (e.g. Barnes *et al*. 2009; Hughner *et al*. 2007; Radman 2005; McEachern and Willock 2004; Makatouni 2002; O'Donavan and McCarty 2002; Magnusson *et al*. 2001; and Gil *et al*. 2000).

In Romania, as in other Central and Eastern European (CEE) countries, the market for organic food remains small, albeit with some recent growth. to the Romanian Ministry of Agriculture and Rural Development data, the value of organic production in 2007 was US$102 million, which represented a 40 percent increase of the value for the previous year (USDA 2008). most important organic products in terms of output are cereals, medicinal flora, honey, sunflower oil and milk. Despite the high level of organic production, in 2007 than 0.01 percent of food products consumed in Romania were organic, compared with an average of 3-4 percent in Western Europe (USDA, 2008). Given the undeveloped state of demand on the domestic market, more than 90 percent of Romanian organic output is exported.

The literature concerning the organic food market in Romania is rather limited with most studies focusing on production (e.g. Gurau and Ranchold 2005; Petrovici and Ritson 2000), rather than consumer behaviour (e.g. Arvanitoyannis and Krystallis 2006). While research to date notes Romania's capacity to become an important EU organic producer, an assessment of the potential for the domestic market requires an analysis of consumer behaviour. Moreover, as organic production typically entails relatively higher costs than conventionally produced equivalents, its viability depends on a sufficiently large group of consumers paying a premium price. The viability of organic foods thus rests partially on the degree to which an organic food is perceived by consumers to represent a premium brand-category (Ayres and Midmore 2009). Hence, this paper aims to explore the market opportunities for organic food from a consumer perspective, drawing on Keller's (1993) theory of brand equity. It concentrates particularly on the attitudes and perceptions of Romanian consumers and their understanding of organic food.

The paper is organized as follows: Section 2 outlines the theoretical framework on brand knowledge that provides the basis for the empirical research;. Section 3 describes the methodology, detailing the rationale for focus groups; Sections 4 and 5 present the main findings and conclusions, respectively.

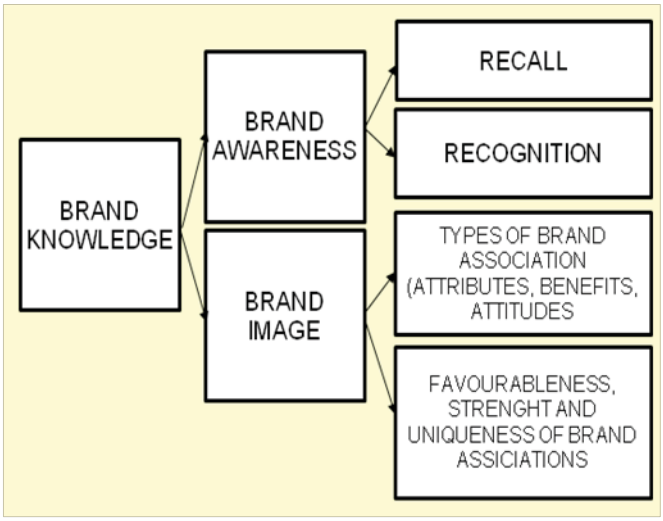
## Keller's theory of brand equity and organic foods

Premium brands require what Keller (1993) labels positive brand equity, i.e. a favourable, "differential effect of brand knowledge on consumer response to the marketing of a brand". The effect a brand can be measured either directly or indirectly. The direct compares consumer responses to the brand of interest with reactions to an unbranded or branded alternative, keeping all other elements of the marketing mix identical. This provides a clear indicator of whether a particular brand possesses positive or negative brand equity, but does not identify causes. The indirect assesses potential sources of brand equity by capturing consumers' brand knowledge. The latter measure can provide a more detailed understanding of the strengths and weaknesses of a particular brand and this approach informs this study. As indicated

in Figure 1, Keller (1993) identified two components of brand knowledge: awareness and image (i.e. a set of brand associations).

Brand awareness refers to the strength of the brand on memory. –That is to say, the likelihood and ease with which a brand name comes to mind. Awareness consists of both recognition (i.e. the consumer's ability to confirm prior exposure to a brand when given the brand as a cue) and recall (i.e. the consumer's ability to correctly discriminate the brand as previously seen or heard of when given the product category or other relevant probe as a cue); these measures capture 'top of the mind' accessibility (Keller 1993)

**FIGURE 1:** DIMENSIONS OF BRAND KNOWLEDGE




Source: adapted from Keller, 1993, p.7

There are three key linkages between brand awareness and consumer behaviour. First, brand awareness is vital for inclusion in a consumer's consideration set (i.e. the small number of alternative brands for a particular product category that receive consideration) for a purchase (Brown and Wildt, 1992). The likelihood of consumers' purchasing a brand outside of the consideration set, particularly for low involvement goods, is low. Second, brand awareness may be the dominant factor in deciding which brand to purchase when consumers have a low degree of involvement, such as through weak motivation (Romaniuk and Sharp 2004). Finally, brand awareness is a necessary precondition for creating brand image, the brand must be established in the consumer's memory in order to form and strengthen brand associations (Krishnan 1996).

Brand image can be defined "perceptions about a brand as reflected by the brand associations held in consumer memory" (Keller 1993). It is critical for marketers to understand the type of associations linked to a brand, which Keller categorises as: attributes; benefits; and attitudes. Attributes refer to what a consumer thinks a product or service is; either related to the product or not. Benefits (i.e. what consumers' value about a product or service), may be functional, symbolic or experiential. 'Brand attitude' refers to consumers' overall evaluation of a brand (Low and Lamb 2000). various types of brand associations that constitute a brand image thus include: product and non-product related attributes; functional, experiential and/or symbolic benefits; and overall brand attitudes.

Brand associations may vary in terms of their favourableness, strength and uniqueness. Strength refers to the intensity of a connection with a brand and depends on how information is interpreted and retained in a consumer's memory. Comparing the associations of the brand in question with the associations of competing brands

permits brand uniqueness to be assessed. At the same time, this comparison also solicits from consumers what they perceive to be the unique features of the brand. Uniqueness is an important factor, as strong, favourable associations may not provide the basis for competitive advantage if they are shared with competitors. These aspects of brand knowledge, outlined above, provide the theoretical basis for the empirical research.

## The focus group method

**TABLE 1:** CHARACTERISTICS OF THE FOCUS GROUPS

| | FG1 (O) | FG2 (O) | FG3 (NO) | FG4 (NO) | Total |
|---|---|---|---|---|---|
| **Gender:** | | | | | |
| female | 3 | 5 | 4 | 4 | 16 |
| male | 3 | 1 | 2 | 3 | 9 |
| **Age group:** | | | | | |
| 18-24 | 1 | 1 | 2 | 2 | 6 |
| 25-34 | 2 | 2 | 3 | 2 | 9 |
| 35-44 | 1 | 2 | | 2 | 5 |
| 45-54 | 1 | 1 | 1 | 1 | 4 |
| 55+ | 1 | | | | 1 |
| **Education:** | | | | | |
| -up to 12 classes | | | 1 | 2 | 3 |
| -vocational training | | | | 1 | 1 |
| -college | | 1 | 1 | | 2 |
| -university and higher | 6 | 5 | 4 | 4 | 19 |
| **Living arrangements:** | | | | | |
| single | 2 | 2 | 3 | 1 | 8 |
| couple without children | 1 | 1 | 2 | 4 | 8 |
| couple/single with at least 1 child under 6y old in the same household | 1 | 1 | | 1 | 3 |
| couple/single with all children over 6y old in the same household | 1 | 2 | 1 | 1 | 5 |
| couple/single with only adult children who have left household | 1 | | | | 1 |
| **Monthly disposable income (Leu/€):** | | | | | |
| < 1 000 (< €240) | | | | 1 | 1 |
| 1 001- 2 000 (€240 - €480) | 1 | 3 | 4 | 2 | 10 |
| 2 001-3 500 (€480 - €840) | 1 | 1 | 1 | 2 | 5 |
| 3 501-5 000 (€840 - €1 120) | 2 | 1 | | 2 | 5 |
| 5 001 -7 000 (€1 120 - €1 675) | | 1 | 1 | | 2 |
| 7 001-10 000 (€1 675 -€2 400) | 1 | | | | 1 |

Note: O = organic; NO = non-organic; exchange rate €1= Leu4.18 (National Romanian Bank, 27 May 2009). By way of comparison, the average total household income (for 2007) was Leu1 687 (or €400) per month.

Given the undeveloped market for organic food in Romania and the lack of previous empirical research, the study employed exploratory focus groups. A key objective of the study was to comprehend Romanian consumers' understanding of organic foods

and their associations, including consumer attitudes and motivations.

Focus groups fit with this objective, as they allow "the researcher to develop an understanding about why people feel the way they do" while offering the opportunity to the participants "to probe each other's reasons for holding a certain view" (Bryman and Bell 2003). Focus groups offer the added advantage of being conducted in "a permissive, non-threatening environment" to the participants (Krueger 1994). Hence, the focus group is a useful technique for not only probing the 'cognitive' aspects of consumers' attitudes (e.g. knowledge, beliefs and perceptions), but also the connotative aspects. Critics would, however, argue that the method is not representative and offers limited information given its time constraints (Barnes *et al*. 2009). As the aim of this study is to assess and gain knowledge about Romanian consumers' attitudes and perceptions in order to explore market opportunities for organic food, the use of a qualitative approach (such as the focus group), was considered an appropriate vehicle for data collection.

## Participants and data collection

Four focus groups included 25 participants, grouped as organic and non-organic consumers. Purposeful sampling was utilized to select respondents that could most inform the study. All focus groups occurred in Bucharest in March 2009. Bucharest was chosen as it is the city with the highest average income and the largest market potential. The participants were selected according to the following criteria: all consumers were food shoppers; over 18 years old; permanent residency in Bucharest. For the purpose of this study, organic consumers were defined as having bought at least one certified-organic food product in the last month. As focus groups do not require a random selection of participants (see Bryman and Bell, 2003; Bender and Ewbank, 1994), participants were identified using personal contacts and a networking strategy. They were then separated into two groups of organic consumers and two groups of non-organic consumers. After identifying the potential members of these four groups, they were contacted using a letter of invitation sent by email, or if no email address was available, the participants were contacted by telephone.

Each group consisted of six or seven participants and the lead author of this paper acted as moderator. The focus groups typically lasted for one hour. The sessions were held at the University of Agricultural Sciences and Veterinary Medicine, Bucharest. All discussions were digitally recorded. Participants were informed in advance about recording and their consent agreed, according to the Market Research Society Code of Conduct. Participants received a voucher worth Leu20 (approximately €5) as compensation for their time and participation. The language of the focus group discussions was Romanian.

The sample included 25 people (16 women and 9 men), with more than half (14) of participants falling into the 25-44 age group (Table 1). Common occupations included management positions (6), university or high-school teaching (6) or engineering (5). There were also three students, one housewife, a sales agent, a beautician, an IT programmer and an accountant. The majority of participants (19) possessed a university degree. Sixteen participants were single or living with a partner, although without any children. Three participants had at least one child under six years old.

The remainder had older children. In terms of total monthly disposable income, most participants (10) were in the Leu1 001 – 2 000 category. There was only one person with a monthly disposable income of less than Leu1 000 and only one person earning more than Leu10 000. Half of the sample consisted of 'light consumers' that consumed organic food once a month and the other half were 'medium-heavy consumers' that consumed organic food at least two to three times per month.

## Discussion Guide and Data Analysis

The focus groups followed a protocol based on a semi-structured interview guide developed using Krueger's theoretical guidelines (1994). The interview guide consisted of a set of 'house rules' for conducting the focus groups and a checklist of questions and required topics that were to be discussed. Keller's theory on consumer brand equity (Keller 1993; Keller 2003; Keller and Lehmann 2006) informed the themes covered in the focus groups. Four major themes were explored: (i) general knowledge and awareness of organic food; (ii) associations of organic produce; (iii) major barriers to purchasing organic food; and (iv) sources of information and the role of various stakeholders in promoting organic food. Within these themes, a number of topics were addressed: the meaning of 'organic'; price and willingness to pay a premium for organic products; taste; health and diet issues; selection of organic products and trust; country-of-origin; labelling; availability of organic products and environmental concerns.

The discussion did not begin immediately with issues regarding organic food. More general questions about food purchasing and consumption choices were asked to encourage participants to think about the kinds of foods they bought in a typical week and why. This helped contextualize attitudes and behaviour towards organic foods. To conclude the focus groups, participants were asked to express what they considered to be the 'typical' Romanian organic consumer (personification) and finally, they were invited to share any comments or suggestions about the discussion.

The digitally recorded interviews were transcribed following each of the focus groups in order to enhance researchers' understanding and capacity for data analysis (Bryman and Bell, 2003). The collected data were explored following the stages (i.e. coding, categorization, comparison, integration and interpretation) of classical content analysis (Spiggle 1994; Strauss and Corbin 1990). Hence, data were organized around particular themes, on a judgmental basis, then coded and categorized in order to facilitate interpretation.

## Result and Discussion

Brand awareness: general knowledge of organic food

Participants (i.e. both organic and non-organic consumers) defined organic food similarly, emphasizing in particular the lack of chemical inputs (e.g. fertilizers, pesticides), as well as the absence of so-called 'artificial' ingredients (e.g. preservatives, food additives, GMO). The official word used by the Romanian Ministry of Agriculture is '*ecologic*' and this is similar to the English term 'organic' and the French term

‘biologic’. However, during the discussions, participants used different terms to define organic food such as ‘ecologic’, ‘eco’, ‘biologic’, ‘bio’ and ‘natural’. As most organic products sold on the Romanian market are imported, the existence of various labels might explain the variety of terms used by participants. Some of the participants explained the terms as follows:

“They aren’t synonyms. But I don’t know the exact definition and difference” [FG1/F, 55+];

“As a consumer, I believe ‘ecologic’ and ‘bio’ mean the same thing” [FG1/M, 18-24];

“I think that there is a difference between ‘natural’ and ‘biologic’. ‘Natural’ means the produce [came] from the countryside; but to call it ‘biologic’, it’s a long way” [FG2/F, 25-34];

“’Natural’ food means that it isn’t helped to grow, while ‘ecologic’ food is controlled to be natural. Still ‘natural’ isn’t necessarily ‘bio’ ” [FG4/F, 18-24].

Additionally, some participants, mostly non-organic shoppers, linked organic food with the more traditional low input farming system practiced by small-scale Romanian farmers. The latter was considered a ‘natural’ method of food production, with low productivity and thus a much lower impact on the environment. Overall, participants talked about two types of organic food: (i) certified, labelled products sold by the large retailers (hypermarkets or supermarkets) or in specialist shops and online stores; and (ii) the ‘unintentional organic’ food supplied by relatives from the countryside or sold in the open-air markets by individual peasants. Although the products included in the latter category are not certified as organic, most participants believed that in most Romanian urban centres there is still a great demand for these products and they have advantages over the certified products. Some participants also shared their own experiences as consumers of ‘unintentional organic’ products:

“From my understanding, they are certified products. They are the same as the natural foods” [FG3/M, 25-34];

“I am aware that there are bio foods without any certification in open-air markets, for instance” [FG2/M, 18-24];

“My parents grow chickens and I know for sure that their eggs are biologic because they don’t give them anything artificial, only … grains” [FG3/F, 18-24];

“Why should we pay a premium for … a product that we can get cheaper from the countryside?” [FG4/M, 25-34].

These ‘unintentional organic’ foods are significant, given the role played by small-scale agricultural production in Romania and the transfers of fresh produce by rural residents to their urban relatives (Arvanitoyannis and Krystallis 2006; Petrovici and Gorton 2005).

## Associations of organic food

Figure 2 summarizes the associations of organic food, both positive and negative, that emerged from the focus groups.

A recurrent association, highlighted by both organic and non-organic shoppers, had to do with health. Some organic shoppers perceived the consumption of organic products as a potential method for the prevention of diseases (such as cancer or heart-related illnesses), which have reached high levels in Romania in recent years. Thus, encouraging early organic consumption in children was seen as a positive measure for increasing life expectancy.

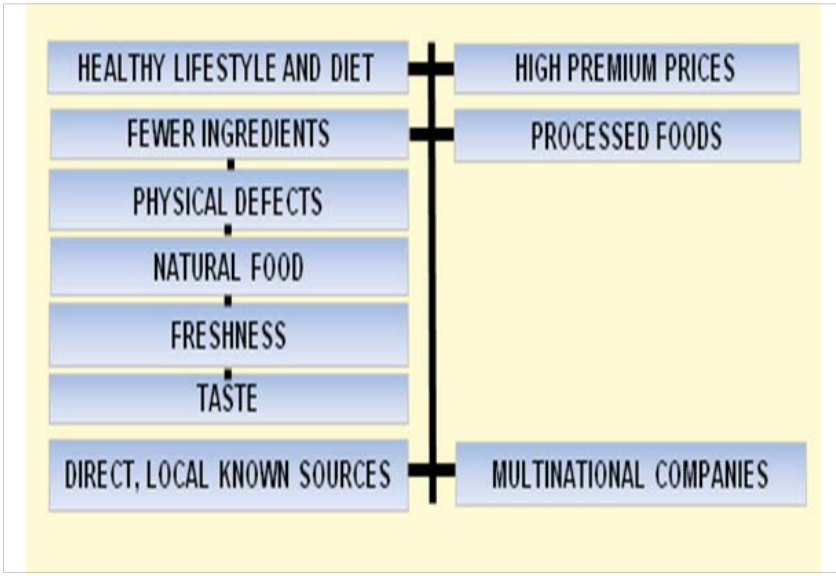
**These attitudes are reflected in the following responses:**

"Because they are healthier" [FG1/M, 18-24];

"They are a lot healthier" [FG3/F, 18-24];

"If they are really ecologic, they definitely are healthier" [FG4/M, 35-44];

**FIGURE 2:** ROMANIAN CONSUMERS ASSOCIATIONS OF ORGANIC FOODS




"This ecologic diet prolonged her life, a little "[FG1/F, 55+];

"So, they would be more than welcomed for children" [FG1/F, 45-54].

These opinions contrast with the findings of Arvanitoyannis and Krystallis (2006) who argued that most Romanian consumers who had heard of the term 'organic' could not identify clear benefits compared to conventional food. However, Arvanitoyannis and Krystallishad only considered one specific organic product, namely honey. Amongst non-organic shoppers, though, there were a few who expressed some scepticism regarding a direct link between health and consumption of organic products, citing a lack of credible (scientific) evidence.

**Physical defects in organic food were associated with authenticity, acting as a source of trust and reassurance for organic shoppers:**

"I avoid good looking, washed, shiny products; I search for a wormy apple or a dirty carrot" [FG1/M, 18-24];

"I went and I bought the ugliest leek available" [FG1/F, 55+];

**The focus groups also debated the linkages between taste and organic foods. Some clearly believed 'real' organic foods tasted more natural and better. Others could not identify any difference. Some felt that organic foods were more filling:**

"You know, I tend to eat less since I've started to consume bio products, because the feeling of satiety comes faster" [FG2/F, 35-44];

"When it comes to taste, I didn't feel [there was] any difference" [FG2/F, 25-34];

"You have to trust your senses, feelings" [FG4/F18-24];

"Definitely, taste is the one that shows you if it's bio or not" [FG4/M, 35-44].

**Nevertheless, some non-organic shoppers possessed negative perceptions of the difference in taste between conventional and organic foods:**

"I think I'll mind if I feel an unusual, different taste" [FG3/M, 25-34];

"We got used to the artificial taste. [We are] addicted" [FG4/F, 18-24].

**Both organic and non-organic consumers, linked organic produce with tradition, and in certain cases nostalgia for childhood. Organic shoppers, however, also recognised that the traditional Romanian diet is not necessarily healthy:**

"Well, if you think about childhood memories, the home-cooked bread, for instance. I noticed that ecologic foods tend to follow traditional recipes" [FG3/F, 25-34];

"We compare it with the natural products that we know since we were kids" [FG4/F, 18-24];

"I remember, when I was little, I think people used to eat healthier" [FG1/M, 18-24].

**The focus groups discussed a potential linkage between organic foods and conspicuous consumption, or a so-called 'snob' effect. None of the organic shoppers, though, perceived such a linkage:**

"In the Romanian culture, snobbism translates into something else, into a cool car and a big house, somewhere, with a swimming pool. It doesn't translate into a healthy diet" [FG1/M, 18-24].

**Nevertheless, there were some non-organic shoppers that perceived such a linkage existed:**

"To pay the current price premium for ecologic foods means you are a snob. You buy them because the other ones from the same social class buy them" [FG3/M, 25-34].

**Finally regarding associations, many perceived organic food as novel, evoking their curiosity. In some cases this was enough to stimulate purchase:**

"Lately, out of curiosity, I bought 'bio' foods" [FG2/M, 18-24].

## Barriers to purchasing organic food

**As expected, high prices and trust were perceived as the main barriers to purchase for both organic and non-organic shoppers. Organic food is perceived rather as a luxury good that appeals only to a restricted segment of consumers, giving rise to a niche market:**

"They are too expensive and I'm not sure that the ecologic standards are applied in our country" [FG1/F, 55+];

"They will always be luxury goods [meant] for a small segment of the population who can afford them" [FG2/F, 45-54];

"Price is the problem. There's no use for knowledge and advice, if we can't afford these products" [FG2/F, 25-34];

"I'm not sure if I can trust all the organic-labelled products on the market to comply with all these standards" [FG3/F, 18-24];

"I would like to consume them, but they are too expensive. I saw the stand; I went to see what was there. I saw the prices and I left" [FG3/F, 45-54];

"We've seen them and admired them on the shelves along with their prices" [FG4/M, 35-44].

**Limited variety and distribution characterize the Romanian organic food market as results of low domestic demand and the relative novelty of many of the products. When asked why they do not consume organic foods more regularly, existing organic shoppers raised the issues of price, restricted distribution and a limited variety of produce:**

"I could barely find labelled products that I'm interested in" [FG1/M, 25-34];

"There aren't any labelled fruit and vegetables on the market" [FG1/F, 25-34];

"You can't find them in corner or neighbourhood shops" [FG1/M, 18-24];

"Hard to find ... you should be lucky to find any" [FG1/M, 35-44];

"I started looking for certain products, but not as often as I would like" [FG2/F, 35-44];

"It's also that they are only in hypermarkets, and how often do you go to a hypermarket? … The variety of products is not even very diverse in our country" [FG3/F, 25-34].

## Sources of information and the role of various stakeholders in promoting organic food

**As regards the sources of information, there were clear differences between organic and non-organic groups resulting from the different levels of consumer awareness:**

"We see adverts for all stupid things—tobacco, alcohol—but for the good products, we don't see any" [FG1/M, 25-34];

"The ecological culture should be taught in schools and universities" [FG1/F, 25-34];

"Even though there should be a government interest to have a healthy population, we don't have it"FG1/M, 18-24];

“Our laws ... even though they exist, aren’t applied” [FG1/F, 55+];

“There are a lot of rich people in Bucharest, but people don’t know about bio. They aren’t informed” [FG2/F, 35-44];

“I think we aren’t informed well enough about their benefits and about the method of production” [FG3/F, 18-24].

**Regarding the role of food processing companies, organic shoppers tended to possess a negative perception of organic products sold by large, multinational companies. In contrast, non-organic shoppers expressed their preference for well-known brands and food processing companies:**

“After I read on the label that it’s produced by Dr. Oetker, I had my doubts if it’s truly organic” [FG2/F, 45-54];

“In the case of the other food products [not fresh], we care about the producer ... and the brand’s prestige” [FG3/F, 18-24];

“A big multinational company that has a certain reputation to protect has all its business in order” [FG3/M, 25-34].

**The main sources of information identified were mass media, some specific health and diet publications, the Internet and large, grocery retailers (such as Carrefour). All participants agreed, however, on the need for better information and a greater involvement on the part of the Romanian Government. Across the groups it was believed that the government played only a minor, if any, role in promoting organic food and a healthy diet:**

“I started to look around, to search for more natural food, with fewer preservatives ... and to get informed ... on the Internet, as the first source” [FG1/M, 18-24];

“Recently, a series of labelled products appeared in supermarkets and I tend to trust them” [FG1/F, 45-55];

“The conclusion would be that, in fact, we need an education campaign, solid, through television because it has the greatest impact on consumers, on the one hand, and on local producers, on the other” [FG2/F, 45-54];

“I just realized that nobody presented any information campaigns about bio foods” [FG4/M, 25-34].

**The participants perceived a lack of consumer knowledge and information, linked to an absence of trust in relation to organic foods, and expressed the need for information campaigns to deal with this problem:**

“We see ads for all the stupid things—tobacco, alcohol—but for the good products, we don’t see any” [FG1/P3];

“The ecological culture should be thought in schools and universities” [FG1/P4];

“There are a lot of rich people in Bucharest, but people don’t know about bio. They aren’t informed” [FG2/P5];

“I think we aren’t informed well enough about their benefits, about the method of production” [FG3/P3].

**An additional source of distrust in certified-organic foods was the Romanian certification system. A public opinion survey (Open Society Institute 2002),**

**supporting this statement and based on a large sample size, indicated "a generalised perception [among participants] that Romania is governed by vested interests rather than by the rule of law". This perception was shared by several of the participants:**

"Even though there should be a government interest to have a healthy population, we don't have it" [FG1/P1];

"Our laws ... even though they exist— they aren't applied" [FG1/P5];

"The accreditation given by an inspection body which most of the times is international and experienced offers you, as a consumer, the trust in that product" [FG2/P5].

## The profile of Romanian organic food consumers

When asked about who buys and consumes organic food in Romania, organic shoppers tended to talk about themselves and their experiences or about friends and relatives. Across the four focus groups the organic consumer was defined in rather positive terms—as an informed person with clear knowledge about organic foods and diets and their impact on health, but which undoubtedly has an income above the average and who can afford to spend not only money, but also time looking for these products. Some of these characteristics are in line with the findings of Vaclavik (2009), who describes the organic customer as young to middle age, urban, health-conscious, well informed and environmentally aware. Although the link between environmental awareness and consumption of organic food did not appear as strong for Romanian consumers, those who mentioned it linked the environment to health concerns.

**Non-organic shoppers identified clearly two types of organic consumers: the urban consumer who buys organically certified products from supermarkets and specialist shops and the rural 'unintentional organic' consumer who produces for his/her own consumption. One organic food shopper also identified this distinction. Overall, all organic foods tend to be perceived as niche products. This in itself may act as a barrier to market development. These attitudes can be seen in the remarks about who are 'organic consumers':**

"The ecologic consumers are women, with a university degree, concerned about health and diet, and with an income above average, let's say" [FG1/F, 25-34];

"You go and buy ecologic food from supermarkets because you are educated enough and you know it's better for you" [FG2/F, 45-54];

"Persons who are concerned about health; they are informed. There are some persons who buy out of curiosity, but they'll get used to them" [FG2/F, 35-44];

"With money, but informed. Otherwise, they won't buy it" [FG3/F, 25-34];

"In my opinion, the ecologic consumer has time, first of all, because usually ecologic foods have short use-by-dates" [FG3/F, 18-24];

"There are clearly two types of ecologic consumers. Most of them are in rural areas and they consume eco food because they produce themselves only for their own consumption" [FG4/M, 35-44].



**Low consumer involvement was linked with non-organic consumption and young, single shoppers:**

"Being single, I don't have any responsibilities, so I don't care much about what I eat. I accidentally bought bio, few times" [FG2/F, 25-34];

"If we think too much, we won't eat anything" [FG3/M, 25-34].

**A greater involvement in food purchasing decisions, which was linked to greater interest in organic produce, was attributed to selfish behaviour, health problems or having children:**

"I know in my case. I changed drastically after my little girl was born. You become a little paranoid about the food for your child" [FG2/F, 35-44];

"I am being selfish. I eat these products because I like to take care of myself" [FG2/F, 25-34;]

"The ecologic consumer is a little bit selfish" [FG3/F, 18-24];

"It's also about age, when you start thinking about health and about children; because you start to think twice about their food" [FG4/M, 35-44].

## Conclusions

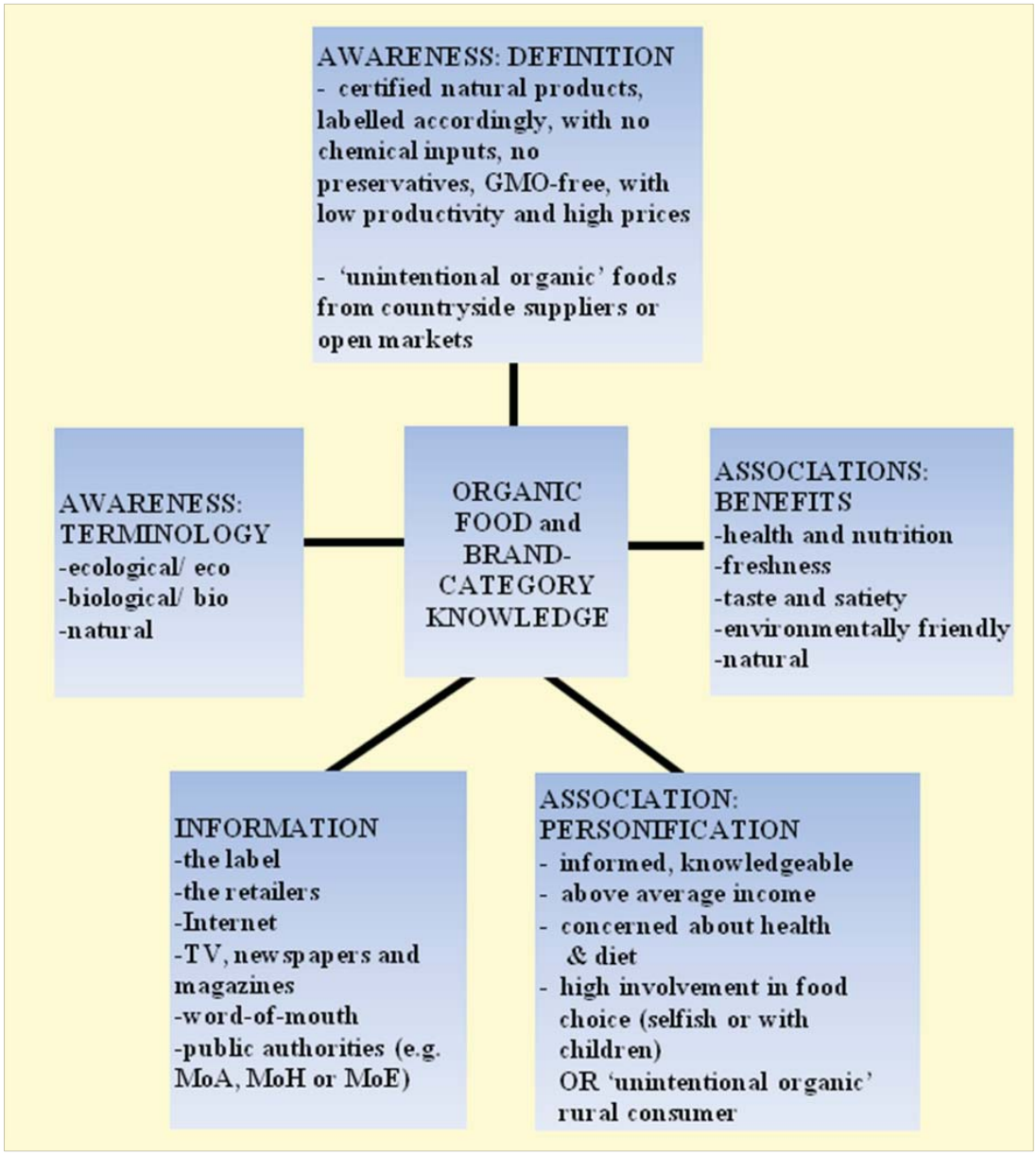
This study seeks to assess and understand Romanian consumers' attitudes and perceptions regarding organic food. It conceptualizes organic food as a premium brand-category that must command a price premium to offset higher production costs compared to conventional agriculture. Keller's (1993) theory that brand knowledge has two components (brand awareness and associations) guided the empirical research. Given the lack of previous work (specifically on the Romanian market) and the desire to understand motivations and attitudes, a qualitative approach was employed with primary data collection based on focus groups. Purposeful sampling, choosing respondents who can most inform the study, guided participant selection. Each focus group discussion was recorded, transcribed and then evaluated using content analysis. Figure 3 summarizes the main findings regarding awareness, associations and information sources.

In drawing conclusions, the exploratory nature of the research and the limitations that emerged from the localized character of this study should be stressed. While the focus groups were deliberately not representative, they did allow for an exploration of perceptions, attitudes and opinions that generated insight into the potential for organic foods in Romania.

In contrast to most Western European countries (Makatouni 2002; Gil *et al.* 2000), Romanian consumers perceive two distinct types of organic foods: (i) certified, labelled products; and (ii) 'unintentional organic' food supplied from the countryside or bought from the very popular urban open-air markets. This also led to the identification of two types of organic consumers: (i) the urban consumer who buys organically certified products from supermarkets and specialist shops; and (ii) the rural 'unintentional organic' consumer who produces for his/her own consumption and urban relatives. While both types of organic food are associated with health benefits, local 'unintentional' organic produce was regarded more favourably, being perceived as authentic, traditional and natural. Physical defects were regarded as

an indicator of authentic, organic production. Many perceived that processed and certified-organic produce available from multiple retailers were not in keeping with the spirit of 'organic foods'. As a matter regarding awareness, 'natural' and 'ecologic' were typically treated as synonyms for organic. These perceptions, where they persist, are likely to limit the potential market for certified-organic produce.

**FIGURE 3:** SUMMARY OF BRAND-CATEGORY KNOWLEDGE FOR ORGANIC FOOD




IN ROMANIA

Note: MoA = Ministry of Agriculture; MoH= Ministry of Health; MoE = Ministry of Education

Both organic and non-organic consumers perceived an association between organic produce and health benefits. Rather than organic being regarded as an expression of ethical behaviour (Honkanen *et al.* 2006), consumption was linked to selfish motivations. All regarded organic food as a niche product, which in itself is likely to limit its mainstream acceptance.

In terms of market development, it appears advantageous to position organic foods as traditional and natural products as this evokes a strong and favourable message appeal. However, without certification, small-scale producers, who currently provide

‘unintentional’ organic produce, will not be able to supply the large multiple retailers with organic labelled products. This is an important factor given the growing role of large multiple grocery retailers, particular in Bucharest and other large cities. Aiding small-scale farms to obtain certification appears an important task for government agencies. This is likely to face significant problems, though, on the supply side (formal compliance) but may also encounter scepticism from consumers. Respondents lack trust in national certification schemes and Romanian government agencies. While respondents felt that public authorities should do more to promote organic food and healthy diets, these agents are not particularly trusted as messengers.

# Bibliography


- Arvanitoyannis, I. & Krystallis, A. 2006. An empirical examination of the determinants of honey consumption in Romania. International Journal of Food Science and Technology 41, pp. 1164–1176.
- Ayres, N. & Midmore, P. 2009. Consumption of organic foods from a life history perspective: an exploratory study of British consumers, Aberystwyth, Wales. School of Management and Business, Aberystwyth University.
- Barnes, A.P., Vergunst, P. & Topp, K. 2009. Assessing the consumer perception of the term "organic": a citizens jury approach. British Food Journal 111 (2), pp.155-164.
- Bender, D. & Ewbank, D. 1994. The focus group as a tool for health research: issues in design and analysis. Health Transition Review 4 (1), pp. 63-80.
- Brown, J.J. & Wildt, A.R. 1992. Consideration set measurement. Journal of the Academy of Marketing Science 20 (3), pp. 235-243.
- Bryman, A. & Bell, E. 2003. Business research methods, Oxford University Press, Oxford.
- Forschungsinstitut fuer biologischen Landbau 2009. Statistics on Organic Farming in Europe, (available at http://www.organic-europe.net/europe_eu/statistics-fibl-survey.asp. accessed 26 May 2009).
- Gil, J.M. Gracia, A. & Sanchez, M. 2000. Market segmentation and willingness to pay for organic products in Spain., The International Food and Agribusiness Management Review 3 (20), pp. 207-226.
- Gurau, C. & Ranchhod, A. 2005. International green marketing: a comparative study of British and Romanian firms. International Marketing Review 22 (5), pp. 547-561.
- Honkanen, P., Verplanken, B. & Olsen, S.O. 2006. Ethical values and motives driving organic food choice. Journal of Consumer Behaviour 5 (5), pp.420-430.
- Hughner, R.S., McDonagh, P., Prothero, A., Shultz, C.J. & Stanton, J. 2007. Who are organic food consumers? A compilation and review of why people purchase organic food. Journal of Consumer Behaviour 6, pp. 94-110.
- Keller, K.L 2003. Brand Synthesis: The multidimensionality of brand knowledge. Journal of Consumer Research 29, pp. 595-600.
- Keller, K.L. & Lehmann, D.R. 2006. Brands and branding: research findings and future priorities. Marketing Science 25 (6), pp. 740–759.
- Keller, K.L. 1993. Conceptualizing, measuring, and managing customer-based brand equity. Journal of Marketing 57, pp. 1-22.
- Krishnan, H.S. 1996. Characteristics of memory associations: a consumer-based brand equity perspective. Journal of Research in Marketing 13 (4), pp. 389-405.
- Krueger, R.A. 1994. Focus groups: a practical guide for applied research (2nd Edition) Sage Publications.
- Low, G. & Lamb, C. 2000. The measurement and dimensionality of brand associations. Journal of Product and Brand Management 9 (6), pp. 350–368.
- Magnusson, M.K., Arvola, A., Koivisto Hursti, U.K., Aberg, L. & Sjoden, P.O. 2001. Attitudes towards organic foods among Swedish consumer. British Food Journal

103 (3), pp. 209-226.

- Makatouni, A. 2002. What motivates consumers to buy organic food in the UK? Results from a qualitative study. British Food Journal 104 (3-5), pp. 345-352.
- McEachern, M.G. & Willock, J. 2004. Producers and consumers of organic meat: a focus on attitudes and motivations. British Food Journal 106 (7), pp. 534-552.
- O'Donavan, P.O. & McCharty, M.C. 2002. Irish consumer preference for organic meat. British Food Journal 104 (3-5), pp. 353-370.
- Open Society Institute 2002. Corruption and anti-corruption policy in Romania. (available at http://www.soros.org/initiatives/eu/articles_publications/publications/eupolicy_20021107. accessed 26 May 2009).
- Petrovici, D.A. & Gorton, M. 2005. An evaluation of the importance of subsistence food production for assessments of poverty and policy targeting: evidence from Romania. Food Policy 30, pp. 205–223.
- Petrovici, D.A. & Ritson, C. 2000. Food consumption patterns in Romania. British Food Journal 102 (4), pp. 290-307.
- Radman, M. 2005. Consumer consumption and perception of organic products in Croatia. British Food Journal 107 (4), pp. 263-273.
- Romaniuk, J. & Sharp, B., 2004. Conceptualizing and measuring brand salience. Marketing Theory 4 (4), pp. 327-342.
- Spiggle, S. 1994. Analysis and interpretation of qualitative data in consumer research. Journal of Consumer Research 21 (3), pp. 491-503.
- Strauss, A. & Corbin, J. 1990. Basics of Qualitative Research: Grounded Theory Procedures and Techniques. Newbury Park, CA: Sage.
- USDA 2008. agriculture in Romania. GAIN Report No. RO8010. (available at http://www.fas.usda.gov/gainfiles/200807/146295056.pdf).
- Vaclavik, T. 2009. Compendium of the organic market in 27 European countries. Specialised Organic Retail Report Europe 2008, ORA, February 20, BioFach 09.

# THE USE OF QUALITY FUNCTION DEPLOYMENT IN THE FOOD INDUSTRY TO SUPPORT PRODUCT DEVELOPMENT

*Zuzana Kapsdorferova*[38]

## Abstract

This paper emphasizes the importance of implementation of new decision-making and planning methods in the food industry. In product sales the customer is the last component of the whole process, but with the most influence on product success. Satisfaction of preferences affects customer decisions and overall company results. Matching customer preferences by a trial and error approach would certainly not be satisfactory. On the contrary, this 'matching' must be the result of systematic planning, which is a basic requirement for effective quality management. This paper presents an example of Quality Function Deployment (QFD) to demonstrate how customer requirements might beassessed, how customers' preferences could be prioritized and then used as benchmarks to evaluate how well a company performs against its competitors. The goal of this paper is to show how QFD can be applied in the food industry to substantially increase customer satisfaction and company performance. The research has been carried out on the improvement of an existing product of a particular diary company. It focused on the evaluation of customer requirements (both spoken and unspoken), their transformation into technical processes to be used in producing the product and then to compare the company's product with its key competitors. The results show that—assuming customer requirements have been carefully defined—even a small change in a product feature may significantly influence the attractiveness of the product.

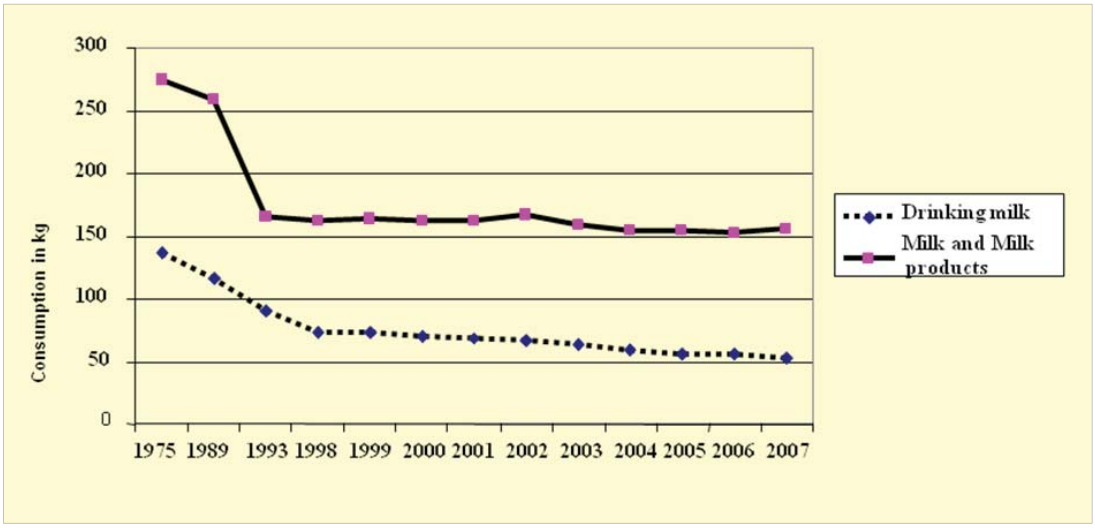
## Methods

Many companies attempt to orient themselves toward meeting customer requirements. Toward this end, they spend considerable amounts annually to conduct many market surveys. Defining customer requirements is extremely difficult, but a

38 Slovak University of Agriculture, Nitra, Slovakia

much more difficult process is the correct interpretation of customer requirements and their transformation into the product desired by the customer. Research was carried out for a Slovakian dairy company, which aimed to improve an existing product. The product was a creamy fruit yogurt. Research was conducted in January 2009, and 65 customers evaluated and tasted the creamy yogurts. The product was compared with two competing products that are sold on the ian market. The QFD method of evaluation was chosen in which research is conducted using modern methods of market research, although its application in food companies in the Slovak Republic is rare. QFD is defined as a concept that provides the means to translate customer requirements into appropriate technical (or technological) requirements for each stage of product development, including marketing strategies, planning, product design and engineering, prototype evaluation, production and sales. In fact it is a planning process that ensures that quality is incorporated into a product and its process at the design stage (Sullivan 1983).

**FIGURE 1:** DEVELOPMENT OF MILK AND MILK PRODUCT CONSUMPTION 1975-2007 IN THE SLOVAK REPUBLIC (KG/PERSON)




*Source: Statistical Office of the Slovak Republic and Dairy magazi*

## Current overview of milk and dairy product consumption in the Slovak Republic

The consumption of dairy products is generally tending to decrease in almost all parts of the world. The consumption of milk and dairy products per capita in the Slovak Republic is considered one of the lowest when compared with the other members of the EU–27. The consumption rate dropped sharply after 1989 and has not yet recovered. The total decrease in consumption by 2007 represents only 65 percent of the volume consumed in 1989. Milk consumption dropped from 115.7 kg per person in 1990 to 52.4 kg per person in 2007, while the combined total of milk and other dairy product consumption stabilized at the level of roughly 153 kg per person from 1993 through 2007 (Figure 1). There are many reasons that influenced the drop in demand. The main reasons can be considered to be: the decreasing number of children in the general population; insufficient advertising and sales promotion methods; high milk prices; and, a changed consumer nutrition pattern, that might be considered as the main barrier to milk consumption. When the consumption of specific dairy products

in the Slovak Republic is considered, it can be observed that the consumption of many dairy products has stagnated except in the category of yogurt drinks, yogurts and cheese. Therefore, creamy yogurt as a member of the category with the highest consumer demand has been selected to be evaluated using the QFD methodology.

## Research results

At the beginning of the research, the requirement of the dairy company was to improve its existing yogurt in accordance with the requirements of the customer and supply the market with a product that would be better than those yogurts currently offered by foreign competitors. The first step was to determine the customer requirements for creamy fruit yogurt and secondly, to identify the major competing products. Research indicated the essential customer requirements in the purchase of yogurt. These requirements were examined in terms of both taste and packaging. Customers evaluated the significance of individual factors. These factors were ranked on a scale of 1-to-5, with 1 representing –'minor importance' and 5 representing 'great

importance'. Among the characteristics affecting taste and packaging, customers assigned the following levels of importance:

| **Taste:** | **Packaging:** |
|---|---|
| •smell (1); | •opening/closing (4); |
| •consistency (4); | •colour (2); |
| •colour (2); | •the volume content (3); |
| •sweet taste (2); | •compulsory information (3); |
| •tastiness (5); | •optional information (2); |
| •slices of fruit (5) | •sturdiness of the package for safe transport (4); |

The rankings for characteristics concerning 'taste' requirements were entered into the QFD product planning matrix (Figure 2, in the column headed 'Importance for customer'). The Customer requirements were then evaluated in terms of the Technical requirements needed for production. The following Technical requirements were identified:

- type of yoghurt culture;
- fermentation process;
- the quality of milk;
- type of fruit ingredients;
- content of fruit ingredients;
- fat content;
- dry matter content;

- PH;
- mixing of ingredients.

Each of these was also entered into columns in the QFD matrix (Figure 2). Weights were then assigned to indicate the relevance of a Customer requirement to a Technical requirement. For example, Tastiness, which was of 'great importance' to customers only showed a high correspondence to the yoghurt's Fat content; most other Technical requirements were of only 'minor importance', with the exception of Milk quality.

**FIGURE 2:** QFD PRODUCT PLANNING MATRIX FOR CREAM FRUIT YOGURTS

| Technical requirements / Customer requirements | Importance for customer | Type of yoghurt culture | Fermentation process | Milk quality | Type of fruit ingredients | Content of fruit ingredients | Fat content | Dry mater content | PH | Mixing of ingredients | Planning matrix: *Company A* | *Company B* | *Company C* | Plan | Improvement | Value |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Smell* | 1 | 2 | 2 | 2 | 3 | 3 | 1 | 1 | 2 | 1 | 4 | 4 | 5 | 5 | 1 | 180 |
| Consistency | 4 | 5 | 5 | 1 | 3 | 3 | 5 | 3 | 1 | 5 | 4 | 3 | 2 | 4 | 1 | *67 500* |
| Colour | 2 | 1 | 1 | 5 | 4 | 4 | 1 | 1 | 1 | 1 | 5 | 5 | 2 | 5 | 1 | 96 |
| Sweet taste | 2 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 5 | 4 | 2 | 5 | 1 | 4 |
| Tastiness | 5 | 1 | 1 | 3 | 1 | 1 | 5 | 2 | 1 | 1 | 4 | 5 | 3 | 5 | 1 | 281.2 |
| Slices of fruit | 5 | 1 | 1 | 1 | 5 | 5 | 1 | 1 | 1 | 3 | 3 | 3 | 3 | 3 | 1 | *375* |
| Technological priorities | | 10 | 10 | 18 | *360* | *180* | 25 | 9 | 2 | 15 | | | | | | |
| Technical benchmarking: *Company A* | | 5 | 4 | 5 | 3 | 15 | 9 | 20 | 5 | 5 | | | | | | |
| Technical benchmarking: *Company B* | | 5 | 4 | 5 | 3 | 15 | 8 | 22 | 5 | 5 | | | | | | |
| Technical benchmarking: *Company C* | | 5 | 3 | 5 | 2 | 15 | 8 | 22 | 5 | 3 | | | | | | |
| Goal | | 5 | 5 | 5 | *4* | *16* | 9 | 22 | 5 | 5 | | | | | | |

Source: Own research

Correlation between the technical parameters was calculated and the results have been recorded in the Roof of the House of Quality. Positive correlation determines the existing relationship between technological priorities. The negative correlation shows no relationship between the priorities. Positive correlation was between type of fruit ingredients and content of fruit ingredients. By comparison of technical

parameters with the parameters of customer was created the matrix of interrelations. Then customers tested all products, using a blind test during which customers did not know the manufacturer of the products they tasted. Customer responses were used to compare the competitive advantages of each product. An analysis of the customer responses was used to determine the areas that would require change or improvement to meet the Customer's requirements. An improvement rate was calculated according to these objectives. Customer requirements were multiplied by the value of Technical requirements, and in turn these products were multiplied by the improvement rate, thus generating an ordered set of priorities. On the basis of this calculation, the main priorities were identified to be:

- consistency (67 500);
- slices of fruit (375);
- tastiness (281).

As with Customer requirements, Technical requirements required assignment of priorities, as well. As seen in Figure 2, the highest weights for technical requirements were assigned to the type of fruit ingredients, the content of fruit ingredients and to fat content. The dairy company subsequently performed technology benchmarking and the results were included in the 'Technical benchmarking' portion of the matrix.

As could be seen, the QFD analysis provided an objective approach to evaluation. It showed that if the dairy company wished to improve the quality of its products on the basis of customer requirements, and in order to surpass its competitors, the company would need to improve the type of fruit ingredients, as well as content of fruit ingredients, that it uses.

## Conclusion

The new presence of large food chains, as well as multinational dairy companies, has significantly influenced the Slovakian dairy market. Almost all the retail chains sell products under the retail brand and they are increasing their market share. Their strong competitive advantage is price with consistent quality. Foreign multinational companies purchased many Slovakian dairy companies. These multinational companies offer good products under the brand name, and as a result, the few remaining Slovakian dairy companies have got into difficult positions. On the Slovakian market, the importance of customer satisfaction has long been neglected. But now, when companies are fighting intensively to keep customers, to this issue has received much more attention. Domestic dairy producers often underestimate foreign competitors in terms of product quality, although they are aware that a brand name, attractive packaging, superb distribution and the effective use of marketing tools has made these companies more successful on the market.

# Bibiliography


- Milk magazine. 2003.vol. 34, ISSN-1210-3144
- Oakland, J. 1995. Total Quality Management. Butterworth Heinemann, 340 pg.,. ISBN 0-7506-2124-9.
- Sullivan L.1986. Quality Function Deployment: Asystem to assure that customers' needs drive the product design and production process. Chap. Quality progress: pg.39..

# COMPETITIVENESS OF THE PIG-MEAT SUPPLY CHAIN IN HUNGARY

*Levente Nyars*[39]

## Abstract

The starting point for an analysis of the present state of the pig sector wasn't agricultural production, in the sense that it is generally accepted. The subject was approached from an analysis based on the perspective of the buyer/consumer (i.e. based on demand, as is usual in modern economic practice), and finally coming to the problems of agricultural production afterwards. An objective opinion of the competitiveness of agricultural production cannot be formed without being aware of the various stages of the agrifood industry value chain and of the expectations of the buyer/consumer. The pressure to meet the expectations of the buyer/consumer is the strongest 'link' in the value chain. At the same time, primary producers and consumers are the elements of the value chain that are most remote from one another. The expectations of consumers are forwarded upstream to the primary producer via the value chain stages of retailing and processing; the primary producer has little opportunity to influence consumer expectations. Discussions with members from the field of primary production support the fact that the most serious problems of the sector are not only those of the sector itself. Rather, the most serious problems share horizontal characteristics, (such as taxation and contribution, bureaucracy, controversial questions concerning land use and regulation, the role of the government).

Keywords: pig-meat supply chain, pig-meat consumption, external trade, retail sector, processing, efficiency of pig fattening.

## Elements of the market

According to European Commission (2009a), approximately 50 percent of the total meat consumption in the EU is pig meat. In 2006, according to the Hungarian Central Statistical Office, per capita consumption of pig meat totalled 27 kg. That is to say, in Hungary, per capita consumption of pig meat attained the average of the EU-27. However the Hungarian pig-meat consumption has been deceasing since the 1990s. In Hungary, the consumption of pig meat is influenced by the disposable income

39 Agricultural Economics Research Institute, Budapest

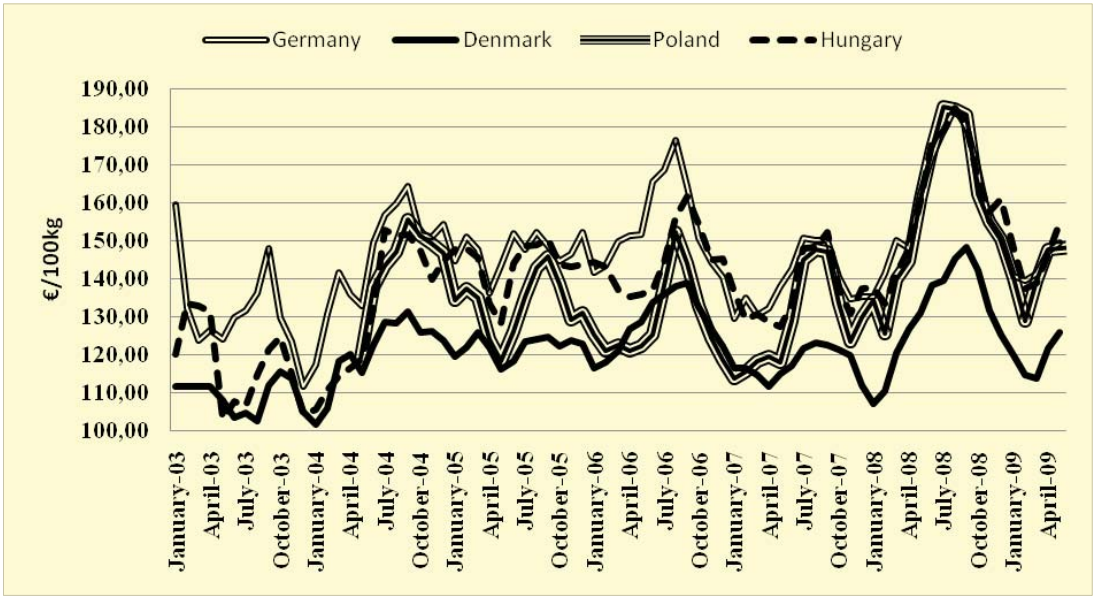
of consumers. The share of poultry meat is still increasing and its consumption has exceeded the consumption of pork. In 2006, per capita consumption of poultry meat was 30 kg. The consumption of any other type of meat (e.g. beef, sheep) is low. According to a recent study, Hungarian consumers think that pig meat is unhealthy, old-fashioned and rich in fat and cholesterol and a boring product (Szakály et al. 2008). If the present trend of consumption continues, it is expected that the degree of expansion of pig-meat consumption will not follow the same trends as disposable income and the standard of living. There are several reasons why the Hungarian consumers prefer poultry to pork. On one hand, poultry meat (mainly broiler meat) is less expensive than pig meat. On the other hand, consumers are sensitive about their health. An important issue that should be noted is that the marketing campaigns of the Hungarian Poultry Product Board have been more efficient than similar campaigns of the Product Board of Meat and Livestock. From a marketing perspective, it would be wise to develop a new 'brand image' for pig meat so that the consumer would associate a positive value to the consumption of pig meat and thus, producers would avoid a further reduction in its consumption. The Hungarian meat industry should launch marketing campaigns that focus on health consciousness; to achieve that aim, and to respond to consumer expectations, an initiative to support permanent product innovation would be desirable.

Across the EU-27 Member States, the demand for the different parts of the pig carcass varies from country to country and from region to region because of consumer habits. In Germany and the Netherlands, during the grill season (from May to August), mostly pork cutlet fillet and pork ribs are consumed. However, the meat processors have to market the less preferred parts of the carcass to other European markets or they must use them in meat preparations. But in the wintertime, the demand for pork cutlet fillet is negligible. There is no demand for pork ribs in Spain but producers can easily sell the surplus in Hungary, for example.

The Hungarian producer price for pig meat is effectively determined by the German and Dutch prices. In addition to seasonal effects, the price trend is influenced by demand factors of the market. During the period 2004-2008, the evolution of Hungarian pig-meat prices approached the prices of the Central European region, although the Hungarian prices have been fluctuating at a lower trajectory compared to the prices of the Polish pig-meat market. Figure 1 shows the relationship between prices in Germany, Denmark, Poland and Hungary between 2003 and 2009.

In May 2009, the Hungarian pig-meat producer price exceeded that of Denmark by 23 percent and of the Netherlands by 15 percent. Due to the difference between the prices, and despite the relatively high costs of transportation, it was profitable to export live pigs and pig meat to Hungary. At the beginning of 2009, the weakening of the Hungarian forint against the euro had the effect of constraining the import of live pigs and pig meat. According to the Hungarian meat processors, efficiency problems have been shrinking beyond that price gap (shown in Figure 1).

**FIGURE 1:** DEVELOPMENT OF PIG-MEAT PRODUCER PRICES IN SELECTED EU MEMBER STATES 2003-2009




Source: European Commission (2009)

Following EU enlargement, the loss of markets and deterioration in livestock production further accelerated (see Udovecz and Potori, 2005; Udovecz *et al*., 2007; Udovecz *et al*., 2008). **In 2004, Hungary became a net importer of live pigs, both in quantity and in value**. Live pig imports increased from 31 thousand metric tonnes in 2004 to 72 thousand metric tonnes in 2008. By contrast, exports amounted to approximately 32 thousand metric tonnes in 2008. The majority of live pig imports originated in Poland. The proportion of imported live pigs exceeded 18 percent of the total quantity available for sale in 2008. With regard to pig meat, the foreign trade balance was negative in quantitative terms only in 2005, remaining positive throughout the period in value. The export value amounted to €234 million in 2008, while that of imports was €155 million (as shown in Figure 2).

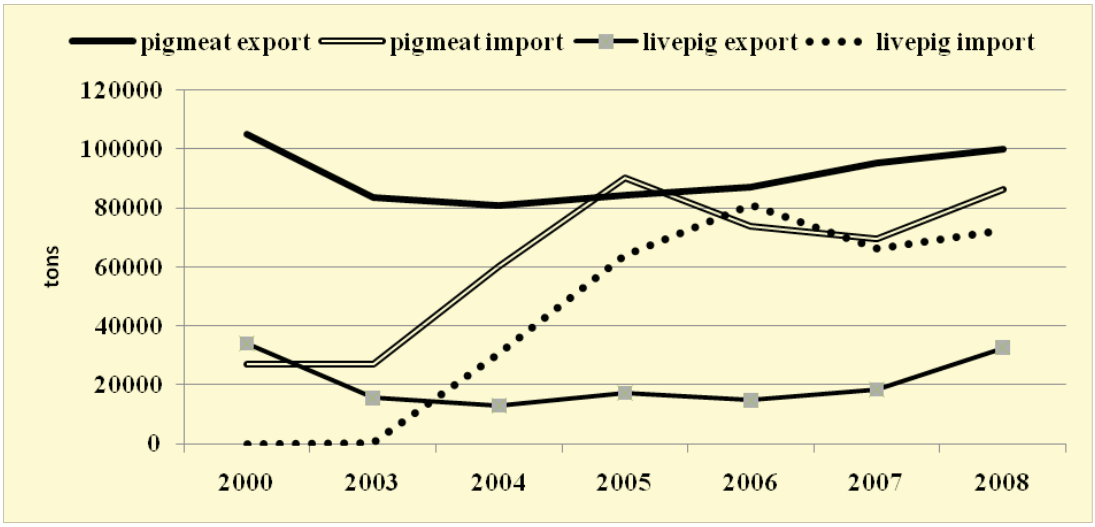
## Retail sector

The supplier-retailer relationship is a serious problem in Hungary, as well as in the older EU Member States (e.g. France). The concentration ratio of the large-scale retail chains in Hungary is the highest compared with the other countries of the Central European region. The multinational retail chains, as well as the Hungarian ones, are in dominant positions, while bargaining power of the Hungarian meat processors is negligible; the processors have little, if any, ability to negotiate terms and conditions with the retailers.

In order to retain their markets, meat processors must constantly adapt themselves to the changing expectations of the buyers/consumers. For example, from the retailer's point of view, selling pre-packaged meat is less expensive because this type of sale requires less investment (i.e. the meat products can be put into existing refrigerators without need for employment of on-site butchers and the construction of their work areas and chopping devices). Using this type of sale, even the stores without meat counters can offer meat. As far as fresh meat is concerned, buyers/consumers

in the Hungarian market are not interested in the origin of the product and do not distinguish between different producers and different products. Despite this, certain retailers consider trademarks important, which may lead to a breakthrough for the processors, as well.

**FIGURE 2:** DEVELOPMENT OF EXTERNAL TRADE IN THE HUNGARIAN PIG SECTOR




Source: Hungarian Central Statistical Office (2009)

From the retailers' perspective, the sale of processed meat is much more profitable than that of fresh meat, even if this market shows signs of oversupply. At the same time and unlike the manufacturers of alcoholic beverages, the meat industry is unable to support its products with important marketing activities, apart from a few exceptional cases. Commercial advertisements usually reveal the features of an entire enterprise and not just those of one product. Experience has shown that retailers select the products they want to advertise out of a great number of products that could easily be exchanged for seemingly identical products manufactured by any number of other producers.

At present, about 30 percent of the national sales of pork is fresh meat. It is expensive for the producer to enter the retail chain as the price of being added to the list of approved suppliers can mount to several million Hungarian forints. The profit made on private labels is usually not too high, although private label meat products are not comparable with one another; sometimes this is a cosmetic difference, due to the packaging. It is practically impossible to earn a profit based exclusively on private labels since the Hungarian meat processors, in competition with one another, can sometimes offer a price that is below the cost of production by adjusting the proportion of expense allocated for transportation and reapportioning it towards trading expense. The situation is made even more difficult by payment deadlinesthat cannot exceed 30 days (according to Law XVI of 2003 concerning Agricultural Market Rules). On a number of occasions, the deadlines considerably exceed the given time period (with various excuses) causing liquidity problems both to the primary producer and the transport company. All this suggests that several national processing plants will go bankrupt.

Private labels today represent an important proportion in the turnover of retail chains.

According to the data available from ACNielsen, private label meat products reached the level of 21 percent of meat sales in Hungary in 2007. In the case of retailing such products, the retailers develop the retail price using a methodology that differs from the pricing construction applied to the products of manufacturers' brands. The so-called 'back margins' are not as high nor do the expenses for the period of time on-sale cost the retailer as much as for its own products. In a recent study conducted by the Hungarian Competition Authority (2003), it was demonstrated that the large-scale retail sector has been using 81 different types of back margins.

From the point of view of logistics and optimization of available capacities, it is advantageous for the processor that private labels represent a relatively large quantity of product shipments. Gaining the transportation rights for certain products becomes highly competitive; as a result, the suppliers are in constant competition with one another and this leads to a decline in prices. What the customer perceives is that private labelled products are definitely much less expensive than other—possibly even higher quality—products with brand names. The turnover rate of private labels could be described as being in a state of constant flux. Levels of profitability are carefully managed against the retailer's marketing strategy of projecting a specific image. As long as the cost of a specific private label product remains relatively low and the product supports the requirements of the retailer's image, even unprofitable products may reach the shelves. Consequently, these products become 'loss leaders' that the retailer sells to attract consumers while intending to make up for the loss of profit on sales of other products.

The market participants in the pig-meat value chain must face such basic commercial problems. The regulations concerning quality have been loosened; Hungarian processors are producing inexpensive and lowerquality products in order to meet the price expectations of the retail chains. However, the lower of quality comes with risk: Products with consistent standards of quality are manufactured with high technology in Western Europe and then transported to Hungary. Due to the fact that from the technological point of view Hungary remains behind many developed countries, its producers are forced into a difficult competition in this product domain. The Austrian meat industry does not produce low quality products for its national market because Austrian customers will not buy them. Furthermore, the meat industry does not facilitate entry of the lowest quality products on to the market. Yet, at the same time, the Austrian meat industry makes strong attempts to sell these same products that can't be sold on the Austrian market onto the Hungarian or other Eastern European markets.

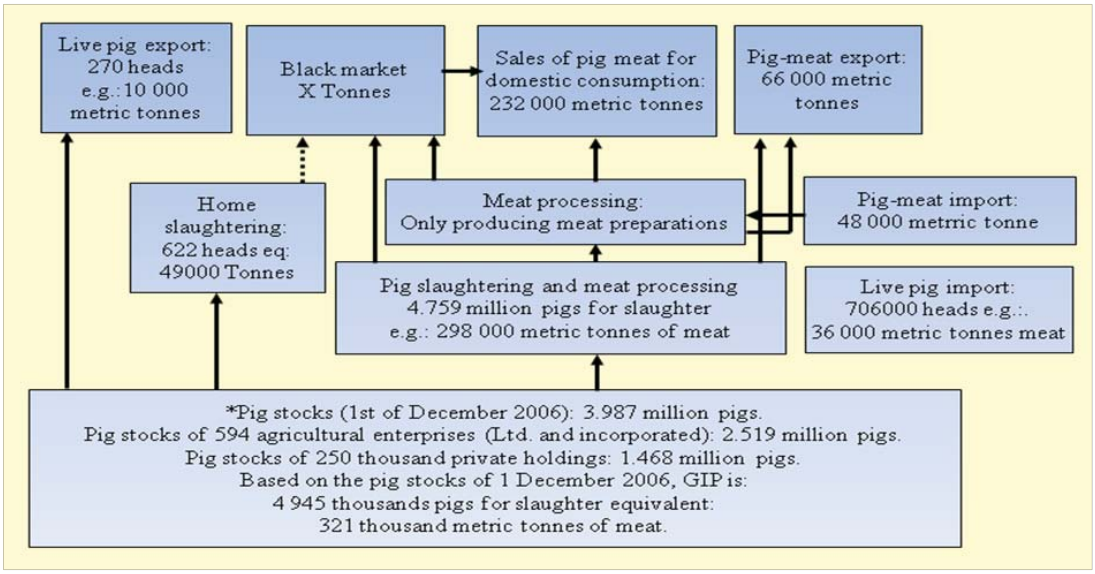
The length and severity of the economic recession and financial crisis fully determine the short and long-term prospects of Hungarian pork consumption and pork export. According to the present day forecast of the European Commission (2009b), in Hungary the private consumption will decline by 6.6 percent in 2009. As a result, the demand for the less expensive parts of the pig and the less expensive processed pork products is very likely to increase; on the other hand, the demand for finished and semi-finished products will certainly decrease. The longer the economic recession lasts, the less frequently people will dine in restaurants. Furthermore, the continued deterioration of the country's catering facilities will worsen; this will have a negative effect on the consumption of pork. But, on the contrary, butcheries and specialty

meat shops may sell a greater amount of fresh meat. In the commercial chains, within the branch of processed meat products the rate of the private labels can grow further since the consumers will continue to favour less expensive products. As a result, in 2009 there could be a rather brutal price competition between meat processors.

## Pig-meat processing

Production of pigs for slaughter and pig slaughtering have radically changed since EU accession. Before the accession, Hungarian pig slaughterhouses mainly slaughtered pigs originating from Hungarian pig fatteners. After EU accession, the Hungarian pig stocks began to decline, and the pig slaughterhouses needed to import live pigs. One-third of Hungarian slaughterhouses deal in production of meat preparations in addition to slaughtering, cutting and de-boning. The rationalization of meat processors has already begun and the initial signs of specialization can also be detected. Production of meat preparations has already been separated from slaughtering and cutting, at least at the level of the producer's site.

**FIGURE 3:** PIG-MEAT MARKETING CHANNELS IN HUNGARY (2007)




Source of data: Agricultural Economics Research Institute and Hungarian Central Statistical Office. Calculations were made by Department of Agricultural Policy based on Varga et al. (2007)

GIP in large text-box at bottom of figure

* Acknowledgement: The pig-meat production of the current year (2007) was determined by the pig stocks of the preceding years as of the first day of December in each calendar year.

In the pig-meat value chain, meat processors that specialize in only producing meat preparations need to buy pig meat from Hungarian slaughterhouses and/or import it to ensure adequate supplies of raw material for production. **The rationalization of the Hungarian meat-processing industry has been moderate compared with leading European competitors**. At the meat-processing stage, the number of slaughterhouses that produce exclusively for the domestic market is relatively high. Today in Hungary, the income positions of the companies performing additional processing are more stable, while pig slaughtering and cutting and deboning is usually a loss-making

economic endeavour. However, it is expected that the production of meat products will be better able to yield profits in the long term.

In 2005, according to the database of the Agricultural Economics Research Institute, there were 103 EU-approved slaughterhouses and 72 cutting and deboning plants. In 2005, the nominal slaughter capacity was 8.5 million pigs per year. In Hungary, the utilization of meat processing capacity is extremely low. In 2005, the capacity utilisation of the Hungarian slaughterhouses was about 50 percent. In 2008, according to slaughtering statistics of the Agricultural Economics Research Institute, 4.3 million pigs were slaughtered in Hungary (including 600 thousand imported pigs); therefore, the utilization capacity was roughly 50 percent (Table 1).

**TABLE 1:** CAPACITIES FOR MEAT PROCESSING IN HUNGARY BY TYPE (2005)

| Activity | Unit (shown as annual rates) | Nominal capacity | Production/ processing | Capacity utilization rates |
|---|---|---|---|---|
| Slaughter line | 1 000 animals | 8 566 | 4 005 | 46.80% |
| Cutting line | metric tonnes | 432 151 | 219 232 | 50.70% |
| Salami production | metric tonnes | 41 341 | 14 098 | 34.10% |
| Sausage production | metric tonnes | 94 396 | 26 761 | 28.40% |
| Meat preparation | metric tonnes | 293 374 | 123 620 | 42.10% |

Source: Agricultural Economics Research Institute (2006)

**In Hungary, there is only one meat processor which has the capability to slaughter 500 pigs per hour.** The national capacity utilization of salami and sausage production was also low (28 percent and 34 percent, respectively). In Hungary, 60 percent of the salami production capacity was held by the top five processors. The concentration ratio in sausage production was low compared with salami production. Most experts agree that production of meat preparation is not concentrated in Hungary (as seen in Table 2). The competitiveness of the meat industry is highly influenced by the geographical distribution of the pig stocks, pig slaughterhouses and the cutting and deboning lines.

**TABLE 2:** PRODUCTION AND CAPACITY CONCENTRATION IN PORK PROCESSING (2005)

| Activity | Salami | | Sausage | | Meat preparation | |
|---|---|---|---|---|---|---|
| | Prod. | Capacity | Prod. | Capacity | Prod. | Capacity |
| | % | % | % | % | % | % |
| Top 5 processors | 85.6 | 59.7 | 57.8 | 26.8 | 46.2 | 33.3 |
| Top 10 processors | 94.3 | 77.7 | 80.3 | 44.8 | 66.9 | 51.4 |

Source: Agricultural Economics Research Institute (2006)

Due to the unreliability of breeders, who may breach their contracts for a difference of as little as five additional forints per kilogram, the supply of livestock for slaughter in Hungary is unpredictable. **Moreover, the sales cooperatives and processing groups are not always reliable, either, because their members can generally sell individually; so they often change the promised quantity according to the prices**

**offered**. Taking into account that the only factor that defines parities (excluding reciprocity) is the actual supply and demand, it becomes clear that the entire branch is will be harmed. When purchasing the domestic raw material, processors usually conclude annual agreements containing all the parameters concerning quantity and quality of pork, as well as payment deadlines. As for the price, the agreements usually indicate only that the price of the pigs should be understood to be the weekly market price in the slaughterhouse according to the EUROP categories of classification. As a result of the drop in the number of the pigs for slaughter—as for example, on 1 December 1 2008, their number did not reach even 3.4 million—a great number of the processors have begun asking for the actual production price of 'E quality' based on live weight, without further consideration of the EUROP categories defined by the slaughterhouses. Payment deadlines vary considerably from 8 banking days to as long as 35-45, although the law restricts them to a maximum of 30 banking days.

An examination of the various sales channels available for pigs for slaughter shows considerable differences in **the price per pig**. Slaughterhouses pay a bonus of 15-20 forints per kilogram (based on live weight) to the pig producers who provide them with 30-50 thousand pigs for slaughter each year. In the case of pig production enterprises belonging to the same owner-group, slaughterhouses purchase the pigs at the market price, as is the case with other sources. Participants in the weekly pricing auction determine the weekly prices; these prices become the starting point for the processors to use for their own sales price. As for the weekly price agreements, slaughterhouses cannot easily change their sales prices to respond to commercial pressures because of the strong market demand of pigs for slaughter, yet slaughterhouses are the ones who determine the prices offered to the producers.

Certain processors still prefer the traditional Hungarian practice of trade based on an oral agreement (i.e. they make an agreement with the producers on a weekly basis about the price and the quantity to be transported the following week). There are disadvantages to this approach: A purchase without contract presents more risk; it is less suitable for the continuous supply of raw material necessary for production; and, it is nearly impossible to assure a stable and constant flow of production matched with source of payments flow (i.e. cash flow) over the long term. **Safe, long-term contracts that have been accurately calculated are not very frequent.** The processors' only short-term recourse to this situation is to produce part of the raw material themselves, since there is no stable (value chain) connection between producers and processors. This may lead the processors toward a more extensive search for imported raw material. As this scenario suggests, over the long term, the situation of the domestic producers of raw material can be worsened by the weak contract enforcement experienced in the industry.

Based on the data of the Hungarian tax authorities (APEH), in 2006, the ten plants with the highest income that deal mainly with pork processing received 41 percent of the income for the overall branch and 82 percent of export sales. According to the data of the Directorate of Food and Feed Safety, the number of the slaughterhouses declined by one-third due to the considerable surplus costs needed to make them suitable to EU requirements, as well as because of problems of general profitability. One year prior to Hungary joining the EU, there were 484 slaughterhouses in operation; by 2007, there were only 327.

# Production of pigs for slaughter

The statistics of the Product Board of Meat and Livestock reported 3.8 million pigs were purchased for slaughter in 2007; but, according to the slaughtering statistics of the Agricultural Economics Research Institute, 4.7 million pigs were slaughtered in Hungary in 2007. The Central Agricultural Office's Animal Breeding Directorate reported that 4.198 million pigs had been slaughtered in 2007. Two identical numbers could not be found in the Hungarian statistics referring to pig slaughter. The great variance in numbers suggests that **the black/grey economy may be present in the pig sector.**

The decline in pig stocks in Hungary already began prior to EU accession. On 1 December 2008, the total number of pigs was 3.38 million; 1.5 million less than on 1 December 2003. The major portion of this decline was due to the decrease (of 1.1 million) in stocks held by private farmers. Also, a reduction in the total number of sows reflects the overall decrease of pig stocks. On 1 December 2008, the sow stocks totalled 230 thousand head, compared to 327 thousand animals on 1 December 2003. In 2007, nearly 66 percent of the total pig stocks were already held by the 'pig-raising plants with stock greater than one thousand head'. During the period between 2003 and 2007, the number of farms raising 1 to 50 pigs decreased by 151 thousand, while their pig stocks declined by 800 thousand head. Hungary has competitive disadvantages inherited from the past that have become even more apparent in the more intense market competition following EU accession (Popp and Potori 2006).

The efficiency of Hungarian pig production lags behind that of the leading European pig-producing countries (as seen in Table 3). With regard to efficiency, the most severe problems are the: smaller litter size; low daily weight gain; low efficiency of feed utilization; long fattening period; and the extended rotation of sows. In addition, without modern plants and technology, it is not worth applying high value genetics to Hungarian pig production.

As opposed to Western-European countries with well-developed pig production, **farms in Hungary have not specialized**, although technologies required for breeding animals are completely different from those for fattening ones. **Transfer between farms in Hungary is hindered by domestic farmers' anxiety** about their livestock contracting diseases, as the farms have differing animal health statuses. In Hungary **renewal of variety has dramatically declined** in the past few years. This is also reflected in the database of Central Agricultural Office's Animal Breeding Directorate with only 42 thousands sows out of a national total of 290 thousand sows in Hungary kept under herd-book control in 2006. Slaughterhouses require homogeneous pigs and livestock, which is also a retailer-related expectation.

**TABLE 3:** AVERAGE PIG PRODUCTION EFFICIENCY IN SELECTED EU COUNTRIES (2006)

| Measurements | Hungary (average) | Hungary (best) | Denmark | Netherlands | Spain |
|---|---|---|---|---|---|
| **Slaughter pigs/sow/year** | 16.8 | 22.7 | 24.3 | 23.2 | 21.9 |
| **Mortality in weaner section (%)** | 5 | 3.3 | 5 | | |
| **Mortality in finisher section (%)** | 7 | 4.75 | 4 | 3 | 7 |
| **Kg feed per kg gain in the finisher section (kg/kg)** | 3.7 | 3.3 | 2.8 | 2.65 | 2.71 |
| **Daily gain (g)** | 659 | 710 | 849 | 774 | 638 |
| **Slaughter weight (kg)** | 109.4 | n.a. | 102 | 113 | 103 |

Source: Rasmussen (2007)

The basis of efficient production is a pig variety with good genotype and excellent keeping technologies. Apart from these requirements, production is also influenced by the professional competence of the management, since the varieties, the annual release, the composition of the livestock and the results all depend on management skill. Hence, expertise and having a vested interest in production results are important.

In addition to the above-mentioned problems, Hungarian pig producers are not able to compete with the leading pig-producing countries (i.e. Netherlands, Denmark and Brazil) because of geographic, eco-political or social reasons. Hungarian pig-meat producers must face additional costs compared with key European competitors, due mainly to geographic reasons. Hungary is far from the nearest sea ports, so the purchase of inputs (such as protein feeds) and exports of meat to third countries are more expensive than in Denmark and the Netherlands. Due to the continental climate, heating and cooling costs are high compared to the Netherlands and Brazil where there are fewer fluctuations in temperature.

A significant proportion of domestic pig farmers without arable land are vulnerable because they cannot produce a sufficient amount of fodder or safely dispose of liquid manure accumulated during production. In a number of the EU-15 countries, **pig farms must be combined with land for the disposition of accumulated liquid manure**. In the absence of land of their own, farmers may keep pigs only if they have a contract for the disposal of liquid manure. Conversely, applicable national land legislation currently does not permit legal entities to acquire land, and the obscure conditions of land ownership and usage make the long-term solution for the problem of manure disposal uncertain. Cross-compliance regulations, regarding environmental, animal welfare and animal health status cause competitive disadvantages to farmers, especially during economic/financial crises. High interest rates and the lack of access to capital exacerbate the problems. (E.g. foreign capital interest rates of 14-15 percent are usual).

Handicaps in terms of efficiency may primarily be imputed to technological deficiencies. The production of pigs for slaughter by small-scale producers can be characterized by a shortage of capital and lack of expertise. As a result, establishing a good quality for breeding animals, and giving adequate attention to the proper conditions of

keeping and providing fodder suitable for the age group are always dubious issues. In the existing economic environment, small-scale farms are unable to expand and develop their production in ways that meet the strict regulations of the EU. **Selection of the appropriate variety and good keeping technologies are equally important**. Without a modern farm it is not worth working with varieties endowed with a high genetic potential because they are a lot more sensitive than former livestock of a questionable origin.

The number of crimes against property has increased in livestock farms over the recent years. Therefore, the costs for guards and protection also increase production costs (e.g. these expenses may constitute as much as 0.5 percent of the production value). Fees levied by different authorities are high (e.g. veterinary inspection charges, rendering costs of animal by-products).

The costs of disposal of fallen stock are extremely high in Hungary by comparison with international standards. The state-owned ATEV is the market leader in the field of animal waste disposal. At the same time, it has to be taken into consideration that ATEV performs public tasks, as well. In the event of an unexpected severe epidemic, the country would have to have reserve capacities immediately available. (At present, one or two months would be required for the start-up of a disposal plant out of operation, being too long in the case of emergency). At the same time, hog raisers were granted several billion forints in subsidies from different support allocations for "fire-fighting" purposes, while the problems have been steadily regenerating. The unreasonably high charges for the official meat analyses lead to the conclusion that the official laboratories are not competitive. In a free market economy, each company should have the right to simply select a laboratory from a group of accredited laboratories; the decision should be subject to the fees and other conditions of service, but should also be independent from the attitude of the factory's own veterinarian(s).

**TABLE 4:** CHARGES RELATED TO SLAUGHTER INSPECTION IN HUNGARY AND THE EU (2009)

| Veterinary inspection charges | Hungary: Ministerial Decree No 53/2009 FVM * | Ministerial Decree No 78/2004 FVM | EU: 882/2004/EC Council Regulation |
|---|---|---|---|
| **Inspection at slaughtering: pigs for slaughter** | 325 HUF animal (1,09 €/animal) | 340 HUF/animal (1,14 €/animal) | <25 kg pig: 0,5 €/animal; 148 HUF/ animal<br>>25 kg pig: 1 €/animal; 296 HUF/animal |

Source: Ministerial Decree No 53/2009 FVM, 882/2004/EC Council Regulation.

A detailed description of minimum fees was introduced from 1st January 2008, which can also be found in the Annex to 882/2004/EC Council Regulation. The EU introduced this because some member states acquired competitive advantage over others in the field of official animal health services by subsidizing these services from the state budget. Table 4 shows some typical fee changes that are significant in red meat production and distribution. The Hungarian fee changes are compared with the tariff items included in Regulation (EC) 882/2004.

On working days from 6.00 hours to 16.30 hours and in slaughterhouses, which work one 24-hour-day, or when working hours exceed a maximum of 8.5 hours/day between 5.00 hours to 21.00 hours.

Looking beyond Europe, in some countries the official veterinary inspection fees and charges are fully financed from the central budget, while in other countries the market participants pay for the animal health services. At the same time a mixed system is applied in many countries (i.e. combination of fees and charges paid to authorities plus use of public funds).

## Conclusions

According to the estimates of legal market participants, 20-35 percent of pig meat (which is produced in Hungary) is sold illegally in the country. After the general value added tax (VAT) was raised to 20 percent, more and more participants in the meat industry began to try to avoid paying the tax; another eventual tax increase would worsen the situation even more. Hungarian authorities could suppress this kind of abuse by decreasing the VAT (this possibility can be excluded for the near future), and/or by increasing the number and intensity of the inspections by the taxation office and by imposing more severe penalties. Due to the lack of all the above, the results of the APEH inspections have not yet had any effect on the meat industry. The industry participants and the Hungarian public administration could not even agree on the creation of a ’green‘number (toll-free number) people could call to report violations (for example, illegal pig slaughter), although the ‘whitening’ of the economy is also a government programme. The creation of a ’green‘ number would not be enough to whiten the market processes of the pig sector but the sector’s participants could found a non-governmental organization (NGO), so that it could take visible measures against illegal meat producers and processors.

National and local regulations, as well as the state authorities, make the operation of Hungarian enterprises harder instead of supporting them. Among those problems specific to the pig producers, some of the most serious are **the regulations concerning environmental protection**, **the problems of urbanization** (that hinder the spreadi of processing plants), **the questions of land property rights**, **high taxes and official fees and the slow payment system of subsidies**. The high taxes and official fees, the ‘black’ economy and the uncertain political and economic circumstances all serve to demoralize manpower. In the Western European countries of the EU, there are fewer property crimes and employees are usually more loyal to their companies. According to the processors, in Hungary the proportion of the value added tax and different official fees are exorbitant; moreover, the other administrative burdens placed on businesses strengthen the ‘black’ economy. In addition, the official veterinarian fees are also too high, while the meat inspection fee is considered to be very high in Hungary.

For enterprises running animal breeding farms, measures should be taken to facilitate the process of purchasing/acquiring land, as well as the creation of legal regulations concerning land lease/rent. With respect to the protection of the environment, the pig-breeding sector can only be considered safe if it can use the dung produced on

its premises either on its own land or on its rented land. **Whether or not a plant functions well or functions at all may depend on its use of land.**

In contemporary Hungary, the financial position of the processing plants, especially those further-downstream in the VC is fairly stable; however, pig slaughtering and chopping and deboning generally produce a loss. As a result, enterprises that deal with pig slaughter and meat chopping and deboning are in a rather dubious position. It's expected that even in the long term, meat processing further downstream will make a profit, while in the field of pig slaughter and meat chopping and deboning, truly effective development and investments should be made to improve competitiveness. The circumstances are made harder by the fact that there are constant changes in fresh meat retail, as well. As the smaller stores nowadays also request a relatively great quantity of chopped meat, national sales differ more and more from the proportions of the body parts. Selling the remaining body parts is becoming more difficult; their price has had to drop, consequently production costs are rising and less profit can be made.

# Bibliography


- European Commission. 2009a. Prospects for agricultural markets and income 2008-2015. Brussels: European Commission.
- European Commission 2009b. Prospects EU interim forecasts for 2009-2010: sharp downturn in growth. Interim Forecast 2009. Brussels: European Commission, DG Economic and Financial Affairs.
- Fogarasi, J.,Nyárs, L. Papp, G., Varga, E. & Vőneki, É. 2007. A főbb állattenyésztési ágazatok és a takarmánytermelés helyzete Romániában. Agrárgazdasági Tanulmányok, 2007/5. Szám. Budapest: Agrárgazdasági Kutató Intézet.
- Nyárs, L., Papp, G. & Vőneki, É. 2004. A főbb hazai állattenyésztési ágazatok kiétásai az Európai Unióban. Agrárgazdasági Tanulmányok, 2004/4. szám. Budapest: Agrárgazdasági Kutató Intézet.
- Hungarian Competition Authority 2003. Large retail chains and suppliers relationship. Budapest: Hungarian Competition Authority.
- Popp, J. & Potori, N. 2006a. Agrarian policy of the countries of Central and Eastern Europe on the way to Eurointegration and its first consequences (pp. 130-158) In: Betlij – Borodina (ed.) – Borodin – Popova – Prokopa – Popp – Potori – Cerova: Ukrainian agrarian sector on the way to Eurointegration. Kiev: Institute of Economics and Forecasting of NAS of the Ukraine.
- Rasmussen, J. 2006. Costs in international pig production. Danish Bacon and Meat Council. The Department for Housing and Production Systems
- Szakály, Z., Fülöp, N. & Nábrádi, A. 2008. 'Fogyasztói attitűdök elemzése a sertéshús és -húskészítmények piacán' In: Bartha A. (szerk.) – Balogh V. (szerk.): A sertéságazat versenyképességének javítása. Debrecen: Debreceni Egyetem, Agrár- és Műszaki Tudományok Centruma.
- Tunyoginé Nechay, V. & Stummer, I. (Eds) 2008. A fontosabb termékpályák 2007. évi piaci folyamatai. Agrárgazdasági Információk, 2008/3. Budapest: Agrárgazdasági Kutató Intézet.
- Udovecz, G., Popp, J. & Potori, N. ed. 2007. Alkalmazkodási kényszerben a magyar mezőgazdaság – folytatódó lemaradás vagy felzárkózás? Agrárgazdasági Tanulmányok, 2007/7. Budapest: Agrárgazdasági Kutató Intézet.
- Popp, J. & Potori, N. 2006. Agrarian policy of the countries of Central and Eastern Europe on the way to Eurointegration and its first consequences (pp. 130-158) in: Betlij – Borodina (ed.) – Borodin – Popova – Prokopa – Popp – Potori – Cerova: Ukrainian agrarian sector on the way to Eurointegration. Kiev: Institute of Economics and Forecasting of NAS of the Ukraine.
- Popp, J. & Potori, N. ed. 2009. A főbb állattenyésztési ágazatok helyzete. Agrárgazdasági Tanulmányok, 2009/3. Budapest: Agrárgazdasági Kutató Intézet.
- Udovecz, G. & Potori, N. 2005. Expected impacts of EU accession in Hungarian agriculture until 2006, Hungarian Agricultural Research, vol. 14, no. 2, pp. 13-16.
- Udovecz, G. – Popp, J. & Potori, N. 2008. 'New challenges for Hungarian agriculture', Studies in Agricultural Economics, no. 108, pp. 19-31.
- Varga, T., Tunyoginé Nechay, V. & Mizik, T. 2007. A mezőgazdasági árképzés elméleti alapjai és hazai gyakorlata. Agrárgazdasági Tanulmányok. 2007/2. Agrárgazdasági Kutató Intézet

# THE ROLE OF MILK MARKETING COOPERATIVES IN THE RECOVERY OF THE ARMENIAN DAIRY SECTOR

Vardan Urutyan

## Abstract

The role of milk marketing cooperatives in the Armenian dairy sector continues to increase. These cooperatives have been mainly supported by the USDA Marketing Assistance Program in Armenia (active in Armenia during 1992-2005) and later by the Center for Agribusiness and Rural Development (CARD).

Among the value chain relationships in the Armenian dairy sector, the most common one is the farmer-dairy processor relationship. Many authors studied different aspects of the farmer-processor relationships. However, there is no documented study about the value chain relationship between farmers and milk marketing cooperatives, which are practically new to Armenia.

This paper aims at studying and describing the role of the milk marketing cooperatives in the recovery and growth of the overall dairy chain in Armenia. The study reviews and analyses the outcomes of the Cooperative Development Program implemented by the USDA Marketing Assistance Program and continued by the CARD Foundation. The paper also identifies and discusses the forms of vertical integration occurring in the dairy sector of Armenia and concentrates on several important issues such as: contractual mechanism between farmers and cooperatives and between farmers and processors, problems and challenges faced by milk producers, farm investments and innovation issues.

The paper also aims at studying the relationships between farmer members and the milk marketing cooperatives. In particular, the study looks at the contractual relationships, hold-up problems, production and prices, trust and social capital among the cooperative members and contract enforcement mechanisms used by the cooperatives. The study also describes thedeterminants of farmer satisfaction with

their current relationships.

The research was based on surveys and interviews. Official publications, internal documents, interim and final reports, financial statements of the cooperatives and other materials were also used in the study. Based on findings, certain recommendations have been proposed.

Keywords: milk marketing cooperative, social capital, trust, hold-up, contract enforcement.

## Introduction

In Armenia the market-oriented reforms introduced in 1991-92 comprised the privatization of many productive resources and organizations. Armenia was one of the first former Soviet republics to privatize agriculture effectively and swiftly during 1991-92: after independence, the legislation necessary for the privatization of land followed; around 70 percent of the arable land and agricultural output was turned over to individual peasant farmers. The egalitarian land privatization led to very small size family farms (only 1.4 ha, on average). The small farm size is not conducive to the application and use of new innovative technology, and this in and of itself hinders the development of the sector.

As in many transition countries of Europe and Central Asia (ECA), a major problem in Armenia during the transition period was the breakdown of the relationships of farmers with input suppliers and output markets. The result is that many farms and rural households face serious limitations in accessing essential inputs (e.g. feed, fertilizer, seeds, chemicals) and selling their output (Swinnen 2005). Widespread forms of contracting problems like long payment delays or non-payments for delivered products were apparent in Armenia during the transition (Swinnen 2005). Restructuring and privatization in Armenia has led to the separation of many previously horizontally and vertically integrated enterprises together with the emergence of new types of businesses (White and Gorton 2004). This led to a situation of widespread financial distress, high discount rates and lack of contractual enforcement (Gow and Swinnen 2001). In general, the model of agricultural transition in Armenia is similar to that of other transition countries in the region (Cocks 2003). To a large extent, the private solutions that successfully helped overcome the transition problems in ECA have not occurred in Armenia.

Prior to transition, the milk processing industry had an annual capacity of 320,000 metric tonnes of dairy production, about 27,000 metric tonnes of cheese and 13,000 metric tonnes of ice cream (Ministry of Agriculture of the Republic of Armenia and FAO 2002). All of the 42 formerly state-owned dairy factories have been privatized. Currently, most of these factories work at a low level of their capacity and some of them do not operate at all. Production focuses on cheese, milk and other dairy products. Many other small plants have also emerged (about 500) which mainly produce salted cheese under inadequate hygienic conditions and without the necessary facilities, resulting in a large share of home-made products appearing on the market, especially in markets outside the capital city.

No single dairy processing company dominates the market for major dairy products due to the wide range of products and large number of processors in the market. There are no foreign direct investments and no joint ventures in the dairy sector. Since independence, most of these farms have been dismantled and currently the bulk of dairy production originates from small private farms with one or two milk cows.

Table 1 shows key dairy indicators for the period of the last eight years. Positive changes can be observed in the numbers. In particular, milk production and milk processing increased significantly. It can also be observed that milk yield has increased, as in 2008 the number of cows was reduced but milk production continued to rise.

**TABLE 1:** KEY SELECTED DAIRY INDICATORS IN ARMENIA, 1996-2008

| | 2000 | 2002 | 2004 | 2006 | 2008 |
|---|---|---|---|---|---|
| **Number of dairy farms (thousands)** | 197 | 193 | 202 | 203 | 199 |
| **Milk (thousands of metric tonnes)** | 449 | 489 | 555 | 620 | 662 |
| **Number of milk cows (thousands)** | 262 | 280 | 290 | 307 | 283 |
| **Milk delivered to dairy (metric tonnes)** | 269 | 294 | 388 | 434 | 456 |
| **Household use (metric tonnes)** | 180 | 195 | 167 | 186 | 189 |

Source: National Statistical Service of the Republic of Armenia (NSS of RA) 1999, 2003 and 2008.

The indicators of household use of milk in the table include both the consumption of milk by families and milk used in the home-made production of dairy products. Table 1 provides evidence that the portion of milk sold to processors, milk consumer cooperatives or other middlemen increased drastically from 59 percent in 2000 to 71 percent in 2008, which means that farmers gradually integrated in market relationships and switched from subsistence farming to commercial production.

An interesting issue emerged in research concerning the framework of the dairy cooperatives and development constraints. When comparing the tables of annual milk production, sales and personal consumption rates, the researchers found that the more farmers produced, the more they sold and eventually the less milk their households personally consumed per single cow (Melkonyan et al. 2008). Thus, a low consumption of milk per single cow may serve as a good indicator for evaluation of dairy farming commercial practices. The explanation behind this finding is that the more the farmer produces and sells, the more the farmer earns. There is also a secondary indicator involved that means the farmer's daily food consumption is not heavily dependent on dairy products. Moreover, when the farmer specializes in dairy farming, they prefer to sell as much of their milk as possible and buy ready-made dairy products for their household consumption, rather than spend their time and other resources on self-processing of their milk into cheese or other products. Indirectly, it's an indication that their time and other resources are more valuable to them than the cost of ready-made dairy products.

An efficient linkage of dairy producers to processors, wholesale and retail markets forms the basis for establishment of sustainable production and marketing, i.e. effectively consolidating the various segments of the milk value chain. However, the production of milk by a large number of small dairy producers in an unconsolidated

manner creates additional threats to the milk value chain related to excess transportation costs, insufficient sanitary conditions while transporting milk and lack of bargaining power for producers at the point of sale. The current conditions for raw milk production are far from being adequate because of the milk's low quality and the significant variations between farms, and even within a single farm. In addition, the low level of organization of the smallholders and the high fragmentation of production imply that processors have to deal with lots of producers who deliver many small quantities of varying qualities of milk. In order to mitigate these shortcomings it is extremely important to improve the conditions of milk production, distribution and marketing. In addition, there is a need to consolidate milk producers into milk marketing cooperatives, as well.

Groups of individuals around the world and throughout time have worked together in pursuit of common goals. Examples of cooperation, or common action, can be traced back to the prehistoric predecessors, who recognized the advantages of work in cooperation with one another in contrast to that on their own (Zeuli 2004). It is obvious that by uniting in agricultural cooperatives or producer-owned groups dairy farmers could solve the majority of their (above-mentioned) problems and would gain a relatively higher degree of bargaining power. By studying and analysing the role and importance of the milk marketing cooperatives operating in Armenia since 2001, the aim is to identify lessons learned that may be applicable and useful to the member-farmers and beneficial for the overall dairy chain of Armenia. An additional objective of this study is to identify and discuss the forms of vertical integration occurring in the dairy sector of Armenia.

## The CARD cooperative development programme

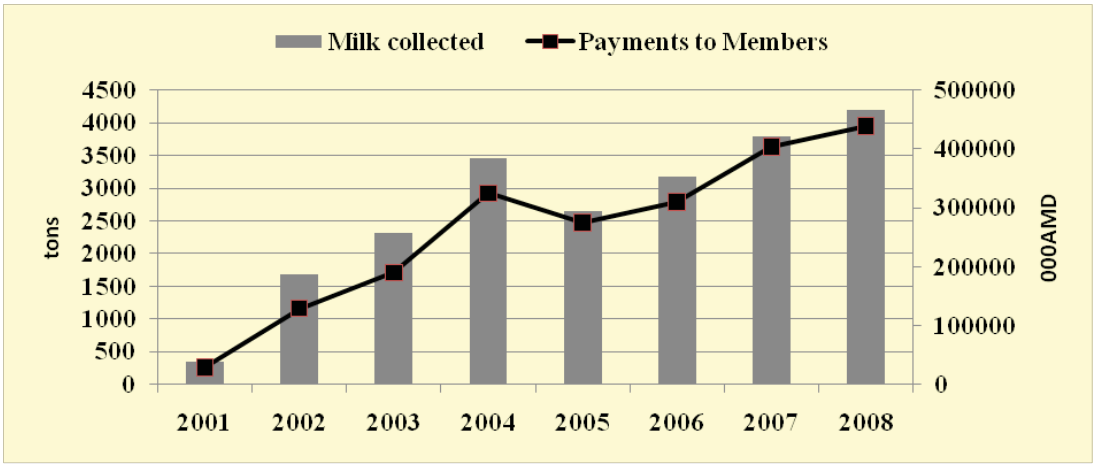
The role of the Center for Agribusiness and Rural Development (CARD) Foundation, as a third–party facilitator in the development of the dairy marketing channels in Armenia has been and remains significant. Through a package of marketing, technical and financial assistance, CARD aims at increasing rural incomes, creating jobs and raising the standard of living of rural communities. In particular, CARD contributed to the development of the dairy marketing channels in Armenia by establishing milk marketing cooperatives and milk collection centres in many villages across the country. These cooperatives are not-for-profit organizations with the objective of marketing the milk produced by their members.

The cooperatives worked closely with CARD clients, i.e. dairy processors, by supplying improved quality milk, and are able to work with other processors, as well. Following the activities and examples of CARD, many international and national organizations and large dairy processors assisted farmer groups to establish cooperatives aimed at improving management practices in the dairy farms in order to improve the quality and quantity of milk supplied. Currently there are almost 30 milk marketing cooperatives throughout Armenia.

Figure 1 shows the milk collection and payments to member-farmers by CARD-supported marketing cooperatives. Cooperatives pay their entire income to farmers, after deducting operating expenses. Operating expenses are paid through a price

margin, i.e. the difference between the price of milk and the price received by farmers.

**FIGURE 1:** MILK COLLECTION AND PAYMENTS BY SELECTED COOPERATIVES, 2001-2008




*Source: Financial statements of cooperatives (2001-2008) and CARD Cooperative Development Program Reports.*

It can certainly be stated that the impact of the cooperative movement in increasing the cash incomes of member-farmers remains significant. "Ashtarak-Kat" CJSC, the biggest dairy processor, along with its 11 milk collection centres, is working with five milk marketing cooperatives. The company is collecting milk from a total of 5 000 farmers and pays them regularly on the 15th day every month. Not all processors are able to provide prompt payments to milk producers.

However, in contrast to the experience of the Ashtarak-Kat CJSC, the Melkonyan *et al*. study (2008) presented evidence that the farmers barely acknowledged an affiliation to the cooperative, nor an understanding of the ideas behind the main principles of cooperation: user-control, user-benefit and user-owner. The studies performed in earlier years showed that in most cases, farmers confuse the cooperative with former Soviet-type collective farms. This fact still remains a major constraint to the establishment and efficient operations of cooperative organizations. In the latest Melkonyan *et al*. study of 294 farmers: only 35.4 percent agreed with the statement that they do exercise their "one-member, one-vote" right; 39.5 percent of all respondents agreed with their status of user-beneficiary; 24.8 percent agreed that they are user-owners; and only 28.2 percent of all respondents agreed with their status as user-controllers.

Simultaneously, from the farmers' perspective, the idea of the lack of the 'social component' still remains an obstacle and a reason for mistrust from the farmers toward cooperative organizations; in spite of increased confidence, many farmers still perceive the cooperative as a separate institution with which they must deal (Grigoryan *et al*. 2007).

Nevertheless, 88 percent of member-farmers used cooperatives to market their milk, while 7 percent also sold milk in the retail market (Hovhannisyan *et al*. 2004). An interesting point is that the vast majority of surveyed member-farmers expressed intention to stay with cooperatives. Thirty percent of respondents would be willing to handover their milk to any buyer offering a higher price, while the remaining 70

percent value loyalty, trust and stability more. In general, this situation is the same in almost all of the milk marketing cooperatives.

## Vertical integration in the Armenian dairy industry

Vertical integration in the sector occurs either through full ownership or through formal or informal contracts. In Armenia, farmers or cooperatives do not own a processing company, and usually their relationship is based on informal contracts. Gow and Swinnen emphasize the importance in developing and transition economies of 'self-enforcing contracts' (i.e. self-enforcing through contract design), such that private losses from breach of contract would outweigh potential benefits (Gow & Swinnen 2001).

These same kinds of 'self-enforcing relationships' exist in the Armenian dairy sector as can be seen in specific value chain relationships between: farmer-and-processor; farmer-and-cooperative; and a cooperative-and-processors (Hakobyan 2004). The most common of these is the farmer-and-processor relationship. The uniqueness of this type of relationship is that processors have milk collection and cooling capacities and are able to quickly pay cash to farmers (Hakobyan 2004). Very often processors offer some contract support measures to farmers, in order to guarantee a stable milk supply and higher quality of milk. Contract innovation measures frequently take the form of prompt payments, coverage of transportation costs and payment for veterinary services (Gow & Swinnen 2001). Contracting is relatively developed in the Armenian dairy sector (White and Gorton 2004). In Armenia, the relatively high level of contracting cannot be linked directly to FDI as domestic investors own all of the dairies in the country, but it can be linked to the growing export volumes of dairy products (White & Gorton 2004).

Although statistics show some decreases in export volumes since 2005, these statistical decreases are related more to currency exchange rates between the Armenian Dram compared with the US Dollar, than to lack of intent on the part of farmers to export their dairy products. For example, the volume of cheese export decreased approximately five times since 2005 due to the appreciation of the Armenian Dram. Therefore, the export situation was not conducive to processors to boost cheese export and the majority of the processors concentrated on local markets. In March 2009, this situation began to improve as the Central Bank of Armenia eliminated exchange rate interventions in favour of restoration of a floating exchange rate policy.

Farmer-processor relationships are practically new in Armenia, as are the new (non-Soviet-style) cooperative-processor relationships. Like the processors, cooperatives also possess cooling tanks and storage facilities, which enable them to continuously procure milk from farmers. The point of leverage in this case is that if one farmer supplies low quality milk, the entire cooperative will suffer as the milk will not be accepted by the processor, or the cooperative might receive a penalty for low quality (Hakobyan 2004). Therefore, members of the cooperative constantly strive to improve the quality of milk and meet the requirements set by the processors.



The relationships between member-farmers and the milk marketing cooperatives are

analysed further in this paper. In particular, this study also looked at the contractual relationships, hold-up problems, production and prices, trust and social capital among the cooperative members, contract enforcement mechanisms used by the cooperatives and farm investments. The study also revealed thedeterminants of farmer satisfaction with their current relationships.

## Data and research methodology

The research was based on survey data. The survey was conducted in Armenia within the scope of "Supporting the International Development of CIS Agriculture" (SIDCISA) project, funded by EU INTAS. The SIDCISA project aimed at understanding the supply chain relationships of commercial milk producers in Armenia, Moldova and Ukraine. A total of 300 dairy farmers were drawn randomly from all regions of Armenia which have significant commercial milk production, based on proportions given from statistical data on milk production. The sample contained 238 individual farmers (non-members) selling their milk to dairy processors and 62 cooperative member-farmers (selling their milk to cooperatives).

Several papers have been released in the scope of the findings of the SIDCISA project (Gorton et al. 2007, Dries et al. 2006). However, this study mainly concentrates on data collected from Armenia with its main emphasis on the relationships of the member-farmers and cooperatives as their main buyers as well as providing interesting comparisons with the relationships between individual farmers and their main buyers i.e. (dairy processors).

Data on farm growth, prices, yields, investment, the nature and satisfaction of relationships with their main buyer and non-price aspects of contracts were also collected and categorized per sampled sub-group.

Firstly, a multivariate regression analysis (using the ordinary least square method) was developed to test whether the members of cooperatives had better bargaining power, receive higher payment for their milk by the cooperatives and have higher level of household welfare. Milk price is the dependent variable and the independent variables are: 'time with main buyersin months'; firm's organizational form (A dairy processor being the reference category); ten regions of Armenia (Tavush region being the reference category); and, a dummy variable for payment time, indicating whether the payment for milk was received after or before the delivery. Since the survey questionnaire contained detailed information on milk prices, such as average milk price, minimum milk price and maximum milk price, a separate regression was developed for each price category. This allowed testing the consistency of prices, not only in terms of average price differences, but also in terms of minimum and maximum price differences.

Following this, an ordered logistic regression model was developed to test the following hypotheses:

- The members of a cooperative are more likely to be more satisfied with the relationship with the main buyer (Cooperative);
- The members of a cooperative are more likely to have the buyer (Cooperative) visit

their premises to help improve performance;

- The members of a cooperative are more likely to have the buyer (Cooperative) provide training or education;
- The members of a cooperative are more likely to have the main buyer contribute to an increase in the output;
- The members of a cooperative are more likely to have the actions of the main buyer help improve the quality of the product;
- The members of a cooperative are more likely to perceive the main buyer (Cooperative) as trustworthy;
- Being able to sell to a cooperative, members have improved the living standard of their household;
- Being able to sell to a cooperative, members have improved the profitability of their farm operations.

For each of these hypotheses, a separate regression was run using the ordered logistical regression model. Firm's organizational type (a dairy processor, dairy logistics/collecting firm, cooperative and other), taking milk to collecting station, being paid after delivery and the price of the milk are the control (independent) variables in the regressions. All outcomes for the dependent variable (i.e. milk price), are ordered around five possible outcomes; these are: strongly disagree; disagree; neither agree or disagree; agree; and strongly agree.

## Results

It was expected that the members of a cooperative must have better bargaining power, which is reflected in overall higher prices for collected milk. Higher prices, on the other hand, meant higher profits and as a result higher household welfare. The unadjusted summary statistics in Table 2 indicate that on average, members of cooperatives have received 5.91 drams more than 'A dairy processor' in the last month (survey was conducted in spring of 2006), 4.59 drams more in 2005 and 4.69 dram more in year 2004. However, these differences may be the result of regional price diversity. To test the hypothesis of higher household welfare for a member of a cooperative, a multivariate regression analysis was run using the ordinal least square (OLS) method.

The results of the OLS analysis are summarized in Table 3. The members of cooperatives, on average, have received 9.66 drams more than 'a dairy processor' in the last month (when the survey was taken), 2.59 drams more in summer 2005 and 8.24 drams more in winter 2004-2005. All the results are statistically significant. Interestingly, the price difference for collected milk was consistently higher for members of cooperatives for minimum and maximum prices, as well.

Time with the main buyers was negative, thus indicating price discounts are given to the longterm reliable buyer. Milk prices were different across regions, as well. Farmers from Aragatsotn (ARGT), Ararat (ARRT) and Kotayk (KTYK) regions were paid the highest rates for their milk. Surprisingly, farmers were paid less when they were paid after the delivery. The summary of the multivariate regression analysis proved

that the members of cooperatives have better bargaining power, get paid higher prices for the milk they produce and, as a result, have higher household welfare.

**TABLE 2:** UNADJUSTED SUMMARY STATISTICS

| | Last Month | Summer 2005 Min. | Summer 2005 Mean | Summer 2005 Max. | Winter 04/05 Min. | Winter 04/05 Mean | Winter 04/05 Max. |
|---|---|---|---|---|---|---|---|
| A dairy processor | 98.4 | 85.5 | 89.6 | 94.1 | 97.1 | 101.1 | 106.1 |
| Dairy logistics/ collecting firm | N/A | 80.7 | 90.3 | 100 | N/A | N/A | N/A |
| Cooperative | 104.3 | 89.7 | 94.3 | 99.4 | 101.6 | 105.7 | 109.1 |
| Other | 100 | 73.3 | 76.7 | 80 | 90 | 95 | 100 |
| Total | 99.7 | 86.1 | 90.5 | 95.2 | 98 | 102 | 106.7 |
| | 5.91 | 4.17 | 4.69 | 5.3 | 4.53 | 4.59 | 3.04 |

Source: Survey data.

**TABLE 3:** RESULTS OF THE OLS ANALYSES

| | Last Month | Summer 2005 Min. | Summer 2005 Mean | Summer 2005 Max. | Winter 04/05 Min. | Winter 04/05 Mean | Winter 04/05 Max. |
|---|---|---|---|---|---|---|---|
| Time with main buyer (months) | -0.01 | -0.03 | -0.06*** | -0.09*** | -0.03* | -0.01 | 0.01 |
| Collecting firm | N/A | 2.07 | 8.76*** | 15.28*** | N/A | N/A | N/A |
| Cooperative | 9.66*** | 3.43** | 2.59* | 4.22** | 7.6*** | 8.24*** | 8.22*** |
| Other | 3.09 | -10.06** | -11.35*** | -14.33*** | -3.38 | 0.99 | 1.62 |
| ARGT | 10.67*** | -5.12 | -2.51 | 2.74 | 10*** | 13.07*** | 15.56*** |
| ARRT | 14.11*** | 1.26 | 2.23 | 6.72* | 20.5*** | 21.21*** | 21.86*** |
| GQNK | 9.85*** | -7.53*** | -0.05 | 7.8** | 7.37** | 11.92*** | 16.13*** |
| KTYK | 14.61*** | 9.45*** | 7.88*** | 9.21** | 16.08*** | 14.09*** | 13.54*** |
| LORI | 2.85 | -4.92* | -2.92 | -0.19 | 4.41 | 2.3 | 1.11 |
| SHRK | 6.38** | -8.96*** | -7.46*** | -1.6 | 3.04 | 0.7 | 2.42 |
| SNK | 3.91 | -13.68*** | -13.9*** | -11.13*** | 1.76 | 0.17 | -0.94 |
| Payment received after delivery | 1.42 | -3.54** | -2.07 | -2.83 | -2.13 | -4.87*** | -7.64*** |
| Constant | 89.32*** | 96.66*** | 99.08*** | 101.19*** | 93.31*** | 98.42*** | 103.32*** |

*Significant at 10%, **Significant at 5%, ***Significant at 1%

# A dairy processor is the reference group, ## Tavush region is the reference group

The probability of overall satisfaction from the relationship with the main buyer is 3.29 times higher for the members of cooperatives compared with those with relationships to a dairy processor. The members of cooperatives are less likely to get education or training from the main buyer. This was a surprising result, as the milk marketing cooperatives regularly provide many training sessions on animal husbandry, veterinary issues, sustainable dairy practices, etc. Unadjusted statistics showed that

cooperatives were more involved in the activities of their members' farm businesses; for example: often or always visiting the premises to improve producer performance; conducting training and seminars (61 percent of the members of cooperatives were in agreement with the statement versus only 15 percent of non-members who agreed).

The actions of the main buyer significantly increase the output and improve the milk quality for the members of cooperatives; the probabilities are 2.6 and 2.25 times higher, respectively. The likelihood of having a more trustworthy buyer is 3.1 times higher for the members of cooperatives (see Table 4). The results of the OLS regression analysis also confirmed that the household welfare and standard of living were much higher for the members of cooperatives. The probabilities of improved living standards and improved profitability are 4.96 and 4.74 times higher, respectively, for the members of cooperatives.

**TABLE 4:** SUMMARIZED RESULTS OF OLS REGRESSION ANALYSES FOR EACH HYPOTHESIS

| | Variables | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** |
| **Collecting Firm** | 1 | .08** | N/A | 6.34* | 3.77 | 0.97 | 3.63 | 3.34 |
| **Cooperative** | 3.29*** | 0.66 | .14*** | 2.6*** | 2.25*** | 3.1*** | 4.96*** | 4.74*** |
| **Other** | 3.25 | 1.74 | N/A | 0.02*** | 0.05** | 0.17 | 0.63 | 0.17 |
| **Take Milk to Coll.Station** | 1.07 | 1.3 | 0.81 | 1.45 | 1.75** | 2.58*** | 2.74*** | 2.52*** |
| **Paid after delivery** | .33*** | 1.19 | 1.44 | .44** | 0.62 | 0.52* | 0.82 | .34*** |
| **Milk Price** | 1.01* | .96*** | .97*** | 1.03*** | 1.02*** | 1.02*** | 1.03*** | 1.02*** |
| **N** | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 |
| **R2** | 0.0557 | 0.0305 | 0.1227 | 0.0745 | 0.0504 | 0.1129 | 0.1172 | 0.1038 |

Variables
1 Overall how satisfied are you with the relationship with your main buyer
2 The buyer visits your premises to help improve performance
3 The buyer provides training/education for you/your farm
4 The actions of my main buyer have contributed to increasing my output
5 The actions of my main buyer have helped improve the quality of my product
6 Our main buyer is trustworthy
7 Being able to sell to a cooperative, members have improved the living standard of their household
8 Being able to sell to a cooperative, members have improved the profitability of their farm operations

*Significant at 10%, **Significant at 5%, ***Significant at 1%

# A dairy processor is the reference group

It was interesting to see that milk price was not a decisive factor for overall satisfaction and improvement of the living standards of the farmers, even though it was significant, but with a very small degree of magnitude (probability ratio of 1.01). There are other 'hidden benefits that members of cooperatives have access to which eventually explain why the probability ratios are high for the cooperatives

(e.g. 4.96, 4.74). Similar benefits are the additional support services provided by the cooperatives to the members. Milk marketing cooperatives were able to provide more contract support measures (additional services) than processors which translated into higher performance, better yields, higher prices, higher levels of trust and reliability for member-farmers. Table 5 shows that the majority of members of cooperatives received forward payments or loans from the cooperative, veterinary support and physical inputs. The cooperatives were very prompt in making payments to farmers.

Contractual relationships were more developed within the cooperatives. The survey revealed that about 60 percent of the members cooperatives have oral contracts, while only 31 percent have written contracts with their cooperatives. Only 9 percent of the members had no preliminary arrangement for their relationship. In comparison, about 30 percent of non-member farmers had no contract with their main buyers; 40 percent had written contracts and the remaining 30 percent had oral contracts. Although the majority of members of cooperatives had only oral contracts, it didn't prevent them from receiving the support measures. This fact highlights the role and the importance of trust between the member and the cooperative.

**TABLE 5:** CONTRACT SUPPORT/INNOVATION MEASURES: COOPERATIVES VS. PROCESSORS

| Possible support measure | YES | NO | YES | NO |
|---|---|---|---|---|
| Credit, loans and forward payments | 54.84 | 45.16 | 24.37 | 75.63 |
| Physical inputs | 51.6 | 48.39 | 7.14 | 92.86 |
| Machinery | 6.45 | 93.55 | 0.42 | 99.58 |
| Transportation | 6.45 | 93.55 | 23.95 | 76.05 |
| Specialized storage | 9.68 | 90.32 | 0 | 100 |
| Guaranteed prices | 41.94 | 58.06 | 47.9 | 52.1 |
| Veterinary support | 46.77 | 53.23 | 17.65 | 82.35 |
| Business and farm management support | 14.52 | 85.48 | 1.26 | 98.74 |
| Harvest andhandling support | 8.06 | 91.94 | 1.26 | 98.74 |
| Loan guarantees | 16.13 | 83.87 | 0.84 | 99.16 |
| Investment loans | 6.45 | 93.55 | 0.42 | 99.58 |
| Quality control | 85.48 | 14.52 | 81.93 | 18.07 |
| Prompt payments | 90.32 | 9.68 | 86.97 | 13.03 |
| Market access | 64.52 | 35.48 | 33.61 | 66.39 |

Source: Survey Data

## Conclusions

World agriculture today shows a growing tendency toward consolidation. Armenian agriculture should also adopt this practice for its own continued development since the prevalence of smallholders in the sector hinders access to world export markets due to high production costs and low levels of competitiveness. For such policies and forms of consolidation, a well-defined strategy is needed; a practical implementation of such a strategy would guarantee smooth transition to international standards of performance and competitiveness. For elaboration of that strategy, both global

experience and traditional features of the domestic sector are important. If global trends point toward a goal that corresponds to one that Armenia seeks to achieve (e.g. modern consolidated agriculture), then specific features of Armenia's domestic agriculture must be considered as crucial when defining the steps required to reach that strategic goal. Toward this end, the historical development path of agriculture taken by more advanced countries shouldn't serve as the only example since Armenia doesn't have sufficient time and resources to proceed in the same manner. Rather, Armenia needs a well-defined model that could guide the sector's development to achieve higher technical and technological levels of productivity and efficiency within a comparatively shorter time and with lower social costs.

It should be noted that the role of milk marketing cooperatives in the dairy supply chain continues to increase. Within that process, the Center for Agribusiness and Rural Development, which continues to provide technical and financial assistance to these cooperatives, has made a valuable contribution. CARD uses an integrated approach to assistance covering milk quality, cooperative development, dairy management, rural credit and training in cooperative management and accounting that builds cohesion among participants and dedication to shared goals between farmers and cooperatives and between cooperatives and dairy processors that allows value added to increase.

These cooperatives provide several benefits, among which the increased access to milk sales is valued most by member-farmers. It should be remembered that there is a substantial impact from the cooperative to increase the farmers' cash incomes. Following the activities and examples of CARD, many international and national organizations and large dairy processors assisted farmer groups to establish cooperatives aimed at improving management practices in the dairy farms in order to improve the quality and quantity of milk supplied. However, many of these organizations didn't possess specialist knowledge and simply replicated the generic models and approaches of CARD in certain areas. These approaches do not always lead to the expected results. As Melkonyan et al. (2008) and Grigoryan et al. (2007) discussed, in most cases farmers confuse the cooperative with former Soviet-type collective farms and don't know how to exercise their 'one member, one vote'-right—nor do they realize that they are the owners of the cooperatives.

CARD and other organizations and NGOs active in the development of the cooperative movement in Armenia should regularly conduct training and consulting for farmers, both members and non-members, on "Cooperative Principles and Identity", "Cooperative Management", "Members' Roles and Responsibilities" and similar topics. In parallel, a lobbying campaign must be developed by farmer organizations and cooperatives towards establishing a "Law on Agricultural Cooperatives" which does not presently exist in Armenia.

The research findings in this paper also showed that being a member of a cooperative, led to farmers becoming more motivated to increase investments in their farms. In particular, about 42 percent of the member-farmers stated that they have invested in new sheds for cattle, about 65 percent have enlarged their cattle sheds and 39 percent purchased new milk cows. More than 20 percent of the member-farmers have bought calves, modernized their cattle stalls and purchased agricultural equipment. When the same indicators were applied to non-member farmers, the results showed

that they invested only half of what cooperative members had.

With this paper, the author advocates continuing with the further development of the cooperative movement and encourages an expansion of the programme to other agricultural sectors to enable all categories of farmers to become more fully integrated in the agrifood value chains and supply networks, and thereby, to improve their incomes.

## Acknowledgments

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# Bibliography


- CARD, 2008. *Cooperative Development Program Reports*. Financial Statement of Cooperatives (2001-2008)
- Cocks, J. 2003. External *Facilitation, Public Agencies, and Market Development in the Armenian Goat Industry: The Case of the USDA Marketing Assistance Project*. Unpublished M.Sc. Thesis, University of Illinois at Urbana-Champaign.
- Dries, L., Dumitrashko, M., Gorton, M., Hewson, P., Ignat, I., Ignat, G., Mkrtchyan, N., Sardaryan, G., Skripnik, A., Urutyan, V, Vandeplas, A. & White, J. 2007. Farmer – processor relationships in the CIS dairy sector: key findings from the SIDCISA research project, Working Paper 2007/4.
- Gorton, M., White, J, Dries, L, Ignat, I., Ignat, A., Sardaryan, G. & Skripnik, A. 2007. *Dairy Farming and Milk Marketing Relationships in the CIS*. Eurasian Geography and Economics, 2007, 48, No. 6, pp. 733–747.
- Gow H. & Swinnen J. 2001. Private Enforcement Capital and Contract Enforcement *In Transition Economies*. AJAE 83 3, August 2001, pp. 686-690.
- Grigoryan, A., Kwapong, N. & Hakhnazaryan, T. 2007. *Farmers Organization in the development of Agriculture in the South Caucasus: Case of Armenia*.
- Hakobyan, A., 2004. *Evolving Marketing Channels in Armenia: A Structure-Conduct-Performance Analysis.* Prepared for Poster Presentation at the 14th Annual IAMA World Food Forum and Agribusiness Symposium in Montreux, Switzerland, June 12-15.
- Hovhannisyan V., Urutyan V. & Dunn D. 2004. *The Role of Cooperatives in Milk Marketing: The Case of Armenia.* Paper presented at the 14th Annual IAMA World Food Forum and Agribusiness Symposium in Montreux, Switzerland, June 12-15, 2004.
- Melkonyan, Ch., Khachatryan, A., Arakelyan, A. & Pogosyan, R. 2008. *Dairy Cooperatives' development constraints in transition countries.* Analysis of Basic Cooperative Principles Armenian Dairy Sector Case.
- Ministry of Agriculture of the Republic of Armenia. 2002. *A Strategy for Sustainable Agricultural Development*. Prepared with the support of the Food and Agriculture Organization of the United Nations within the framework of TCP/ARM/0065.
- National Statistical Service of the RA, *Yearbook 2003*, available at http://www.armstat.am/Arm/StatData/Taregirq_03/index-eng.html
- National Statistical Service of the RA, Yearbook 2008, available at http://www.armstat.am/Arm/StatData/Taregirq_08/index-eng.html
- Swinnen J. 2005. *When the Market Comes to You — or Not. The Dynamics of Vertical Coordination in Agri-food Chains in Transition.* Final Report of the World Bank ECSSD ESW Dynamics of Vertical Coordination in ECA Agri-food Chains: Implications for Policy and Bank Operations EW-P084034-ESW-BB.
- White, J. & Gorton, M. 2004. *Vertical Coordination in Transition Countries: A comparative study of agri-food chains in Moldova*, Armenia, Georgia, Russia, Ukraine. Report prepared for the World Bank ECSSD project on Vertical Coordination in ECA Agrifood Chains as an *Engine of Private Sector Development: Implications for Policy and Bank Operations Contract* No. 7615040/7620016.
- Zeuli, A., Kimberley & Cropp R. 2004. *Cooperatives: Principles and practices in the 21st century.* University of Wisconsin.

# THE EVOLUTION OF THE MEDICINAL AND AROMATIC PLANTS VALUE CHAIN IN ALBANIA – IMPLICATIONS FOR POVERTY REDUCTION AND RURAL DEVELOPMENT

Drini Imami[40 41 42 43 44] *Luciano Leonetti* [41] *, Andi Stefanllari* [41 42 43 44 45]

## Abstract

Medicinal and Aromatic Plants (MAPs) make up one of the main agribusiness sectors in Albania and their export accounts for a large share of agrifood exports. Albania exports a wide range of MAP products, but is particularly strong in sage for which it is one of the world's leading exporters. Wild harvesting of MAPs is very common in Albania. Given the high share of the population found in rural areas and the high unemployment rate in mountainous areas that are rich in MAPs, harvesting MAPs represents an important source of income. MAPs collection generates income for about 100 000 persons; it is the main source of income for thousands of rural households. Over the last few years, the number of actors in the downstream part of the MAPs value chain (VC) increased and consequently, this has also increased the competition and demand for raw MAPs. As competition has grown in the downstream part of the VC, the income of rural households involved in MAPs collection have also increased, which suggests a lower rate of poverty for such households and an important opportunity for rural development.

40 Development Solutions Associates (DSA)
41 Faculty of Economics and Agribusiness, Agricultural University of Tirana
42 Department of Agricultural Economics and Engineering, University of Bologna
43 Institute of Advanced Studies, University of Bologna
44 Open Society Institute (Grantee)

# Introduction and methodology

Medicinal and Aromatic Plants (MAPs) are the main non-timber agroforestry business in Albania, generating more than ten million euros per year and providing a portion of annual income for tens of thousands of rural households.

Albania is a major international producer for some MAPs. In fact, within specific markets and market segments, Albanian products are the market leaders (such as in the case of sage in the United States and wild thyme in Germany).

Wild harvesting of MAPs is very common in Albania given the high share of the rural population and the high unemployment in these areas. MAPs are found all over the country, but collection is more developed and better organized in some mountainous areas where there is also higher unemployment and relatively high levels of poverty.

In this paper, the intent is to address recent trends in the MAPs VC, and to analyse the impact of the evolution in this sector on poverty reduction and rural development. In addition, recommendations are provided for improvements of the MAPs VC.

The research for this paper is based extensively on a survey conducted during 2008 that included the main actors of the MAPs VC and on the analysis of secondary data. The main method used for the 2008 survey was direct semi-structured interviews. Interview guidelines were developed after a careful review of the previous studies and of secondary data. The interviewees included: two of the largest processor-exporters; six medium-scale processor-exporters; five small-scale processor-traders; five collectors; five cultivators; and, three agronomists.

The secondary data were mainly obtained from the databases of the Albanian Centre for International Trade (ACIT), EUROSTAT, FAOSTAT, USDA, *et al*.

Due to the scarcity of specific data, which became worse moving upstream from exports towards production at the regional level, data collection and analysis was focused mainly on the middle and downstream parts of the VC. Generally speaking, the data for the entire study could be characterized as scattered, partial and unreliable. Therefore, the main research relied on the information provided by the participants in the interviews.

Albanian statistics are often not very reliable and it does not appear possible to obtain detailed data on export by type of MAP. Albanian official statistics that were used in this paper, have been obtained mainly from ACIT. International trade statistics sometimes report commodities trade data at the Harmonised System six-digit level (HS–6) and sometimes using the ten-digit level (HS-10). As a result, some data reports groupings of MAPs trade rather than data for specific MAPs. For example, the analysis of exports to the United States is more detailed at specific product levels than the analysis of exports to the EU.

# Relative importance of the sector

## Relative importance of MAPs for the Albanian economy

MAPs are a major agroforestry business in Albania, especially in terms of international trade, with only a small share targeted for the domestic market. There are no accurate figures representing domestic demand and consumption. It's widely agreed, though, that, domestic demand for the main MAPs is not significant compared with export demand. Domestically, MAPs are widely used by individuals for cooking, preparation of herbal teas and traditional medicine. Also, given the limited presence of MAPs-processing facilities in the country, their industrial use is extremely limited.

Over the last decade MAPs export has reached a level of more than ten million euros per year, with most shipments destined for Germany and the United States. Albania exports a wide range of products, but is particularly strong in only three to four MAPs(i.e. sage, oregano, thyme and savoury, in order of importance). Sage alone accounts for almost half of the value of total MAPs export.

Export of MAPs was also an important source of foreign currency during the planned economy. During that period, an extensive network of village collection points connected to a number of strategically placed warehouses was established. These warehouses, which now operate as private enterprises, are still the backbone of the upstream VC.

The exact level of MAPs production is hard to assess. There was a study conducted by the Federal Agency for Nature Conservation (FANC) that made an attempt to assess the levels of production for the main MAPs (FANC 2003). In the 2008 study described in this paper, an assessment was made based on interviews with processor-exporters.[45] Table 1 shows the main figures resulting from the 2008 field research and from the 2003 FANC study. Additional inconsistencies may also arise from the different time periods under study (i.e. authors' study in 2008 vs. the FANC study in 2003). Despite these differences, the levels of productions and sales do not appear to change so drastically from year to year.

**TABLE 1:** ESTIMATE OF MAPS EXPORTED IN METRIC TONNES

| MAPs species | FANC 2003 estimates | Authors' 2008 estimates[*] |
|---|---|---|
| Sage | 1, 500 | 2 000 - 2 500 |
| Oregano | | 500 |
| Thyme | 300 | 300-350 |
| Repanda juniper | | 250-320 |
| Wild Apple | 110 | 600-800 |

These estimates are calculated based on the information obtained from the interviews with the main processors.

45 Some processors were not willing to share all the information they had; therefore it's likely that not all the information is accurate (particularly the estimates of the national scale).

### Role of maps in the economy of agrosilvipastoral communities

While MAPs are found all over Albania, the eight districts in which they are most widespread and where collection is better organized are Malesia e Madhe, Shkoder, Skrapar, Elbasan, Korce, Berat, Permet and Durres.

Collection of wild MAPs is an important economic activity and source of income for many rural households, although in almost all cases it is a part-time activity. Collection of the main MAPs takes place mostly during July and August. This follows on from the most important part of the season for small ruminants breeding ([46]) and before the season begins for gathering edible nuts.

MAPs are the most important forestry subsector in terms of the number of people involved. It is estimated that about 100 000 people are involved in wild MAPs collection (UNDP 2005). This activity is concentrated more in the interior and mountain areas, where poverty is usually higher. . Most rural families in these agrosilvipastoral communities get a significant share of their income from MAPs collection. Revenue from MAPs collection may account for as much as 17 percent of the northern Albania household income; more specifically, sage alone may generate about 10 percent of family income, as shown in a recent study of the Shkodra region (Fugarini 2007). Many families in remote rural areas generate an even greater share of income from MAPs collection.

Malesia e Madhe is one of the districts where collection of MAPs is a major activity for the farmers. Around 80 percent of the farmers are involved to some extent in MAPs harvesting: 50 percent of the harvest work force is comprised of women; 30 percent by children; and 20 percent by men. According to the local leading entrepreneurs who were interviewed, families involved in agrosilvipastoral activities in this district generate around 60 percent of their income from MAPs harvesting.

Also in some villages in central Albania (i.e. within the district of Elbasan), MAPs collection is the main economic activity for up to one-third of households. One person can earn annually the equivalent of 2 000 USD for three to four months of hard work during the summer when most MAPs can be collected (according to authors' interviews). The number of working days devoted to MAPs collection varies according to the importance of the activity at the local level, but it can represent some 25-30 working days per year per person involved—not including the post-collection work for drying, first sorting, etc. But, it can be much higher in some areas depending on the type of MAPs involved.

## Main actors in the MAPs VC

### Harvesters of wild MAPS and cultivators

The majority of rural residents involved in MAPs collection are harvesters of wild MAPs. Harvesters are usually responsible for drying the herbs and storing them

46 For example, most lambs are sold about 60 days after birth; births are planned so that most of the lambs are ready for sale between the end of April and mid-June.

until they sell and deliver them to collectors. Drying takes place in open space under sunlight.

According to collectors interviewed, one harvester can gather 15 kg of natural sage per day. Collectors buy from harvesters located up to a certain distance after the harvesters have accumulated aboutone metric tonne of MAPs. Some harvesters have constructed new large storage houses that can store up to 30 metric tonnes of MAPs for a definite period.

Generally harvesters sell MAPs to collectors; however, when harvesters are located within a range of 25 km, all categories of processors may buy quantities of MAPs directly fromthe harvesters, bypassing collectors.

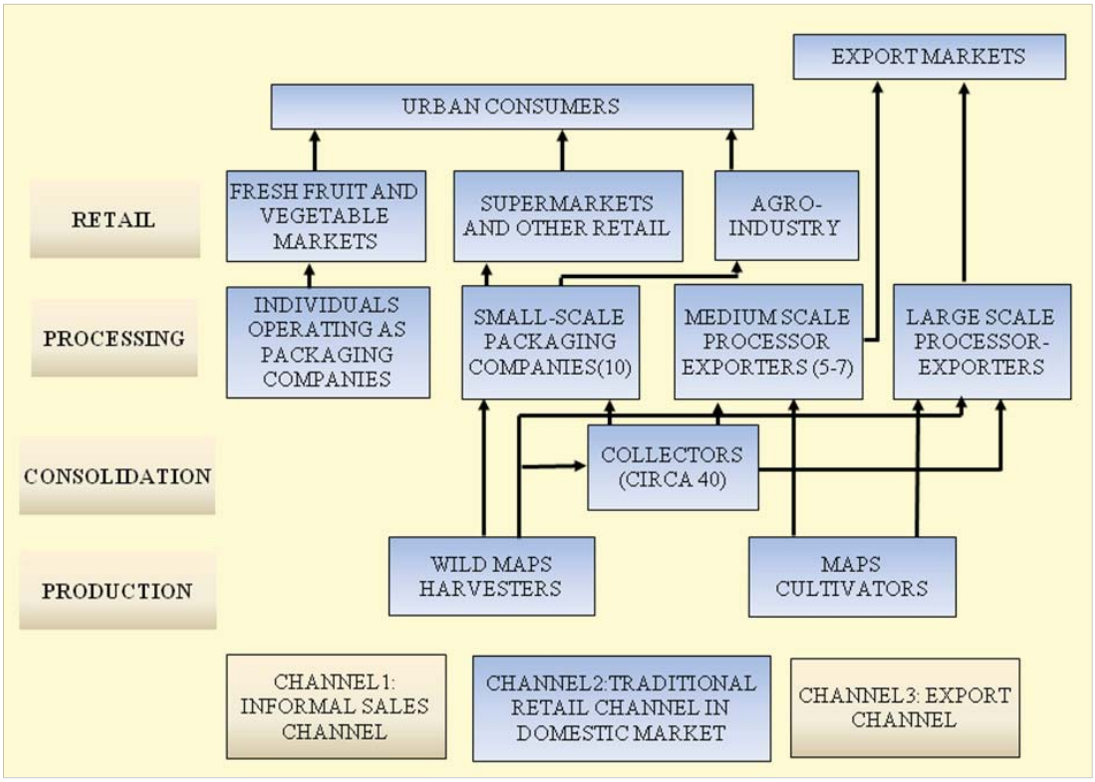
Cultivation of MAPs is discussed in the next section.

## Overall structure of the VC

The sector of MAPs collection and processing is organized into several main levels, namely: harvesters of wild MAPs and cultivators of MAPs, collectors, packaging companies, medium companies, and large companies specialized in exporting.

A schematic overview of the MAPs VC in Albania is depicted in Figure 1.

**FIGURE 1:** OVERVIEW OF THE MAPS VC




## Collectors

These operators are based near the areas where MAPs harvesting takes place. They collect MAPs from the harvesters and store the MAPS in their warehouses. The collectors provide the function of consolidators in each district by collecting MAPs

from thousands of harvesters and then storing the MAPs in their own warehouses, which are typically warehouse buildings of former state owned cooperatives. In each district there are at least two to four main collectors who each may accumulate an estimated 20-100 tonnes of MAPs annually. Malesia e Madhe is an exception because there are an estimated 15 collectors in this district. In total, for the entire country there are approximately 40 collectors.

cooperative. The collectors sell the MAPs to the major processor-exporters, usually adding an average 10-15 percentmarkup. However, markups vary from product to product and from region to region, depending on the degree of competition.

Collectors have established regular supplier relationships with processors, traders and exporters. However, collectors are not tied to any one single customer. They may supply different customers with different products or they may switch to another buyer who offers a better price.

Sometimes major exporters lend capital in advance, and especially for key products. But in exchange for the advance payment, the harvesters must provide products exclusively to the collector and at lower prices than if the harvesters had operated with their own funds until the sale was concluded.

In some cases, major collectors have even sold directly to foreign buyers. However, these are sporadic cases and collectors don't regularly trade directly with foreign buyers.

## Small processor-traders

Collectors, who have managed to enlarge their business, usually establish small processing companies. In other cases, these processing companies are small joint ventures between local collectors and foreign traders.

These companies invest in processing lines to perform cleaning and packaging operations. A typical cleaning-and-packing line first performs pre-cleaning tasks: the removal of stalks; elimination of other grasses, dust and stones; and elimination of other physicalimpurities. Following completion of the cleaning and selection phases, the MAPs are pressed and packaged, usually in 50 kg sacks.

Small processing companies prepare and sell 100 to 500 metric tonnes of MAPs annually. They sell MAPs mostly to large companies in Albania, but on some occasions, they also sell directly to foreign buyers.

## Medium and large-sized processors exporting to foreign markets

### MAIN OPERATORS AND PRODUCTS

The major exporters can be divided into two main groups: large processors (such as Alb Ducros and Albania Herb); and (some five to seven) medium-sized export companies which have consolidated and manage to sell directly to foreign buyers. Alb Ducros is the largest of these companies; it performs a higher level of processing,

is a more structured enterprise and has consolidated trade links with Germany, the United States and France. Alb Ducros enjoyed a near monopoly of the export market for Albanian MAPs from the beginning of transition up to 2000-2001. Since then, other relatively large and medium-sized operators have entered the market, increasing competition.

The position of most large and medium-sized processors in international markets is that of suppliers of raw material. Most of them perform basic processing operations (such as cleaning and selection, grinding and pressing) as well as selling to foreign buyers. Alb Ducros is one of the few exporters, that is able to perform higher level processing and therefore, charge higher prices for its processed MAPs.

Some of these companies attempt to add value to their products through bio-certification, producing essential oils, etc. While all these companies have invested in new processing lines, it was not possible to obtain accurate figures on investments as each considered such information confidential and would not disclose actual numbers.

Each export company has an established network of regular collectors from all over the country. In addition, the export companies have contract production arrangements with a number of MAPs farmers who cultivate limited surface areas. It should be noted, though, that the large and medium-sized companies are the only ones to have supported the cultivation of MAPs. The exporters also have joint operations with small processors and are also supplied by occasional collectors. Large processors also have collection agents or branches in selected districts; the processors pay the operating expenses of these entities.

### PRODUCTION OF ESSENTIAL OILS

Currently, Albania produces between 35 and 40 metric tonnes annually of essential oils. It's estimated that these are produced by a total of 15 small, medium and large-sized processing companies mostly located in northern and central Albania. All these companies produce essential oils using the steam distillation method. The medium and large-sized producers of essential oils operate their own distilleries, but they also buy essential oils from the smaller processors. For the most part, only stems are used in the distillation process as dried leaves are exported as a separate product.

Many distilleries operated by the smaller companies are artisanal stills and similar to the stills where raki (grappa) is boiled. When using these simple stills, the essential oil must be extracted mechanically from the water. In contrast, the modern stills automatically separate the essential oil in a free-flow.

## Recent trends in the MAPs VC in Albania

Most processors and collectors interviewed reported that there are problems with MAPs harvesting and that assistance is required in this area. In addition, other key products (such as thyme, oregano and winter savoury) are characterized by quality problems because often they are not collected at the optimal time, or may be

poorly cleaned and dried. Sage is frequently harvested too early, affecting its quality. Although sage ripens in the beginning of July, farmers harvest it in June and sell it in July. Harvesting should be made manually so that only the leaves are collected leaving the body of the sage plant intact. However, many harvesters use sickles to harvest sage and end up cutting the whole plant, damaging the plant's regeneration potential and future production. Most harvesters collect sage in plastic sheets, then lay the sheets out to dry in the open air under direct sunlight, although sage should be dried in shadow and not exposed to sunlight.

Production sustainability is also affected during harvesting. Eager to harvest as large a quantity of MAPs as possible, harvesters do not follow proper harvesting practices. This not only damages the quality of MAPs collected but also damages the remaining wild MAPs leading to lower production in the following years.

On the other hand, demographic changes in some rural areas are also affecting the collection capacity of wild MAPs. Almost all processors and collectors interviewed confirmed that there is a decline in the demographic population in some mountainous areas and this has reduced the collection capability for some wild MAPs. According to one major processor interviewed, sage in high hills and mountain areas is harvested less, while wild MAPs nearer to villages are over-harvested.

According to one major actor that was interviewed, international market demand for MAPs is not stable and varies significantly from year to year. The market demand for sage, though, is stable, and the total quantity exported is dependent upon the amounts collected annually. There is also steady market demand for oregano, thyme, winter savoury, blueberries, lemon balm, rosemary, wild apple, juniper, stinging nettle and dog rose. As a result of the recent evolution of the sector, there has been a certain specialization of processors for selected MAPs.

In recent years, competition among traders for the procurement of MAPs has increased, with the double effect of contributing to increase purchase prices (for more details, see Chapter 6).

## MAPs cultivation

During the planned economy, several MAPs were planted on a fairly largescale by some cooperatives (e.g. sage, thyme, oregano, lavender and rosemary). But once the land had reverted to private property again after 1991, the cultivation of MAPs nearly ceased. However, from the late 1990s, competition for steady supplies of raw material has pushed trading companies to increase cultivation of MAPs.

Accurate official data on the volume and species of MAPs cultivated in Albania are difficult to obtain. However, estimates reported from a previous study (FANC 2003) based on data provided by the Ministry of Environment (as of 2001) showed a total MAPs-cultivated surface area of approximately 1 900 hectares. According to the authors' 2008 survey, though, there are only a couple hundred hectares of area cultivated with oregano and thyme, and just a few tens of hectares with sage and lavender; the total area cultivated with MAPs likely does not exceed 500 hectares at present.

Facing fierce competition for MAPs, as previously discussed, some collectors are now involved in the cultivation of MAPs in order to secure a steady supply of raw material. This activity does not disrupt the wild MAPs collection as the activities take place in different seasons of the year.

The increased interest in cultivating MAPs led most of the companies involved in the MAPs VC to take some steps to stimulate such activity, but so far with mixed results. Usually these contract production initiatives are based on agreements with large processor-exporters. These large operators distribute free seeds to farmers in order to increase production/supply of selected MAPs. The farmers then regularly supply the large operators at harvest time. However, some traders themselves are also directly involved in MAPs cultivation.

Personal trust is a key factor in the relationships between collectors and processors. There are cases in which proposals to cultivate MAPs were rejected because the representative of the processor-exporter making the proposal was introduced by other operators who were not considered reliable, while similar proposals were accepted because the parties were considered trustworthy.

### Supporting institution and environment

The Albanian government and public institutions have shown very limited attention to the MAPs sector, despite its importance in terms of poverty reduction and improved rural development.

The few development projects dealing with MAPs (the most notable being components of USAID, IFDC and EDEM projects and GTZ activities for mountainous areas) were not directed at the entire VC. Instead they either focused on support for development of the downstream part of the chain (i.e. wholesaling and exporting) or treated the issue(s) as part of wider local development programmes. Also MADA, UNDP Art-Gold and IDEAS have been active in this sector in certain parts of the country.

The cost/effectiveness of the activities associated with the projects in this sector have been quite rewarding, also due to favourable market conditions. But, solving the constraints of the sector has been largely beyond project scope or means. However, it should be noted that there have been some limited resources applied by international development projects to the upstream part of the VC. Some training has been provided for sustainable MAPs collection and for proper post-harvest practices; there has also been support from international development projects along with some sporadic efforts toward cultivating the predominant MAPs, but there has been no real holistic effort to develop the upstream portion of the VC.

## Trade analysis

### 1. Maps traded on the domestic market

Even if the demand for MAPs in the domestic market is limited, a wide range of MAPs

is commonly sold in fresh fruit and vegetable markets and other retail outlets.

The main products traded on the domestic market are herbal teas and spices used for cooking. At present, tea and salep are packaged by Albanian companies and sold in retail outlets including supermarkets as well as to restaurants. Other herbs and spices are sold in fresh fruit and vegetable markets, packaged in simple plastic bags.

However, Albanian MAPs are targeted mainly for export, rather than for the domestic market.

## 2. International trade and Albanian export of MAPs

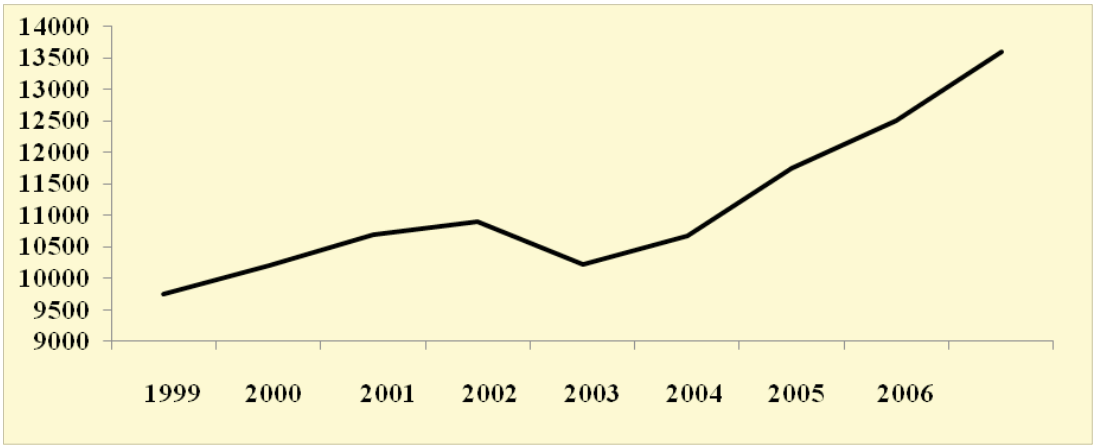
In recent years the demand for MAPs has grown rapidly because of accelerated local, national and international interest, the latter notably from the Western pharmaceutical industry (Ruben 2004). This has enabled Albania and other suppliers of MAPs to increase their level of MAPs export to the Western countries.

In general, Balkan countries are a major source of MAPs as raw material or semi-finished products suitable for many industries and across different sectors in the EU and the United States. Albania is the third largest exporter of MAPs in Europe, (on a par with France )[47] and is the second-ranked European country (after Bulgaria) with a trade surplus in MAPs. Albania is not a newcomer to the MAPs market and has held a major role in the international trade of MAPs for decades.

### 2.1 OVERALL EXPORT FLOWS AND DESTINATION OF EXPORTS

Exports of MAPs accounts on average for 25 percent of total agrifood exports from Albania and more, than 50 percent of all forestry-product exports. The value of exports of Albanian MAPs has increased continuously during the last ten years (Figure 2). The increase can be attributed to increased prices and also higher volumes for some MAPs. By 2007, export of MAPs had reached roughly 14.7 million euros, 60 percent of which was shipped to Germany and the United States.

**FIGURE 2:** TOTAL MAPS EXPORTS 1999-2007 (IN 000 EUROS)



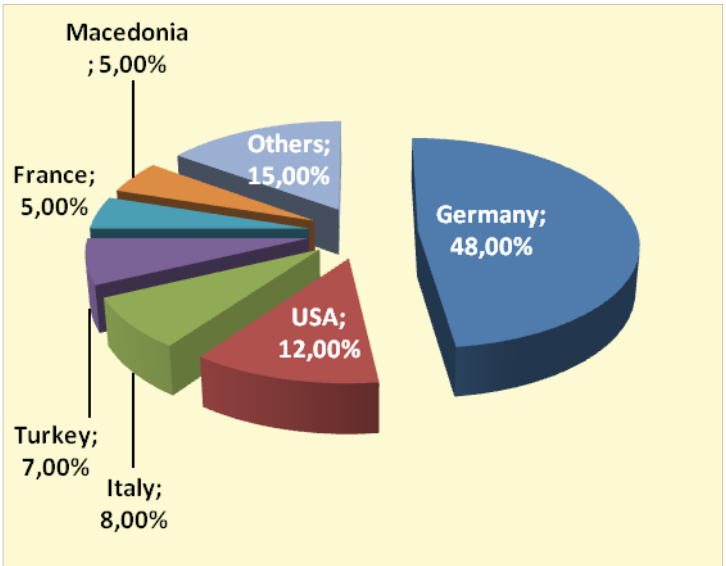

The structure of Albanian MAPs exports varies significantly from year to year, but the main markets are always Germany and the United States, followed by Italy, France and

47 A share of the French MAPs exports are actually re-exports of imported MAPs; also, France is probably the world's most significant market for essential oils.

Turkey. The level of exports to specific countries is not only affected by the demand of those countries, but also by the competition from other suppliers.

Different target markets demand different types of MAPs. For example, sage is typically exported to the United States; more than half of the sage imported by the United States comes from Albania, (Figure 3). Germany is a key market for MAPs in Europe (Figure 3). In addition, a share of MAPs export to Germany is processed further and then re-exported to other countries, including the United States.

**FIGURE 3:** EXPORT DISTRIBUTIONS OF ALBANIAN MAPS IN 2007

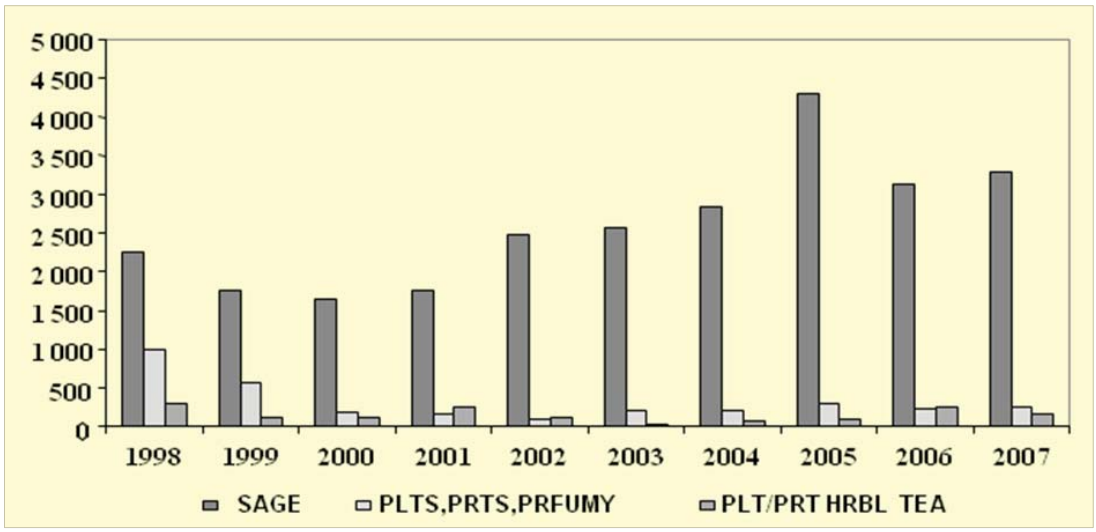



Source: ACIT

## 3. Exports to the United States

Albanian exports of MAPs to the United States have increased over the last decade (Figure 4).

**FIGURE 4:** ALBANIAN MAPS EXPORTS TO UNITED STATES (000 USD)

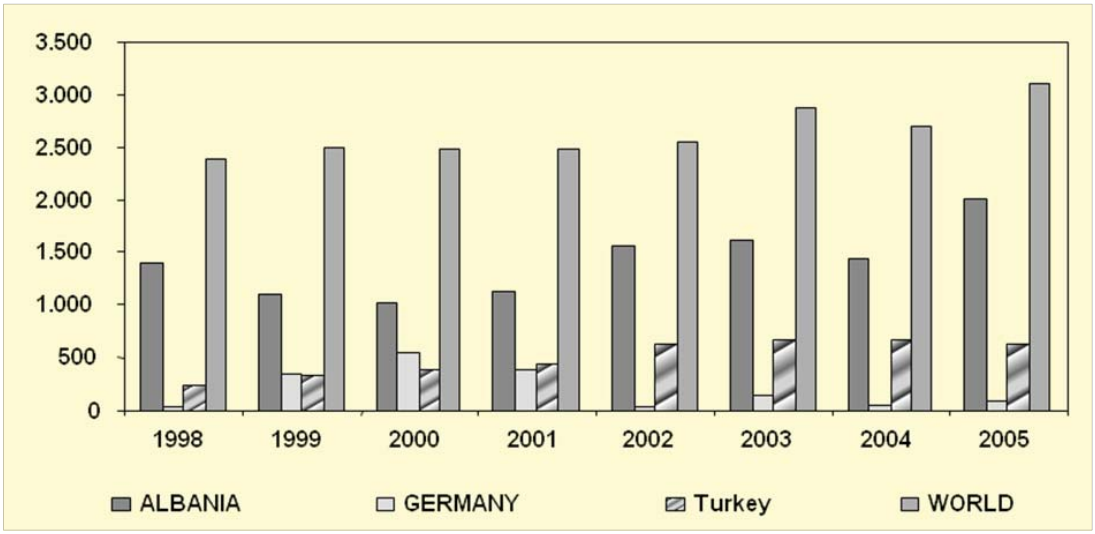



Source: USDA

In the case of sage, Albania is the main supplier to the United States. Turkey, whose role in sage imports to the United States is gaining strength, is in second position

while Germany's position has declined considerably, especially since 2001 (Figure 5).

**FIGURE 5:** UNITED STATES IMPORTS OF SAGE IN METRIC TONNES




Source: USDA

Despite the fact that Albanian sage has high organoleptic properties, the Albanian sage prices are significantly lower than those of the rest of the world. Moreover, Albania, while supplying high quantities—or more than half of the sage imported by the United States, for example—should have the advantage of being in a favourable negotiating position. This, in turn, should help to obtain higher prices, but that hasn't been the case. Low prices are attributed, to a large extent, to poor post-collection practices (involving sorting, cleaning, varietal purity, phytosanitary conditions, food safety treatments, freshness, moisture level, etc.) that can affect the quality characteristics of exported sage. This is also a weak point in regard to the trade of other MAPs products.

## 4. Exports to EU countries

As mentioned earlier, EUROSTAT provides data only up to the six-digit level (HS–6). As a result, only the most significant MAPs in terms of revenue (i.e. mostly spices and hot peppers) areindividually identified. At the same time, there is duplication in the reporting as the same MAPs sometimes appear in more than one category, depending on their inclusion in a final product (such as those MAPs used in production of cosmetics and perfumery); and those destined for direct consumption (such as herbs for cooking, herbal teas or herbal medicines).[48]

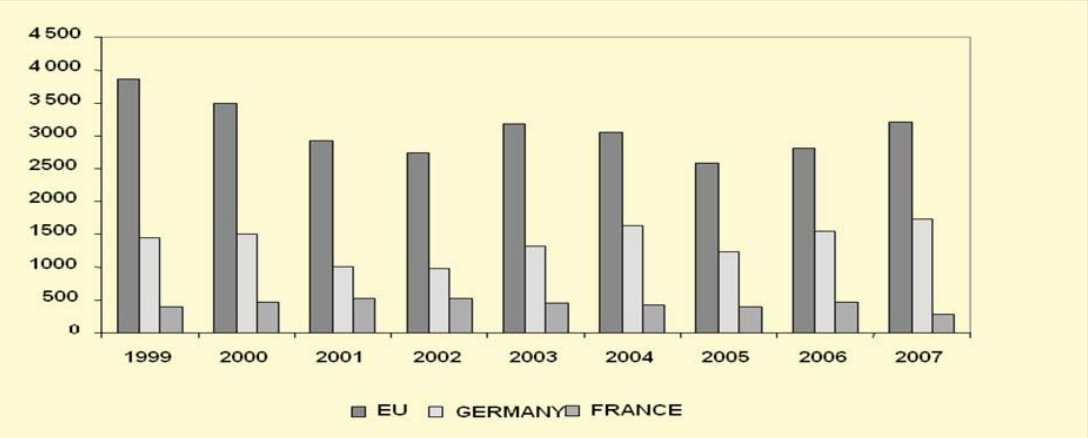
Exporters of Albanian MAPs target different EU countries. Germany is by far the most important market, followed by Italy and France (Figure 3). Just as the trade statistics showed, there are also differences in the markets depending on the intended use of the MAPs. France is a more important market for MAPs destined for secondary processing and the Italian market is more closely associated with MAPs used for cooking and herbal medicine.

The most representative set of data is relevant to those MAPs used for secondary

48 In effect, the same MAP may be reported in two categories if they are imported for sales in herbal shops or pharmacies and also whether they are used in the production process to extract chemicals used in traditional medicines.

processing. [49]. In this subsector, Albanian MAPs exported to the EU have increased over the last few years, both in terms of volume. (Figure 6).

**FIGURE 6:** EXPORTS TO THE EU OF MAPS FOR SECONDARY PROCESSING 1999-2007 (IN MTS)




Source: Eurostat

## Producer price and marksups analysis

Producer prices and markups of MAPs vary according to the type of product. For some products, prices are quite high while other products are sold at lower prices. Collectors, however, tend to charge a consistent markup for most products, usually ten percent, to cover their costs and provide a profit. Harvesters and processors assign different markups to different products. Some of these differences can be seen in Table 2.

**TABLE 2:** PRICES OF SELECTED PRODUCTS AT EACH VC LEVEL (EURO/KG)

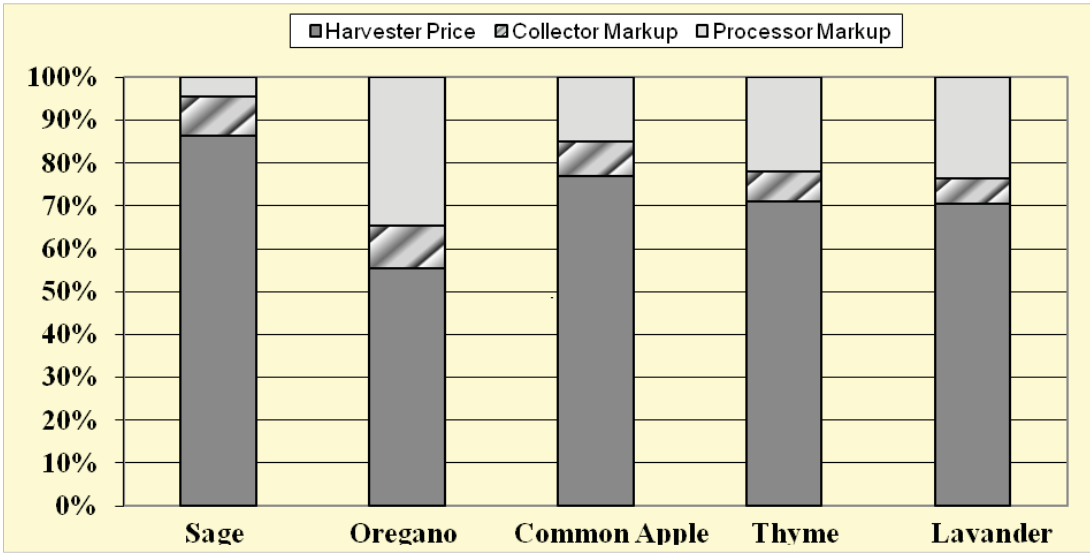
| | Harvester | Collector | Processor |
|---|---|---|---|
| Sage | 1.1 | 1.21 | 1.27 |
| Oregano | 1.5 | 1.8 | 2.7 |
| Common Apple | 1 | 1.1 | 1.3 |
| Thyme | 1 | 1.1 | 1.4 |
| Lavender | 1.2 | 1.3 | 1.7 |

Source: Authors' survey

Sage is one product that tends to command greater markups as demand for sage constantly remains high (Figure 7).

49 Eurostat code 121190: "Plants, parts of plants, including seeds and fruits, used primarily in perfumery, in pharmacy or for insecticidal, fungicidal or similar purposes, fresh or dried, whether or not cut, crushed or powdered (excluding liquorice and ginseng roots, coca leaf and poppy straw)."

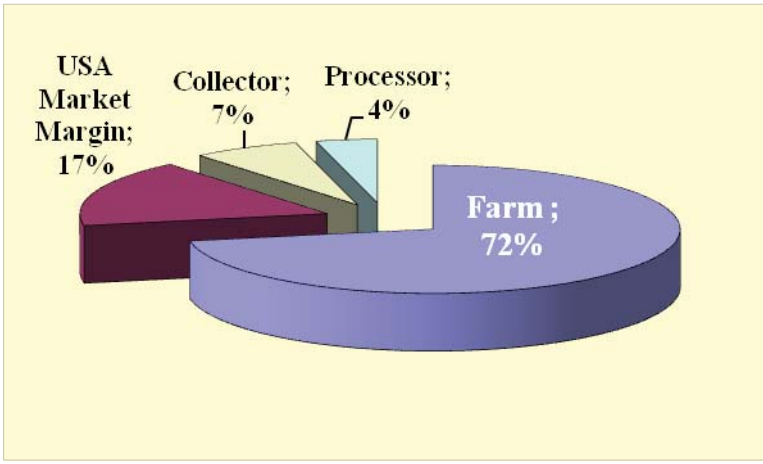
**FIGURE 7:** MARKUPS FOR HARVESTERS, COLLECTORS AND PROCESSORS




*Source: Authors' survey*

The sage available on the United States market has a value of 1.50 euros/kg. Prices and profit margins are not identical for all years and for all actors across the country, but, in general, they follow the pattern seen in Figure 8.

**FIGURE 8:** PROFIT MARGINS FOR SAGE AT EACH VC LEVEL




Source: Authors' survey

Processor margins for sage tend to be lower than that of other MAPs because there is strong competition among many collectors and processors to purchase sage. Thus, competitive pressure reduces the margins at the collector/processor level, leaving a higher share to the harvesters/farmers. The processors interviewed in the 2008 study confirmed this.. Farmers currently obtain prices that are about 20 percent higher than they were two to three years ago. This change in distribution of margins along the VC, as well as the increased price for sage, implies that harvesters/farmers are direct beneficiaries of these two changes. These two changes are key developments in that most of the harvester/farmer income remains in rural households.

Consequently, it can be said that sales of sage, which also account for half of all Albanian MAPs exported, contributes to poverty reduction and rural development. This is especially the case in the many areas where MAPs collection is one of the few or one of the main economic activities. It would be difficult to accurately assess the level

of impact on poverty reduction and rural development, but based on the increase in income (discussed in the analysis above), the impact should be significant.

## Evaluating the sector situation and potential for development

The MAPs VC in Albania represents a consolidated and growing agribusiness. For the foreseeable future, the international market will remain the primary target for sales of Albanian MAPs.

During the last decade, the MAPs sector grew in both size and efficiency. Ten years ago, exports were made almost exclusively by one subsidiary of a multi-national group. Over the years, an increased number of operators acquired the experience, contacts and resources to directly export MAPs. Today, not fewer than eight companies are exporting and each has an average turnover exceeding one million euros. With a single exception, Albanian entrepreneurs own all of these companies.

Increased competition in the downstream portion of the VC led the MAPs exporters to invest more in upgrading their facilities, mainly in the areas of grading, sorting and marketing. Some investments were also made to establish processing activities.

Nevertheless, international markets and the overall socio-economic situation of the country evolved even more quickly. The new challenge now is the possible entrance into the Albanian market of larger foreign companies establishing branches or subsidiary companies, with much larger financial, organizational and technical resources than local competitors can provide.

Albania is a major international producer in the MAPs business, especially in some products (i.e. sage, thyme, oregano and savoury) and in certain markets (such as the United States and Germany). The majority of Albanian MAPs has been exported as raw material intended for further processing abroad. This presents an opportunity for Albanian companies to become more competitive; increased quality in cleaning and pre-processing adds value with minimal incremental cost.

A lack of processing facilities has been a factor that prevented Albania from offering higher added value to its export customers. A lack of standardisation and poor post-harvest practices also affect the unit value of exported products. Despite the high quality of raw material harvested, deficiencies in standards and practices result in unit values lower than that of one of Albania's main competitors. Re-export of assorted MAPs is another essential part of the business throughout the world, but Albanian operators have not yet developed the agribusiness management practices to respond to this challenge.

At present, the Albanian operators are facing a four-pronged challenge:

1. *International competition is becoming fiercer and the MAPs VC is becoming more complex, especially at the international level. Albanian operators are not adapting and investing as much as required to stay competitive in the international environment*. In the downstream VC, Albanian operators became stronger over the last ten years,

but their competitors in other Balkan and Mediterranean countries grew more quickly and developed in a more structured manner. In addition, competition in the main markets (Germany and the United States, first, and then followed by Italy and France) is now becoming fiercer. As food safety requirements become more stringent and MAPs processing increases in complexity, the profit margins for many exporters are becoming thinner.[50] There is a real risk that an increasing share of the overall profit margins in the VC will be transferred abroad through third-party trades. The human and financial resources that individual Albanian operators can deploy would be sufficient in a framework of limited competition in international markets, but facing stronger international competitors forces the Albanian operators to risk becoming suppliers of only the most basic raw materials (such as dried MAPs with basic grading, irregular standards, incomplete fit to phytosanitary standards or to food safety regulations). As a result, the investments made thus far to develop the downstream part of the VC, risk becoming irrelevant or unprofitable.

2. *Value added obtained from MAPs exported by Albania is relatively low when compared with MAPs exported by other countries*. The average price of Albanian MAPs on the international market is lower than that of competitors from other countries, even though the quality of the fresh wild plants that represent the main export items is particularly high. Efficiency and quality in the upstream VC must be improved, adopting more practices for harvesting of wild MAPs, better post-collection activities (sorting and drying) and increasing the share of cultivated MAPs within total output.

3. *Sourcing regular flows of raw material is becoming more difficult and expensive.* This is due to a combination of social, environmental and market factors. Depopulated mountain and interior areas coupled with an ageing rural work force in the marginal-harvesting areas no longer ensure a cheap and abundant workforce to harvest MAPs. Also, the opportunity cost associated with harvest labour practices has increased. A scarcity of training and lack of sensitivity for the environmental impact of MAPs-gathering practices have both contributed to an increased scarcity of wild plants and to some MAPS becoming unsustainable—not to mention the effects of overall environmental degradation affecting Albania's mountainous areas as a whole. Increased competition between exporters is also leading to aggressive supply practices[51] and, therefore, to increased procurement costs. Even if the total volume of MAPs exported is growing little, there is a consequent reduction of exporters' profit margins.

4. *Lack of governance for development of the MAPs sector today, both by public institutions and private operators, will become a future constraint on the sector.* Lack of governance, in parallel with a scarcity of expertise, has led to the lack of a vision for the strategic development of the sector and to translate such a vision into operational priorities, action plans and coordinated activities.

5. The development of the sector is not being embedded in the wider framework of Albania's rural development strategy and there is a total disconnect between the

50 For example, the production of some essential oils was previously performed in large-scale and efficient processing units in Western countries. The output was regarded as a 'partially-finished' product. , Now some essential oils are considered to be a commodity; not profitable enough to be processed in the wealthiest countries. Major investments are now being made to transfer such processing activities to MAPs-producing countries. Such investments are being directed to countries (such as Turkey, Bulgaria and Egypt) with larger production facilities, better developed industrial base and better access to capital than in Albania, .

51 Dried MAPs are increasingly purchased by cash payments: the first buyers to arrive get the product. This is a recent change compared with the more stable and consolidated trading relationships between collectors and exporters that were common a few years ago.

MAPs industry and the institutions (Ministry of Agriculture, Ministry of Environment, universities, research centres and extension services) that should accompany this evolutionary improvement.

6. Operators in the downstream VC made impressive gains in learning market specifics, understanding the immediate needs of their customers and in incorporating this knowledge into their own businesses. But, these same operators have not yet developed the capacity to apply a broader perspective when evaluating the long-term impact of their individual decisions, nor are they receiving support from the institutions in this field.

7. In spite of the size and the importance of the MAPs VC, a network of services to increase the added value of exports was not established or encouraged by exporters. Rather, they preferred to invest in individual development of their own facilities, with the result being a number of facilities with incomplete and/or inefficient operations. In contrast, a possible alternative to these exporter-owned facilities could have been the development of only a few highly efficient facilities operated by independent service providers.

# Conclusions and recommandations

## 1. The importance of MAPs in rural development and alleviation of rural poverty in Albania

MAPs are one of the few relatively wealthy sectors of Albanian agrifood and agroforestry business; they are an important source of revenue for agrosilvipastoral communities.

Increased global demand combined with increased competition in the downstream MAPs VC has resulted in an incrementally increased share of profits to the rural dwellers involved in wild MAPs harvesting. This has resulted in higher income for rural households, thereby contributing to poverty reduction and rural development in many areas where MAPs collection is one the predominant economic activities.

The same factors – increased demand and steadily higher prices for wild MAPs, stronger competition between Albanian wholesalers/exporters, gradual reduction of the workforce in mountain and interior areas – that led to increased levels of MAPs exports are likely to stimulate an increased production of cultivated MAPs to be integrated with the present output (almost totally comprised of wild plants).

MAPs collection and wholesale trading is also one of the few areas in which the upstream VC in disadvantaged areas of Albania is relatively efficient and for which an infrastructural network, albeit not adequate, is available and operates profitably.

The main challenges to the further development of the MAPs sector are related to a scarcity of expertise and poor harvesting practices used by rural dwellers involved in MAPs collection. These issues have led to: i) poor quality and lower prices paid in the international markets for Albanian dried MAPs; ii) to the adoption of harvesting practices that are not sustainable; and, iii) environmental damage and an

eventualreduction in availability of wild MAPs, at least in proximity of the harvesters' villages. Expertise of rural dwellers on professional MAPs cultivation is almost non-existent, as well.

MAPs collection and cultivation can play an important role in poverty reduction in the mountain and interior areas of Albania as part of a rural development approach focused on: i) optimising the flow of seasonal income of subsistence- and marginal-farmers/breeders; and, ii) providing development opportunities to farmers interested to small-scale cultivation of MAPs by offering at least the minimum potential in terms of human resources and capital investment.

## 2. Key areas for improvement

Three areas have been considered as priorities for sectoral development:

1. **Increased cultivation of MAPs**. Cultivation of MAPs is expected to continue expansion in the following years. Technical assistance is needed in this field to improve production quality and efficiency, and to enhance the value added-aspect of relationships between actors in the MAPs VC, particularly upstream. The most commonly proposed solution is to merely begin MAPs cultivation, with the expectation that this will simultaneously solvea number of existing problems (e.g. standardization, harvesting and collection costs, planning of product flows, food safety concerns, environmental risks). At the same time, the overall cost effectiveness of MAPs cultivation has not been addressed. Open items such as market value and production use of cultivated MAPs (versus wild MAPs) have not been properly analysed.

2. The large-scale introduction of cultivated MAPs would strongly impact business models, market environment and perspectives of the sector. Considering the importance of MAPs for rural development in Albania, it would also have a significant impact on the dynamics of rural development and environmental protection in the mountain and interior regions. All these aspects should be considered when planning investments in MAPs cultivation. The capacity and the interest in making such analyses go beyond the decision criteria used by individual companies.

3. **Improving quality and standardization of wild MAPs harvested**. All operators agree about the need to improve the quality of raw material supplied by harvesters and collectors;, however, they are not inclined to invest in training, extension services and other facilities as these investments could also benefit their competitors. As a result, the limited training provided was almost exclusively financed via development projects.

4. The environmental impact of MAPs harvesting should be mitigated. An improvement in harvesting practices will also improve the quality and value of harvested MAPs, while encouraging cultivation of some endangered species.

5. A widespread and more sustainable training scheme for harvesting of wild plants should be established. Training to improve harvesting and post-harvest practices is urgent, as some wild plants have already started to become endangered, and the cost of raw material is rising, while the quality of labour remains the same. To be successful, the scheme must be co-financed or supported in some way by the processors/traders. Traders generally recognize that the next step for improving the

competitiveness of their business is to increase the quality characteristics of dried MAPs. Therefore, it should be possible to encourage their willing participation in co-financing the training to improve harvester practices.

6. **Increasing the quantity and range of processed MAPs products, particularly essential oils**. To compensate for the reduction in profit margins due to increased costs of raw materials, many operators have become interested in starting (or increasing) production of essential oils. Thus far, the preferred solution has been to invest individually in vertical integration, establishing small processing units. Such solutions are not usually profitable, due to their limited output compared with the level of technical expertise and management skill required to integrate such a complex function in existing businesses.

7. Vertical integration, however, does have an advantage as it can contribute to a reduction of 'Transaction Costs' (Williamson 1971). Support for the establishment of independent processing facilities, that would process MAPs for a fee and offer a more efficient alternative to direct vertical integration, has not attracted serious interest from the main exporters.

8. **Building up a knowledge base, accessible to the operators, is a priority**. At present, expertise on MAPs cultivation and processing as well as knowledge of the complex processed products in the downstream VC, is quite scarce. Direct cooperation with institutions would help to fill this gap in knowledge. It would also be extremely worthwhile for dissemination of information if the operators, or their associations, networked with national and international development projects dealing with local development in interior and mountain areas.

## 3. Giving priority to policy input

Private operators in the MAPs business in Albania are growing and investing; the sector is already contributing much to rural development and alleviation of rural poverty. Nevertheless, the evolution of international markets and the choices made by leading VC actors show that the present system needs a broader vision of future development and more coordination with government policy development.

Despite MAPs being one the most important sectors in the Albanian agrifood trade balance and for rural development in mountainous areas, there is no specific development strategy or action plan from the institutional policy-makers, nor have private operators managed to define a vision of future development for the sector as a whole.

An additional issue is that the economic importance of MAPs is not matched by a corresponding production and dissemination of useful information to involve and orient the actors in the related agrifood VCs.

The importance of the sector to rural development and to alleviation of rural poverty calls for the development of a sectoral strategy as well as the development of institutional and economic tools for its implementation. Ideally, such a strategy should be embedded in the wider framework of the „Inter-Sectoral Rural Development Strategy of Albania 2007-2013," which will become the basis for public investments and facilitating private investments in rural areas.

Improving self-governance of agrifood VC actors is also an important issue. The sector is already represented through an existing association, mainly composed of exporters. However, this association should play a more active role in: i) establishing a system of services to support VC operators; and, ii) building up a consolidated knowledge base.

## Bibliography


- *ACIT (Albanian Center for International Trade) Database*, available at: http://www.ftdb.acit-al.info
- *EUROSTAT database*, available at: www.ec.europa.eu/eurostat
- Federal Agency for Nature Conservation, 2003, *Medicinal and Aromatic Plants in Albania, Bosnia-Herzegovina, Bulgaria, Croatia and Romania*
- Fugarini T., 2007, *Gjendja aktuale e arroreve ne rajonin e Shkodres: Veshtiresite dhe Mundesite per permiresimin e sektorit te Lajthise*, Arres dhe Geshtejes
- Ruben R., Slingerland M., & Nijhoff H., 2004, *Agro-food chains and networks for development, Frontis Workshop on Agro-food Chains and Networks for Development*Wageningen, 191-202.
- Williamson, O., 1971, The Vertical Integration of Production: Market Failure Considerations, *American Economic Review*, vol. 61, issue 2, pages 112-23
- UNDP, 2005, *The Agribusiness Sector in Albania*
- *USDA trade database*, available at: www.fas.usda.gov/ustrade/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# INCREASING MARKETING POTENTIAL FOR DIRECT FOOD SALES AND ITS RELATIONSHIP TO RURAL DEVELOPMENT

*Istvan Feher, and Eva Macsai*[52]

## Introduction

The number of agricultural producers in the EU continually decreases for a variety of reasons: as a consequence of stiff competition; strict conditions set by the concentrated commercial sector;, and the EU system of subsidies that favours the larger producers. These issues (in Hungary) stem mainly from joining the EU and entering the internal market. In many developed economies, the average farmer receives as little as only 20 percent of the retail price of food. To overcome this tendency, measures must be taken to ease the process of distribution and sales by farmers. One possibility that may increase farm income is the use of direct sales by the farmer.

In many countries farmers sell their products directly, in conformance with national regulations and practices concerning direct sales of farm produce. Such regulation also exists in Hungary, but in practice, compliance is quite expensive. The modification of the regulations concerning direct sales would allow direct distribution by farmers to local shops and restaurants. This could potentially boost income of rural communities and could possibly lead to an environmental benefit, since the transportation distance of products could be reduced.

## Direct sales in practice

In the case of transition economies like Hungary, marketing organizations have not yet been established in each sector of the agrifood value chains. The lack of these organizations creates numerous difficulties, primarily in coordination. The well-organized nature of large, multinational companies eliminates many of these difficulties. The vast majority of agricultural producers are more likely to face market uncertainty as they lack the technical knowledge of risk management. This is particularly true of small-scale farmers, and of farmers in the fruit and vegetable

52 Szent István University, Gödöllő, Hungary

sectors.

Selling directly to consumers can be very advantageous to both small-scale farms and fruit and vegetable producers. Direct sales allow farmers to sell produce at a premium price, thus leading to income gains. Furthermore, it provides an important opportunity for these farmers to improve their knowledge of the consumers' product requirements and in turn to influence the consumers' opinion of food producers. Selling directly to consumers is an opportunity for farmers to increase their share of the retail price of the product by eliminating some downstream participants from the value chain for these products. Direct sales represent a commercial activity in which local farmers assume the distribution and marketing roles. For those farmers with good communication skills, it offers an opportunity to influence consumer preferences and may, in fact, make the consumers' purchasing experience more enjoyable.

The key to success in direct selling is that it's 'mutually beneficial.' I.e. both the producer and the customer are 'winners'. For the producer, direct sales offers the opportunity to experience gains in income, while the customer is provided with very fresh produce, and possibly at lower prices than in retail markets. In addition, customers need not be concerned about buying stale packaged fruits and vegetables that have been repackaged or re-dated with a false expiration date.

Farmers who will benefit the most from direct sales are those who possess the necessary labour force, capacity and knowledge. Furthermore, an environment in which consumers are welcome is more conducive to direct sales. It's also helpful when producers are located near the target consumers. It is important for agricultural and rural development advisers to acquaint farmers with any opportunities related to potential subsidies, as well as to help them combine their labour force and take part in continuing education courses. Although direct sales may be more appealing to small and medium-scale farmers, it may suit any size operation. However, by taking on the role of direct seller, the farmer must compete with an increasing number of hypermarkets, supermarkets and wholesale markets.

In performing direct sales, it is very important to abide by the established rules and regulations, to offer produce of superior quality and to present the products in such a way as to enhance consumers' desire to purchase. It is also very important that the farmer, or the farmer's sales staff, possess the behavioural abilities that ensure successful retail sales.

In the field of direct sales, numerous case studies of practices in the EU already exist. Looking into the literature and applying the lessons learned, could be useful in regulation and practice. Three key factors discussed in the case studies are: 1) professional training of the sales staff; 2) their ability to influence consumers' desires; and 3) the farmer's degree of adaptability to new forms of cooperation.

The main key to successful direct selling is the same as that for all successful marketing: The producer must recognize that the consumer is 'king'. The wants and desires of the consumer, not the producer, must dominate the marketing strategy. Thus, the producer must discover the reason(s) as to why consumers might prefer direct sales to hypermarket sales. Part of the rationale might reside with a desire for what the consumer feels is a higher quality or fresher product. Consumers may also be looking

to combine the shopping experience with a pleasant drive away from the crowded city and into the slower pace of the countryside, or to search for organic or natural products. Another reason may be to locate unique products, such as meat from past historical breeds or eggs from free-range chickens.

It may not be sufficient to simply offer a high quality product. Often other characteristics of the buying experience are just as important in attracting customers to direct sales. Another aspect of successful direct farmer-to-consumer marketing is the buying experience itself. The consumer often receives additional satisfaction by speaking to the farmer, or a member of his or her family. Some consumers feel this puts them in touch with their 'roots' and reminds them of their childhood. Salespeople dressed in traditional or period costumes, who display products in buildings of historical or traditional design, might add to the ambiance of the buying process for consumers or direct sales. In order for direct farmtoconsumer sales to be successful, the consumer must enjoy the buying experience, which involves not only a high quality product but also a high quality interaction with the salesperson. A farm-to-consumer marketing strategy should not overlook the training of salespeople.

**The benefits of direct sales are:**

- They create local jobs.
- They increase the likelihood of keeping the population in rural areas.
- They increase the value added of the product.
- They differentiate the product and increase its availability.
- They strengthen the farmer's marketing orientation.
- They improve the farmer's bargaining position.
- They increase consumer trust in farm produce and have a favourable effect on public opinion of agrifood production as a whole.
- They augment farmers' incomes and reduce the claims for social benefits in rural areas.
- They lead to greater market share of rural areas in the agrifood value chain and in service provision.
- They respect environmental and animal welfare standards.
- They promote the development of rural and farm tourism.
- They can reduce the need for and the costs of farm-to-market transportation.

## Forms of direct sales

Farmers have a variety of options in developing a direct sales format. They may sell their product(s) in their own shop, through a catalogue and/or delivery to restaurants and shops. Additional direct sales channels include: on-farm sales; roadside stands; and displays in local markets where the farmers may sell their own seasonal products. In recent years, more and more organic markets play an important role in the direct sales segment.

Direct sales to customers are most widely found in fruit production. A common type of operation is known as 'u-pick' or 'pick-your-own', where it is the customers who

pick and transport the fruit. Another version of direct sale is when farmers use 'mobile shops'to sell their products, so producers transport products to the customers in the city.

The hypermarkets and supermarkets also recognize the possibilities for product differentiation based on direct sales. That is why there are more and more options available for customer purchases, such as ordering products via phone or through the Internet, sometimes at scheduled times (such as at the beginning of the week). Producers then transport them directly to the retailer in a refrigerated van and avoid many distribution platforms. Lately, restaurants and hotels have also come forward with a higher demand for delivery services from the producer (Hajdú and Lakner 1999).

The more recent development of greater availability of low-cost IT tools have launched the electronic version of direct sales, or 'Internet marketing.' This form of marketing provides a new opportunity to develop direct sales patterns. For example, traditional direct sales methods in wine production can be complemented with Internet sales. Wine producers already use electronic marketing successfully as a response to the increasing number of online wine trading societies. This will continue to be a growing and important marketing method for wine producers as more affluent consumers continues to purchase computers (Rouzet and Seguin 2003). Advisers are also helping farmers to choose the right sales channels to diversify their marketing activities.

## An example of direct sales

An example of direct sales is an initiative of the Chamber of Agriculture of Bács-Kiskun County called the "Cellar-tour". The "Cellar-tour" is a Web site for farmers to experiment with direct marketing, using the Web site offer their products. The Web site is an opportunity for farmers producing vegetables, fruits, organic products, milk, dairy products, honey, pork meat, poultry, rabbits, eggs, fish, pickles, wild products and mushrooms to widen their market. The Web site helps consumers find farmers, from whom they could purchase the products needed. Parts of the Web site provide an introduction to the farms, their locations and their activities. However, ther products cannot be purchased through the Internet.

The Web site represents 95 farmers and 129 products. Most of the farmers joining the programme are leaders in organic production. Some of the farmers sell fresh vegetables and fruits, while others offer prepared products (such as marmalade or dried fruits). The programme was designed to increase rural tourism. However, on this particular Web site both products and leisure services are offered because these activities can serve to complement one another.. As part of the programme, the common marketing promotion and communication actions have been set up for the participating farmers.

One of the most successful elements of this programme is that farmers can become familiar with quality assurance practices and the rules of food safety during training sessions. A significant part of the consumer-focused approach provides an opportunity for the consumer to get to know the origin of the food he/she purchases. In the

case of those farms that participate in farm tourism, the consumer can even visit the source of their food.

## Consumer trends in direct sales

There are numerous constraints to increasing the popularity of direct sales in Hungary. One constraint is the prevalent consumer behaviour that considers buying food a leisure activity. Hypermarkets and supermarkets with large floor space and low prices are designed to meet this set of 'leisure' expectations. The retail chains offer a wide variety of goods and favourable prices. At the same time, customers place high value on being able to buy everything in one store. Present tendencies show that most Hungarian customers prefer these large store-formats to direct sales.

Although convenience is a key, in recent years trends have shown that some factors have decreased consumer trust in mass-produced goods. The reasons for this distrust include the lack of transparency of the food supply, the growing number of food scandals (such as dangerous spices, lead-laced paprika, dioxin-polluted poultry and BSE) along with new technologies that consumers find alarming.

As a result, today's consumers are searching for food that:

- is safe to consume and isn't harmful to one's health;
- is of proven origin, and the producer is authentic (i.e. a known-entity);
- the consumption of which is pleasant;
- The production of which suits the growing interest in protecting the environment and concern for animal welfare (Berke 2003; Szakály and Berke 2004).

Both domestic and international trends show that consumers increasingly associate the above set of preferences with regional foods (such as traditional foods or those with national characteristics) and with organic products (Szente 2005).

## Links between rural development and direct sales

Diversification of farm activities contributes to the well-being of local people in rural areas. These activities contribute to increased employment and to the development of industrial and service activities of complementary and/or outside worker jobs, of commerce, and of tourism. Such activities may also foster cooperation among many other sectors of the economy. Many nations prefer that rural economies in the future should remain in agriculture and agrosilvicultural production, through continued processing, services, commerce and a better infrastructure. One of the possibilities to diversify one's activities is to build up a direct sale system. The other possibility is to produce local specialities (product diversification) to increase value added. The aims and priorities of the local and EU rural development programmes are shown in Table 1 (Fehér and Koródi 2006).

This grouping presented in Table 1 can be useful in analysing the impacts of diversification. The effects that these measures have on rural society and the economy

confirm their integrative role. The table shows that value added also participates in the development of the system of direct sales and fosters multifunctional agriculture. It must be mentioned that the development of specialty local products means the products represent a common local value and are principally those that can be associated with a specific village due to their historical heritage or tradition. There is no standard or official definition for specialty local products that includes all the possible factors. Efforts by marketing and rural development experts are needed to identify and market these specialty products to the appropriate target consumers.

**TABLE 1:** LINKS BETWEEN DEVELOPMENT MEASURES AND INTEGRATED RURAL DEVELOPMENT

| Characteristics of development measures that mainly realize integrated development | Characteristics of development measures that can realize integrated development |
|---|---|
| Diversification of economic activities; | Protection and preservation of cultural heritage; |
| The development of local and agricultural production infrastructure; | Reasonable utilization of natural and human resources; |
| Involvement of active population into the flow of information and the creation of rural development information centres; | Improvement of the structure of age and the qualifications of the active population and reinforcement of young entrepreneurs' attachments; |
| Improvement of living conditions; | Protection of natural and man-made environment; |
| Development of local markets and special products; | Elevation of the general education of the population; |
| Village development, renovation of villages and farms; | Diminution of social and employment strains; |
| Re-establishment of professional and civil communities. | Increased emphasis on social attendance and care. |

Meanwhile, it should be noted that—mainly in Europe—the definition and the possibilities of product regulation concerning geographical origin are clearly defined and well-known. However, the 'protection of geographical origin'is not the same issue as identification of the 'specialty local products' discussed above. In a wider sense, these can be described from the marketing point of view as 'local products'or 'regional specialties' that interconnect and integrate villages, people and cultural practices, but are not regulated and legally protected. These products reach the consumer in relatively small quantities, through direct sale, and they are often attached to the services of rural tourism. The local products are also developed to ensure high quality products for the consumer or to attract tourists. People can be proud of them since they are unique to that particular location (Lengyel 2004).

## Supporting rural development through the promotion of direct sales

The budget appropriations made by the Ministry of Agriculture and Rural Development for rural development, funded purely from national sources, played a significant role in securing the foundations of Hungarian rural development. From 2000 to 2003, a total of Ft16.9 billion was allocated for tenders for investments in small plants, distilleries, bakeries, wine bottling facilities, and other types of facilities that processed traditional agricultural products, collected in the *HÍR* (i.e. Traditions, Tastes and

Regions) Programme. Support was similarly provided to establish and expand local markets and acquisition depots. During 2000-2004, these tendering possibilities were offered via the Special Accession Programme for Agriculture and Rural Development (SAPARD) and after EU accession, the programmes were offered via the Agriculture and Rural Development Operational Programme (ARDOP) (Bene 2007).

Currently, the priorities for agriculture and rural development during the development period 2007-2013 are as follows:

- improvement in competitiveness of the agricultural, forestry and food processing sectors along with the required structural changes;
- consideration of the requirements of the 'buyer' as an individual, and how this impacts conditions of competitive agriculture, especially concerning product innovation and market-orientation
- improving the likelihood of returns for sustainable farming;
- an easing of employment concerns in rural areas, broadening of income-producing opportunities, improvement in quality of life and improved access to services;
- Better development of local communities.

Within the framework of Axis I and III of the New Hungary Rural Development Programme (ÚMVP), subsidies are provided to improve rural and agricultural tourism, to develop economic safety nets for the rural communities and to increase quality and value added in agriculture. At the same time, these subsidies offer the opportunity for farmers to use them to support an increased effort in direct sales.

## Legal regulation of direct sales

### Regulations

Regulations (EC) N$^{o.}$ 852/2004 and (EC) N$^{o.}$ 853/2004 describe the hygienic conditions required for production and distribution of agrifood products of plant or animal origin. Although distinctions are made between small-scale production for private consumption rather than direct sales, the regulations require that all producers that sell foodstuffs to consumers, including small-scale primary producers, must adhere to hygienic requirements for food safety. These regulations provide Member States the opportunity to create their own regulations concerning hygiene and food safety within the framework established by the two EC regulations. The Hungarian national regulation, concerning hygiene and food safety during production and distribution is 14/2006. (II. 16.) Ministry of Agriculture and Rural Development (i.e. ICSSZEM).

According to the Hungarian regulation, farmers have the opportunity to sell products made on the farm at certain designated places and in specific quantities. The regulation can also be construed as a basis for improving direct sales. Farmers may sell their own products directly to consumers. However, farmers must inform local agricultural authorities of any change in farm activity (i.e. starting operations, modifying any aspect and pausing, either temporarily or permanently, must be announced). In the case of food products of animal origin, the local veterinarian inspects the health of

the animals and the hygienic conditions at the facility. If a farmer wants to produce an agrifood product, at least one specific room must be provided for this purpose and maintained according to the necessary hygienic requirements. The room(s) can be in homes, but may only be used for private functions outside of the production period.

Under the Hungarian regulation, farmers are allowed to produce up to a maximum capacity for direct sale. For example, there are annual limits for certain products: 5 000 kg of honey; 6 000 kg of fish; 20 000 kg of fruit and vegetables. A special category exists with weekly limits: 100 kg of pickles; 20 kg of vegetable products (other than pickles); 100 kg of mushrooms; and 50 kg of harvested wild fruit and vegetables.

Animal slaughter is regulated on a weekly basis and the maximum capacities for direct sale are: four swine; one head of cattle; four sheep or four goats. The animals may be slaughtered by the farmers or at an official slaughterhouse. However, the farmers must not sell the fresh meat of these particular animals. The farmers may produce meat products from it, and then those can be sold directly by the farmers. Slightly different regulations apply to poultry and rabbits. On a weekly basis, farmers are allowed to slaughter up to 200 hens or 100 ducks and/or geese or 50 rabbits. The meat must not be separated into parts nor sold as separate parts (except in the case of goose or duck liver). Farmers are allowed to sell up to 50 kg of this meat per week. Chicken farmers are permitted to sell up to 360 eggs per week and dairy farmers are allowed to sell up to 200 litres of milk per day. The dairy farmers may also sell up to 40 kg of other dairy-products daily, but these are subject to local restrictions.

Farmers must not sell their products to retail establishments or to caterers. The farm-prepared goods are only allowed to be sold locally and are not allowed to be sold in shops (www.elotiszaert.hu). This leads to an additional constraint that limits the spread of farm-product shops and country shops, while also slowing the development of rural tourism

NGOs and other members of civil society interested in improving the economic situation of the farmers studied the legal situation andmade recommendations to improve regulation so that it would serve the needs of the farmers better. The NGOs and other civil organizations offered the following suggestions:

- Farmer-prepared products (such as marmalade, sausage, cheese) cannot now reach local shops and restaurants. There is little benefit to the farmer for preparation of the goods, and this also limits the product offerings of the shopkeepers and the restaurants. This is considered an unnecessary limitation that is against the aims of rural development and tourism.
- New regulatory categories are needed to allow farmers to participate in public markets. Farmers' fairs, village days and other open-air festivals and markets could become livelier and more attractive with new products (such as homemade breads) sold directly by the farmers.
- The most recent regulation intends to permit direct sales through local shops. But the regulation defines 'local shops' as being within the perimeters of the locality. In a village of 200 inhabitants, for example, the local market is too small to be sustainable. Therefore, the suggestion is to extend the boundaries up to a distance of 50 km.

- Farm revenue should be tax-free on the first Ft400 000 sales of non-prepared goods (i.e. raw commodity products) and an additional Ft400 000 should be tax-free concerning sales of prepared products.

In addition, to achieve an increase in direct sales requires an increase in both producer and consumer awareness. New educational efforts should be aimed at helping producers and consumers see that direct sales are a possible way of achieving sustainability.

## Conclusions

The direct sale of agricultural products plays an important role in the diversification of the activities of the rural population. On one hand, this form of distribution ensures consumers with provision of fresh foods. On the other hand, it provides increased income to farmers, which in turn allows farmers to remain in the countryside. To achieve an increase in direct sales, an increase in both producer and consumer awareness is necessary. Educational efforts should be aimed at helping both sides see clearly that direct sales are a possible way of achieving sustainability. Direct sales are not as widespread in Hungary as they are in some other European countries. One of the main problems in Hungary is that current regulation restricts direct sales too narrowly. To improve the situation, the regulations are being modified. Through these modifications, it is likely that this means of production and distribution will increase.

# Bibliography


- Bene T 2007. *Expanding Possibilities of Direct Sales – in the Light of Agro Tourism and Rural Development Programs*, RENE Congress and Direct Marketing Forum, Mosonmagyaróvár
- Czauner P. 2006. Kamra-túra az interneten. *Népszabadság.*2006.10.03. p. 16. (Also available at www.kamra-tura.hu)
- Fehér I. & Koródi M. 2006 A vidéki turizmus diverzifikációs sajátosságai. *A Falu*. 2006.Tél.
- Hajdú, I. & Lakner, Z. 1999. *Piaci szereplők az élelmiszerkereskedelemben, Az élelmiszeripar gazdaságtana,*Mezőgazdasági Szaktudás Kiadó, Budapest. pp. 86-92.
- Lehota, J. 2001. *Élelmiszergazdasági marketing*. Műszaki Könyvkiadó, Budapest.
- Lengyel Z. 2004. Három haszon egy kézben. *Kistermelők Lapja*2004. 47. Évf. 5. Szám pp.12-
- Rouzet E. & Seguin G.: 2003 *Le marketing du vin*, Dunod, Paris. p. 57. ISBN 2 10 0070169.
- Stefler J. A közvetlen értékesítés marketing aspektusai az agrárgazdaságban. *Arhívum* XXI. Évf. 4. szám pp. 49-60.
- Szakály Z., & Berke Sz. 2004 *A táplálkozás, a minőség és a marketing kapcsolata élelmiszereknél*. KJK-KERSZÖV Jogi és Üzleti Kiadó Kft, Budapest, 2004, 319-335
- Szente Viktória. 2005. *Az ökoélelmiszerek termelésének, kereskedelmének gazdasági és piaci összefüggései*. Doktori (PhD) Értekezés, Kaposvá-ri Egyetem, Gazdaságtudományi Kar, Kaposvár, 2005, 1-152.
- USDA. www.ams.usda.gov/
- www.kamra-tura.hu

# LIST OF WORKSHOP PARTICIPANTS

## Albania

**Mr Drini Imami**

Agrifood value chain researcher, Consultant
Agriculture University of Tirana
Rr. Elbasanit Nr. 26, 1001 Tirana
+355-68-403-0630
drinimami@yahoo.com

## Armenia

**Mr Vardan Urutyan**

Director, ATC Lecturer/Researcher
International Center for Agribusiness Research and Education (ICARE)
74 Teryan St. Yerevan 0009, Armenia
(37410) 52-28-39
37410) 56-62-21
vardan@icare.am

## Azerbaijan

**Mr Orkhan Balayev**

Senior Staff Scientist
Research Institute of Agricultural Economy
+994 12 561 37 90
obalayev@yahoo.com

## Bosnia and Herzegovina

**Mr Sabahudin Bajramovic**

Professor
University of Sarajevo
Zmeja od Bosne 8, 71000 Sarajevo
+387-33-653-33
+387-33-667-429
s.bajramovic@ppf.unsa.ba

## Bulgaria

**Ms Totka Todorova Trifonova**

Nikola Pushkarov Institute of Soil Science
7 Shose Bankya Str., P.O. Box 1369, 1080 Sofia
+359-2-824-8986
+359-2-824-8986
tmitova@mail.bg

## Croatia

**Mr Tomislav Budin**

Minister Counselor for International Relations
Ministry of Agriculture, Fisheries and Rural Development
HR-10 000 Zagreb, Ulica grada Vukovara 78
+385-98-209924
+385 1 6109 206
tomo@adris.hr

## Germany

**Mr Taras Gagalyuk**

Research Associate
Leibniz Institute of Agricultural Development in Central and Eastern Europe
Theodor-Lieser-Str. 2, 06120 Halle (Saale) Germany
+49 (345) 2928 232
+49 (345) 2928 399
gagalyuk@iamo.de

**Ms Vera Belaya**

Ph.D. student
Leibniz Institute of Agricultural Development in Central and Eastern Europe
Theodor-Lieser-Str. 2, 06120 Halle (Saale) Germany
+49 (0345) 2928243
+49 (0345) 2928299
belaya@iamo.de

## Hungary

**Ms Eva Macsai**

PhD Student
Szent István University

**Ms Levente Nyárs**

Researcher
Agricultural Economics Research Institute
(+36 1) 476-6071
nyars.levente@aki.gov.hu

**Mr József Lehota**

Professor
Szent István University
Lehota.Jozsef@gtk.szie.hu

## Kyrgyzstan

**Mr Rysbek Apasov**
FAO National Correspondent
Ministry of Agriculture, Water and Processing Industry
Kievskaya Str 96/a, 720040 Bishkek
+996-312-623-716
+996-312-623-615
fao-kg@elcat.kg

## Macedonia

**Ms Biljana Petrovska**

Advisor, Department of Internationl Cooperation
Ministry of Agriculture, Forestry and Water Economy
Ul. Leninova 2 1000 Skopje, Macedonia
+389 2 3127 760
+389 2 3124 224
biljana.petrovska@mzsv.gov.mk

## Moldova

**Ms Galina Leasenco**
Moldovan Center for Food Safety and Quality
10 Bucuresti Str. MD2001 Chisinau
+373-69-137-734
+373-22-549-723
lgalina@yahoo.com

## Moldova

**Mr Mihail Suvac**

Head of Direction for Phytotechnology, Seed Production, and Horticulture
Ministry of Agriculture and Food Industry
162 Stefan cel Mare Bld., Chisinau
+37322 211575
+37322 210135
mihai_suvac@mail.ru

## Romania

**Ms Alexandra POPA**

MSc Student
Newcastle University
35 Mr. Bacila Str., bl. 33A, ap.30, 022846 Bucharest, Romania
Alexandrapopa1@gmail.com

**Ms Cornelia Alboiu**

PhD Scientific Researcher
Inst of Agricultural Economics, Bucharest
+40-21-4104254
coraalboiu@yahoo.com

**Goran Zivkov**

SEEDEV
+381 64 155 76 14
goran.zivkov@seedev.org

**Mr Rade Popovic**

Professor
University of Novi Sad
popovicr@eccf.su.ac.yu

**Mr Milos Milovanovic**

Assistant Minsiter
Ministry of Agriculture, Forestry and Water Management
Nemanija 22-26, 11000 Belgrade
+381-11-361-3278
+381-11-36-0190
milos.milovanovic@minpolj.gov.rs

## Slovakia

**Ms Zuzana Kapsdorferová**

Department of Management, Slovak University of Agriculuture,
Tr. A. Hlinku 2, 94911 Nitra, Slovakia
+421-037-65014131
zk00202@fem.uniag.sk

## Slovenia

**Mr Ales Kuhar**

University of Ljubljana
Groblje 3, 1230 Domzale, Slovenia
+ 386-1-7217-811
+ 386-1-7241-005
Ales.Kuhar@bfro.uni-lj.si

## Tajikistan

**Mr Mahmud Kodirov**

Deputy Minister of Agriculture
Ministry of Agriculture
+ 992 37 221 71 18

**Mr Muzafar Mirzoev**

Head of Division
Ministry of Agriculture
+ 992 37 221 71 18

## Ukraine

**Mr Oleksandr ZHEMOYDA**

Associate Professor
National University of Life and Environmental Sciences of Ukraine
Geroiv Oborony str., 11, of. 308, Kyiv, 03041, Ukraine
+38 050 442 32 54
+38 044 527 56 48
alzhemoyda@gmail.com

## FAO

**Mr Doyle Baker**

Chief, Rural Infrastructure and Agro-Industries Division
Rural Infrastructure and Agro-industries Division

**Ms Szilivia Lehel**

Consultant
Regional Office for Europe and Central Asia

**Mr Domonkos Őze**

Junior Agribusiness and Enterprise Development Officer
Regional Office for Europe and Central Asia

**Mr Stjepan Tanic**

Agribusiness and Enterprise Development Officer
Regional Office for Europe and Central Asia