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Global Trends in the Dairy Industry

OUTLOOK FOR THE BALTICS



OECD

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FOREWORD

The dairy industry continues to be the backbone of the agro-food sector in Estonia, Latvia and Lithuania. As the three Baltic countries gear up for accession to the European Union, they need to examine the strengths and areas needing improvement in their dairy sectors in relation to international developments in the industry. The process of transition to market-based policies has already induced dramatic changes in Baltic milk production and processing structures. The EU enlargement process is spurring further changes, albeit with uncertainties about future quota and payment levels. In tandem, the global dairy industry is experiencing accelerated movement, evidenced by numerous mergers and acquisitions and new forms of trade in high technology milk components.

Against this background, the outlook for the dairy industry in Estonia, Latvia and Lithuania was the focus of the OECD's fourth meeting with the Baltic countries in the area of agro-food policies, held in Vilnius on 4-5 December 2001 and financed through the Baltic Regional Programme. The Workshop continued the policy dialogue between policy makers in Lithuania, Latvia and Estonia and OECD Member countries on structural and policy reforms in the agro-food sector. The discussion was set in the context of global developments at the farm and industry levels, as well as market trends and emerging challenges. Some 80 participants attended the Workshop, including high-level policy makers, parliamentarians, industry representatives, academics, and farmer representatives from Estonia, Latvia and Lithuania and about 15 policy experts from OECD Member countries, the European Commission and the EBRD.

The reader will find the essence of the discussions about global trends and the challenges they pose for the Baltics in the Executive Summary, with a more detailed summary of Workshop conclusions and implications at the end of this volume. The first set of papers provides an update on structural changes and key issues in the dairy industry for each of the three countries. The second part of these Proceedings deals with the external challenges related to global trends in consolidation, concentration and strategic alliances in dairy processing and marketing worldwide, as well as the growing market power of retailers. Developments in the Irish dairy sector over the past thirty years provide useful insights into the effects of joining the European Union while dealing with global industry dynamics. Third, the report examines the situation of the sector in the central and eastern European countries, the implications of EU enlargement, including for meeting WTO obligations, and the competitive prospects and challenges for the Baltics.

These Proceedings are produced by the OECD's Directorate for Food, Agriculture and Fisheries under the auspices of the Centre for Co-operation with Non-Members (CCNM) and published under the responsibility of the Secretary-General of the OECD.

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The Workshop was prepared by OECD in close collaboration with the Ministry of Agriculture of Lithuania. Special thanks are extended to all those involved in its preparation, particularly State Secretary Alfonsas Tamošiūnas, Mr. Raimundas Dužinskas, Ms. Goda Kantautienė, Mr. Michael Ryan, Ms. Sally Taylor and Ms. Anita Lari. Appreciation is extended to all those who submitted papers and contributed to the discussions.

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EXECUTIVE SUMMARY

Rationalisation and consolidation through mergers, acquisitions and strategic alliances are now a common feature of the global dairy industry. International dairy companies are substantially larger than the dairy industry of many small countries. This development is accelerating, driven by economies of scale, increased competition for raw material, internationalisation, changes in companies' formal structures and the desire to capitalise on the favourable market prospects. In addition to the push from intense competitive pressures, increased concentration is driven by changes in the nature of demand coming from rising incomes and population growth, resulting in greater emphasis on higher value added and healthier products.

The development of international dairy conglomerates such as Fonterra Foods, has become a key feature of the global dairy industry. Thus, small dairy exporting countries face major challenges and choices with respect to their approach to industry ownership and the maintenance of competition. Dairy companies in export oriented countries such as France, Ireland and the Netherlands are continuing to expand through external investments in the dairy industry of other countries, whereas, in countries such as Canada, Germany and the US, developments have mainly focused on greater concentration. The creation of strategic alliances to penetrate product or regional markets is a growing phenomenon. This trend raises important questions with respect to competition policy.

While the bulk of processed milk is still transformed into conventional dairy or industrial products, an increasing share is diverted to producing high margin, value added consumer products. Moreover, an emerging trend in the global dairy market is the growth in demand for milk based ingredients. Several factors are driving this trend including advances in food processing technology, functional characteristics of input and output products, as well as the continued search by processors for low cost ingredients and improved product functionality. Most of the dairy based ingredients depend on processing with membrane technology and, consequently, economies of scale are an important dimension of these processes and technology. Growth in the dairy based ingredient market provides new market opportunities for the dairy sectors in emerging economies.

Against the background of sluggish growth in the world economy, dairy product prices fell sharply in late 2001. The high volatility in international prices reflects the relatively thin world market for dairy products, with international trade equivalent to about 5% of total production and with many domestic markets being largely isolated from international price movements. Over the medium term, however, market prospects for dairy products are favourable with strong demand emanating from key import markets, especially South East Asia. The dairy sector is one of the slowest to liberalise as negotiations between government administrations, milk producers and industry groups anxious to retain support have been difficult. Further growth in trade of dairy products will depend on additional liberalisation of world dairy markets and a reduction in the high tariffs. While the EU enlargement will provide preferential access to the new member countries, including Estonia, Latvia and Lithuania, managing the supply/demand balance in light of WTO commitments is likely to become a major challenge. Milk production is expected to expand in the low cost producing regions of the world: South America, Oceania and the central and eastern European countries (CEECs), in the latter region driven by the greater market opportunities associated with EU Membership, but depending on quota volumes agreed in the accession negotiations.

Across the Baltic region, there are great expectations of high benefits accruing from EU accession, in particular, related to increased investment and export opportunities to other EU countries. Implementation of the Common Agriculture Policy (CAP) has important implications for the milk value chain with the opening up of large market opportunities for export companies. However, without further restructuring the Baltic dairy industry will find it very difficult to compete with established EU processors in the enlarged market. Increased funding under the Special Accession Programme for Agriculture and Rural Development (SAPARD) should help accelerate structural change in the Baltic dairy sector. However, there is considerable uncertainty facing Baltic farmers related to the size of milk quotas in the short term, and the possible abolition of quotas in the long term. Although administrative costs are extremely high for the Baltic countries, preparations for the implementation of the quota management system are progressing quite rapidly.

The dairy industry continues to be the backbone of the agro-food sector in the three Baltic countries. The industry structure is quite different from that in existing EU member states, insofar as the structure of milk production is bipolar, with a strong competitive sector and part social sector, and almost one-third of milk production is not delivered to processors, but sold directly from farms. Given the small and fragmented farm size, low productivity and seasonality of milk production, considerable adjustments in farm structures are essential to develop a competitive farm sector, especially in Latvia and Lithuania. The improvement in milk quality and farm structure is a high priority in all three Baltic countries. In addition, the high cost milk assembly and fragmented processing structure needs substantial renewal, investment and updating to form a more competitive industry. The industry is likely to continue to evolve and further change may be accelerated by pressures from greater concentration at the retail level.

There is a strong recognition that the dairy industry must increase its competitiveness through further restructuring at the primary production level, as well as in processing and distribution. The higher productivity that should result from restructuring should ensure that incomes rise to the European level, while at the same time consumers have access to high quality dairy products at competitive prices. At this juncture, the Baltic countries largely focus on the production of bulk dairy products, but greater emphasis should be given to developing niche markets for local specialities and higher value dairy products. With a stable political and macroeconomic situation, good access to raw material and factors of production and access to the large EU market, the Baltic region is particularly attractive to foreign investors.

The dairy sector is a clear point of strength for the three Baltic countries, where a competitive and sustainable industry can be developed. With impending EU membership this offers the Baltic countries a unique window of opportunity to accelerate the process of consolidation at the processing level and to create a more economically viable and sustainable dairy sector. There is some scepticism that too much concentration in the industry can lead to excess market power and possible abuse of such power. This raises the important issue of the enforcement of effective competition policy across the region. Further integration into global markets and price alignments with the European Union will make milk and beef production more competitive in the Baltics. In terms of modernisation, a key issue is to identify and adopt the appropriate technology at farm and industry level taking into account the relative costs of labour and capital. The governments have an important role to play in ensuring a stable and predictable macroeconomic situation and the continuation of the liberal trading regimes. A key role for policy makers is to identify and use the appropriate policy instruments to promote structural adjustment. For the long term success of the industry it is crucial that there be good co-operation and communications between all stakeholders in the dairy chain: producers, processors, distributors, retailers and consumers. The development of a regional or pan-Baltic dairy industry may go some way towards resolving certain problems of the sector.

OPENING STATEMENTS

OPENING STATEMENT

Mr. Alfonsas Tamošiūnas
State Secretary
Ministry of Agriculture of the Republic of Lithuania

I would like to welcome participants to the *Workshop on Agro-Food Policies in Estonia, Latvia and Lithuania: Opportunities and Challenges for the Dairy Industry*. I am delighted to see so many participants from our neighbouring Baltic states as well as our honoured guests from France, Denmark, Finland, Germany, Ireland, the Netherlands, Poland, Sweden, the United Kingdom, and the United States.

I would like to extend my warmest appreciation to the Deputy Director of the OECD Directorate for Food, Agriculture and Fisheries, Mr. Ken Ash, and his colleagues for their initiative in arranging this Conference in Lithuania. I would also like to express my appreciation for their preparatory and organisational work in arranging this event.

I wish the Conference participants creative and fruitful work and good impressions from their stay in Vilnius and Lithuania.

Lithuania, as well as the other Baltic states, has maintained traditional dairy production, characterised by favourable natural conditions, a large number of agricultural specialists, and well-developed production infrastructure (fields and pastures, processing facilities, etc.), and dairy products represent an important share of the local market and of exports.

The transition from a centrally-planned to a market economy and agricultural reform have transformed farm ownership and farming methods and have had a strong impact on the dairy sector. The structure of the dairy sector has become dominated by small farms, resulting in inefficiencies.

Despite all the complexities of the transition period, the dairy sector is important for the Lithuanian economy and it is given high priority under the Lithuanian agriculture and rural development strategy, approved by the Lithuanian *Seimas* resolution of June 13, 2000. In 2000, milk production represented 17% of total agricultural production and exports of dairy products represented 34% of total exports of agricultural and food products. About 65% of the rural population is engaged in milk production. Approximately 33-35% of their income comes from milk and it is the main source of income for many rural inhabitants.

The State supports the development of the dairy sector. Recently, LTL 9.3 million were allocated to the development of specialised dairy farms, LTL 2.3 million to investments in cooling and milking equipment, LTL 12.3 million to acquiring blood stock and LTL 89.5 million to improving stock productivity.

The investment provided by the State has encouraged the development of specialised dairy production farms, improvements in raw milk quality (50% of milk purchased is of the highest quality), and improvements in yields (productivity of controlled cows is 4 863 kg per year).

The new Lithuanian Government envisages specific actions for further development of the dairy sector. The planned structural policy measures will provide 45-50% of dairy farm modernisation costs under the Special Rural Support programme and will make effective use of funds under the SAPARD programme. Credits on favourable terms are also foreseen for the implementation of investment

projects, i.e. interest subsidies on 50% of long-term and 60% of short-term loans. We also intend to set up a co-operative movement within the dairy sector.

Recently, the most significant changes have taken place within the milk processing industry where harsh competition under market economy conditions has resulted in restructuring and concentration. Under the pressure of competition, a number of enterprises merged with other enterprises or went bankrupt. Today about 70% of raw milk is purchased by a group of three large enterprises: the Joint Stock Company “*Rokiškio sūris*” and its subsidiaries; the Joint Stock Company “*Pieno žvaigždės*” and its subsidiaries; and the Joint Stock Company “*Žemaitijos pienas*” and other companies within the group. These companies are financially strong and competitive. Together with some smaller companies that have gained a foothold in the market, these companies have succeeded in modernising their production, implementing modern technologies, expanding and renewing their product range, improving quality and implementing quality control. As a result, the 17 milk processing companies that process about 80% of the milk purchased in Lithuania have veterinary certificates and can export their products to the EU. Compared to other sectors of the food economy, the dairy sector maintains the broadest trade relations with the EU states that are Lithuania’s main trading partners: more than 50% of dairy products are exported to Western markets. This means that Lithuanian dairy products meet the quality and food security requirements of the EU and other countries. The remaining share of exports goes to the CIS and the United States. The main exports are cheese, butter and skim milk powder, with cheese exports showing the greatest increase in recent years.

Foreign capital - the European Bank for Reconstruction and Development, “Swede Agri Invest” and “Svedfund International” of Sweden and some others - also participates in milk processing companies in Lithuania.

For several years Lithuania has had a functioning centralised system for raw milk analysis. All milk for sale is analysed by the state company “*Pieno tyrimai*” and milk processing companies settle accounts with raw milk suppliers according to the data analysis. This central laboratory analyses the milk from cows that are managed for breeding purposes. The modern equipment and highly qualified personnel of the laboratory ensure the effectiveness and impartiality of the analysis. The laboratory participates in international standards programmes and has been granted international accreditation in recognition of the high reliability of its results.

Maximum benefit must be drawn from the period prior to joining the EU to increase the efficiency and competitiveness of the dairy economy in Lithuania so that, after accession, the industry can compete successfully in the market for dairy products. In order to meet these objectives the State’s role in regulating and developing the dairy economy should focus on the following:

- providing the legal, economic and institutional preconditions for effective development of the dairy economy taking into account the requirements of EU integration;
- constitution of a favourable foreign trade regime for dairy exports, including indirect support for production and marketing of exported goods, while respecting international obligations;
- closing the price gap between the primary milk production chain and the milk processing industry.

Once again let me, on behalf of the Lithuanian Government, express our gratitude to the representatives of the Organisation for Economic Co-operation and Development for arranging this

Conference, which is particularly useful for politicians, experts, and milk producing and processing organisations.

I wish the participants in the Workshop successful and fruitful work and believe that the ideas and proposals expressed during this Conference will be beneficial to all participants in this Forum, and that the proceedings will help to strengthen co-operation between our countries on our path to the European Union.

OPENING STATEMENT

Ms. Taina Kiekkö
Ambassador
Embassy of Finland to Lithuania

- Mr. State Secretary, Ladies and Gentlemen, I am particularly pleased to welcome warmly all participants to this workshop today. OECD has asked me to do so for three reasons. First, I am glad to welcome you in my capacity as Ambassador of Finland to Lithuania. Secondly, my recent responsibilities in Paris included the post of Deputy Permanent Representative of Finland to the OECD, an organisation that I know rather well and whose work I value highly. And thirdly, I represent one of the sponsoring countries of this event.
- Allow me to elaborate somewhat on the perspectives that these roles give me in relation to this important workshop.
- As newly appointed Ambassador, I have already had the opportunity to observe for myself profound changes in the functioning of economic and institutional mechanisms here in Lithuania. I know that equally deep and rapid changes are happening in Estonia and Latvia.
- The drive to change has been stimulated by the integration of your countries into the international economy and by competitive pressures. Certainly, European Union enlargement has provided a major additional stimulus, with the positive pressures of a concrete timetable. All three Baltic countries have received encouraging signals from the Commission on their progress recently. Agriculture is a critical chapter in the EU accession negotiations. And here in the Baltic countries especially, the dairy sector is critical to the agro-food industry.
- So, the timing of this workshop could hardly be better as an opportunity to bring each other up to date on the situation of dairy policies in Estonia, Latvia and Lithuania; to examine recent developments in international dairy processing and markets; and to draw the relevant policy implications and conclusions for the Baltic countries.
- Now, secondly, from the perspective of my deep involvement in many fields of economic activity covered by the OECD, what is the comparative advantage of the OECD in organising such a policy discussion?
- The OECD works as a permanent inter-governmental Secretariat to compare experiences from one country to another and thus to better inform domestic policy decisions. Member countries share fundamental principles of democracy, market economy and human rights. But beyond this like-mindedness, there are numerous differences between OECD countries in the policy options they apply. In no sector is this so evident as in agriculture.
- The collective knowledge and experience of the thirty OECD members can be mobilised to help find solutions to difficult policy problems. This is often of particular value to smaller economies, lacking resources to carry out analytical investigations on a wide variety of policy issues themselves. Peer review and peer pressure can be brought to bear to help reformers introduce more efficient and competitive policies - in Member countries and non-OECD countries alike. Such working methods are a great strength of the Organisation.

- The OECD is not a forum for negotiation, nor does it provide funding. This frees the analytical context, the international experience and the policy dialogue in OECD activities from various pressures and from conditionality. OECD's objectivity and neutrality have often been evoked as key elements of its comparative advantage.
- Today's workshop is part of a continuum of activities targeted to the agricultural sector that began in Visby in 1992. Comprehensive agricultural policy *Reviews* have been carried out for each country. Monitoring and analysis of policy and market developments are conducted on an ongoing basis and published annually. Baltic policy experts participate actively and regularly in meetings of the *OECD Global Forum on Agriculture* and other specialised workshops and seminars. Enormous strides in agricultural reform have been taken over the past ten years. Even since OECD brought together Baltic and OECD Ministers of Agriculture in Riga in November of 1998, dramatic changes have occurred.
- My third perspective is as a sponsor of this workshop, as well as many other joint Baltic-OECD activities. Recognising the value that the OECD approach and experience can bring to non-OECD countries, your governments issued a joint declaration in 1996 requesting a Special Regional Programme. Finland, together with other Nordic countries, took up the challenge and the *Baltic Regional Programme* was created in March 1998.
- The programme works extremely well and is widely recognised as a model of its kind. Ten countries, including the Baltics themselves, provide the bulk of the funding. The target countries are fully integrated into the planning, implementation and evaluation process. Without any doubt, the *Baltic Regional Programme* has been highly successful in creating very close working relations between Estonia, Latvia and Lithuania and OECD.
- So, Mr. State Secretary, Ladies and Gentlemen, from my triple perspective the discussions that we will have in the course of these two days have an important role to play in this steadily evolving co-operation, especially in the decisive year ahead. I hope that all of you will participate actively in the discussions so that all can benefit to the maximum from the international expertise and excellent papers that have brought together for this event to support successful reforms of the dairy sector in Estonia, Latvia and Lithuania.

OPENING STATEMENT

Mr. Ken Ash

**Deputy Director, Directorate for Food, Agriculture and Fisheries
Organisation for Economic Co-operation and Development (OECD)**

On behalf of the OECD, I would like to welcome all participants and invited speakers to this *Workshop on Agro-Food Policies in Estonia, Latvia and Lithuania: Opportunities and Challenges for the Dairy Industry*. This *Workshop* is made possible through the financial support of several Nordic and EU Member countries through the *Baltic Regional Programme* as well as the strong support of the Governments of Estonia, Latvia and Lithuania. I wish to make special mention of the excellent co-operation between OECD and staff in the Ministry of Agriculture, in particular State Secretary Alfonsas Tamošiūnas, as well as the efforts of Dr. Raimundas Dužinskas and Ms. Goda Kantautienė, whose support was essential to ensure that this comprehensive and substantive programme was realised. Special thanks to Ambassador Kiekko, whose recent experience as her government's representative to the OECD contributed to her special understanding of the role of the Organisation, and its efforts to communicate effectively and to share relevant experiences with countries outside of the OECD-area.

I would now like to introduce my colleagues and members of the OECD team from the Directorate for Food, Agriculture and Fisheries: Ms. Alexandra Trzeciak-Duval, Head of the Non-Member Economies Division; Mr. Michael M. Ryan, Manager, *Baltic Regional Programme*, Non-Member Economies Division; and Mr. Pavel Vavra, Analyst, Trade and Markets Division.

This *Workshop* has several key objectives. First, to enhance dialogue and debate on dairy policies between policy makers in Lithuania, Latvia and Estonia and OECD countries. Second, to provide information to producers, processors, consumers and policy makers on the major structural changes and trends in the global dairy industry, as well as recent developments in international dairy markets. Third, to provide a sound information base to help the Baltic dairy industry and policy makers to identify ways to improve the efficiency and competitiveness of the sector and develop appropriate and sustainable industry strategies.

To achieve these objectives I strongly urge all attendees to participate actively and fully in the *Workshop*. The dairy industry experts and policy makers here today in Vilnius are available to provide relevant information to assist policy makers in the three Baltic countries to develop their dairy sector. Notwithstanding the usefulness of this advice, the onus remains on Baltic governments and dairy industry stakeholders to consider their own circumstances and goals, and to develop their own approaches to further development of the dairy sector in the region.

Mr. Chairman, ladies and gentlemen, in these brief remarks I have outlined some of the key challenges that will be debated over the next two days. I hope that the outcome of all our efforts at this *Workshop* will provide results that will help the Baltic dairy industry and stakeholders to respond effectively to the opportunities and complex challenges facing the dairy industry.

Thank you for your attention and my best wishes for a successful *Workshop*.

SESSION 1. THE PRODUCTION AND PROCESSING SECTOR IN THE BALTIC REGION

THE STRUCTURE OF MILK PROCESSING AND MARKETING IN ESTONIA

By Ms. Piret Hein

Abstract

The dairy sector is the most important sector of agricultural production in Estonia. The structure of the milk processing industry is expected to undergo restructuring and rationalisation in response to the challenges arising from the forthcoming accession to the EU, deepening economic integration, changing consumer preferences and terms of trade. Concentration of the sector is the most likely outcome. Accession to the EU and the accompanying harmonisation of legislation is the strongest factor influencing this development. In addition, the limited supply of raw milk is creating competition among enterprises and will probably increase vertical integration as well as processor consolidation. Changes in consumer preferences are driving processors to produce higher quality and value added products. Improving export opportunities is crucial to ensure the viability of the dairy sector as Estonia is a net exporter of milk products. Attracting foreign direct investment to the milk sector helps to increase competitiveness by providing additional capital and know-how. However, increasing integration is going to affect the traditional, location-related attractions for foreign investors which poses additional challenges.

Introduction

During the last decade the dairy sector has been the most important sector of agricultural production in Estonia. Similarly, the milk-processing industry is the leading food processing sector, accounting for 28% of food industry production. Overall, self-sufficiency in Estonian agricultural products is estimated to be about 80%, whereas self-sufficiency in milk amounts to 135%. Hence, Estonia is a net exporter of milk products. Milk and fish products are the only agricultural product groups with a positive trade balance. This suggests that Estonia has a comparative advantage in milk production.

The Estonian dairy industry has undergone dramatic changes since the transition to a market economy, including privatisation, the loss of traditional markets in Eastern Europe, decline in the raw material base and increased competition with (cheaper) imported milk products due to Estonia's liberal trade policy.

Currently the Estonian food processing industry, including the dairy sector, faces important challenges from accession to the EU, overall globalisation and deepening economic integration. This is expected to result in higher efficiency and consolidation of enterprises. Changes in trade policy and consumer preferences will also have an important impact on the dairy industry. In order to be competitive under these new market conditions; the dairy industry needs to undergo restructuring and rationalisation. **The key to achieving a competitive and viable milk processing sector is efficiency, dynamic adjustment to the changing market conditions, product development, higher quality, value added products, and developing export markets.**

While ten years have passed since the onset of fundamental changes in the economic environment, the structure of the milk processing industry has not yet undergone the expected restructuring. This paper attempts to shed some light on the reasons for this lack of restructuring, as well as discussing the factors influencing the industry structure in the coming years.

The paper consists of two parts: The first gives an overview of the problems and opportunities resulting from the emerging structure of milk processing, marketing and trade in dairy products in Estonia. The second discusses the factors influencing the future development of the structure of the dairy industry, including accession to the EU, raw milk supply, consumer preferences, foreign direct investments, trade policy, price developments and increasing economic integration.

Problems and opportunities in the milk processing sector in Estonia

The Estonian milk processing sector is the largest sector in the food industry accounting for 28% of total production. Since 1992, its share has increased year on year (Table 1). Estonia is a net exporter of milk products. Exports accounted for 25% of agricultural exports and 29% of total milk production in 2000. The share of exports decreased by about 10 percentage points in 1999 due to the dramatic fall in purchasing power in Russia, which was an important export destination of Estonian dairy products. Trade has since been reoriented towards western markets.

In 1989, there were nine dairies with 41 production units – all of which were state owned and privatised individually. In privatising the processing enterprises, preference was given to co-operatives consisting of primary producers. However, while many processing facilities were acquired by agricultural producers' co-operatives, they did not include the biggest market leaders. The reason was that the co-operatives lacked financial resources, management and marketing know-how. The result is that there are few co-operatives in the milk processing sector today.

In 2000, there were 44 milk processing enterprises in Estonia of which 27 large-capacity and 17 small-capacity enterprises. The number of milk processing enterprises has generally remained stable or has slightly increased.

Until recently, the milk-processing sector has not been very attractive for foreign investors. However, interest in Estonian milk processing companies has increased lately. There are 5 large- or medium-sized foreign owned enterprises in Estonia, only one dates back to 1995 and it is the only green-field investment in the dairy sector. There are also a couple of small, niche enterprises under foreign ownership. The strategies of the investors are not similar – some are export oriented while others are domestic market driven. In some cases, the strategy has shifted from export orientation towards a mixed strategy (*i.e.* domestic market and exports).

Table 1. **Development of the structure of the dairy industry in the 1990s**

	1989	1992	1996	1998	2000
Share of milk processing in food industry %	34%	21%	26%	28%	28%
Share of exports in dairy production %	30%*	26%*	41%**	39%**	29%**
Number of dairy enterprises	9		28	41	44
Number of foreign owned enterprises	no	no	1		8
Production of raw milk (thousand tonnes)	1 277	919	675	730	629
Consumption of milk (thousand tonnes)	894	643	450	467	446
Self sufficiency of milk %	143	143	150	156	135
Price of raw milk EEK/t		869	2 484	2 407	2 719

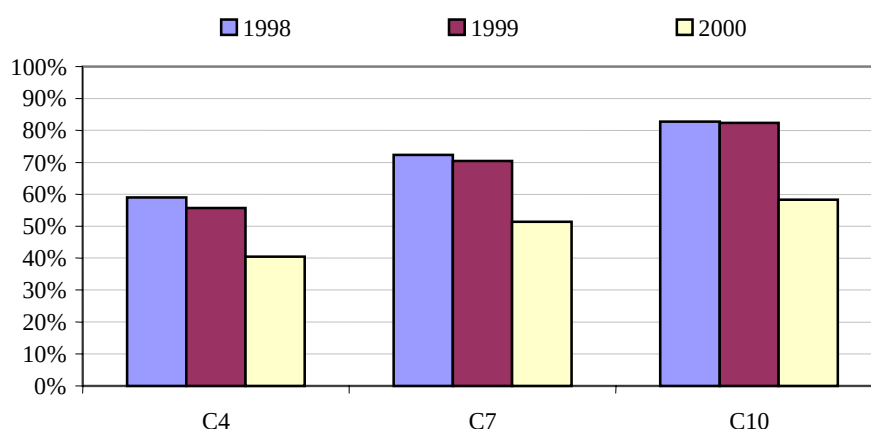
Source: Statistical Office of Estonia.

Notes: * The share calculated on the quantity basis of produced raw milk and exports calculated back to milk.

** The share calculated on the value basis from production and exports of processing industry.

The structure of the industry can be illustrated by the concentration index. Figure 1 shows the shifts in concentration in the dairy industry over 3 years. The concentration at C4 as well as C7 and C10 has decreased since 1998 and a considerable drop can be observed for 2000. The reasons could be increasing competition among the biggest players and the active division of market shares. In 2000, the number of enterprises complying with EU standards increased, which means that there are more big players in the market. Moreover, when looking at the raw milk market (Figure 2) it can be observed that, in 1999, six big enterprises purchased most of the raw milk, whereas by 2000 the number had increased to eight.

Figure 1. **Concentration indexes for the dairy industry¹**

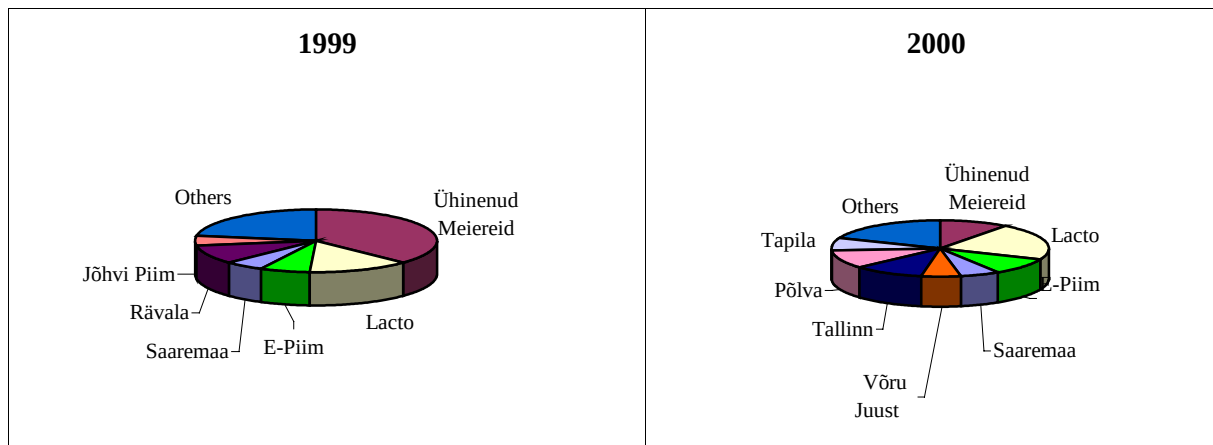


Source: Central Commercial Register.

1. The concentration ratios are calculated based on the net turnovers of the enterprises and no distinction is made on sales to exports or domestic markets.

The production of raw milk has decreased two-fold compared to 1989 (Table 1). In 2000, the production of raw milk was 629 000 tonnes, of which 409 000 tonnes were purchased by milk processing enterprises. Figure 2 shows that in 2000 there were eight big players in the raw milk purchasing market, with the remainder of companies purchasing less than 20% of milk.

Figure 2. **Purchases of raw milk in 1999 and 2000**



Source: Ministry of Agriculture.

Consumption of milk and milk products decreased nearly 50% (1993 compared to 1990) in the early 1990s. The main reasons were strict fiscal policy and deteriorating purchasing power. During this period Estonia introduced a liberal trade regime, which increased the share of imported food products available in retail shops in Estonia. For example, in 1994, imported yoghurt accounted for about 65% of turnover in retail shops and imported ice cream for about 80%. According to market research carried out in May 2001 the situation has reversed, although the liberal trade regime is still in place. The share of imported yoghurts in the retail turnover decreased to 14% and imported ice cream to 13%. Overall, 85% of consumers preferred to purchase domestic products in 2001 (in 1996 the percentage was 73). The reasons for preferring domestic products were traditional taste, lack of additives, high quality, attractive packaging and competitive prices.

This suggests that processing companies have succeeded in competing against imports and have won back market share. This has been achieved through increasing product range and variety, as well as excellent results in product development and quality.

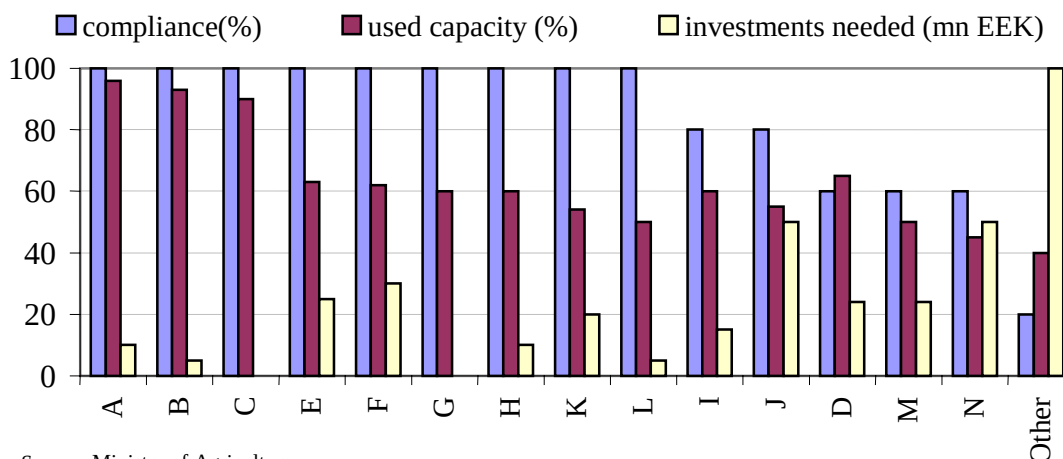
Over capacity, inherited from the Soviet era, is a serious problem for the dairy industry. Figure 3 shows capacity utilisation in milk processing enterprises

Nine Estonian milk-processing enterprises now comply with hygiene and other requirements and have the right to export to the EU. Three of these enterprises have built new production plants; while the remainder have renovated existing plants. The nine enterprises are mostly large-scale. They include exporting enterprises as well as dairies catering only for the local market and some which target both.

Excess production capacity means that there are inefficiencies in the sector, which results in high fixed costs. Also the nine enterprises complying with requirements do not fully use their capacity. Due to the overcapacity in the sector and the resulting inefficiencies many enterprises have not been able to

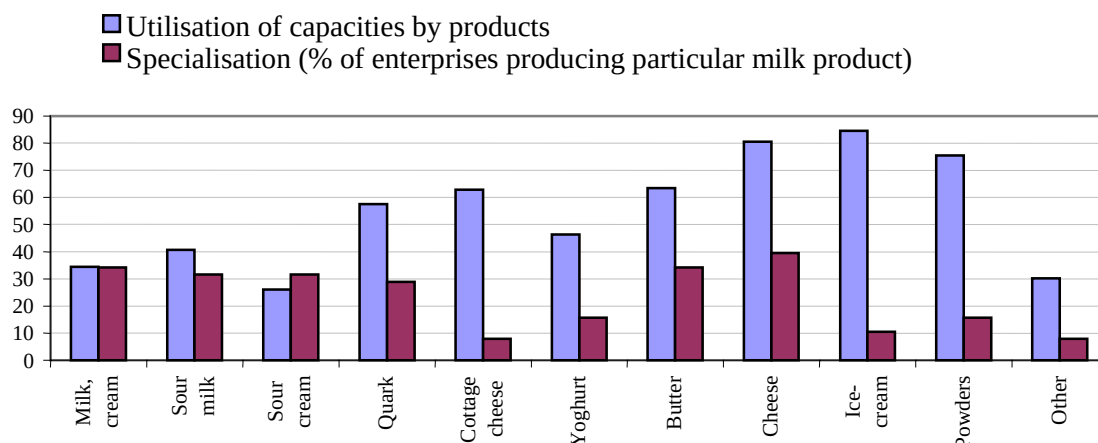
modernise their production process. Investment needs have been increasing and a large number of enterprises have postponed investments.

Figure 3. **Compliance of dairy enterprises with EU requirements, utilisation of capacities and investment needs in 2000**



Further analysis of inefficiencies in production capacity reveals two interesting aspects. Looking at capacity use by milk products (Figure 4), it can be observed that the production capacity for exported products (cheese, butter and milk powder) is better exploited than that for whole milk products produced for local consumption. This leads to an observation on low specialisation (Figure 4). Whole milk products for domestic production are produced in roughly 30% of enterprises; the same applies for butter and cheese. Higher concentration has occurred in production of ice cream, cottage cheese and milk powder. From an economic perspective, production should be concentrated in larger companies, while small enterprises could focus on niche production.

**Figure 4. Utilisation capacities of milk products and the specialisation of enterprises
(% of enterprises that produce that product)**



Source: Ministry of Agriculture.

Another issue raised earlier is the investment needs of the sector which mostly relate to increasing processing efficiency and product competitiveness. Figure 3 gives an overview of the investment needs and of enterprise compliance. Enterprises that fall under the category “others” are mainly small or medium sized with low capacity and high investment needs. These enterprises usually lack strategic plans and are the ones most likely to leave the market.

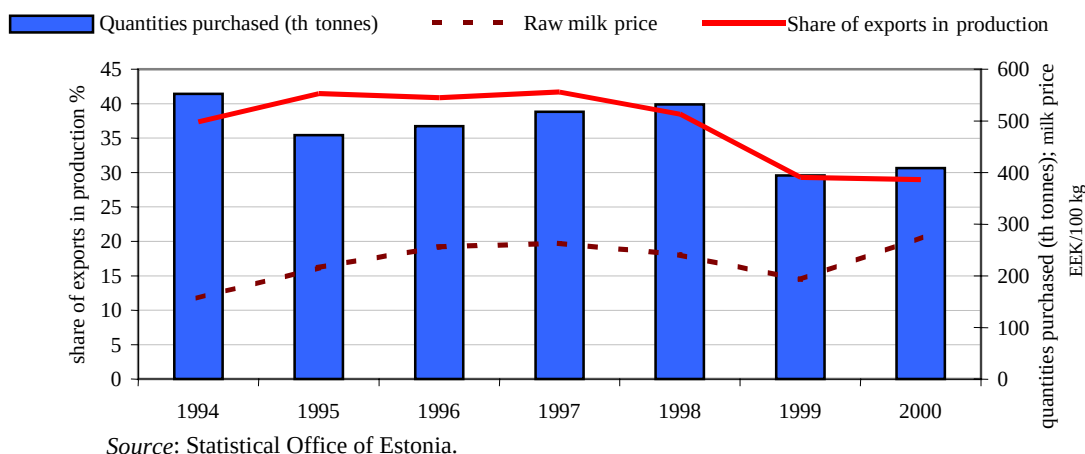
Milk processing enterprises will have to comply with the provisions of the Food Act by 1 January 2003, the date on which it comes into force. Enterprises not complying will have to cease their operations. The introduction of this new legislation is partly driven by harmonisation with the EU, but the overriding concern is food safety for consumers.

To help enterprises to comply, the EU has introduced the SAPARD programme. The programme began in 2001 in Estonia. One of the objectives is to provide investments to improve competitiveness and efficiency. In 2001, EEK 100 million were allocated to the processing sector, of which, 40% was allocated to milk processing. The total funds ear-marked for the processing sector amounts to EEK 325 million up to 2006.

Exports of milk products have been reoriented in recent years. In 2000, the bulk of dairy products were exported to the EU (68%), Latvia (9%) and Russia (7%). The main exports were skim milk powder (36%), butter (19%), cheese (19%) and milk powder (16%). Prior to 1997 the major export partner for the dairy industry was Russia, whose share in exports of milk products was 36.9% in 1995. By 1999, the share had fallen to 9.7% and in 2000 to 7%. Enterprises have tried to find alternative markets for their products and have targeted the EU. The favourable conditions for Estonian exports to the EU came into force on 1 July 2000 and have facilitated this development.

Export opportunities have a direct impact on the price paid by processors to raw milk producers in Estonia. Developments in the price of raw milk, as well as the export share in production, are shown in Figure 5.

Figure 5. Price and quantities of purchased raw milk and share of exports in production



Following the 1998 Russian crisis, exports dropped considerably. This led to an immediate drop in the raw milk price, as well as a slight decrease in consumer prices on the domestic market as competition increased. Enterprises, which had focused on the eastern market faced economic difficulties, whereas enterprises producing for the local market were in a better position and could afford to pay higher prices to producers.

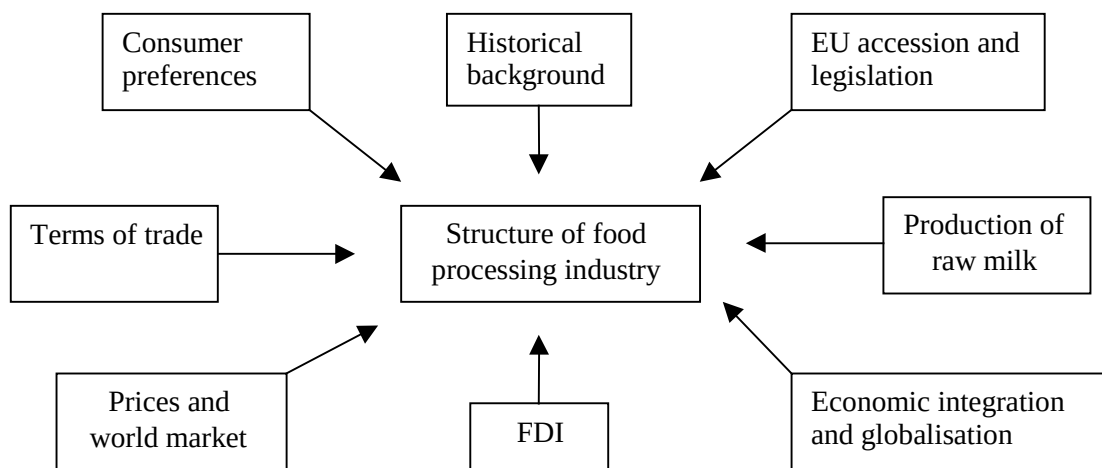
From 2000 the market situation changed. World market prices for milk products were favourable and enterprises benefited from favourable export opportunities to the EU². Also consumer prices on the local market started to rise, as did raw milk prices. Moreover, increased competition in the raw milk market is leading to higher raw milk prices.

Factors influencing further structural development in the dairy industry

There are number of factors influencing the structure of the processing industry (Chart 1). The following chapter discusses how accession to the EU, raw milk supply, consumer preferences, foreign direct investments (FDI), changes in trade policy, price developments, and increasing economic integration are influencing the development of the dairy industry structure.

2. More liberal trading regime, namely an increase in export quotas for dairy products was introduced in 01.07.2000 as a result of negotiations with the EU.

Chart 1. **Factors influencing industry structure**



Accession to the EU and harmonisation of legislation

Implementation of the Food Act on 1 January 2003 will have a direct impact on the structure of the dairy industry. The requirements of the Act were announced in 2000 to allow adequate time for enterprises to comply. This transition period also explains the relative lack of change in the structure of dairy sector to date, as enterprises that do not meet the required standards and do not plan to comply, can continue to operate until 1 January 2003. After the Act is enforced, enterprises that do not comply will have to close down, leading to a higher concentration of milk processors, and increased efficiency due to higher capacity use.

While it is expected that the number of complying enterprises will rise, not all enterprises will be able to complete their investments on time. This does not mean that there will be insufficient capacity to process raw milk produced in Estonia or to supply consumers with domestic milk products, because the nine existing complying enterprises have the capacity to process all the raw milk produced in Estonia. Moreover, it is expected that as the number of complying enterprises increases, consolidation will most likely take place in order to increase efficiency and competitiveness.

Primary production and raw milk supply

Concentration is also expected to occur in the raw milk market. As shown already, eight enterprises dominate the raw milk purchasing market. In 2000 and 2001, competition increased due to the favourable export opportunities, which led to an increase in the price of raw milk. It can be anticipated that some enterprises that cannot afford the higher raw milk price will lose their raw milk supply and will have to close down. Already, some enterprises' traditional suppliers have been bought out by other processors offering higher prices.

Despite the intense situation on the raw milk market there are not many signs of vertical integration, which would ensure a stable milk supply to the processor. Of the enterprises which dominate the raw

milk market, there is one co-operative³, which has established a stable supply base by making long term stable contracts, and one which has purchased milk producers. Vertical integration is hence a challenge for the dairy industry in ensuring a stable raw milk supply.

Consumer preferences

Milk processing enterprises have increased their domestic market sales. This shows that they have been successful in competing with low priced (subsidised) imports and have become more competitive. On the other hand, the rising consumption of domestic products also means that the domestic market for milk products has increased, opening up opportunities for more enterprises to enter the market, which may in turn have delayed restructuring in the sector. However, from the consumer's point of view the increasing variety of products available, the higher quality, and the development of new products are favourable developments, as is the increased competitiveness in the sector.

Regardless of the increasing consumption of domestic products there are still opportunities for milk processors to be more innovative and dynamic in responding to changing consumer preferences. One challenge for the Estonian dairy industry is whether to move towards production of inputs for other food industries (*i.e.* cheese, powders, butter) or to focus more on higher value-added consumer products. The Government can also contribute to the development of higher value-added products by providing support for collective marketing. Estonia is currently elaborating a strategy and role for the state in collective marketing to promote the consumption of Estonian products and to increase competitiveness.

Terms of trade

As a small country with a liberal trading regime, Estonia is, without doubt, a price taker on international markets. Estonia is also open to external shocks, as protection of the domestic market is almost non-existent⁴. Therefore price developments in international markets have a direct impact on the Estonian dairy sector. In order to be competitive on export markets, efficiency and specialisation have to increase, and the sector has to respond dynamically to market trends.

Estonia's trading regime is unlikely to change prior to its accession to the EU, although it would be valuable for Estonia if further liberalisation of trade (*i.e.* expanding export opportunities) with the EU could take place. The impact of such a development would be as important as the liberalisation of trade with the EU that came into effect on 1 July 2000.

3. In total there are 7 co-operatives in milk processing sector, of which one is large scale and six small scale.

4. Until 2000 there were no customs tariffs on agricultural products, as well as no other quantitative restrictions to trade. Since the 1st of January 2000 tariffs have been introduced towards so called third countries (*i.e.* the countries with which Estonia has no free trade agreements). The tariff ceilings that Estonia has bounded in WTO are relatively low compared to other countries. The actual weighted average tariff rate in 2000 was 0.57%.

Economic integration and FDI

Upon accession, Estonia will be part of the EU internal market. Economic integration will affect the location-related advantages of Estonia for foreign investors. So far, Estonia has been attractive for investors in the domestic milk sector (for value added products), although there have also been some export-oriented investments (for bulk products). There is overall agreement that accession to the EU and deepening economic integration will have a net positive impact on the economy. However, in terms of FDI, which transfers capital and know how, creates new jobs, and increases efficiency, there are some aspects that Estonia should consider in order to benefit from being part of the internal market.

A number of location-related factors are important for investors. These include market growth, comparatively low labour and factor costs, market size, liberal trade policy, government policy, geographical proximity/cultural link with investors. Some of these elements are likely to change after accession and economic integration, for example, market size. On the one hand, while the small size of the Estonian market will no longer be an obstacle for FDI seeking market opportunities, the incentive to invest in Estonia might decrease as the Estonian market becomes fully integrated with the EU. The challenge for Estonia will be to maintain incentives for market seeking FDI and to benefit from FDI transfers to increase competitiveness in the dairy industry.

Conclusions

The structure of the milk processing industry is facing important challenges and major changes are expected to take place. Several factors will influence the emerging structure of the milk processing industry, including accession to the EU, changes in legislation, developments in primary production, consumer trends, prices, marketing and terms of trade as well as foreign direct investments and deepening economic integration. The overall conclusion is that in order to be competitive and efficient the inevitable development is towards higher concentration in the milk processing sector:

- ✓ Accession to the EU and harmonisation of legislation means that the number of enterprises will probably decrease and concentration in the industry increase.
- ✓ Concentration is also expected to result from the limited supply of raw milk as weaker enterprises will not be competitive in assuring their raw milk supply.
- ✓ In response to consumer preferences the trend towards production of higher value added and quality products will increase.
- ✓ Maintaining its liberal trading regime means that Estonia will remain open to external shocks. However, the outlook for more favourable export opportunities for dairy products to the EU will improve marketing opportunities for the dairy industry.
- ✓ Increasing economic integration will affect the location-related advantages of Estonia for foreign investors – the impact on the dairy industry structure is unclear as it is not certain whether sufficient incentives will remain to invest in Estonia.

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THE STRUCTURE OF MILK PROCESSING AND MARKETING IN LITHUANIA

By Mr. Alvydas Ramanauskas and Dr. Natalija Kazlauskienė
(Paper presented by Mr. A. Ramanauskas)

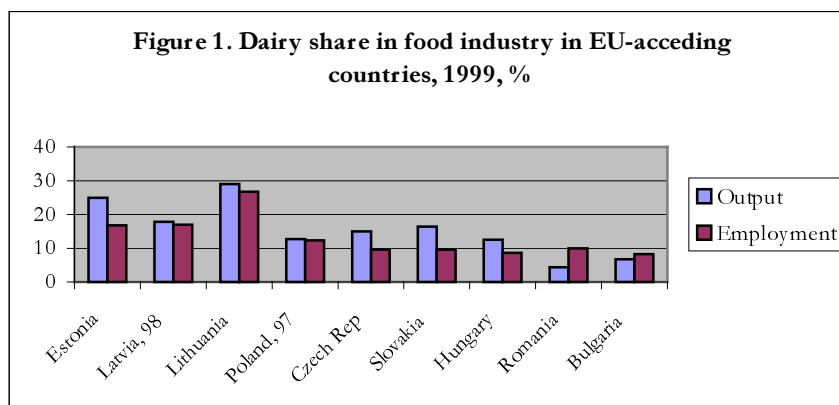
Abstract

The paper analyses the evolution of the dairy industry in view of how various internal and external forces have affected the structure of production and sales and the consolidation of the industry. The dairy processing and distribution system has evolved rapidly and has shown its competitiveness in new product and market development and diversification as well as in achieving EU certification for most of the industry capacity. This process of change is continuing and is driven by internal and external competition and by increasing concentration of the retail markets, while the fragmented structure of dairy farms is a major handicap to the reduction of cost, the reduction of the sharp seasonality of milk production, and the improvement of raw milk quality.

Introduction

Dairy processing in Lithuania traditionally has been, and still is one of the most important sectors of the agro-food industry. It provides jobs to over a quarter of those employed in the food industry together with a substantial number of farmers and contributes nearly one-third of food industry output.

The size and importance of this sector in Lithuania stands out when compared to the rest of EU-acceding countries (Figure 1). Being traditionally export-oriented, this sector also contributes over a third of food industry exports earnings. Indicators of its international recognition and competitiveness are the 18 EU-certified processing enterprises covering over 80% of output and the rapid diversification of export markets for dairy products. From the outset of the structural reforms, the dairy industry has been and continues to be the domestic leader within the food industry. Dramatic changes have occurred in the number and size of enterprises, ownership and management structures, volumes of raw milk processing and output sales, composition of produced products, domestic marketing and foreign trade.



Source: FAO and OECD statistical on-line databases.

Stronger integration into the world market and preparation for EU membership place additional pressures for improvement in product quality, increases in efficiency and the overall strengthening of competitiveness in domestic and foreign markets. These developments also require more flexible production structures as well as innovative and dynamic management and marketing strategies.

With this in mind, the paper attempts to provide an overview of the present situation in dairy processing and marketing as well as to outline the main factors determining future developments and challenges to be overcome on the way to becoming stronger and more competitive. The most recent data available and used in the paper are for 1999 and in some instances 2000. Later developments are described on the basis of the assessment and trend evaluation by dairy industry experts.

Brief description of the situation, challenges and perspectives in dairy industry

The dairy processing industry plays an important role in the Lithuanian food sector. It contributes a substantial share to gross output, employment, and export earnings, as well as attracting a sizeable part of FDI (Table 1).

Table 1. Main indicators of the dairy processing industry

Indicators	1997	1999	2000
Gross output, mio Lt	1 689.2	1 559.3	1 586.0
% of food industry	27.8	29.0	n.a.
Employment, thous.	15.5	11.9	10.4
% of food industry	25.5	26.7	n.a.
Number of processing enterprises	49	40	38
FDI, mio Lt, end of the year	53.4	156.9	n.a.
Output/employee, Lt	109.0	131.0	152.5
Exports *, mio Lt	803.8	467.3	605.1
% of food industry	70.3	37.0	38.1

Source: Department of Statistics: Statistical Yearbook of Lithuania, 2000.

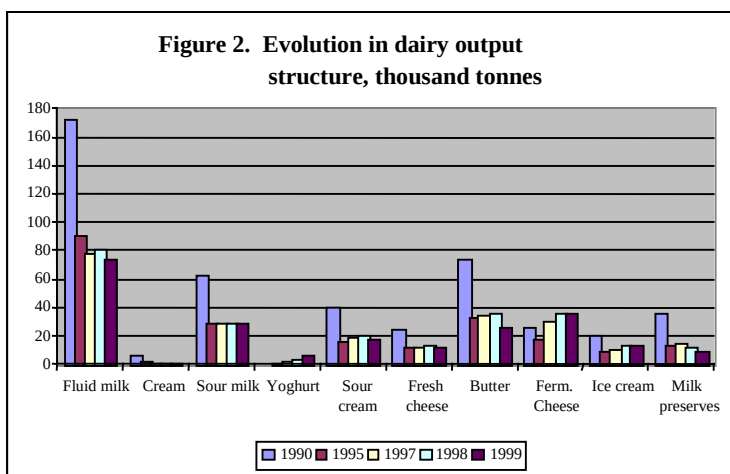
** include eggs*

During the period under review, the number of dairy processing enterprises and employees has gone down, leading to improved productivity (nearly 40%). The share of dairy processing in food exports has increased steadily, reaching close to 40% in 2000. The same pattern can be observed for FDI. Exports accounted for 30% of total dairy product output in 1999 and 38% in 2000. In 2001, exports continued to grow due to favourable market conditions. At present, privatisation of the dairy industry is practically completed.

As a result of the reforms, the dairy processing industry experienced dramatic changes in a number of areas.

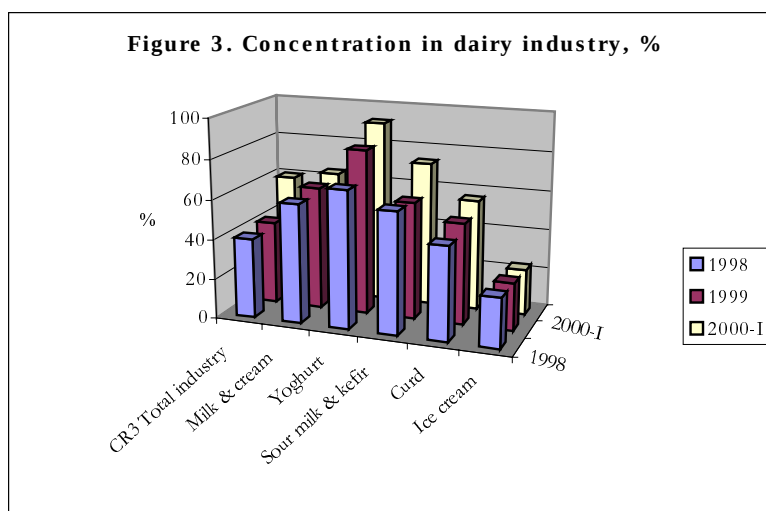
First, a significant decline in volumes of processed milk caused by a decline in raw milk output. This decline was accompanied by significant changes in product structure, reflecting the changing market situation and consumer preferences (Figure 2). At the beginning of reforms, the most dramatic declines occurred in fluid milk, cream, sour milk, sour cream, fresh cheese, butter and milk preserves production, where it ranged from 53% to 85% between 1990 and 1999. On the other hand, fermented cheese production increased 35%, reflecting improving competitiveness and a strengthening position

in foreign markets. Production of yoghurt, non-existent in 1990, steadily grew since 1995 nearly doubling from year to year.



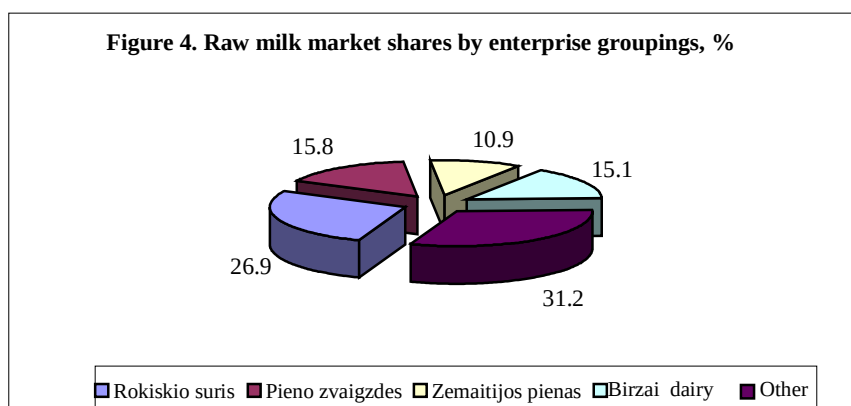
Source: Department of Statistics: Statistical Yearbook of Lithuania, 2000.

Second, the concentration process in the dairy industry was very rapid and was caused by domestic policies and changes in the domestic and external markets. As a result of bankruptcies, mergers and acquisitions, and general industry concentration level, measured by concentration index (CR3) as well as concentration in individual products (such as yoghurt, sour milk and kefir, curd), production has increased substantially during 1998-2000 (Figure 3).



Source: EBRD study.

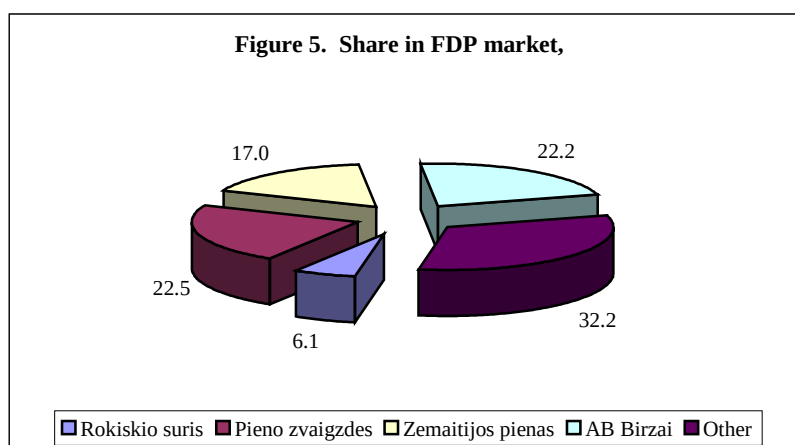
Though the general concentration level in 1999 was moderate (CR3=42%), in major fresh dairy product production, except for ice cream (CR3=24%), it was rather high and peaked at 83% for yoghurt. The concentration process in the dairy industry resulted in a dramatic decrease in enterprise numbers and the formation of producer (enterprise) groupings. In 1999, there were four major enterprise groupings competing for raw milk supply (Figure 4).



Source: EBRD study.

The concentration process continued in 2000 and 2001, with the bankruptcy of Birzai dairy, whose 15.1% share in raw milk market held in 1999 was captured by other market players, and due to further acquisitions of smaller plants which in 1999 had 31.2% of the milk supply market. However, later data is not available and we will limit ourselves to factual evidence from 1999, indicating only tendencies for 2000 and 2001.

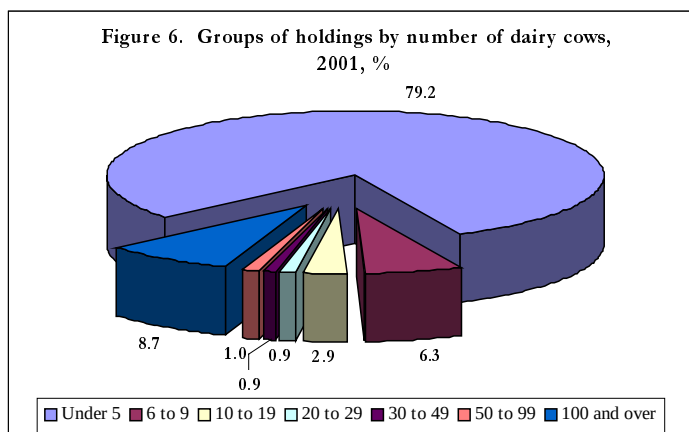
Similar tendencies can be observed in regard to output markets. In 1999, more than a half of the fresh dairy product (FDP) market belonged to three dairy companies (Figure 5). Similar to raw milk market developments, further concentration of the fresh dairy product market has occurred in 2000 and 2001 reflecting the exit of Birzai joint stock dairy company.



Source: Department of Statistics: Statistical Yearbook of Lithuania, 2000.

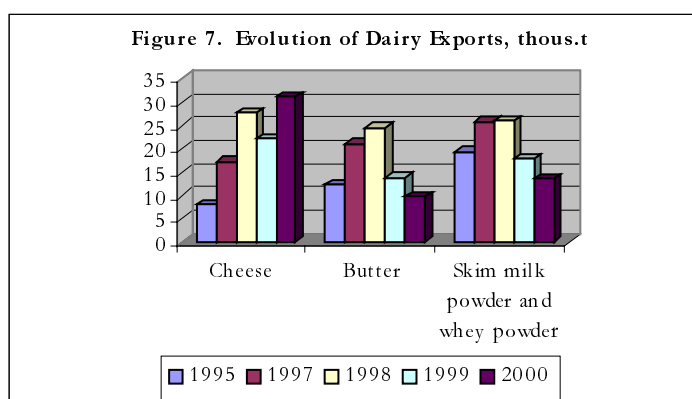
Those four above mentioned enterprise groupings differ substantially from the point of view of total sales (JSC “Rokiskio suris” being highest and exceeding the closest competitors, Birzai joint stock dairy company and JSC “Pieno zvaigzdes”, by 35 and 52%, respectively). Enterprise groupings also differ by market orientation, with JSC “Rokiskio suris” being the export leader. They also differ by value added (ranging from 0.27 for JSC “Rokiskio suris” to 0.6 for JSC “Zemaitijos pienas”) and gross profit margin (from 7.4% for Birzai joint stock dairy company to 16.3% for JSC “Zemaitijos pienas”).

Third, substantial changes occurred in the structure of dairy farming. As a result of farm privatisation and establishment of family farms, dairy operations are extremely fragmented creating numerous problems for the dairy processing industry, including the stability of raw milk supply, the quality of milk and high milk collection costs which in many cases add up to 10-15% of the milk farm price. The present situation in dairy farm structure is shown in Figure 6. At the beginning of 2001, nearly 80% of raw milk was produced by farms with dairy herds under 5 cows and only 9.7% of milk was produced by farms with dairy herds exceeding 50 cows.



Source: Department of Statistics: Statistical Yearbook of Lithuania, 2000.

Finally, substantial changes occurred in dairy product exports. This, first of all, applies to volumes and product structure (Figure 7). Given the general negative impact of the 1998-1999 Russian financial crisis on all dairy exports, cheese, seems to be the only product which succeeded in sustaining and improving market performance in 1995-2000, perhaps due to diversification of markets and higher competitiveness.

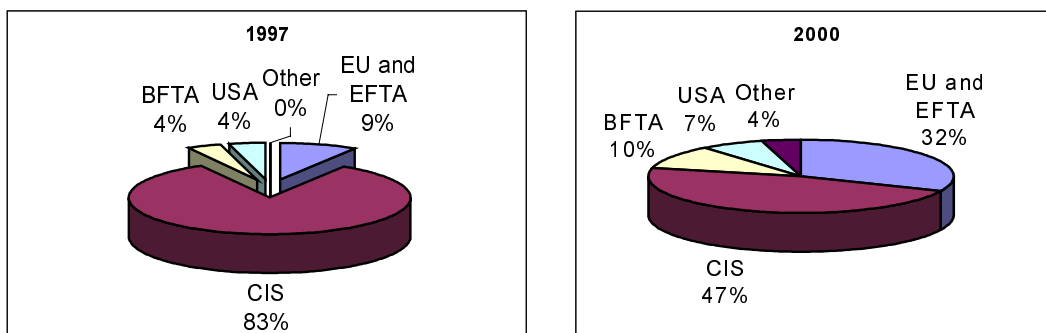


Source: Department of Statistics: Statistical Yearbook of Lithuania, 2000.

Important changes have occurred in geographical destinations of major exported commodities, with Western markets gaining more importance and bigger shares. In 1997, the main export market for butter was the CIS (Figure 8), accounting for more than 80% of all butter exports; and the only other destination that exceeded 4% was the EU and EFTA combined. By 2000, the shares going to

EU/EFTA, BFTA, USA, and other countries all increased substantially at the expense of the CIS at the same time as total exports were declining. This was also accompanied by a shift from opportunistic export sales to longer-term contract arrangements with stable buyers.

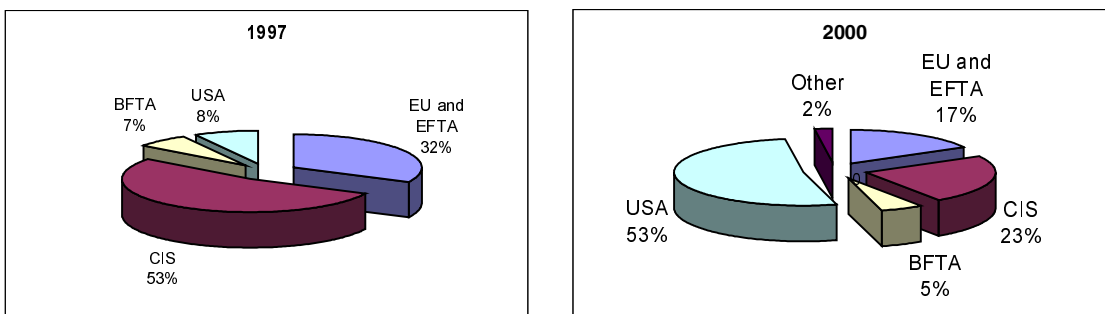
Figure 8. Evolution in geographic destination of butter exports



Source: Lithuanian Dairy Association.

An even greater shift occurred for cheese exports (Figure 9), where the CIS share declined from 53 to 23% over this three-year period, when total cheese exports were increasing. In this case, the USA became the largest market, with over 50% of the exports; and all other shares declined.

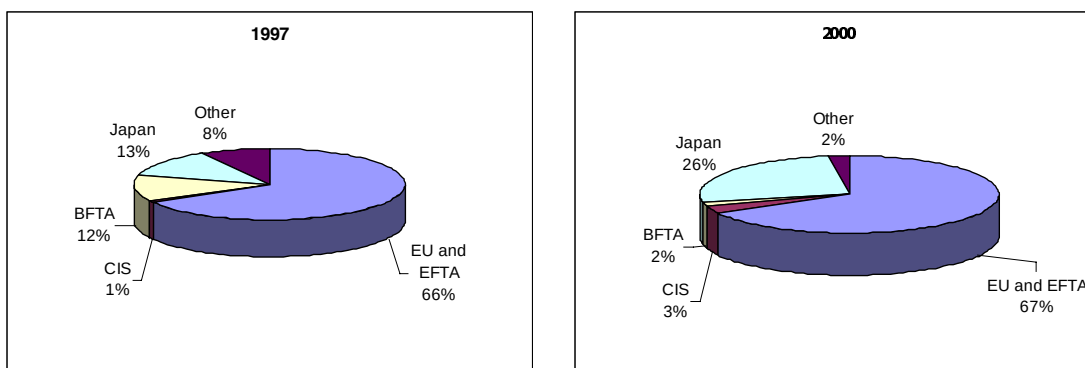
Figure 9. Evolution in geographical destination of cheese exports



Source: Lithuanian Dairy Association.

The changes in the export pattern for skim milk powder (SMP) were less dramatic, as the EU/EFTA share remained nearly the same and Japan nearly doubled its share at the expense of the remaining regions. This took place in the context of declining total exports for SMP.

Figure 10. **Evolution in geographical destination of skim milk powder**



Source: Lithuanian Dairy Association.

The above mentioned changes among other factors were to a great extent caused by government policies. After deregulation of processing and retail margins for dairy products in 1994 and 1995 and milk farm prices in mid-2000, there are no longer interventions along the marketing chain. As a result of farm price deregulation last year, anticipated sharp price decline has not occurred and on the contrary farm prices increased 12% in 2001 compared to 2000. Growing domestic competition among processors for raw milk supply caused this. Since dairy processing depends on the viability and efficiency of dairy farming, government policies in that primary farming sector are crucial. Investment support to modernise production facilities, improve breeds, consolidate dairy herds and improve milk quality has to be made a high priority not only in the implementation of SAPARD but also for national support schemes.

Evolution of dairy industry: main factors influencing the process

Factors influencing the **current situation** in the dairy industry can be divided into two groups: internal and external, each of them being of relative importance at different reform stages.

Internal factors include:

- Privatisation and restructuring of the dairy industry. The selected model of enterprise privatisation favouring raw milk suppliers and employees often resulted in fragmentation of ownership, thus complicating the decision making process, and creating obstacles to FDI needed for enterprise restructuring and modernisation. Slow and complicated bankruptcy procedures with inefficient enforcement mechanisms and government bailouts of troubled enterprises delayed structural changes in the industry.
- Situation in dairy farming.
 - Heavy dependence of rural households on income from sales of milk.
 - Irrational, fragmented farm structure with small dairy herds which increases milk collection costs and prevents investment into farm modernisation and restructuring.

- Difficulties in securing stable and high quality raw milk supply.
- Growing competition among processing enterprises for raw milk supply.
- Market regulation and support policies.
 - Lack of consistent medium and long-term policies, which prevents private sector from working out and implementing enterprise development and investment strategies.
 - Heavy government intervention in farm price regulation till mid-2000 resulting in insolvency and bankruptcies and as a result, speedy concentration of dairy processing.
 - Social orientation of farm support policies which prevented consolidation of dairy operations and exit of 1-3 cow farms from commercial milk production.
 - Absences of viable export promotion policies and weakness of relevant market information and export promotion institutions.
- Changes in the domestic market.
 - Decline in the purchasing power of population, resulting in a sharp drop of dairy product consumption and a shift towards cheaper, lower value added products among low income consumers and growing demand for new higher value added products among top income consumers.
 - Increasing competition in the domestic markets with imported products under preferential terms of trade.
 - A substantial share of direct milk and product sales competing with enterprise produced and marketed products.
 - Concentration of the wholesale and retail marketing chains and severe payment arrears for supplied dairy products.

External factors include:

- Loss of traditional markets as a result of separation from the Soviet Union in early nineties and impact of the 1998-1999 Russian economic and financial crisis, limited access to alternative markets, together with other factors caused a severe output decline, structural changes and market adjustments.
- Re-integration into world dairy markets put pressure for improved competitiveness of the industry with strong emphasis on higher quality of produce and efficiency of enterprises as well as market promotion. All those features required an enormous investment, which was limited by the ownership structure of enterprises, poor access to credit at the beginning of reforms and lack of a clear vision for sector development.

- Accession to WTO resulted in a gradual decline in the domestic market protection, abolition of export subsidies and limited choice of export support measures. On the other hand, the main competitors of Lithuania continue to use the above-mentioned measures, thus creating an uneven playing field in major foreign markets.
- Prospective membership in the EU and current trade liberalisation as part of the preparation for integration into the EU single market require implementing a variety of structural and institutional changes.

Future developments in the sector will be influenced and guided by:

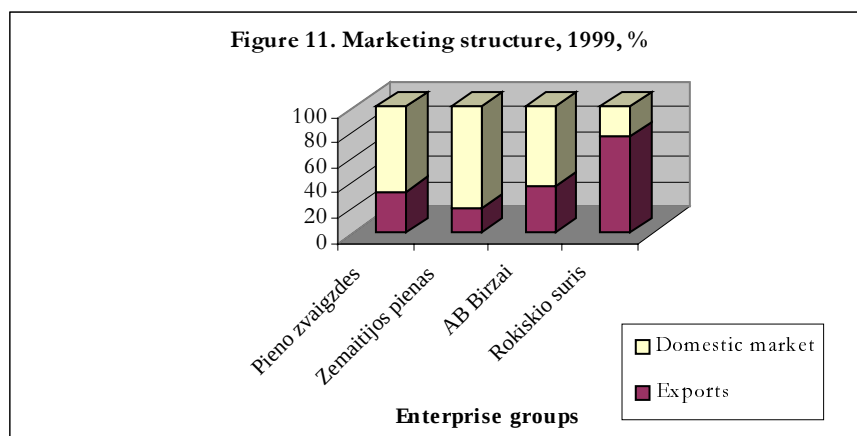
- Government commitment to secure a stable and favourable legal, economic and institutional environment for the development of the food industry as a whole and the dairy industry in particular. This includes, but should not be limited to farm restructuring and modernisation policies, market regulation measures, and export promotion and market information activities, investment climate and development of the credit market.
- Effective solution of problems caused by payment arrears from traders, both on the wholesale and retail levels.
- Accession to EU (enforcement of stricter quality control and certification requirements).
- Present and future government farm support and market regulation policies (direct impact on primary farming: farm structures and size of dairy herds, modernisation, stability of raw milk supply and quality).
- Purchasing power of population and consumer preferences (determination of the domestic market demand and product variety, which require flexibility and adjustment from the dairy processing side).
- Success in diversification of export destinations with an attempt to identify and secure market niches.
- The ability to achieve and sustain an increasing share of higher value-added products in the export structure.
- Further trade liberalisation under WTO, situation in the world markets and current economic recession in the West (impact on export possibilities and output volumes).

Marketing of dairy products

After the collapse of the centralised distribution system, enterprises had to establish their own wholesale and retail distribution systems or rely on the emerging wholesale and/or retail chains. Individual enterprises have chosen various approaches depending on their location, enterprise product specialisation, organisational and management structure as well as market destination. Within the four major enterprise groupings described above, there are significant differences in market orientation (Figure 11). In 1999, only one of the groups – JSC “Rokiskio suris”, specialising mainly in fermented cheese production, was strongly export-oriented, with exports exceeding three quarters of total output. The rest of the groups marketed their products predominantly in the domestic market, with export

shares ranging from around 20% to 35% of their sales. Export activities are organised mainly using the following approaches:

- triangular trade: using services of foreign intermediaries involved in re-sale or in further processing and sales of Lithuanian products;
- selling directly to clients in foreign markets; and
- establishing own distribution networks in foreign countries (*e.g.*, wholesale system in BFTA countries).



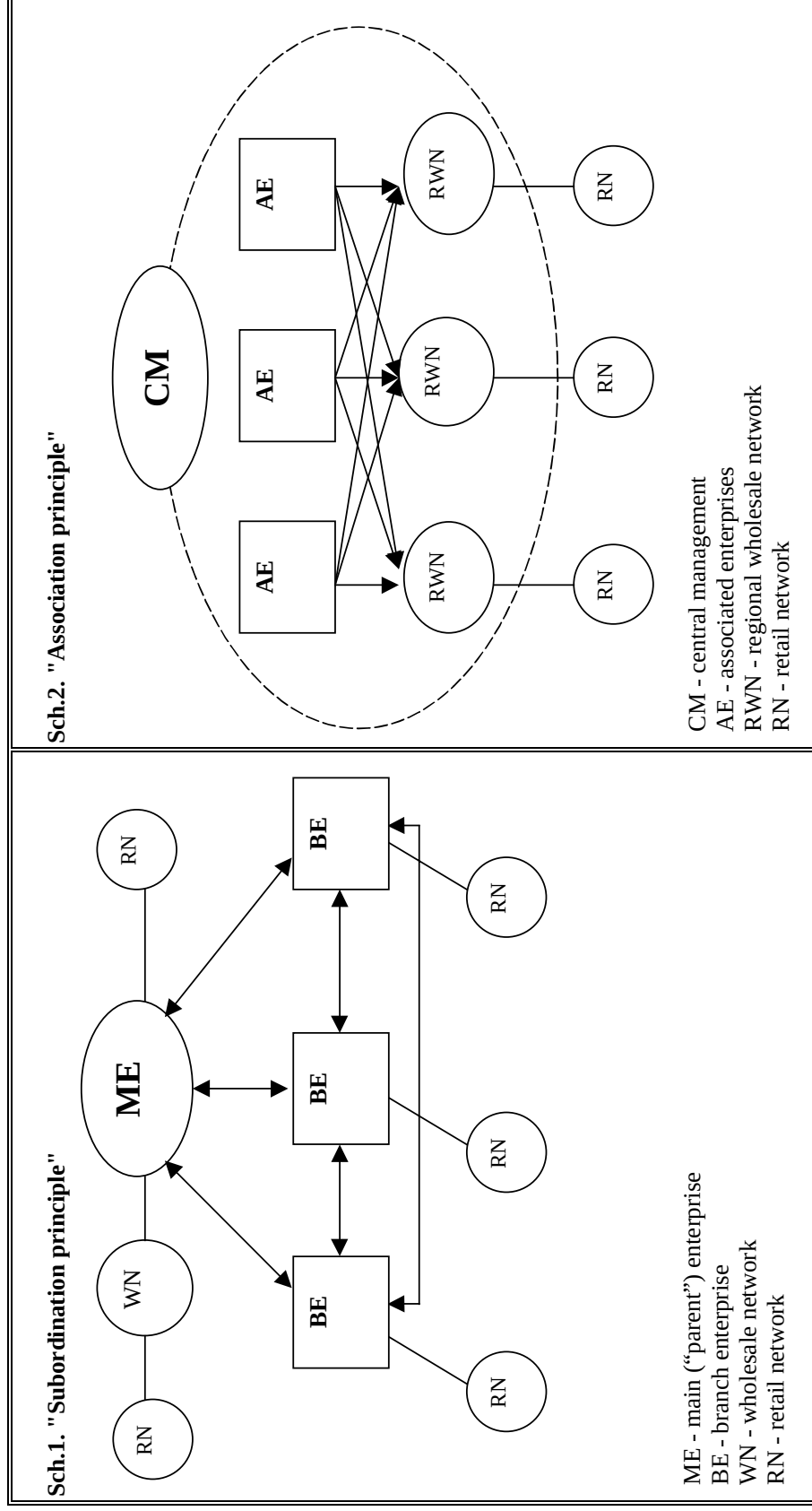
Source: Lithuanian Dairy Association.

In the domestic market two major marketing schemes are used with individual variations reflecting the specificity of individual group conditions (Figure 12).

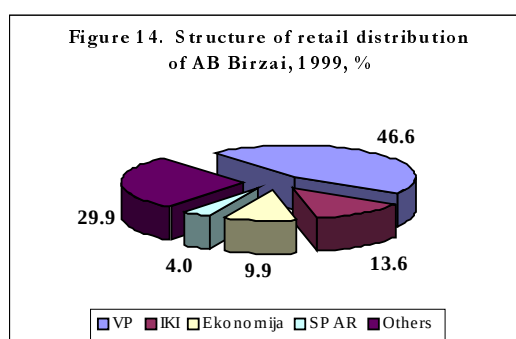
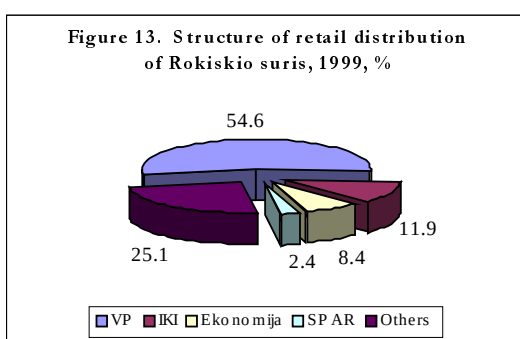
The main difference between them reflects the major difference in organisational and management structure themselves: in the first case, there is one major, or parent, enterprise with a number of subordinated branches. That parent enterprise engages in marketing through wholesale and retail networks, and branches into access markets through the parent enterprise and retail networks. In the second case, the whole enterprise group is organised in the form of an individual enterprise association with individual enterprises maintaining their own access to retail networks as well as marketing products through regional wholesale distribution networks.

However, under both schemes, dairy processing enterprises interact with the established wholesale and retail marketing chains, which at present have a strong consolidation tendency. During the period under review, four major marketing chains dominated the food retail sector: Vilniaus Prekyba, IKI, Ekonomija and SPAR. Recently SPAR has experienced serious financial difficulties and it is likely that its market share in food retailing will be acquired by one of the existing companies or divided among market leaders in some way.

FIGURE 12. MAJOR DAIRY PRODUCT MARKETING SCHEMES



Examples of two processing enterprises, JSC “Rokiskio suris” and Birzai joint stock dairy company, shows the share of individual retail chains in domestic marketing in 1999 (Figures 13 and 14). In case of JSC “Rokiskio suris” (RS), in 1999 there was a strong dominance of the Vilniaus Prekyba retail chain, marketing over half of all RS dairy products designated for the domestic market. Together with IKI and Ekonomija retail chains, the share of those three retailers was close to 75%. In case of Birzai joint stock dairy company, the same three major retail players were dominating domestic product marketing (70% of marketed output). However, given the shares of JSC “Rokiskio suris” and Birzai joint stock dairy company in the domestic dairy product market (37.9% in 1999), the estimated concentration ratio of the above mentioned retail chains in marketing dairy products is much lower than in two mentioned examples and makes up around 38%. In 1999, other dairies were marketing their products through alternative channels. However, in 2000 and 2001 further concentration of retail chains took place leading to growing power and pressure from traders on dairy processors. The situation has changed in 2000 and 2001 with further concentration of market shares through bankruptcies and mergers of some retail chains.



Sources: Dairy Processors Association; EBRD study.

Conclusions

During the last decade, as the reform process began and then accelerated in the food industry, the dairy industry has undergone an overwhelming change covering ownership and organisational structure, production, changes in production mix, expansion of product variety, collapse of traditional markets and search for new markets. The present structure of the dairy processing industry in Lithuania was formed under the influence of internal and external factors, among which domestic privatisation and market regulation policies as well as integration into global markets played crucial roles. The restructuring and modernisation process is still to be completed. The industry is still undergoing further concentration through bankruptcies, consolidation of operations and mergers. As it strives to become more competitive and efficient, to be capable of sustaining growing external and domestic competitive pressures and to find its deserved place in the EU single market, the industry faces a number of challenges and has to find rational, sustainable and flexible solutions to reflect the rapidly changing domestic and international market situation. The major challenges that the industry faces at present and will have to overcome in the immediate future could be summarised as follows.

On the input supply side:

- Due to the fragmented nature of farm operations it is hard to secure stable quality raw milk supply, and raw milk collection costs are high due to fragmentation of dairy herds and spread of milk collection zones.

- Milk production seasonality as well as lack of long-term stable, clear farm policies also have a major impact on raw milk deliveries to processing enterprises. This hampers further investment in production and marketing of dairy products.

On the output marketing side:

- Due to significant concentration of the retail chains and the low bargaining power and weak organisational capacity of processing enterprises, there still are significant payments arrears and pressure from retailers to sell under concessional conditions.
- As a result of the 1998-1999 Russian crisis, dairy enterprises had to seek alternative markets. A noticeable shift in geographical export destinations has occurred, with Western markets gaining more importance and a bigger share, in addition stimulated by liberalisation of trade with the EU, and improved competitiveness. Another tendency is a diversification of exports with an attempt to find market niches for specific higher value-added products, whose share in the export structure is increasing.
- Since national export support is extremely limited and export subsidies are prohibited in compliance with Lithuania's WTO accession commitments, dairy exports face unfair competition in the traditional Russian and CIS markets with subsidised exports from the EU and the US. Sound and long-term export support and promotion policies are still missing. Market information systems have to be strengthened.
- There is an increasing tendency to establish long-term trade contracts with foreign partners, which gradually replaces previous ad hoc marketing of surplus products.

Under these circumstances it is extremely important for dairy enterprises to develop clear development strategies, formulate priorities and work out short and medium term action plans to rationalise operations, increase efficiency and improve competitiveness. To succeed, private sector effort has to be supported by a stable, predictable and transparent policy, economic and legal environment.

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Discussant Paper

IMPLICATIONS FOR PRODUCERS, PROCESSORS, CONSUMERS AND POLICY MAKERS

By Dr. Adriaan Krijger

Abstract

The countries of the Baltic region have a long history in the production, processing and trade of milk. Compared to other emerging dairy nations this situation provides a relatively good starting point for integrating further into the global dairy market. Nevertheless a lot still has to be done to catch up. Especially the fragmented production structure both on the farming level and on the industry level for most countries is something that needs attention. The dairy industry as a whole is, at this stage, no match for both (foreign) retailers and foreign dairy processors.

It is recommended to watch carefully the orientation and initiatives of the global dairy players and to act accordingly, to co-operate within the Baltic region and to focus on selected products and selected markets.

Introduction

In this short contribution, the author would like to point to a few things, which he believes are important to reflect on in this context. As it will be difficult to comment on each of the country presentations separately and the countries more or less face the same challenges, the Baltic region in this contribution is considered as a whole. First the strong points of the region's dairy industry will be presented, then the author will deal with the, in his opinion, weaker points, and finally he will end up with some concluding remarks.

Strong points

Tradition in dairy production

The countries of the Baltic region each have a relatively big dairy sector. And, what is even more important, they share a long history in dairy production. As a consequence the infrastructure is in place and it is also well rooted. Dairy cows, dairy farmers, dairy industry and dairy trade, it is all there. And it has been there already for a long time. Knowledge to process, to market and to export milk is at hand.

This situation puts the countries in a favourable position, compared to other emerging dairy nations, with regard to the challenges to participate in the international dairy business.

Climatic conditions

Climatic conditions are favourable to produce milk. In this respect, relatively speaking, the Baltic region should be able, at the end of the day, to produce milk at competitive costs.

Bias to export

The Baltic countries also have a long export tradition. Traders are familiar with international dairy trade, know the export markets, know the regulations that apply, have knowledge of financial instruments, exchange rates, know how to ship goods, other logistics, etc. A recent IDF study reveals that countries with an export orientation have an advantage over those countries that recently started to export.¹

Huge consumer markets nearby

Close to the Baltic region is the EU market. A high income, fast growing, market. But also close are the CIS. Therefore opportunities to sell dairy products are abundant.

Weak points

Dairy farming

Dairy farming in the Baltic region is less efficient, which means that production costs are still too high. Apart from Estonia the majority of the dairy operations is small-scale, cows have a low milk yield and much of the milk is not delivered to the industry. The farming structure is fragmented. This seriously hampers competition.

Production in the Baltic region is also seasonal. An extreme handicap when it comes to meet the demands of the modern consumer. This consumer wants fresh dairy products all year round, every day. To meet this demand properly, “square” delivery is essential.

Furthermore, the quality of the milk does not meet international standards. It is poor compared to standards in the EU. Given the world-wide discussion on food safety, it is essential to improve the quality of the milk.

Processing fragmented

Apart from Lithuania, the processing industry still has a consolidation process to go through. Until then, the industry will be a target for foreign companies and indeed will be no match for (foreign) retailers. By the way, the fragmented situation in the dairy industries of, in particular, Estonia and Latvia also explains the relatively small margins on dairy products.

1. IDF (International Dairy Federation), Structural Change in the Dairy sector, Bulletin of the IDF 360, Brussels, 2001.

Specialisation is low

Specialisation is low. Most dairies produce the whole basket of dairy products. This strategy might be interesting from the point of risk management, but the bigger you get, the more the advantages of risk spread will be outweighed by the investment costs made to be competitive in all directions. Conclusion: once you get bigger: focus on fewer products.

Internal market size

Each of the Baltic countries has a small home market with a population ranging from 1.5 to 3.7 million. Consolidation on a national scale alone, will not generate enough momentum to make the next step in the consolidation process, *i.e.* internationalisation.

Distance between production and consumption

It is essential to have up-to-date information on consumer trends. Market research in this respect is very valuable, but also very expensive. Industries should therefore seek additional support from retailers, who are closer to the consumer and can provide relevant market information.

Hardly any foreign retailers, any FDI

This is changing for the better. Obviously this is important for two reasons. First to get connected to the international system. Second, foreign partners will bring in funds and know how.

Cheap imports

Trade agreements with the EU are reciprocal. Easier access to the EU also means allowing cheap imports into the Baltic region. You run the risk that those cheap imports might prohibit structural developments and therefore delay the consolidation process.

Concluding remarks

Stop thinking about countries; think about companies.

The present example of this is Fonterra. A New Zealand based company with interests all over the world. For those internationally operating companies national borders do not exist any longer. The international dairy companies therefore should be closely observed. They determine the future playing field.

Stop thinking about volumes; think about market shares.

Traditionally, the dairy processing industry produced fresh milk, butter, cheese and powders. But things have changed. These days a full-grown dairy industry makes thousands of products. Think for instance of the ingredients market. Big alone is not beautiful anymore. Better be small in niche

markets with relatively high margins. Especially when you are less competitive in the volume segment of the market. Try to be number 1 or 2 in certain (smaller) markets and make a good profit.

Define Estonia, Latvia and Lithuania as the home market.

Example here is Campina, Dutch based internationally operating dairy company. The co-op considered the Dutch market too small for the company's growth ambitions. It therefore defined its home market to be Germany, Belgium and the Netherlands. It is only in the 1990s that the company made this strategic decision. These days more than half of the turnover originates from Germany. Defining Estonia, Latvia and Lithuania, as your common home market requires co-operation, but will surely speed up consolidation.

World production and trade tends to regionalise: concentrate on Europe.

A recent study undertaken by the Dutch Dairy Board reveals that world production and trade tends to regionalise. Trade within economic blocks grows faster than trade between blocks.² For the Baltic region this implies that it makes more sense to focus on Europe rather than to focus on the rest of the world.

These are just a few considerations and may be useful to bear in mind when reflecting on the future. Most important however is to focus. Do not try to conquer the whole world at once in one step. It is advisable to focus your strategy on selected products and markets.

2. Dutch Dairy Board, World trade in dairy products. Does dairy trade become more regional? Paper presented at the FAL Conference on Globalisation, production siting and competitiveness of livestock production in Braunschweig, Germany in September 2000.

THE EMERGING FARM STRUCTURE OF MILK PRODUCTION AND TRENDS IN PRODUCTION IN ESTONIA: THE IMPACT OF FARM STRUCTURES ON THE QUALITY AND PRODUCER PRICE OF MILK

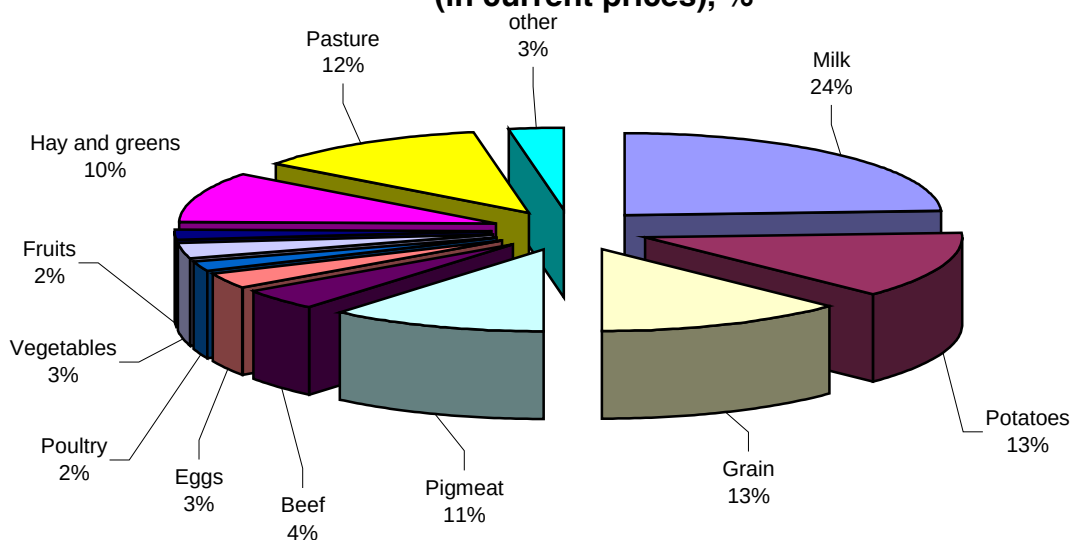
By Mrs. Tiina Saron

Abstract

Estonia has a long tradition of producing of milk and dairy products; the share of milk in GAO was 24% in 2000. The number of milk producers is estimated at 8-10 thousand. Approximately one thousand of them produce about 75% of the Estonian raw milk. The paper analyses how the quality of milk influences the competitiveness of the milk sector. The full retail value of milk and milk products will be realised if quality is maximised. It is therefore in the best commercial interests of everyone in the chain, from production to retailing, to be aware of that. The quality of raw milk has significantly improved in recent years. This has been possible due to raw milk quality testing by enterprises, investments in equipment by milk producers and measures taken by the state. Different farm structures and production costs provide different preconditions for production of high quality milk and different opportunities to make the necessary investments. Higher quality guarantees higher income for milk producers. To further improve the quality of raw milk the actions taken so far must be continued and new measures taken.

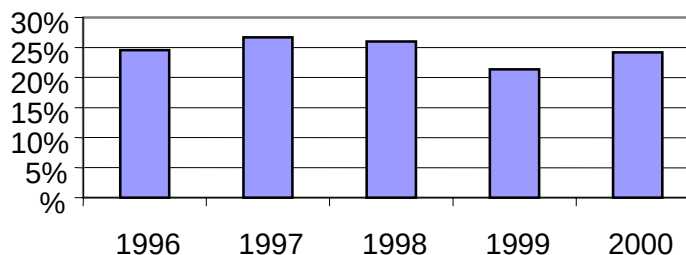
The importance of milk production for Estonia

Figure 1. Share of commodities in GAO, 2000
(in current prices), %



Source: Statistical Office of Estonia, Trade Bureau of the Ministry of Agriculture.

**Figure 2. Share of milk in GAO
(in current prices), %**



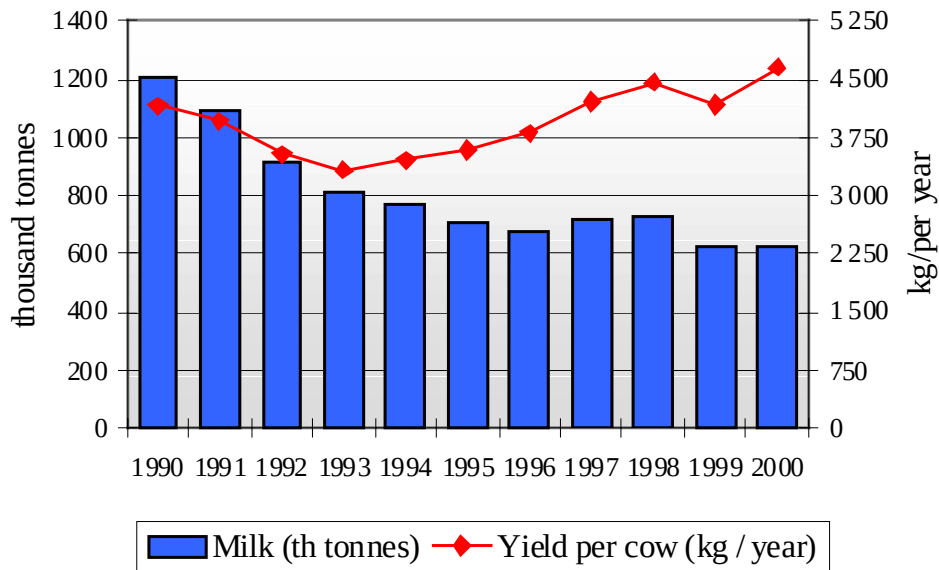
Source: Statistical Office of Estonia, Trade Bureau of the Ministry of Agriculture.

Traditionally, milk has been a very important product for Estonia. However the level of production has changed dramatically over the last years. In 1991, 1.1 million tonnes of milk were produced in Estonia, but in 2000 production fell to only 0.63 million tonnes.

Milk production in Estonia began to decrease in the beginning of the 1990s. The first signs of stabilisation became visible only in 1997, but even today there is no clear upward trend as the number of cows is continuing to decrease. When compared with 1989 milk production has fallen by half.

However, the milk yield per cow started to increase from 1994. In 2000, the average yield per cow was 12% higher than in 1990.

Figure 3. Total milk production and average yearly yield per cow

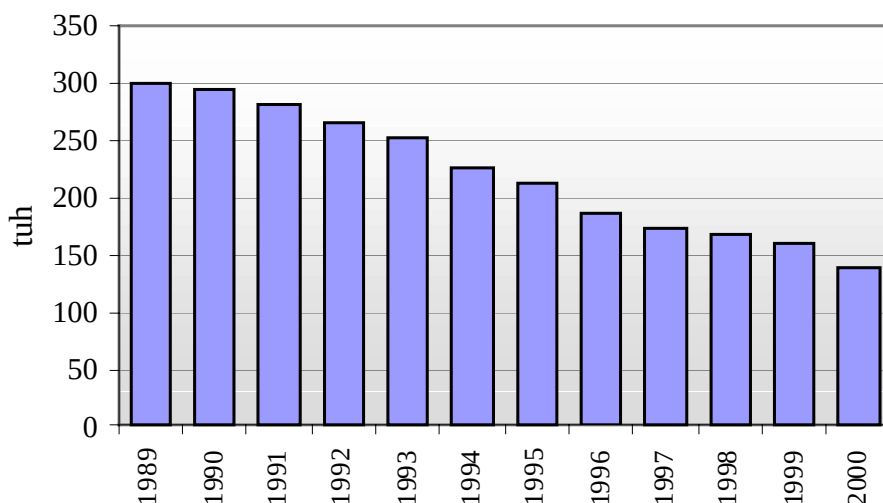


Source: Statistical Office of Estonia; Bureau of Animal Husbandry of the Ministry of Agriculture.

The number of cows in Estonia has been decreasing constantly. For example, when comparing 2000 with 1993 the number of cows has decreased by 57%. At the beginning of 2001 there were 131 000 cows in Estonia.

According to the prognosis of the Ministry of Agriculture the number of cows in the coming year is not going to decrease substantially, but a slight increase is more likely. The liquidation of herds caused by the unfavourable market conditions of previous years has stopped. More powerful and competitive producers continue their activities.

Figure 4. Number of cows as of 31st December 2000



Source: Statistical Office of Estonia; Bureau of Animal Husbandry of the Ministry of Agriculture.

The importance of raw milk quality to the processed milk products. Development of milk quality in Estonia and the respective state measures.

The quality of raw milk has a very definite effect on the yield and quality of products made from it. The compositional quality, the hygienic quality, the health of the cows in terms of mastitis all have an impact on the yield and quality of milk, and hence the financial return from products made from milk. Therefore, high quality raw milk is essential not only because of EU accession, although EU regulations set very clear and tough requirements for the whole chain of milk production including raw milk production.

Different farm structures provide different preconditions for production of high quality milk. In terms of cost efficiency certain farm structures provide better opportunities to make the necessary investments for the assurance of high quality.

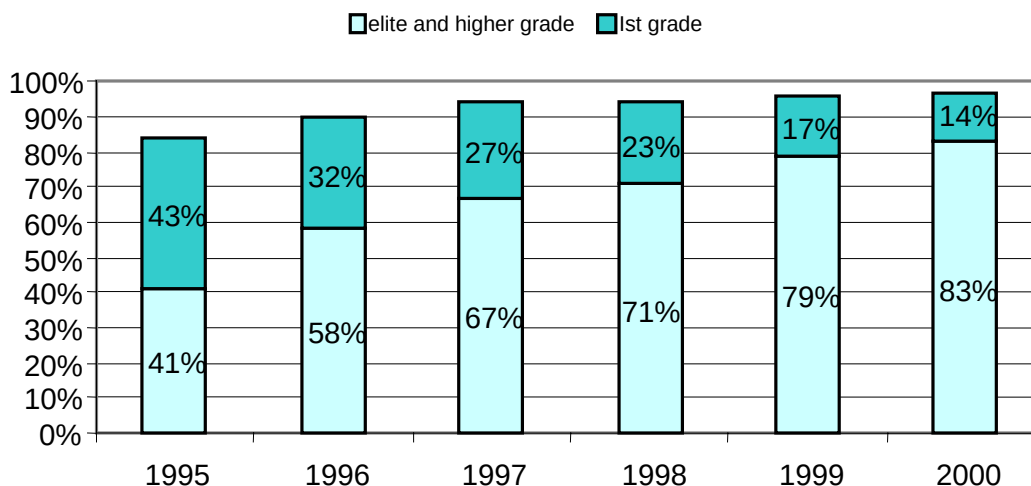
Processing industries can influence the quality of milk by price policy. The government can contribute by implementation of measures like milk recording, independent raw milk quality testing and investment support.

For certain periods of time direct payments might be necessary, as they help to overcome periods when prices are low.

Estonia has a fairly long tradition in improving raw milk quality. The first raw milk standard was established in 1994 and became a basis for milk classification according to the total number of bacteria and somatic cells. By decree of the Minister of Agriculture in 1995, this standard became compulsory for all purchases of raw milk.

The quality of raw milk has significantly improved in recent years. This has been possible due to raw milk quality testing by enterprises and the improvement of equipment by milk producers.

Figure 5. **Quality of raw milk**



Source: Statistical Office of Estonia.

The share of 2nd grade milk has decreased constantly. There are several reasons for this. First, in 1995 the raw milk standard was made compulsory. Second, enterprises have been forced to deal with the quality of their products, faced with heavy competition on different markets. Quality of the end products is foremost determined by the quality of raw material.

Thus, a corresponding price policy has been elaborated, and the price for 2nd grade milk was set very low, which did not stimulate producers to produce milk of such quality.

Table 1. **Comparison of Estonian and EU raw milk requirements**

	EU	Higher grade	I grade
No. of bacteria 30°C ml	≤ 100 000	≤ 100 000	≤ 500 000
Somatic cells (per ml)	≤ 400 000	≤ 400 000	≤ 500 000
Special weight g/l	not less than 1 028	not less than 1 027	not less than 1 027
Freezing point °C	not more than -0.520	not more than -0.515	not more than -0.515

Source: Ministry of Agriculture.

According to the “Milk and milk-based products hygiene requirements” starting from January 1st, 2001, food for human consumption can only be produced from higher and grade I milk. As of January 1st, 2002, human food can only be produced from milk meeting the requirements of elite or higher grade. These criteria also respond to the raw milk requirements of the EU.

Opportunities of different farm structures for the quality assurance

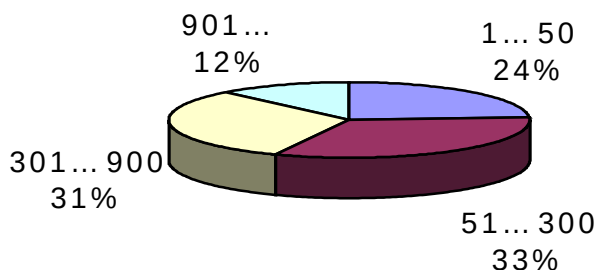
For the quality of raw milk the milking equipment is essential. There are three different types of milking equipment used in Estonian farms: pipeline, parlour systems and bucket milking systems.

Of the milking systems installed in Estonian dairy farms 60% are pipeline, 17% parlour systems and 27% bucket milking systems. The majority of pipeline milking systems were installed in the 1970s and 1980s. Most of these pipelines are obsolete. In recent years in addition to the installation of new milking equipment the reconstruction of old ones has been started. Nearly 40% of production farms are equipped with contemporary milking and cooling equipment.

Farm size is crucial to the ability to make the necessary investments.

Raw milk production in Estonia is concentrated on big farms. Sixty-eight per cent of herds consist of 1 to 10 cows, but only 10% of total Estonian milk production is produced in these herds. At the same time 0.2% of herds consist of more than 900 cows, but 12% of the milk comes from these herds.

Figure 6. Total milk production by herd size, 2000



Source: ARIB.

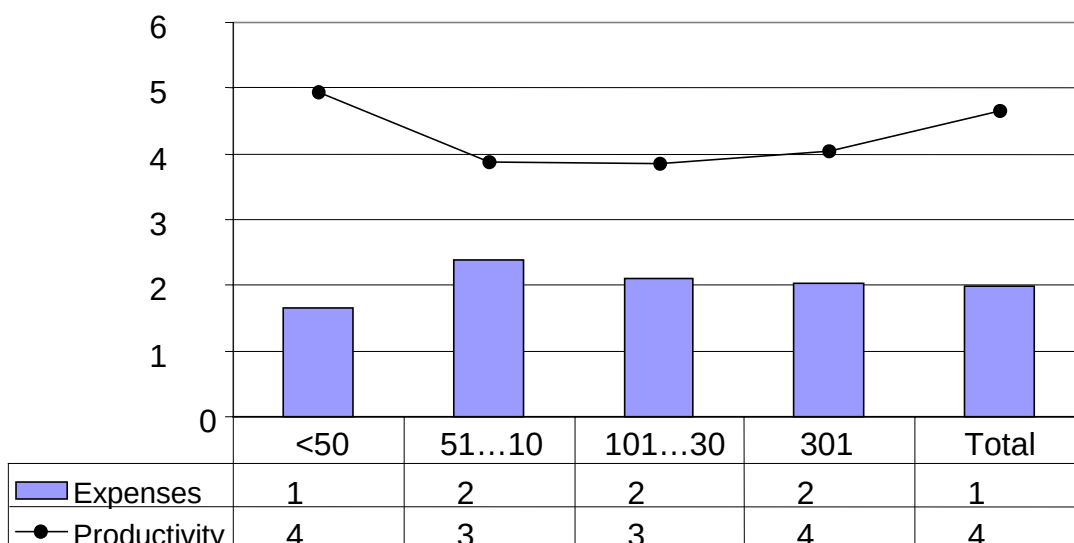
Although the farm structure and milking systems in general create a good basis for achieving high quality, many need to be improved. According to expert assessment, about EEK 3 billion should be invested in dairy farming until 2006 to improve the present situation and bring farms into compliance with the hygiene requirements.

Production costs in different farm structures

There are two different aspects of production costs and ability to invest. Although smaller farms seem to have the lowest costs, labour expenses are hardly reflected there. The ability to invest in more heavy equipment like tractors or milking facilities is given preference on the bigger farms that can more easily afford such large investments and also obtain credit from the banks.

Figure 7 shows the real average expenditure per tonne of milk in milk production companies of different sizes. It shows that the higher the level of milk production, the less is spent on production of one tonne of milk. The average milk production in the analysed group was 4 651 kg per cow in a year and expenses per tonne of milk produced were, on average, EEK 1 981. If we add here the expenses made on the rearing of the replacements then, on average, EEK 2 500 was the cost of producing one tonne of milk.

Figure 7. **Cost of production of one tonne of milk according to the size of herd**



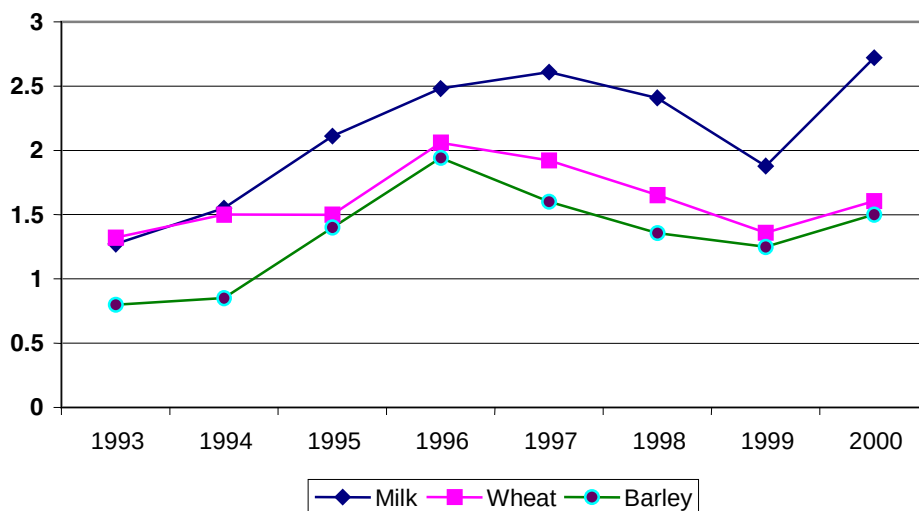
Source: Jäneda Training and Advisory Centre.

According to the analysis it can be deduced that based on the level of milk production, where a cow produces at least 4 000 kg of milk per year, milk production is most practical in enterprises with more than 300 cows. Small producers (<50 cows) had the lowest costs on the production of one tonne of milk, but in this group the cost of labour was very low and apparently not counted properly.

Farm gate price development and its impact on different structures and on different marketing channels

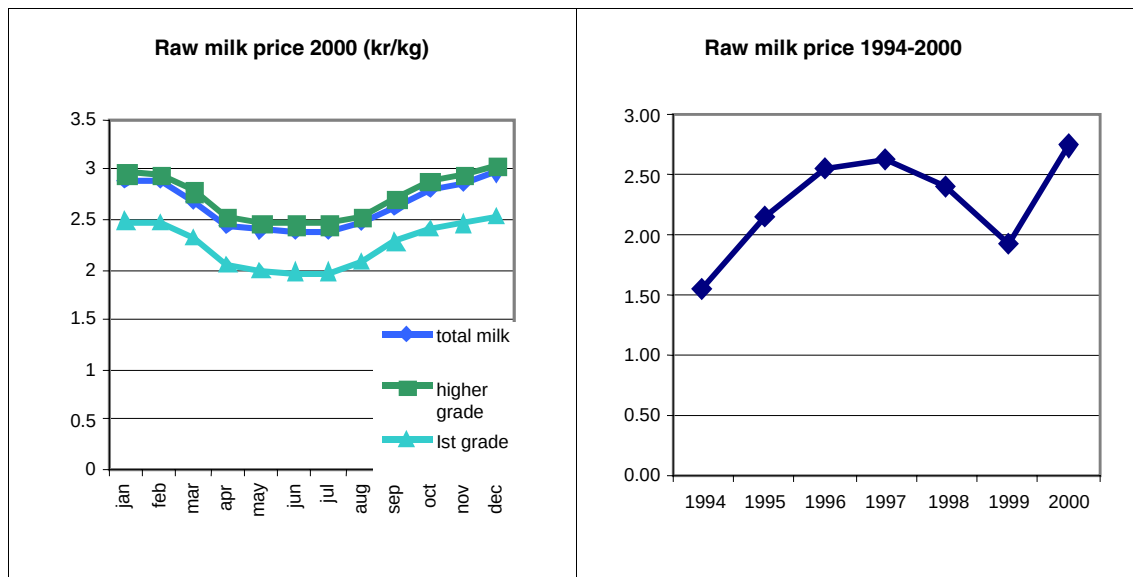
After the low prices that persisted for 1.5 years (since the second half of 1998), the purchase price of milk has again reached the level of 1997. Favourable world market conditions resulted in a rise in producer prices and the market situation of local producers improved.

Figure 8. **Development of producer prices in ESTONIA**
(EEK/kg)



Source: IER.

Figure 9. **Price of raw milk**



Source: Farm gate and producer prices of agricultural products in Estonia, IER.

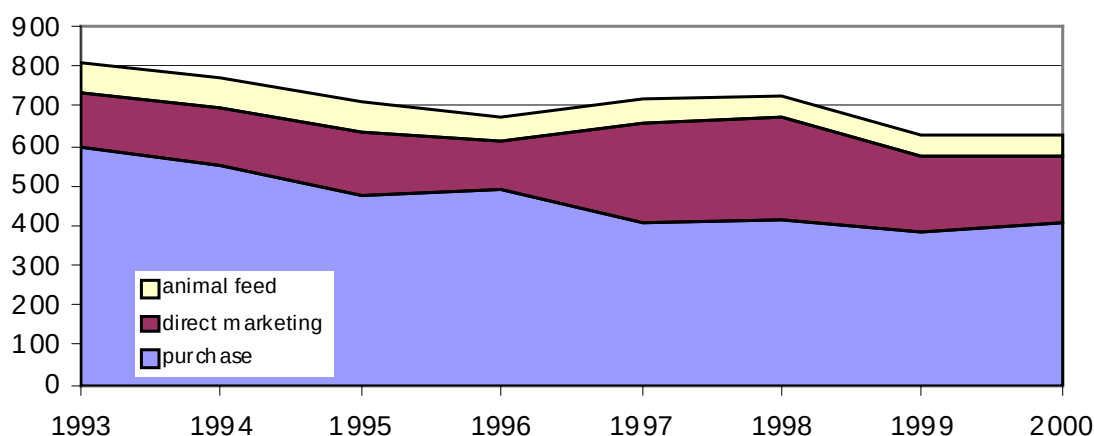
During the period of low prices, those enterprises which had to repay high loans had the most severe difficulties. On the other hand, small farms with a lot of manual labour and low level of capitalisation could overcome the problems most easily. However, for the smaller farms, especially the very small

ones, quality is a serious problem. Also, for processing plants it is a heavy additional cost to organise frequent collections of milk from small producers with unreliable cooling equipment.

Another important aspect concerns the sales of raw milk. A considerable amount is still marketed directly. This allows for better prices, which are sometimes twice the price paid by processing facilities. However, the trend here is falling as prices in processing enterprises have stabilised at a higher level, the quality is improving and the hygiene rules of direct sales are tightening.

Figure 10. **Utilisation of raw milk**

('000 tonnes)



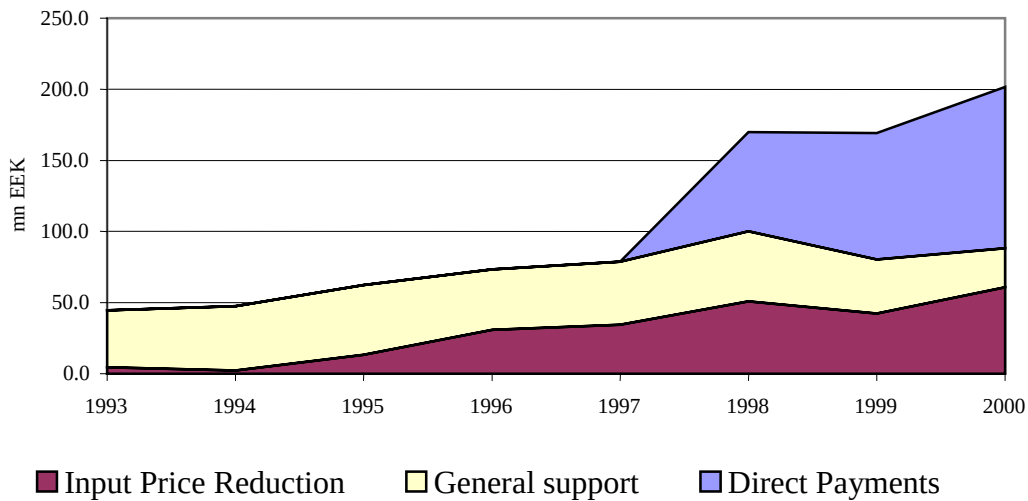
Source: *Animal Husbandry*, Statistical Office of Estonia.

State measures for promotion of the development of milk quality and income of farmers

The government introduced, at the beginning, soft measures like subsidised credits (since 1993) and interest compensation (since 1993). For smaller farms, tax relief was granted: from 1989 to 1994 for family farms (based on Family Farm Act), and since 1995 for smaller farms (based on minimum income tax). Investment support was introduced in 1997. In 1998, compensation for weather damage was paid.

Since the second half of 2001 the long awaited SAPARD – programme was started, which is planned to support, among other things, production of milk with EEK 360 million until 2006.

Figure 11. Budgetary support to the milk sector



Source: Trade Bureau, Ministry of Agriculture.

Summary and outlook

Milk is an important product for Estonia: its share in GAO is still 25%. Regarding animal production, the decline in the number of cows has stopped and milk yield is improving. The quality of raw milk has constantly been the focus of attention in Estonia. The full retail value of milk and milk products will only be realised if quality is maximised. To achieve that, investment in farms for improvement of hygiene conditions and renewal of milking equipment is needed. According to the calculations of price, it is most practical to produce milk in herds of more than 300 cows. Taking into consideration the current purchase price of raw milk, the income from direct subsidies and investment support of the SAPARD programme, it is realistic to guarantee farms' adherence to EU requirements and further improvement in the quality of milk.

Regardless of the improvements in the quality of raw milk, the actions taken so far must be continued and new measures taken to keep the quality of raw milk produced in Estonia from becoming an obstacle to trade.

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SITUATION AND TRENDS IN THE LATVIAN MILK PRODUCTION SECTOR

By Ms. Inga Jēkabsone

Abstract

The dairy sector is historically one of the priority agricultural sectors in Latvia. Both climatic and soil aspects provide favourable pre-conditions for its development.

During the last decade there has been a significant reduction in Latvian dairy production figures, as was the case in most new-formed states in Central and Eastern Europe. The reduction affected not only the volumes of milk production in Latvia, but also the quality of milk and the structure of dairy farms. The financial crisis in Russia in 1998 also had a negative impact. Nevertheless, in 2000 there has been a slight increase in the sector, and it can be anticipated that the upward trend will continue. The productivity of Latvian dairy cows has been steadily increasing since 1993.

The structure of milk production has remained fragmented since the early nineties due to the change in property rights to the production assets from 100% state owned to private ownership. Due to the privatisation process and abolition of large state farms, the bulk of dairy cattle today is kept in small individual farms with no more than 5 cows. However, a trend toward the formation of average sized dairy farms with 15-100 cows and modern technologies has appeared in recent years.

State support in the form of direct and indirect subsidies to milk producers has been allocated since 1996, and in recent years it has been focused on breeding activities, cattle registration and identification, and fulfilment of the milk monitoring programme. The aim of support is to increase total milk production in the country by modernisation of farms and increasing cow productivity.

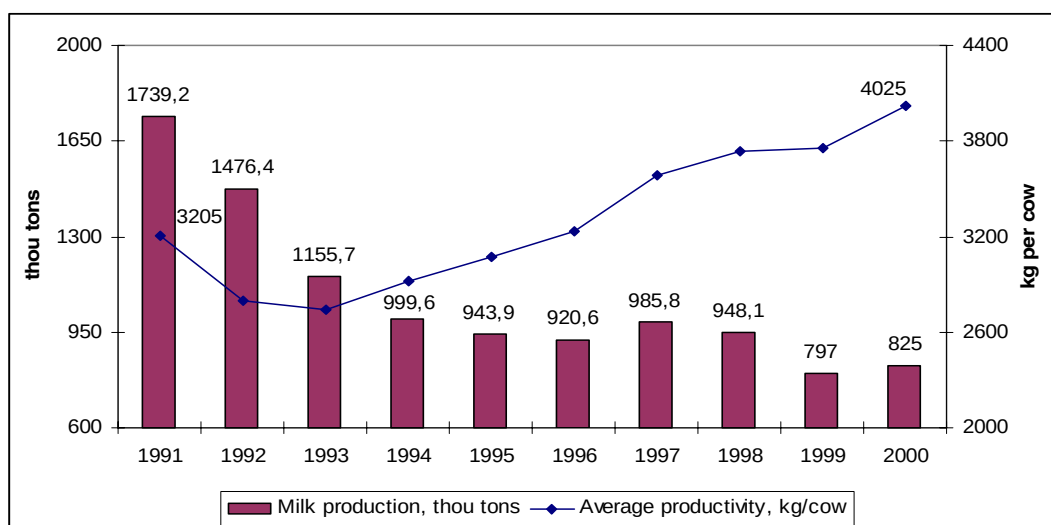
Production

The dairy sector is still one of the priority agricultural sectors in Latvia. The pre-conditions for development of the sector are favourable from both the climatic and soil aspects. Besides, there are more people employed in dairy compared to other sectors of agriculture. In 2000, the value of final production of milk accounted for up to LVL 65 million, which represents 45% of total final production of livestock products, and exceeded the corresponding 1999 figure by 13%.

In the last 10 years when Latvian agriculture was undergoing the transition to the principles of a market economy, a dramatic decrease occurred in the whole dairy sector, both in milk production and processing volumes. The world financial crisis of 1998, with its major impact coming from the Russian market, interrupted the slight positive growth, which had emerged in 1997. However, in 2000 the development trend in the sector turned upwards again, exceeding the figure of 1999 by 26.3 thousand tonnes or 3%. Moreover, the bulk of the increase has appeared in the individual sector, while in the statutory farms milk production has decreased. It can be expected that in 1999 production had reached its lowest level and that in the near future steady, if not significant, increases will appear. One of the major reasons for such a prediction is the improvement of the processing and marketing of milk products.

Figure 1 below reflects the dynamics of milk production in comparison to the average productivity in the period of 1991–2000.

Figure 1. Milk production and average productivity in Latvia in 1991–2000



Source: Latvian Central Statistical Bureau.

As Figure 1 shows, notwithstanding the decrease in total milk production by 58%, the average productivity of dairy cows has increased by as much as 25.6% during the reference period, and in 2000 reached 4 025 kg/cow. This trend can be enhanced by improvements in breeding activities, introduction of high quality cattle in the dairy herds, as well as improvements in feeding technologies.

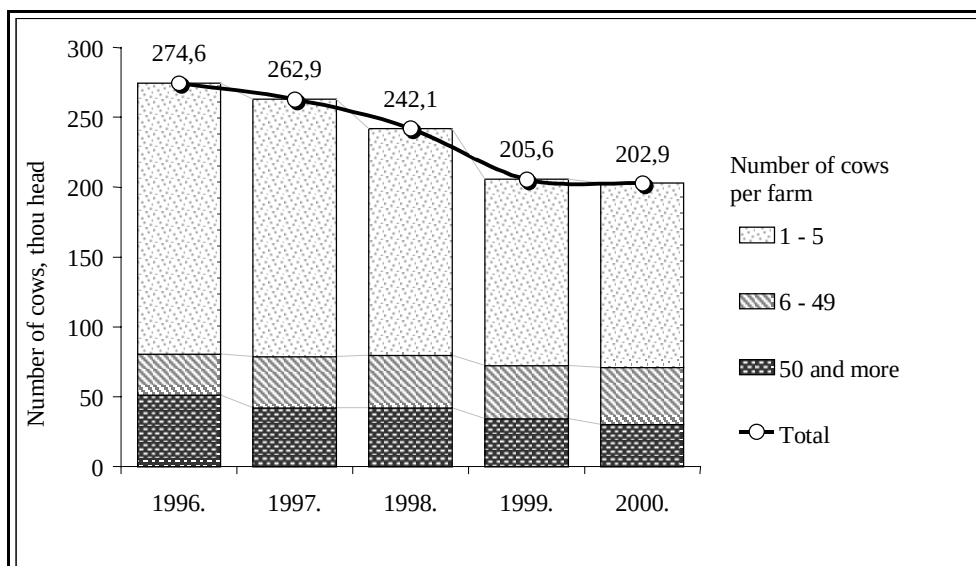
As one of the factors behind the decrease in the volume of total milk production, the reduction in the number of dairy cows can be mentioned. The reduction amounted to 62% (Figure 2) in the year 2000, compared to the figure in 1990. Nevertheless, the reduction can be partially attributed to the elimination of low quality cows from the dairy herd. However, today the situation of renewing the herd has become problematic, as Latvian farmers are finding it difficult to purchase high quality breeding animals.

More optimistic figures can be seen from the milk-recording programme. The average productivity of cows under the milk recording programme in 2000 was 4 408 kg per cow, which is 10% higher than the average productivity in the country. Also, the fat content and protein content in milk derived from cows under the milk-recording programme is higher; in 2000 they were 4.44% and 3.31% respectively, compared to the average of 4.08% (fat) and 3.18% (protein) in the country.

Nonetheless, the number of cows under the milk-recording programme in Latvia follows the general declining trend of dairy cow numbers in Latvia. In 2000, there were only 73 thousand cows registered under the milk monitoring programme, which was 6% less than in 1999, and 9% less than in 1998.

The trend in the total number of dairy cows and the structure of milk production in Latvia since 1996 is shown in Figure 2.

Figure 2. Dairy cow numbers and the structure of milk production in Latvia, 1996-2000



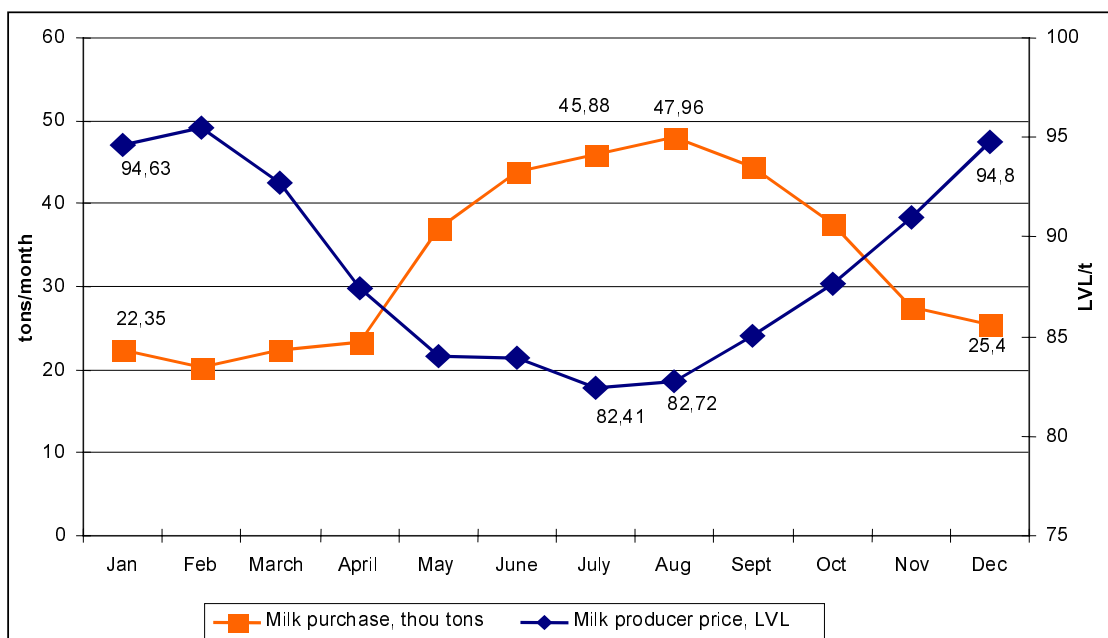
Source: Latvian Central Statistical Bureau.

As was the case for the most of the countries emerging from the former USSR in the early nineties, the ownership of agricultural production assets has changed from close to 100% state owned to mostly privately owned and, therefore, the structure of Latvian milk production was split into many small units, with only a small number of dairy farms holding more than 100 cows. Still, today the structure of dairy farms in Latvia is very fragmented: in 2000 up to 65% of cows were kept in farms with an average herd size of 1-5 cows. The share of those small farms counted for 94% of all dairy farms in Latvia. It is evident that such a structure is not motivating farmers to invest in new technologies on the dairy farm. This factor has also been reinforced by the lack of financial resources.

However, in recent years there has been a trend of a diminishing number of small farms with 1-5 cows and the formation of middle to large size farms with 10–199 cows. These positive developments in the structure of milk production, if supported by an effective state support policy, could lead to further increases in average milk yields, raw milk quality and total volume of milk production. The productive and progress-oriented Latvian dairy producers are aware that intensification and concentration in production, as well as increasing the size of the herd, are the factors which play a significant role in increasing the quality of milk, and improving the quality and health of the herd, as well as diminishing the production cost (veterinary services, investments in technologies, etc.) per unit. This also attracts a higher milk purchase price from the dairy.

Milk production in Latvia, historically, has developed with a marked seasonal character, which creates an important problem in respect of the uneven supply of milk during the year. Both the producers and the processing industry suffer from the seasonality of milk production, due to the excess supply of raw milk in the summer period when milk prices reach their lowest level, while in the winter and fall seasons there is a shortage of raw milk. (Figure 3).

Figure 3. Dynamics of milk purchase and producer prices for milk in 2000



Source: Latvian Central Statistical Bureau.

Nevertheless, it should be pointed out that several farmers have already adjusted their milk production, so as to spread production through the year and to diminish its seasonal character.

As the positive trends in Latvian milk production continue, the shrinking scope of the so-called “grey market in raw milk” can also be mentioned, whereby milk is delivered to processing establishments or sold on the market places without a process of tracing its origin. This can be partially attributed to the steadily increasing milk producer price, which in 2000 increased by 8.2% over 1999. A further improvement in the monitoring of the milk market in Latvia can be anticipated from implementing the system of detailed accounting of all milk quantities purchased by dairies from each individual milk supplier, broken down by individual quantities and quality classes. This system, called the Milk Producers’ Register, will be implemented as from 1 January 2002 under the recently adopted Regulations of the Cabinet of Ministers, “On circulation of milk, treated milk and milk products”, but already today it is functioning partially on a voluntary basis. In view of Latvia’s integration into the European Union, the register will form the basis for implementation of the milk quota system.

State support to milk production

The main strategic goals of the state policy in the milk production sector of Latvia are defined in the Programme for Development of Agriculture for the year 2001, and are:

- formation of a rational milk production structure;
- milk production conforming with the sanitary, hygiene and animal welfare requirements of the EU;
- improving raw milk quality;
- increasing the productivity of dairy cows (reaching up to 5 000 kg per cow);
- minimising milk production costs.

In order to achieve these strategic goals, the state support payments are allocated to milk producers under the yearly-adopted Instruction of the Ministry of Agriculture “On state support for production of agricultural products conforming with the EU requirements”. The main accent of state support through recent years has been put on animal breeding measures, updating and keeping the cattle register, as well as technological modernisation of milk production. In 2001, the following support was granted to dairy farmers:

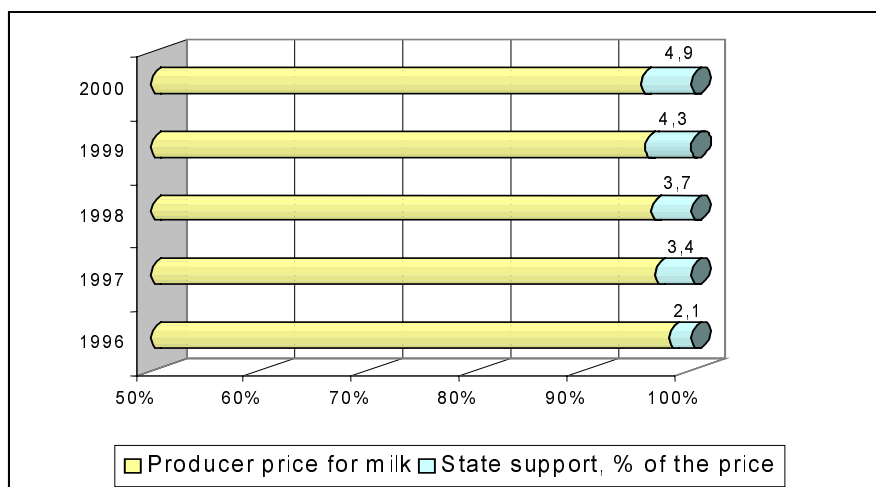
- keeping up of the cattle register (LVL 160 thousand);
- keeping up of the milk monitoring programme (LVL 400 thousand);
- developing dairy farming (Ls LVL 3 340 thousand);
- establishing and keeping up of the Milk Producers’ Register (LVL 40 thousand).

The total amount of state support to milk producers in 2000 amounted to LVL 3 220.9 thousand, which was 17.2% of the total state support to agricultural production. In 2001, the share of support to milk producers in respect to the total national support for agricultural production is estimated at 18.8%.

State support is allocated based on certain eligibility conditions to be fulfilled by dairy farmers, *e.g.*, minimum productivity level of the dairy cow, milk recording programme fulfilment, minimum number of dairy cows in the herd, and other depending on the aim of the specific support measure.

To analyse the effect of state support, its impact on the milk producer price paid by dairies (Figure 4) can be considered.

Figure 4. **Relative share of state support in the producer price for milk**



Source: Latvian Central Statistical Bureau, Ministry of Agriculture of Latvia.

As Figure 4 shows, the state support to dairy farming in Latvia contributes little to the producer price, and in 2000 it amounted to 4.9% of the average milk price.

Besides national subsidies, support for milk production will also be available according to the support programme “Modernisation of agriculture machinery, equipment and construction of buildings” within the SAPARD Programme for Agriculture and Rural Development.

Conclusions

1. The reduction in the whole agriculture sector since the beginning of the previous decade affected not only the volume of milk production in Latvia, declining from 1 892 thousand tonnes in 1990 to only 825 thousand tonnes in 2000, but also the quality of milk and the structure of dairy farms. The Russian financial crisis in 1998 also had a negative impact. Nonetheless, in 2000 there was a slight improvement in the sector, and it can be anticipated that the upward trend will continue. Despite the decline in total production volumes and dairy cow numbers, the productivity of Latvian dairy cows is steadily increasing as from 1993, and reached 4 025 kg per cow in 2000.
2. Milk production structure in Latvia is very fragmented since 1990 due to the privatisation process and the abolition of large state farms. The number of small farms with only 1-5 cows has remained at the level of around 65% during the last 5-6 years: the number of average sized dairy farms with 15-100 cows has fluctuated more widely.
3. State support in the form of direct and indirect subsidies to milk production has been allocated since 1996 and in recent years it has been focused on breeding activities, cattle registering and identification, and the fulfilment of the milk monitoring programme. In 2000, state support amounted to 17.2% of total state support budget to agriculture, and in 2001 it is estimated at LVL 3 940 thousand, which would comprise 18.8% of total support to agriculture. An assessment of the contribution of state support to the milk

producer price paid by dairies, shows that the price is only marginally affected, by 4.9% in 2000 and 4.3% in 1999.

4. A slight trend of centralisation and concentration is occurring in milk production in Latvia, which should contribute to minimising production costs (new technologies, veterinary services, salaries, etc.), as well as to improving milk quality.
5. The productivity of cows under the milk recording programme is higher than the country's average figure, but the number of cows under the programme is declining, following the downward trend in total dairy cow numbers in Latvia.
6. The "grey market" in raw milk is shrinking due to measures for increasing controls and improving monitoring on the milk market, as well as to steadily increasing milk producer prices from dairies.
7. By steadily improving the feeding technologies and introducing high quality breeds in the Latvian dairy herds, the herd quality is improving and the volume of milk production is expected to increase.
8. The acquisition of high quality breeding animals is problematic today for Latvian dairy farmers due to the "empty" breeding cattle market.

THE EMERGING FARM STRUCTURE OF MILK PRODUCTION AND TRENDS IN PRODUCTION IN LITHUANIA

By Mr. Vytautas Lekešys

Abstract

Small farms are dominant in the production structure of the Lithuanian dairy sector. Low productivity of dairy cows, insufficient breeding work, farmers' inadequate appreciation of the benefits of co-operation, and development of co-operation are just some of the difficulties. Financial support from the Government and SAPARD programme is absolutely necessary for the enlargement of dairy herds and improving animal keeping technologies. The establishment of a data network for dairy farms is needed. Big and competitive farms will produce the high quality milk for Lithuanian dairy industry. Only co-operation can secure constant and higher income for milk producers.

Lithuania has kept the old cattle-breeding traditions and has taken care of stock-breeding, therefore it has a good potential for developing dairy husbandry. This was predetermined by historical, economic, and climatic conditions, and continuous attention to the problems of stock-breeding. All the work was done by cattle breeders.

After the re-establishment of Lithuania, the “self-dependence” associated with the agricultural reforms started. The methods of farming were changing rapidly, as well as ownership forms. The number of cattle decreased. Dairies were privatised; the traditional markets for dairy products were lost. Later on, concentration of dairies took place, three groups were formed (“Rokiskio suris”, “Pieno zvaigzdes”, “Zemaitijos pienas”). These groups process 80% of all raw milk bought in Lithuania. Today more than a half of Lithuanian dairy products are exported. Dairies have EU certificates, and the dairy products are of high quality. Yet, it must be pointed out that there is a big development gap between the raw milk production sector and the milk processing industry.

Unfortunately, agricultural reform was based on emotions rather than economic principles. There are large areas of good, but unused land in Lithuania today. These areas are not decreasing, partly due to the very low prices for plant products. The process of restitution of land ownership rights is not yet over, and juridical persons are still not allowed to buy land. It is estimated, that dairy farming provides the highest profits per land unit. It is possible for Lithuania to have an economically strong agricultural sector, and especially dairy sector. Therefore, it is very important to evaluate the current situation in the dairy sector and foresee the practical means to support its development. There are 460 000 dairy cows in Lithuania today, 120 000 less than in 1996–1997. Last year the average milk yield per cow was 3 673 kg, 524 kg higher than in 1996–1997. Looking at this information, one can conclude, that productivity is improving. Yet, this would be a one-sided view.

We should not forget that milk is produced by farms with 1–3 cows. Today they are the main raw milk suppliers. It takes tens of thousands of rural inhabitants, with a few hectares of land and unable to enlarge the number of dairy cows to 5–7 or 10. The majority of dairy farmers have no agricultural education; they are pensioners without any possibilities of developing the dairy farm because of old age, absence of buildings and the low price for raw milk. There is no economic reason to introduce modern milking, refrigeration, or forage preparation technologies on this type of farm. On the other hand, only these modern technologies can guarantee the production of high quality milk. It is very difficult from a technical point of view to separate the high quality from lower quality milk.

Farmers and agricultural enterprises are not able to accumulate enough own capital for long term investments; therefore, those who develop specialised dairy farms should have open and easy access to investment programmes. Increasing the competitiveness of dairy farms would speed up the restructuring, modernisation, and productivity increase on dairy farms. It would help to improve milk quality, to stick to veterinary – sanitary requirements in all segments of production. Small farm owners are not able to change the fodder structure, and poor quality hay and low quality pasture grass are used. Only economically strong dairy farms can balance fodder properly (to make enough haylage, corn silage, rape-cake).

It is the opinion of the co-operative board, that, first of all, the Ministry of Agriculture together with the specialists from county Rural Affairs Departments should urgently analyse the dairy farm situation. This would allow the identification of dairy farms which are promising and able to fulfil EU requirements. Then, there is a need to collect the data about farms, which are capable and plan to increase activities by modernising production technology. Third, information should be collected about small, not promising farms, which will produce milk only for their own needs in the future. All this data would allow us correctly to evaluate the dairy sector, and of even greater importance, to distribute support to the dairy sector properly – from the special rural support programme as well as from the SAPARD. We should not repeat the previous mistake, whereby the Government was supporting the 1-2 cow owners. The total cost was LTL 18.5 million, and had no effect. This experience has shown that herds could not be increased in this way. It only prolonged the existence of small raw milk suppliers. In our opinion, the majority of small milk producers will not be able to enlarge their herds and to use the provided support properly. If the aforementioned financial support (LTL 18.5 million) had been used directly for the enlargement of herds, construction of cow barns, buying of equipment, this would have had a better result. Financing small milk producers reduces their incentive to choose another kind of activity. It has to be pointed out that the support given was social, and not to improve efficiency. The Ministry of Agriculture has to promote the production of high quality competitive products, and the social issues have to be handled by the Ministry of Social Security and Labour.

We think, that promising dairy farms have to be supported, to enable them to increase their herd. Only then, would the investments have the desired effect. This would have a positive influence on the dairy product market. On the one hand, producers would have more income stability, on the other hand, the processors would receive plenty of high quality raw milk. Milk collecting costs would decrease, and so would the costs of the final product.

Lithuania has for several years been preparing for EU membership. Our milk producers know about the EU system, and its functioning in the dairy sector. EU farmers know what they will get for milk sold. Lithuanian milk producers can only dream about this kind of certainty. Today, Lithuanian processors are dictating prices to milk producers. Lithuanian milk producer prices are equal to 48% of EU milk producer prices. Lithuanian milk producers could be compensated by direct payments for productive cows. There is always a way out from any situation, you have only to look for it. The explanation by Lithuanian politicians, namely that everything has to be ruled by free market principles, has led to the situation, where milk producers cannot survive. Three or four years ago Lithuanian milk producers were receiving subsidies of LTL 78–100 million yearly. Now, for the second year, they get a price, which is substantially lower than the price of three or four years ago.

Lithuanian agriculture, and the dairy sector in particular, is influenced by EU enlargement, agreement with WTO, globalisation, etc. Lithuania is amending the laws and requirements for milk producers according to EU regulations. Dairy farming is not just the production of dairy products. It covers also animal welfare, food security, healthiness, and rural development. Our milk producers are involved in discussions with politicians, and are trying to convince society that they are not only producing food,

but also satisfying other needs of society. Yet we need to spend more of our time and efforts on economic and legal education, and to assess the benefits of organic farming. Milk producers should receive sufficient legal support concerning environmental requirements and the ways in which they have to be fulfilled. And we should not forget the most important thing – discussions with other participants in the market. Only dialogue, based on the actual numbers, would allow the milk producer to prove that there are no more possibilities to decrease milk costs. Traders, selling the final product are making quite good profit, which is used to improve the trading system. At the same time, the importance of the milk producer as a partner is underestimated. Such a situation will not improve the relations between milk producers, processors and traders.

A majority of Lithuanian milk producers are viewing the SAPARD programme as a saviour. The National Payment Agency, though, is forecasting, that there will not be enough SAPARD finances to cover all the prepared projects. In addition to this, the National Payment Agency is not accredited by the EU yet, and it is not known when the SAPARD finances will reach Lithuanian milk producers. Their incomes and jobs will depend on receiving this support directly.

Lithuanian agricultural production fell in recent years, and there are no clear signs of recovery. We could say that the trend is gloomy. For example, in 1995–1999, 1.33 million tonnes of milk were sold yearly, and this decreased to 1.1 million tonnes in 2000. There are only 1 300 specialised dairy farms keeping 11 or more cows. This group of farms has about 64 000 cows in total, accounting for 13.9% of all cows in Lithuania. The situation with the number of controlled cows is even worse. Only 20% of all cows are controlled. If controlled cows made up 70–80% of total cow numbers, this would allow us to have higher-bred younger animals, and improve the formation of herds focused on milk protein. Dairies would collect milk at lower costs. It is not known what proportion of all produced milk is bought by dairies. It is obvious, that there is much more milk produced than dairies are buying, and this surplus is used for own purposes, sold to neighbours or on the retail markets in cities and fed to animals. Milk market organisation and development of farm data networks are important issues, which can decide the development of the dairy sector.

A few words about the agricultural co-operative “Lietuviskas pienas” (“Lithuanian milk”). The insufficient development of the dairy sector has stimulated us to create a co-operative, which has become a necessity for milk producers. We have realised, that only through the co-operative can milk producers participate in milk production and market forming processes. A single milk producer, even a relatively big one, has difficulties in defending his interests when he deals with milk processors. A co-operative is an agricultural unit, established by a group of natural and legal persons. The agricultural co-operative “Lietuviskas pienas” member has to be a farmer or legal person, producing and selling not less than 300 kg of high quality milk per day. Co-operative members elect a board of 12 persons. The administrative – organisational work in the co-operative is carried out by two persons. Soon they will employ a specialist, who will take care of cattle feeding rations, mineral supplements, improving milk content and quality. This will also improve the productivity of cows. At present, there are 50 members of the co-operative, and we sell more than 160 tonnes of milk daily. The co-operative has been working only nine months, but we are satisfied with the results. The work already done (negotiations with milk processors concerning milk prices, milk quality testing programme, content of fodder and its supplements, etc.) will allow us to consolidate our position among milk producers. During the summer, when there is a peak in daily milk production, for the period from 1 July 2001 to 1 October 2001, our co-operative members received a price 10% higher for one kilogram of basic milk, compared to the early summer. The price our co-operative members are getting now only partially covers the needs of milk producers.

The Chairman of the Board, Pranas Dailide, is working in a co-operative agricultural enterprise “Gruduva”. Last year they had 439 cows and produced 7 498 kg of milk per cow. Another member of

the board, Martynas Butkevicius, had 21 cows, produced 6 281 kg of milk per cow, with 4.29% fat and 3.30% protein. These examples show, that dairy herds of our co-operative members are much more productive than the Lithuanian average.

The task of the co-operative is to cover the economic and social needs of members. Our objectives are: to produce high quality milk, improve the delivery of milk, defend the interests of members in all institutions, and get the best price for milk. Achieving these objectives will benefit our members economically and allow for a faster development of the milk sector.

Conclusions

1. The attention and support from the Lithuanian government to the dairy sector would ensure further development of the sector.
2. The use of SAPARD funds would ensure implementation of modern milk production technologies.
3. Improvement of the stock-breeding work, and implementation of modern fodder technologies would increase the productivity of cows and enhance milk protein.
4. Co-operation of milk producers promotes the development of dairy farms, and provides an opportunity to represent farmers in negotiations concerning the price of milk.
5. Improved co-operation among milk producers, aiming for high quality milk and better milk price, would ensure a stable income for milk producers.
6. Sufficient investments into developing the dairy sector would allow milk production to meet EU requirements.
7. Only dairy farms that are modern and sufficiently large will be competitive.

Discussant Paper

IMPLICATIONS FOR PRODUCERS, PROCESSORS, CONSUMERS AND GOVERNMENT POLICY

By Mr. Håkan Loxbo

Implications for producers

The farm structures of milk production in the three Baltic countries differ a lot. The extremes are on one hand Lithuania, where in 1999 about 70% of raw milk supplies came from herds with 1-5 cows, and Latvia, where about 65% came from herds with 1-5 cows. On the other hand Estonia, where 64% of its main raw milk supplies came from herds with more than 50 cows in the year 2000, is well above the EU average. Although the privatisation process is not yet fully completed, the results of this process are quite different in the three countries.

In spite of the different structures so far, a number of factors that affect structures are at work in all three countries: EU and domestic quality requirements, actual quality and productivity (yields per cow), unused production potential, investment needs, domestic demand, local direct sales, export opportunities to the EU, with significant improvements as from July 2000, exports to other markets (Russia), domestic prices, structure and competition in the processing stage including FDI, domestic supports and EU support (SAPARD).

And then there is great uncertainty about the future terms after accession to the EU. The greatest uncertainty in the dairy sector is the issue of milk quotas for new member states (MS) in the short term, and the possible abolishment of production quotas in the longer term, together with possible future direct payments in the EU to dairy cows. In the EU perspective there are also other important aspects that will affect the dairy sector of new MS, not least the conditions that will apply for other commodities and sectors (grains, sugar, beef...).

Producers, in order to survive economically, have to be profitable and be able to produce high quality. Their profitability is determined by costs and revenues. In order to be able to compete certain costs must be endured, *e.g.* investments have to be made in equipment, breeding, productivity, quality requirements and size. On the income side, the prices received are crucial combined with payments from support schemes.

The reports presented indicate that profitability is closely connected with herd size and quality adjustments. It seems obvious that the structures in Latvia and Lithuania have to change into bigger herds and co-operation in order that full time producers can survive economically, to be able to make the necessary investment in quality milk, feeding systems and other modern equipment, in order to reap the benefits of quality payments and of increased domestic and export demand. The adjustment process towards bigger herds, higher productivity and quality production by means of SAPARD funds, domestic supports and driven by EU and domestic requirements will be difficult but necessary. In Latvia such a development is already on its way. There is now a trend towards more middle and large size herds (10-199 cows) and an awareness of the importance of size for profitability and quality among producers and from the side of the Latvian state as reflected in the main strategic policy goals for 2001 and the conditions required to obtain state support.

One important issue is: will the structural adjustment process be alleviated by increased domestic demand and export possibilities? Another issue relates to how expectations regarding the future conditions after accession to the EU will affect the adjustment process.

Estonia's big-producer structure, where farms with 300 cows or more are "most practical", has facilitated investments in milk quality. National requirements as from 1 January 2002, whereby only higher or elite quality can be used for human consumption, will probably make it impossible for many small producers to survive economically. For high quality - mostly big producers - the prospects for the pre-accession period are bright due to high domestic demand and improved export possibilities to the EU. This, together with SAPARD funds and domestic direct payments, may give some room for smaller producers to invest and expand. Expectations regarding the future conditions after accession to the EU will probably also affect the structure. How the structure will develop after accession is another issue. Will the "most practical" production take place at farms with more than 300 cows? There will probably be room, however, for profitable production at much lower levels if one looks at the EU average.

Implications for processors

Big producers with high quality milk are attractive for processors due to: quantity, quality and lower collecting costs. The costs to collect the milk are lower, the profits made from the end products higher, and therefore, the prices paid can be higher. If high quality milk supplies are limited, competition for supplies by means of higher prices can be anticipated, provided that the processors do not co-operate in price cartels. The market power of milk producers seems to be strong in Estonia, where the dairies are competing for market share and total milk supplies are limited. In Lithuania and Latvia most of the small-scale producers seem to be price-takers with limited market power due to their limited size, limited competition among the three big dairy companies (Lithuania), and due to quality and collection costs. Changes towards bigger herds and higher milk quality will be of mutual advantage to both producers and processors, although the latter will lose some market power to producers.

Implications for consumers

Consumers are naturally interested in reliable supplies, quality, taste, choice between products, safe products and reasonable prices. In most countries, consumers have a preference for domestically produced products, preferably locally produced.

Since structure is interrelated with cost efficiency, profitability, stable supplies and quality it can be easily argued that structure in primary dairy production can have a lot of implications for consumers. How the benefits due to structure in the end will affect consumers depends on, to what extent there is competition in primary production, as well as in the processing industry and the retail trade.

Small producers cannot easily afford to invest in quality. A typical small-producer structure therefore, will have problems in satisfying consumer demand for quality. If this type of structure persists, quality demand cannot be met from domestic sources. If quality investments become normal in the whole sector, this would mean that structures would have to increase from the small-scale structure. This could theoretically be avoided by public interference in the adjustment process.

A development towards big farms seems to be good for consumers when it comes to the quality factor. If satisfactory quality levels have already been reached, then there are other benefits of larger versus smaller producers: more cost-efficient production when it comes to feeding, breeding and machinery

follows from size, which can offset part of the increased production costs due to quality requirements. A development towards more large-scale production will mean that the share of production going to local sales will decrease. However, this may be to the detriment of certain consumers. On the whole, such a development would mean more stable domestic deliveries and a better competitive situation for the sector vis-à-vis imports. In Estonia, the market share of imports has decreased rather drastically in recent years. The increased consumer confidence in domestic products seems to be due to the increased supply of domestic high quality products. This pattern will probably be seen also in Latvia and Lithuania too, concurrently with more efficient herd structures and increased domestic supplies of high quality milk and dairy products.

Implications for government policy

In Estonia, the dominant big-scale structure with a very high percentage of production fulfilling EU standards has alleviated policies to go further on the quality road with rather limited domestic support and with the help of SAPARD funds. Producers not fulfilling the standards, mostly small-producers will soon be forced to leave the sector. Special support for the small-producers doesn't seem to be an option.

In Latvia and Lithuania the bulk of raw milk production comes from small producers resulting from the privatisation process, as Mr. Lekešys puts it, based more on “emotions than on economic principles”, producers seeing SAPARD as their one and only “saviour”. The policy implications in these two countries can be quite complicated. Like in other European countries, structures will probably have to change to larger and fewer. This process goes relatively fast, if there is no public interference, as can be seen in the decreasing numbers of small herds in Latvia over the last 5 years.

The existence of state policies aiming at bigger and more efficient herds combined with efficient means to achieve these goals will speed up the process. The funds available and other policy measures must be used to promote this development. The process of setting eligibility criteria and distributing the funds to specific producers can prove difficult.

SESSION 2. MARKET AND STRUCTURAL CHANGES IN THE DAIRY SECTOR

RECENT TRENDS IN DAIRY PRODUCT DEVELOPMENT AND MARKETS

By Dr. Thomas Cox

Abstract

*Several key themes characterise recent trends in dairy product development and markets: world product markets are increasingly driven by milk components (NOT milk!!!); international (**Codex Alimentarius**) and national standards of identity that provide both opportunities and barriers to dairy product development and markets; WTO and regional trade barriers; market demand drivers (population and incomes) both regionally (domestic demand) and internationally (export demand); world supply/demand balance which impacts world export/import prices and hence, the viability of new milk supplies in a world dairy context. The impacts of these key themes are explored from both a developing and developed economy perspective.*

Introduction

I will summarise recent trends in world dairy product development and markets using the following key themes:

1. World product markets are increasingly driven by milk components (NOT milk!!!). These milk components include: milk fat (and fat fractionations); protein (casein, whey protein, and other protein fractionations); lactose. This trend is manifest in the strong growth of world markets for dairy based ingredients.
2. International (**Codex Alimentarius**) and national standards of identity that provide both opportunities and barriers to dairy product development and markets.
3. WTO and regional trade barriers that provide both opportunities and barriers to dairy product development and markets.
4. Market demand drivers (population and incomes) both regionally (domestic demand) and internationally (export demand).
5. World supply/demand balance which impacts world export/import prices and hence, the viability of new milk supplies in a world dairy context.

After elaborating on these themes, I then provide a developed and a less developed economy perspective on dairy product and market trends, that attempts to summarise the implications of these trends for both domestic and export market opportunities and challenges. Lastly, I provide a summary and conclusions section that re-iterates the main points of the presentation.

Product Development and Market Trends: Milk Components (NOT Milk) Is Key!!!

The dairy component based, marketing and procurement perspective on dairy product development and markets, is driven by the constituents of milk: milk fat (and fat fractionations), protein (casein, whey protein, and other protein fractionations), lactose (and lactose fractionations). Much of the current world dairy sector demand growth is “industrial” demand for milk-based ingredients

(intermediate versus final demand products). These trends in world dairy based ingredient demand are driven by:

1. Continued advances in food processing technology, both on the input side (fractionations of milk components) and product side (processes to optimise cost and functionality using the evolving dairy based ingredients). See Appendix Table 1 for some recent examples of this type of food science/technology research.
2. The functional characteristics of inputs and final products.
3. And, the continual search by processors for low cost ingredients and improved product functionality.

Key examples include the whey protein, lactose and milk protein concentrate fractionations of milk.¹

Whey proteins are multifunctional food ingredients with high nutritional value (they provide a complete amino acid profile (particularly lysine) that is easily digested), with a wide range of functional properties that allow the development of new products and optimisation of existing products with considerable cost savings (Bouzas). Whey proteins are easily digested and have excellent metabolic efficiency yielding a high biological value that is ideal for infant and sports nutrition (Pasin and Miller;). About 80% of bovine milk proteins are casein fractionations with the remaining 20% composed of whey protein fractionations. The major whey protein fractionations include β -lactoglobulin (about 50% of the total whey protein content of bovine milk) and α -lactalbumin (about 25% of the total whey protein content of bovine milk). In contrast, about 70% of the protein content of human milk is like whey protein, with 41% being α -lactalbumin (*i.e.*, 28% of the total protein content of human milk). This makes whey protein fractionations (including the minor fractionation lactoferrin, and iron binding protein that enhances iron absorption and does not cause constipation in infants like other inorganic iron supplements) an ideal ingredient for infant formulas (Walzem), as well as sports drinks and nutrition bars (Pasin and Miller). The nutritional benefits of whey proteins include appetite suppression (glycomacropeptide whey protein fractionation), bone physiology, therapeutic use for infants and the elderly, immune system stimulation, antioxidant and anti-carcinogenic properties, HIV (antioxidant properties) treatment, and to aid in the control of hypertension (Walzem).

The wide range of functional characteristics of whey ingredients include use as a fat mimetic (ingredients that have distinctly different chemical structure from fat but which possess similar functional properties in foods – viscosity, mouthfeel and appearance – in low-fat food preparations), gelling and water binding properties, emulsification, viscosification, whipping/foaming properties and adhesion (Johnson). Use of whey proteins as a fat mimetic is mainly for its emulsification properties in low-fat salad dressing, mayonnaise, cream soups, sauces and processed meats. Cost reductions come from replacing or extending more expensive egg whites, hydrocolloid gums, soy proteins and modified starches. The water binding properties of whey ingredients allow for cost reductions by adding more water while yielding a product with the good viscosity and opacity (Johnson).

1. Excellent reference materials, which I use extensively in the following discussion, can be found at the US Dairy Export Council web-site: <http://www.usdec.org/publications/monographs.htm>.

With this wide range of nutritional and functional characteristics, whey proteins are widely used in:

- Baked goods: improved toasting qualities; enhanced crust browning, crumb structure, flavour and shelf life (Burrington).
- Confectionery applications: flavour, colour, texture and coating properties (Bouzas).
- Processed cheese and cheese spreads: improved sheeting, slicing, shredding and spreading; enhanced melting properties; superior flavour and body (Young).
- Ice cream and frozen desserts: cost efficiency and quality improvement as well as nutritional value (Young).
- Fermented dairy products: improved flavour and texture, nutritional enrichment, reduced syneresis and extended shelf life, prebiotic effects, nutraceutical benefits and cost effectiveness (Huginin).
- Processed meats: improved flavour and texture, water binding, cook yield and finished product functional performance (Keaton).
- Lowfat applications: contribute to creaminess, texture, water binding, opacity and adhesion (Johnson).
- Sports nutrition: easily digestible high quality protein that provides energy, high levels of leucine, isoleucine, aginine, lysine and valine, a good source of sulphur containing (antioxidant) amino acids (cystine and methionine), contains glutamine, and is an excellent source of bioavailable calcium (Pasin and Miller).

The most commonly used whey ingredients include sweet whey (a by-product of cheese making), acid whey (a by product from cottage and ricotta cheese), reduced lactose whey, de-mineralised whey (*i.e.*, remove salts), modified whey, a variety of whey protein concentrates (WPC) based on protein content (WPC34, WPC50, WPC80), and whey protein isolate WPI (90% protein).

Lactose products are often used to substitute for cane and beet sugars, especially where domestic sugar policy increases prices of cane/beet sugars (*e.g.*, EU, US, Canada).

While whey and lactose fractionates are usually processed from the whey by-product associated with cheese production, membrane technologies can also be used to fractionate bulk farm milk. A good example of this trend is milk protein concentrates (MPC) that are produced using micro- and ultra-filtration technologies to a variety of procurement specifications. A common MPC export into the US food ingredient market would concentrate the milk proteins (retentate) while removing lactose (and other minerals) in the permeate, spray drying the retentate/proteins, perhaps further refining the permeate (into de-mineralised lactose), and spray drying these fractions. The resulting dry products, (MPC, lactose, de-mineralised lactose, etc.) are widely used in sports drinks, cheese standardisation, and a variety of other applications as substitutes for milk powders (SMP, WMP), evaporated/condensed milks, and even farm bulk milk. Additional membrane processing can be used to further concentrate the casein, serum (whey) protein, and lactose/mineral fractionations.

As the US has relatively low tariffs and no import quotas on MPCs, these products are increasingly attractive to food processors as a way to source cheaper milk solids (and, often increased functionality) from off-shore sources. However, US standards of identity for many cheese products, currently do not

allow the use of MPC ingredients in the manufacturing process. This has led many processors to circumvent these standards of identity and labelling requirements (*e.g.*, producing “pizza cheese” (for which no specific standard of identity exists) instead of mozzarella cheese). These standards of identity issues are addressed further below.

All of these dairy based ingredients are based on processing with membrane technologies. New product development and optimisation of existing product to reduce costs and/or increase final product functionality requires a moderately sophisticated food processing sector and technology. Size/scale economies are important characteristics of many of these processes and technologies, suggesting differential advantages to larger firms and perhaps to foreign direct investment firms who bring knowledge, expertise and capital from other developed markets.

As an example of the types of product and process research that is driving the evolution of the component based, dairy ingredient perspective that characterises much of the new product development and market trends, I include a listing of current dairy related research topics from Dr. Barbano at Cornell University’s Food Science Department (see Appendix Table 1).

The dairy component based, marketing and procurement perspective on dairy product development and markets suggests that it is essential to develop a component based marketing plan, incentive structure, and quality standards, that is, to evolve a competitive dairy sector in a world dairy market context. In the extreme, this implies the evolution of dairy refineries where milk components are fractionated off via membrane technologies and then recombined to specific procurement requirements for both ingredient and final product markets. This provides the opportunity to differentiate markets and add value through increased functionality in the input and final product markets.

Codex Alimentarius versus National Standards of Identity: Opportunities or Barriers?

Many product formulations are governed by national and/or international standards of identity that set minimum/maximum composition and other processing/labelling characteristics. In this context, the impact of **Codex Alimentarius** imposes standards on the types and amounts of dairy based ingredient products for internationally traded products such as confections (*e.g.*, chocolates), cheese and other dairy products, bakery goods, etc.

Recent trends include the proposed Codex standards of identity for cheeses. Current standards dictate that cheeses with standards of identity (cheddar, mozzarella, Swiss, etc.) must be made from milk (including skim milk powder (SMP), whole milk powder (WMP), condensed milks, and cream). The proposed cheese standards state that cheeses with standards of identity must be made from milk or products derived from milk. This seemingly simple change in the standards of identity would allow the use of milk protein concentrates (MPC), caseins, anhydrous milk fats (AMF) and other fat/protein fractionations that are not allowed under the current standards of identity. In many countries (*e.g.*, the US), these cheese products must be labelled as “imitation” or “artificial”.²

Similar changes in Codex and/or national standards of identity would provide considerable opportunities to expand domestic and international markets for dairy based ingredients. This is particularly the case for potential export demand to the extent that the evolving dairy based ingredient

2. The is widespread use of MPCs in the production of mozzarella cheese for the fast food and hotel, restaurant and institutional (HRI) trade. While US standards of identity currently prohibit the use of MPCs in the manufacture of mozzarella cheese, no such standards exist for “pizza cheese”. As well, many processed cheeses and cheese spreads allow the use of MPCs as well as caseinates.

markets create products not thoroughly covered by current trade barriers. This is the case for MPC and casein in the US where tariffs are minimal and there are no import quota limitations. As a result, US imports of MPC have skyrocketed and generated considerable policy discussion as these products likely substitute for domestically sourced milk powders (SMP and WMP).³ The US-WTO commitments may prohibit the introduction of additional trade barriers on these products.

With the evolution of the Codex standards of identity, potential issues in reconciling domestic versus international standards will arise. Will countries be forced to allow imports/exports of products that are inconsistent with national standards? Will such products be subject to domestic/national labelling requirements (such as “imitation” cheese)?

These evolving issues reveal the relative political power of processors and consumers (lower cost ingredients/products with improved functionality) versus farm interests (imported dairy based ingredients will likely substitute for domestic (and likely more expensive) milk products).

Trade Barriers: Additional Market Access or *Status Quo* Protection?

Understanding recent trends in dairy product development and markets must occur in the context of current and evolving WTO dairy trade legislation. In this context, my opinion is that the prospects for further dairy trade liberalisation are somewhat limited. Why? For starters, who among the major trading nations is motivated to further liberalise their domestic dairy markets?

Clearly, the heavily protected dairy economies (US, EU, Canada, Japan) are not so motivated. While the US and Canada would likely support liberalisation in grains, oilseeds, and livestock products, it's not clear that this is the case for dairy. The EU will be totally absorbed in the planned EU expansion and managing the associated issues that threaten the Common Agricultural Policy (CAP). Given recent dairy developments, for the US 2002 farm bill (minimum Class I mover, Class III target price deficiency payments, national pooling with payment limitations, authorisation of regional supply control boards, regional assessment for surplus sales to the CCC under the price support programme), one can make a persuasive argument that the US dairy sector is becoming more like the EU than a “market driven”, “free trade” proponent!!!

Equally clear is that the low-cost dairy exporters (Australia, Argentina, Eastern Europe) will push hard for additional market access (lower tariffs and export subsidies, increased import quotas). The bottom line question, however, is where does the trade policy bargaining power with respect to dairy issues reside?

If the prospects for multilateral dairy trade liberalisation are limited, perhaps there are stronger opportunities for regional trade agreement expansion (*e.g.*, EU expansion, NAFTA/FTAA, MERCOSUR, ASEAN, etc.) This potentially will limit access to non-members (within WTO guidelines). Clearly EU expansion will provide preferential access to new members and the Baltic states' dairy sectors should gain benefits with their eventual inclusion into the EU. But, managing the supply/demand balance in the EU (a roughly 10% structural surplus in production addressed by milk production quotas, export and consumption subsidies, and strong border protections) will remain very challenging in the face of current (much less more liberalised!!!) WTO commitments, expansion to Eastern Europe, and the relatively strong entrenchment of EU farm lobbies who will seek to protect their current share of the more lucrative regional and EU dairy product markets. In this context, the

3. For additional information on this growing US controversy, see the GAO and NMPF web sites in the references.

economic interest and political power of EU dairy processors (and consumers) seeking additional and more competitive milk procurement (constrained by the current milk quotas) must vie with the established interests of the farm milk sectors. This should lead to a lively debate where economic (efficiency driven) rationalisation of the EU dairy sector must vie with the “multi-functionality” and distribution of benefits of current farm/trade policies.

My conclusions? Additional access to world export markets with heavily protected dairy sectors will likely remain very challenging and access to “competitive” world export markets will be very competitive (based on price, quality, tight procurement specifications with sizeable competition from extant world class/low cost/high quality exporters).

Key Market Demand Drivers: Population and Incomes

Growth in world dairy export markets is heavily dependent on growth in regional and country GDP/capita. Clearly, the current world recession has had sizeable impacts on key dairy export markets in the developed economies (US, EU, Japan) and developing economies (especially Asian markets, Brazil, Mexico, etc). Similarly, the Russian currency crisis had large negative GDP impacts on the Baltic economies.

When considering potential export market expansion, it is useful to differentiate value added versus bulk commodity markets. Value added products compete with established local and multinational processors and are likely more income sensitive than bulk markets. In contrast, bulk commodities likely compete on price and quality with established low-cost exporters who have “first mover” advantages (established accounts, dependable supply and quality, etc.).

Growth in domestic dairy product demand faces similar issues, but there are some advantages to local processors: local trade barriers/protection; knowledge of domestic preferences/products; and, potentially preferential access to domestic markets via trade barriers. However, GDP growth remains key to the expansion of these markets.

World Supply/Demand Balance Trends

Through the late 1990s there have been rapid expansion trends in low cost production/processing regions (*e.g.*, Oceania, Argentina, and the Western US). There are some suggestions that New Zealand’s further growth potential will be limited, and that Australia will account for most of Oceania’s future growth in milk production. Other regions with significant potential supply growth include Eastern Europe, Brazil, and perhaps China.

Given this supply expansion, sluggish world demand growth due to macroeconomic forces (especially GDP growth) suggests relatively competitive world dairy export markets with depressed prices. There is upside potential due to supply shocks in major exporters/importers or the improving world economy (demand growth). In this supply/demand balance context, and coupled with my views on the potential for additional multilateral dairy trade liberalisation, I conclude that market access to developed economy markets will be limited. Similarly, given competition from established exporters in developed and developing country “competitive” export markets, the prospects of additional access to these markets will remain challenging to new entrants.

Developed Economy Perspective

When looking at the developed economy food system, one key trend is the increasing concentration and market power of both processors and retailers. This crucial synergism, where processors and retailers continue to agglomerate via mergers and acquisitions, is driven in part by the need to attain more size/scale economies and cost efficiencies in procurement, processing, marketing and logistics.

As a result of this process, there is a continual search for “value added” product differentiation to exploit market power and increase (or maintain) market shares in the face of increased competition. Generally this implies providing increased product functionality and/or reduced costs.

In the developed economies, most dairy product innovation revolves around increased input and product functionality, value added convenience and packaging, and the continual pressure to reduce costs. Fast-food and other food-away-from-home (FAFH) market trends dominate US dairy consumption growth. To some extent, FAFH and hotel-restaurant-institutional (HRI) consumption growth is income dependent. Again, this growth sector provides increased functionality and/or lower cost, value added opportunities for processors.

“Mature” markets become more sophisticated (“up-scaling of consumption”) with increasing incomes. For example, the US is becoming more European in much of its speciality cheese demand. Similarly, many other developed (and developing) countries are becoming more like the US with respect to fast food and the HRI markets. Foreign direct investment and other domestically based “import substitution” strategies are often used to avoid market access barriers to supplying these growth markets.

There is the possibility that the developed economies are potential dairy export markets for new (or expanding) entrants to the world dairy sector. The prospects for additional market access via multilateral WTO trade liberalisation appear somewhat limited. Perhaps there are stronger opportunities for expansion of regional trade agreements but this will likely limit additional access to new members (*e.g.*, EU expansion would provide preferential EU access to new members). In the EU context, new members will vie for increased access based on natural or policy induced comparative advantage with established EU milk and product supplies.

In this context, world supply/demand balance is crucial to the evaluation of export potential to the developed economies. Rapid expansion trends in low cost production/processing regions (Oceania, Argentina, and Western US) and sluggish world demand growth due to macroeconomic forces (especially GNP growth) suggests relatively competitive export markets with depressed prices. While there remains upside potential due to supply shocks in the major exporting or importing regions/countries, or due to an improving world economy, the competition from established low-cost, high quality exporters is likely to be substantive.

Less Developed Economy Perspective

Domestic market growth potential is driven primarily by population and (especially) by GDP growth. In addition, “Westernisation” trends in many of these economies generate foodservice (HRI) market growth. Growth trends in traditional dairy product consumption versus increasing preferences for new value added products (likely very income growth dependent) will influence the mix of increased “value added” versus bulk/commodity processing opportunities. Slow GDP growth will result in slower consumption growth in these markets.

A key issue concerns what firms will supply this growth: local or multi-national firms using local milk supplies and/or imported dairy based ingredients.

As well, industry structure (number, size and market share of firms) and infrastructure are crucial. Scale efficient (low-cost) and innovative processing firms are likely to have competitive advantages in meeting these potential growth markets. Local versus multinational ownership of these firms will be influenced by access to, and cost of capital and by the progressiveness of their integrated marketing/procurement business strategies. Foreign direct investments (with marketing, procurement and processing expertise as well as access to capital) are often used to avoid market access limitations imposed by the current WTO agreement. There are also issues associated with the quality/procurement standards of foreign-owned food service (hotels, restaurants and institutional) markets and potential infrastructure improvements required to support processing and wholesale/retail logistic demands.

Conclusions

Recent product development and market trends are increasingly driven by milk components (NOT milk)!!! The dairy sector does not produce milk in this view, but rather milk fats (and fat fractionations), milk proteins (casein, whey protein, and other protein fractionations), and lactose (and lactose fractionations). This provides market opportunities to develop a dairy industry to address these emerging trends. Key world dairy growth prospects include the evolving dairy based ingredient market growth/trends.

When considering these growth prospects, ***the dairy component based, marketing and procurement perspective on dairy product development and markets suggests that it is essential to develop a component based marketing plan, incentive structure, and quality standards***, that is, to evolve a competitive dairy sector in a world dairy market context. In the extreme, this implies the evolution of dairy refineries where milk components are fractionated off via membrane technologies and then recombined to specific procurement requirements for both ingredient and final product markets. This provides the opportunity to differentiate markets and add value through increased functionality in the input and final product markets.

International and national standards of identity provide both opportunities (*e.g.*, proposed Codex cheese standards) and barriers (*e.g.*, labelling requirements and limitations to expansion of lower cost ingredient usage).

Given the prospects for additional export market access via further WTO trade liberalisation versus “status quo” protectionism, I conclude that additional access to world export markets with heavily protected dairy sectors will likely be very challenging. Similarly, additional access to “competitive” world export markets will likely be very competitive and driven by price, quality, tight procurement

specifications and with challenging competition from existing world class/low cost/high quality exporters.

Increasing processor/retailer concentration, size/scale economies, market power raises potential competition policy issues with respect to these product developments and market trends. Convenience/packaging innovations (income growth dependent) in both dairy based ingredients and final products are a crucial aspect of the product differentiation the firms use to maintain/increase market power.

Growth in world dairy markets (domestic and export) is heavily dependent on GDP/capita growth. There are favourable “Westernisation” trends in many developing market economies. “Mature” markets in the developed economies continue to become more sophisticated (“up-scaling of consumption”) with increasing incomes. These trends will provide market growth opportunities to regions and products with price and functionally competitive products.

Export potential into the developed economy markets will be closely linked to further dairy trade liberalisation with increased market access. In this context, world supply/demand balance will remain a crucial determinant of world export prices, hence will define the competitive context of world trade. If recent trends in world supply/demand balance continue (rapid expansion trends in low cost production/processing regions coupled with sluggish world demand growth due to macroeconomic forces), this suggests relatively competitive world dairy export markets with depressed prices. Value added (more income responsive) versus bulk commodity (less income responsive, more price responsive) market growth opportunities requires careful consideration in this context.

Appendix Table 1:

Northeast Dairy Centre (Cornell University) Dairy Related Research Activities.

1. A Direct Approach to the Manufacture of Mozzarella Cheese Using 8 to 10X Concentrated Microfiltration Retentate.
2. Non-Thermal Pasteurisation of Fluid Milk Using High Pressure Carbon Dioxide.
3. Technical and Economic Development of a Milk Refinery Model.
4. Using carbon dioxide to improve the bacterial killing power of pasteurisation.
5. A Novel Process to Improve Lower Fat Cheddar Cheese Flavour.
6. Development of Yoghurt Cheese Prototypes.
7. Effect of Direct Carbon Dioxide Addition on the Safety and Quality of Neutral pH Dairy Products.
8. Reducing the Post-Baking Chewiness of Low Fat Mozzarella Cheese on Pizza.
9. Identify the Cause and Possible Solutions to the Slit Formation Problem in Long Hold Cheddar Cheese.
10. Role of Dietary Components in Dairy Cattle Rations in Controlling the Concentration of CLA in Milk Fat.
11. Control of Mozzarella Cheese Functionality Through Process Control.
12. Characterisation and Utilisation of Novel Composite Gels of Starch and Whey Protein Blends.
13. Improved Shelf-Life and Quality of Direct Set Cream Cheese Through Control of the Water Phase.
14. Application of Milk Protein Fractionation by Microfiltration to Fluid Milk Processing.
15. Strategies to Produce 640 Cheddar Blocks with Uniform Composition.
16. Application of Milk Protein Fractionation by Microfiltration to Cheddar Cheese Manufacture.
17. Hydrophobic Surface Coating Technology to Control Low Fat Mozzarella Melting.
18. Use of True Protein as the basis for milk component pricing.
19. Use of Carbon Dioxide to Improve the Shelf-life and Quality of Dairy Foods.
20. Technologies to Enhance the Appearance and Flavour of Fat-Free Fluid Milk.

NOTES: These are from a PowerPoint presentation by Dr. Barbano at The Thirteenth Annual Cornell Conference on Dairy Market and Product Research held in Syracuse, New York on March 6, 2000. Visit the “Workshops” section at the website: <http://cpdmp.cornell.edu/>

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MEDIUM TERM MARKET PROSPECTS FOR THE MAIN DAIRY PRODUCTS

By Mr. Pavel Vavra

Abstract

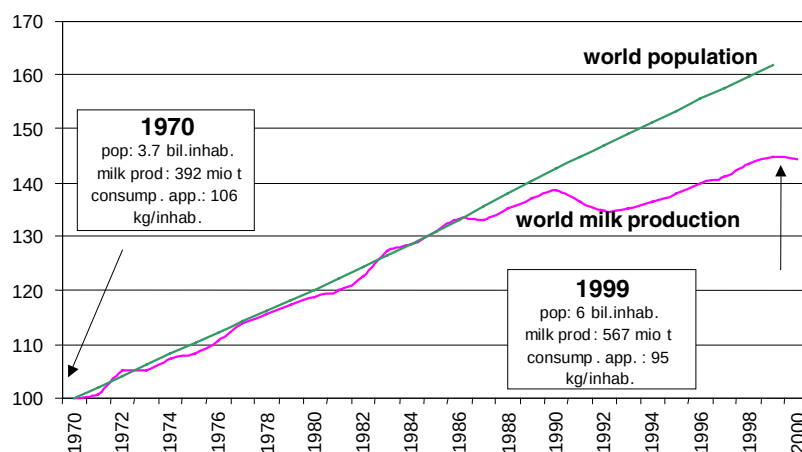
World dairy markets are, at this juncture, in a relatively vigorous stage of development. The market is stimulated by demand growth in key import markets (i.e. South East Asia) and also benefits from WTO limits on subsidised exports. World prices for all dairy products have recovered from low levels in 1999 and the OECD projects favourable trends for prices and dairy markets to continue over the medium-term. Demand is expected to remain strong, with the possible exception of SMP which faces increasing competition from WMP and whey powder. These projections are however subject to world economic growth and developments in major markets such as Russia and China.

Introduction

The trend over the last thirty years indicate that world milk production has not kept up with the increase in the world population (Figure 1). In 1970, milk production was 392 million tonnes and population at 3.7 billion inhabitants. Thirty years later, milk production has increased to about 567 million tonnes while population has increased to 6 billion inhabitants. These figures indicate that per capita consumption decreased from 105.9 kg per person in 1970 to 94.5 kg per person three decades later. It is apparent from the trend lines in Figure 1 that growth in milk production slowed down considerably after 1990.

However, there have been substantial differences across regions in milk production changes over the last decade. For example, while production decreased by almost 54 million tonnes in Central and Eastern Europe (including NIS) and by 6 million tonnes in Western Europe, production in Southern Asia increased by 23 million tonnes, in South America by 12 million tonnes and Oceania by 7 million tonnes. The production trends for the main dairy products in the OECD countries indicate a decline of skim milk powder (SMP) and butter production from its mid 1980's level (Figure 2). On the other hand, the figure shows that the production of cheese and whole milk powder (WMP) has been increasing sharply over the last twenty years. These trends for dairy products are expected to continue also over the medium-term.

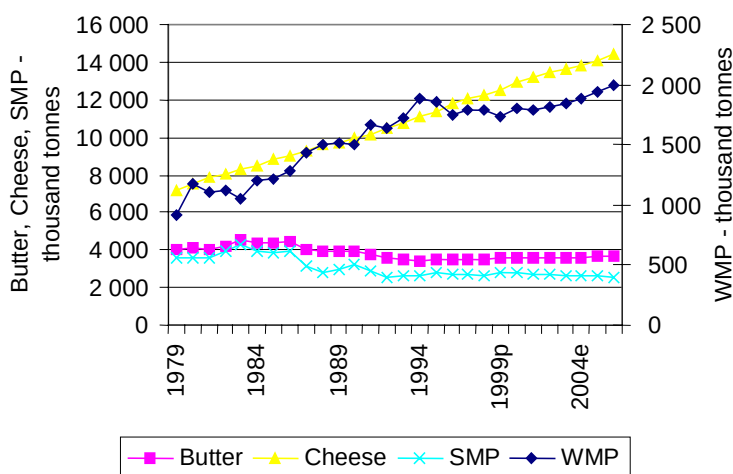
Figure 1. Trends in milk production and the world population (index base 100 in 1970)



Source: International Dairy Federation.

One of the characteristics which makes the dairy sector and markets unique is the differentiation of milk into non-tradable fluid (drinking) milk and “tradable” manufacturing milk. Manufacturing milk is not traded as such, but rather in the form of milk products such as skim milk powder (SMP), whole milk powder (WMP), butter, cheese, casein and whey. Naturally, a given unit of milk contains only so much milk fat, protein and other solids. These components are used in dairy products in various proportions. Moreover, as milk products are not made independently, but often as joint products (butter and skim milk powder, cheese and whey), this can result in dairy markets moving in opposite directions. These facts make dairy one of the most complex agricultural sectors.

Figure 2. Production trends in the OECD countries¹



1. The source for all figures and tables is the OECD unless stated otherwise.

Despite the technological developments in refrigeration and transportation, international trade in milk and milk products, even now, represents only about 5-7% of world production of cows' milk (intra-EU trade excluded). On the other hand, international trade in dairy products accounts for 50% of production of whole milk powder, 30% of skim milk powder, 10-15% of butter and retail packed condensed milks, 7-6% of cheese, 3% of yoghurt and other fresh dairy products, less than 2% of retail packed cream and less than 0.5% of retail pack liquid milks (IDF, 2000).

Dairy markets – Major players

Production and exporters

The European Union (EU) in 2000 was the world's largest producer of cow's milk², accounting for about 29% of the total world production. It is the largest exporter of dairy products, although its share of world markets has fallen in the last five years from about 55% to approximately 40%. The EU has operated a milk quota system since 1984. Under the Berlin Agreement the EU announced an increase in dairy quotas in two steps. In 2000 and 2001, quotas were increased for Greece, Spain, Ireland, Italy and Northern Ireland. Over the three-year period beginning in 2005 quotas are to be increased by 1.5% for all countries. Butter and SMP intervention prices are to be reduced by 15% in three equal steps beginning in 2005, with the simultaneous introduction of direct payments for milk delivered under the quota system.

The lowering of support prices for butter, skim milk powder and milk will likely result in less market intervention in dairy products in the form of lower export subsidies and less public stocks. Thus, quantities that would otherwise have been removed from the domestic market through these instruments will be sold internally. The combined effect of rising milk production (resulting from the concurrent increase in milk quota) and less intervention will be falling market prices for milk and dairy products. As subsidised exports are expected to decrease, the EU's share of the world dairy product trade is expected to fall. Lower subsidised exports may be replaced by unsubsidised exports, to the extent that falling EU prices and rising world prices allow, but these are not expected to become very large in the projection period as the gaps between EU and world dairy product prices are not expected to be eliminated.

While the Berlin Agreement signalled an extension of the current quota regime until March 2008, it provided for a review of the regime in 2003, with a view to possible expiry of the quota system after 2006. The so-called mid-term review is anxiously being awaited, as any change in the quota regime will clearly have implications for dairy production, not only within current EU member states, but also for those countries seeking to join the EU. In October 2001, the European Court of auditors recommended to end the Europe's milk quota system and suggested that the EU Commission should implement reform in the dairy sector already in 2002 (Court of Auditors, 2001). However, it is unlikely that there will be any major change of the EU dairy regime prior to the mid-term review.

New Zealand is the second major player with a rapidly increasing share of world markets. Its share increased from 17% in 1995 to 24% in 1999. Of the total milk produced in New Zealand (13.7 million tonnes in the 2000/2001 season), approximately 3% is consumed within New Zealand as liquid milk, and a further 2% is used in manufactured dairy products sold domestically. The remaining 95% is exported as manufactured dairy products (MAF, 2001). Dairy production in New Zealand is based on

2. If buffalo milk is included, the largest producer in the world is India.

grazing with very low production cost and characterised by a co-operative structure. All of the dairy co-operatives are owned exclusively by their milk suppliers.

In December 2000, the two largest New Zealand dairy companies Kiwi and the New Zealand Dairy Group agreed to merge to form a new co-operative called Fonterra. (Originally called GlobalCo). Following the merger, the new company will absorb the activities of the NZDB, while Board's monopoly export status will be eliminated 12 months after the merger is fully complete. The new co-operative will become the largest company in New Zealand and the 9th largest dairy producer in the world. At the same time the NZDB continues to seek alliances and partnerships with international dairy companies. The Trans-Tasman alliance between the Australia's second largest dairy company Bonlac and the New Zealand Dairy Board already took place in April 2001. The NZDB has also told the European dairy industry leaders that the Board is investigating new partnerships, joint ventures, and acquisitions within Europe. Further, the NZDB has announced it is forming a joint venture with the largest US dairy co-operative (Dairy Farmers of America) to market new types of cheese.

Australia is another important player on the dairy markets. Its share of world markets increased from 12% in 1995 to 19% in 1999. The new dairy policy reform in Australia, which largely deregulated the milk production, will likely improve competitiveness and the position of Australian dairy on the world markets. The policy reform introduced in Australia on 1 July 2000 removed simultaneously the domestic market support scheme and fresh milk regulations to allow the market to determine milk prices. At the same time, a structural adjustment package was introduced through the Dairy Industry Adjustment Act to help producers cope with the adjustment pressures and to allow farmers to choose between adjusting to lower market returns and leaving the industry. There has been some dissatisfaction reported following the deregulation, and some Australian dairy farmers have unsuccessfully campaigned for re-regulation in their respective states. While some political support has been generated, re-regulation of the industry appears unlikely.

USA ranks also among dairy product exporters although with a much smaller share of world markets (about 4%). Despite being one of the world's largest dairy producers, most milk and dairy products are consumed domestically. The FAIR Act of 1996 signalled the abolition of support prices for butter, SMP and cheese. However, contrary to what was planned, the USA extended its dairy product price support for an additional 2 years and twice offered dairy farmers significant direct payments (e.g. USD 125 million in 2000 under the Dairy Market Loss Assistance Programme) in order to compensate for the loss of income due to lower prices. While the future of a new agricultural Act should be discussed soon, a possible extension over several years of the support programme is not expected to change the competitiveness of the United States in export markets in the medium-term.³

Importers

On the import side the situation is much more fragmented. South America imports mostly whole milk powder, Mexico imports SMP, Africa imports SMP and WMP and the EU imports mainly butter and cheese from New Zealand and SMP from CEEC (Poland). Whole milk powder, processed cheeses and feta are imported by Middle East countries. Although the USA is exporting some of its cheddar production it is an importer of a variety of cheeses and recently of butter. Asia is an increasingly important importer of WMP, fats and cheeses. Between 1990 and 1999, Asia has raised its share of world cheese imports from 14% to 22% (OECD, 2001).

3. Argentina, Canada and Poland can also be considered among significant dairy product exporting nations with about 1-2% share of world markets.

Japan is one of the most important importers of dairy products. Japan manages dairy product imports under TRQs by import licensing and state trading. Quantities under import license are allocated by the MAFF to private importers based on historical records (IATRC, 2001). Recently Japan has introduced a dairy reform package through the so called “New Policy”. From April 2001, the reform abolished the Guaranteed Price and the Standard Transaction Price alongside the Deficiency Payment Scheme. The reform has introduced a new direct payments programme to compensate farmers for the support price cuts. In addition to direct income payments, emergency measures to protect farmers from unforeseen fluctuations in manufacturing milk prices were also introduced. It is expected that demand for dairy products especially cheese will significantly outpace domestic production which will result in more imports. Between 1999 to 2000 cheese imports to Japan grew from 187 kt to 221 kt, which is an increase of more than 15% in just one year (FAS, 2001).

Dairy markets - Recent developments

World dairy markets are at the moment in a relatively lively phase of development. The market is stimulated by demand growth in key import markets (*i.e.* South East Asia) and also to some extent following the WTO agreement, by progressive reductions in supply distortions favouring low cost regions such as Oceania (Australia and New Zealand). World dairy product prices improved substantially for all products during 2000, except for butter. Spot prices for skim milk and whole milk powder increased sharply by 36% and 18% respectively, from the 1999 levels. Strong SMP and WMP markets allowed the European Union to boost its exports of milk powders and at the same time to reduce its per-unit subsidy. Lower production of skim milk powder, mainly due to low butter prices (SMP is a co-product of butter), together with the elimination of EU public stocks have reduced world supplies of skim milk powder. This reduction together with stronger world demands (especially in Asia) has pushed world prices for SMP to USD 2 225 a tonne in October 2000. Since then the price has come down a little, to USD 2 077 a tonne in August 2001.

While SMP and WMP prices have risen sharply in 2000 butter prices slipped by about 3% from the 1999 level. One of the reasons for weak international butter prices was low demand from the main butter importer, the Russian Federation, and also high price elasticity with respect to butter substitutes such as margarine. Nevertheless, butter prices have bounced back, and increased steadily in the first half of 2001 to reach USD 1 565 in August 2001. World cheese prices have also like SMP and WMP, risen from its 1999 levels to reach USD 1 975 in December 2000. Given the very high prices at the end of 2000 for SMP, some of the milk was redirected from cheese to SMP. This, together with the strong demand for cheese, resulted in a further increase in world cheese prices, which reached USD 2 270 in June 2001.

Dairy markets - Medium-term outlook

The OECD projects a favourable medium-term outlook for milk production and dairy markets. Stimulated by higher demand and stronger producer prices, milk production is set to expand especially outside the OECD area. Strong demand will also lift world prices for all dairy products, but skim milk powder demand is expected to be increasingly held back by rising competition from whey powder and whole milk powder.

The macroeconomic assumptions underlying OECD’s medium-term outlook for the dairy sector assume annual GDP growth of 3.3% in the OECD area, and about 4.7% in non-OECD area. Exchange rates relative to the US are expected to depreciate for China, Mexico and New Zealand and appreciate for Australia, Canada, Japan and the EU. The favourable outlook, to a large extent, is driven by strong

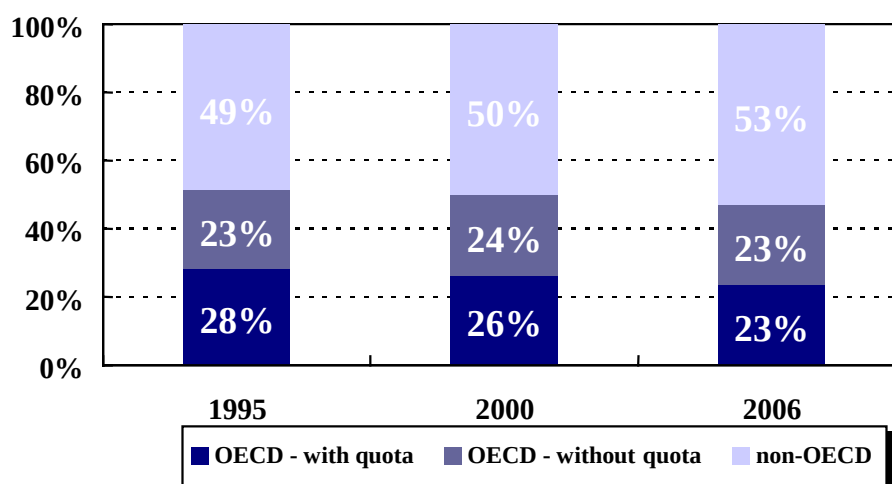
and sustainable economic growth especially in non-OECD countries (in particular China, South East Asia, Latin America, North Africa and the Middle East).⁴

It should be noted that since the projections were done the very favourable macroeconomic indicators have been somewhat downgraded and short-term prospects for global growth have weakened significantly. The slowdown in the US economy, a stalling recovery in Japan and moderate growth in the EU and in a number of emerging economies have contributed to a more bleak picture of world economic growth. The situation has worsened following the September attack on the US which may have the capacity to further destabilise the economic situation.

Milk production

World cow milk production is projected to increase by 67 million tonnes between 2000 and 2006 (*i.e.* 12%). The largest increases are expected in non-OECD countries, especially in China, India, Brazil, Argentina and Mexico, where demand and prices are anticipated to recover. The average growth rate in non-OECD countries is projected at 3% a year, three times as fast as in the OECD area, thus increasing the non-OECD share of world output from 50% to 53% (Figure 3). OECD countries, especially those facing dairy policy constraints such as production quotas are expected to see their share of world output shrink from 26% to 23%, but non-quota OECD producers should maintain their position.

Figure 3. The world cow milk production shares (1995-2006)



The non-quota OECD producers and major exporters of dairy products, Australia and New Zealand, are anticipated to benefit from increased demand in Asia. Over the period 2000-2006, milk production is forecast to increase by 11.6% (from 11.2 to 12.5 kt) in Australia and by 18.9% from (12.2 to 14.5 kt) in New Zealand. An important increase in milk production of 7% is forecast for the US driven by strong domestic demand, notably for cheese.

4. The medium-term projections were made in February 2001.

In Argentina, the low world prices in recent years were not offset by exchange rate adjustments with the result that prices to Argentinean producers have fallen sharply. These declines have caused many marginal producers to exit the industry resulting in an overall decline in Argentinean milk production in 2000, with a further decline likely in 2001. However, it is expected that over the medium-term, milk production will bounce back and increase by about 10% from the 2000 level.

In the EU, milk production is forecast to decrease marginally from 121.4 million tonnes in 2000 to 121.2 million tonnes by the year 2002. Further modest declines are expected until 2004, however production is projected to return to 121.1 level in 2006, thanks mainly to the increase in milk quotas. In 2001, the EU dairy production has been significantly impacted by the outbreak of foot and mouth disease (FMD). The main outbreak was in the UK, but other countries were affected. To prevent a further spread of the disease a considerable number of cows was slaughtered, which suggested that production in the EU would fall significantly. In fact for the UK, milk production was estimated to be down 5%. However, the situation will likely not be as dramatic as many remaining producers may try to boost their production and there have been reported favourable conditions for milk production during the autumn months throughout the EU.

In the CEECs, milk production is expected to increase over the medium-term, especially in Poland. Over the period 2000-2006 production in Poland is forecast to expand from 11.9 kt to 13.8 kt which is almost a 16% increase.

Dairy products

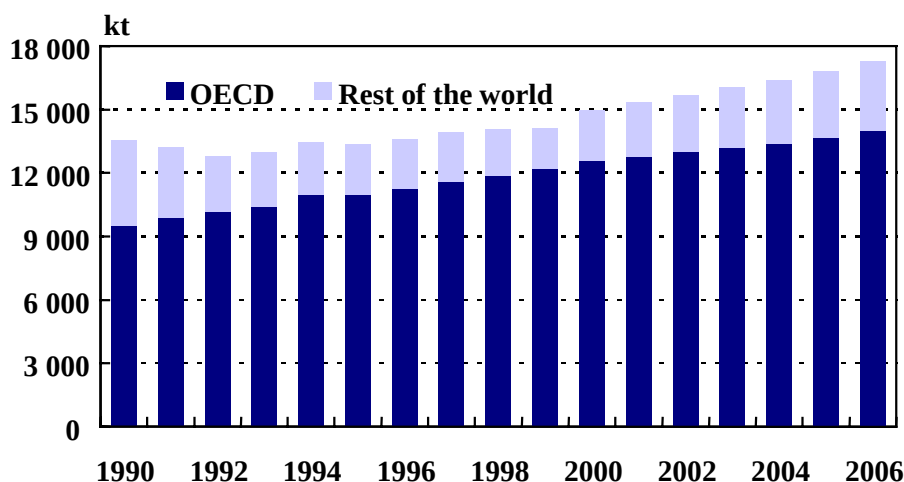
Fluid milk consumption should only exhibit a modest growth over the medium-term, and therefore most of the milk production increase would be processed into dairy products. The OECD expects a gradual shift in world trade of dairy products from bulk dairy products (SMP and butter) towards higher value added products (such as cheese) that has been observed since the mid 1980s to continue over the medium-term. The consumption of dairy products in OECD countries is expected to increase above all for WMP (18%) and cheese (11.1%). Much more modest changes in consumption are expected for SMP (1.5%) and stagnation is projected for butter (0%).

The consumption of dairy products in non-OECD countries (notably in Asia, Latin America and the Middle East) is projected to increase substantially over the medium horizon. This solid growth in dairy product consumption should concern all products, though to a lesser extent milk powders. Whereas over the period 2000-2006 SMP and WMP demand would rise by around 14%, the consumption of butter and cheese would show growth of more than 30%. Development of fast food catering, increasing adoption of “western” diet, population growth, improved economic conditions, and increased urbanisation are responsible for this shift in demand.

Cheese

Overall, the most favourable outlook is expected for cheese. The OECD expects world consumption to rise significantly over the medium-term (Figure 4). Around 60% of the increase will take place in OECD countries, which account for about 84% of total world consumption of cheese, and would be met by increased domestic supply. The US and the EU would account for more than half of this additional cheese demand. Total cheese imports and exports of the OECD countries are expected to rise by 8% and 14% respectively, over the 2000-2006 period.

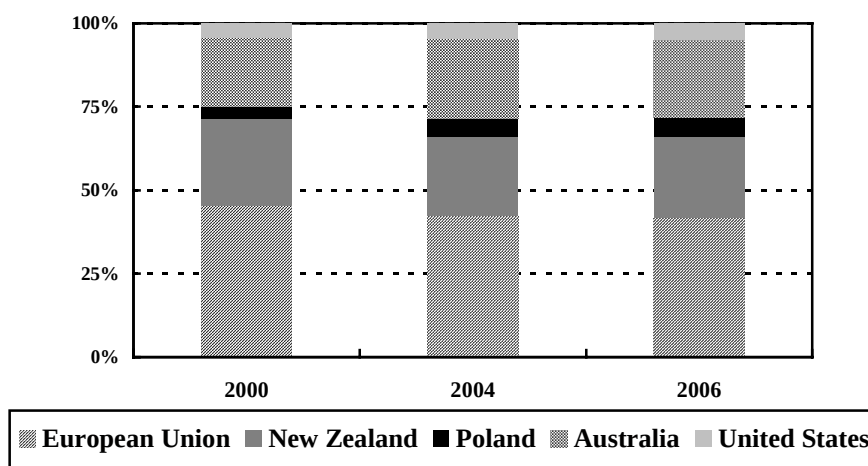
Figure 4. **World demand for cheese over the period 1990-2006**



Net imports of cheese from the non-OECD area would grow by 26% or around 4% annually until 2006. Increasing cheese consumption in the Asian region would be mainly satisfied by imports from Australia and New Zealand. The main increases in imports will be in Japan, where domestic production is not foreseen to keep pace with rising consumption.

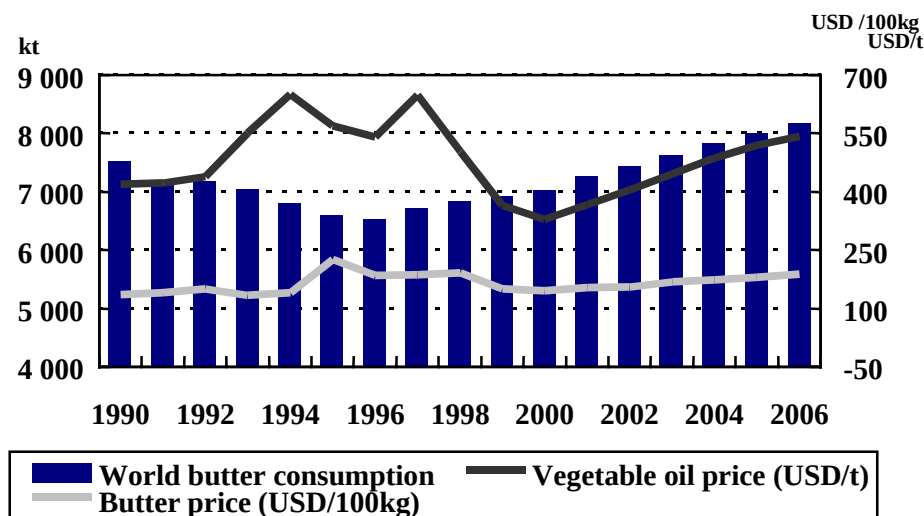
In Latin America, the increasing demand is expected to be supplied either by domestic production or by expanding cheese production in Argentina. Russian demand for cheese demonstrated striking growth in the 1990s (net imports rose from close to zero until 1993, to 15% of the non-OECD total by 1994-1995 and over 25% for period 1996-1998). Although the rouble crisis pushed net imports significantly back in 1999, a recovery to past growth trends over the next few years could result in world cheese prices even higher than the baseline projections. These increased imports of cheese to Russia would be supplied mostly by the EU and the CEECs (Figure 5).

Figure 5. **Projected shares for major exporters of cheese over the period 2000-2006**



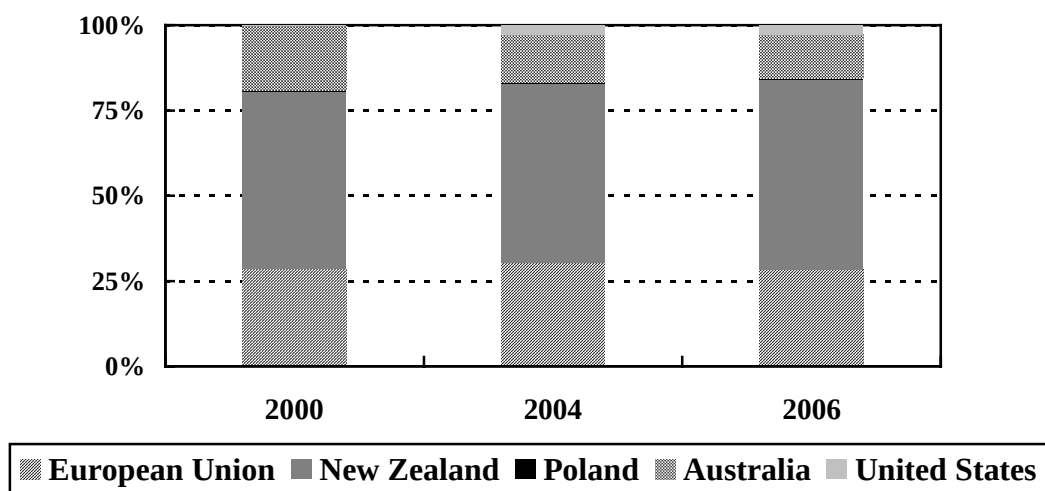
Despite the fact that butter consumption is expected to remain stagnant in OECD countries over the period 2000-2006, world butter consumption is expected to increase thanks to strong growth in non-OECD countries. In response to rising domestic demand in the region, butter production is likely to increase in non-OECD countries, though not enough to avoid a deficit and a higher net import requirement over current levels. The resulting rise in import demand for butter should be most marked in East Asia and the Middle East.

Figure 6. **World demand for butter over the period 1990-2006**



Global demand should also benefit from an expected rise in world vegetable oil prices (Figure 6). As in the past, Russian imports are likely to follow an uneven trend. Since 1993 these have accounted for 30% to 45% of total trade into non-OECD countries (except in 1999 when they fell to 15% after the 1998 rouble devaluation), the impact of Russian import demand on world prices is considerable. The likely fluctuations in the level of Russian imports may accordingly cause fluctuations in world butter prices. The bulk of the growth in the butter trade is projected to be captured by New Zealand (Figure 7).

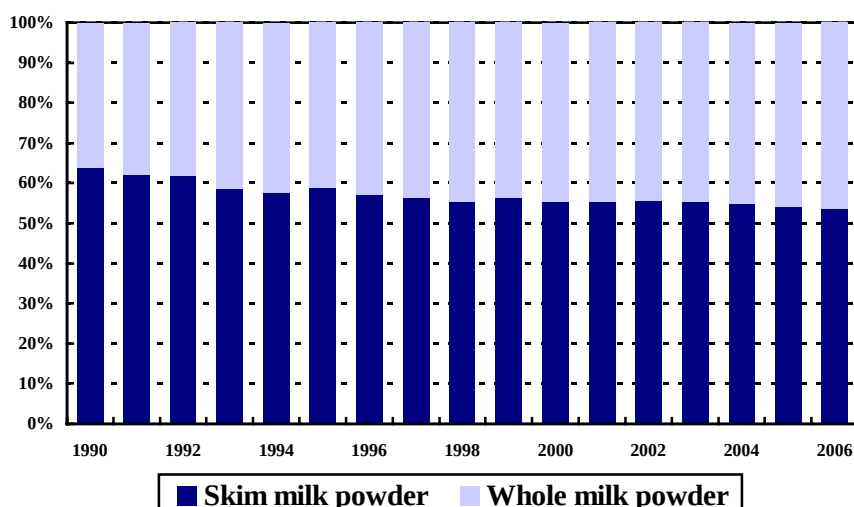
Figure 7. **Projected shares for major exporters of butter over the period 2000-2006**



Milk powders

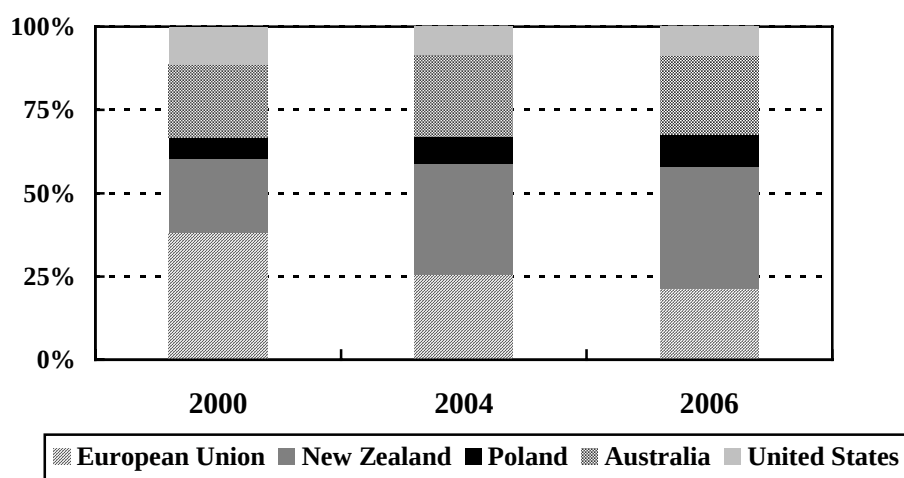
World demand for whole milk powder is projected to rise. WMP is increasingly used for milk reconstitution, where it is displacing both skimmed milk powder and condensed milk (Figure 8). The consumption is expected to increase by 15% from 2 667 kt in 2000 to 3 076 kt in 2006. The increased consumption beyond domestic supply capacity, expected mainly in Latin America, North Africa and Asia, will likely generate a significant expansion in trade between the OECD area and the rest of the world in the medium-term. New Zealand and Australia will likely capture the bulk of the additional trade to the detriment of the EU.

Figure 8. **Shares of world demand for WMP and SMP**



SMP over the same period will exhibit more modest growth of about 5%. SMP is not only facing competition from WMP in the milk reconstitution markets, but also from whey powder and other products in the animal feed and foodstuff markets. These facts will result in a decline in SMP trade from the OECD area estimated at around 21%. New Zealand, Poland and Argentina would increase their share of the international market of SMP to the detriment of the EU and Australia (Figure 9). Nevertheless, the continuing EU ban on meat and bone meal will help to prevent a sharper fall in SMP markets.

Figure 9. **Projected shares for major exporters of SMP over the period 2000-2006**



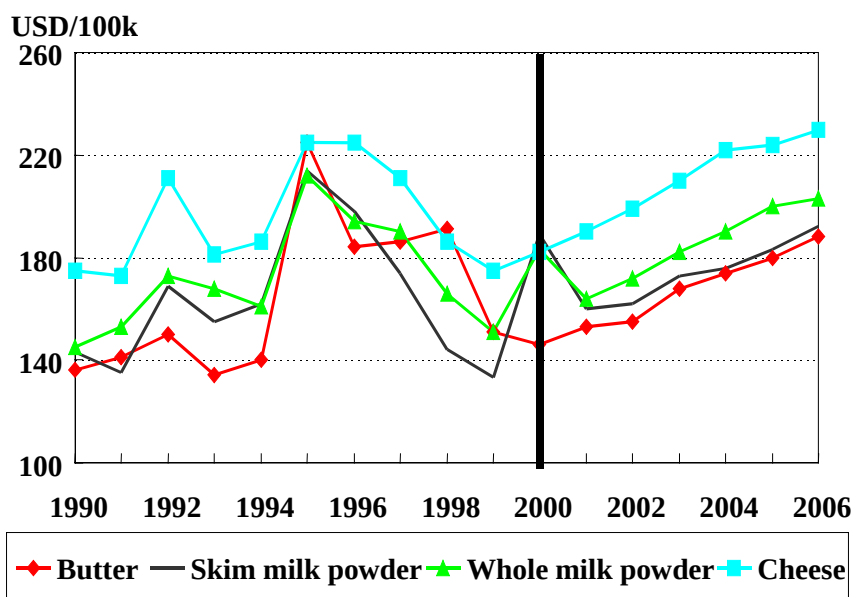
Whey production is projected to increase with rising cheese and casein output (of which whey is a by-product). On account of environmental regulations, which restrict disposal on the fields and in ditches, and technological advances, whey is increasingly processed for sale as protein concentrates or lactose (high-value ingredients for foodstuffs and pharmaceuticals). It may also simply be powdered for use in animal feed and manufactured foods. At present the attractive price of whey is likely to result in continuation of the recent trend and a further increase in demand for whey powder (OECD, 2001).

World dairy product prices

The dairy supply and demand projections suggest that world dairy product prices will move higher over the medium-term. Prices for most milk products are expected to increase above the price level of the late 1990s. This is true especially for cheese where demand should strengthen in both OECD and non-OECD countries. Prices for SMP are expected to fall from their high levels of 2000, however, they should pick up again in 2003.

Growing demand for whole milk powder as an ingredient for processed foods is expected to be a key factor for strong international prices for WMP over the medium-term. Nevertheless, increased production following the rise in prices can be expected to limit the price rise. Despite the fact that the outlook for butter is not as favourable, butter prices are expected also to recover gradually, though remaining strongly linked to developments in the Russian market (the major import market), where commercial imports have fluctuated since the early 1990s. Butter prices should also benefit from the expected rise in vegetable oil prices (Figure 10).

Figure 10. Trends for world dairy product prices



Comparing the projection of OECD with projection based on FAPRI⁵ outlook baseline, FAPRI dairy product world price projections emerge a little less optimistic. Nevertheless, FAPRI also expects an upward trend in all prices, except SMP, which is projected to stay below its 2000 price level.

Table 1. Comparison of OECD and FAPRI projections for world dairy product prices

		2000	2001	2002	2003	2004	2005	2006
BUTTER	OECD	1 462	1 525	1 548	1 683	1 741	1 799	1 880
	FAPRI	1 325	1 422	1 579	1 603	1 639	1 670	1 689
SMP	OECD	1 888	1 597	1 618	1 726	1 760	1 830	1 923
	FAPRI	1 880	1 804	1 728	1 757	1 794	1 816	1 851
WMP	OECD	1 835	1 644	1 716	1 820	1 896	1 999	2 028
	FAPRI	1 846	1 749	1 808	1 838	1 875	1 904	1 934
CHEESE	OECD	1 816	1 904	1 990	2 103	2 221	2 242	2 301
	FAPRI	1 854	1 844	1 938	1 959	2 002	2 037	2 061

Source: OECD (2001), FAPRI (2001).

5. The Food and Agricultural Policy Research Institute (FAPRI) provides economic analysis for policy makers, opinion leaders, and stakeholders in US agriculture. It is jointly based at the Iowa State University and the University of Missouri-Columbia.

Key issues

As mentioned above, the key assumption for the medium-term outlook is continuous world economic growth. Another important impact on the dairy markets will come from developments in Russia, China and the CEECs. Russia is very important for commercial imports of butter and cheese. If Russia returns to export and import levels similar to those existing prior to the devaluation of the rouble in 1998 this would certainly have a considerable impact on world dairy markets. The latest developments indicate that the Russian dairy sector has largely stabilised and with better feed supplies milk production is forecast to increase slightly in 2001. Demand for dairy products has also been growing and is expected to induce more imports of butter, cheese and milk powder in 2001.

Chinese imports of dairy products are currently equivalent to 25% of its domestic output. Expressed in milk equivalents, 80% of imports are in the form of whey powder and milk powder, which are used to fill gaps in both the quality and quantity of local production. Recently, China joined the WTO and it can be expected that customs tariffs on dairy imports will be reduced significantly over the next five years. When these cuts are completed, dairy processors may find it cheaper to import milk powder than continue using locally produced raw milk. In addition, foreign enterprises will be allowed to market dairy products within China and the limits on companies authorised to import dairy products will be ended, thus freeing up more competition and helping to lower domestic prices.

Lower feed costs resulting from reduced import tariffs on grain and oilseed cake could also have some effect, albeit limited, on China's domestic dairy production. The impact is likely to be greater in Southern China, where grazing is scarce, than in the major milk-producing areas of the North, where cows are not dependent on feed supplements.

In the near future, the CEECs may play an increasingly important role on the world dairy markets. There is a long tradition for dairy industry in the region with dairy being often one of the most important of all agricultural sectors. However, the milk sector in these countries had to cope with great adjustment pressures over the last decade. Following the privatisation and market liberalisation milk production sharply declined and is only slowly recovering. While, fragmentation of dairy farms induces high collection cost, limitations in the size of the processing plants prevents exploitation of economies of scale, and there is often a problem of quality control. But, it is expected that the dairy industry, with the continued restructuring, will regain its strength. Certainly, joining the EU will open market opportunities and will likely induce further development of the CEECs dairy sector.

Another important issue, which is not new for other industries, that is escalating in dairy markets, is the phenomena of consolidation. Recent developments may suggest further consolidations and mergers among domestic as well as international dairy companies. Thus, one of the concerns for the near future is that dairy markets might become increasingly subject to the control of powerful multinational companies.

Finally, the WTO negotiations will have an important influence on future dairy markets. There is still the potential to liberalise dairy markets through removing (reducing) high tariffs and protection under the tariff rate quota system. The future of export subsidies will also be on the agenda as these measures distort trade and put downward pressure on world commodity prices. In addition, the legal definition in the Uruguay Round Agreement on Agriculture of what constitutes an export subsidy is not entirely clear. Recently the United States and New Zealand have won an important case before the World Trade Organisation (WTO) that challenged Canadian dairy export subsidies as a violation of WTO rules. Besides the direct economic impact on dairy, the WTO ruling sets an important precedent

which should help prevent other countries from adopting similar export subsidy programmes.⁶ Nevertheless, other countries (including the USA) through market price arrangements are exercising what might be called “consumers only financed subsidies”, a practice, which has not been challenged at the WTO, but has an important and possibly distorting impact on dairy markets.

Concluding comments

The medium-term outlook for the dairy industry looks favourable. The outlook expects strong demand from non-OECD countries, net trade from OECD countries to increase virtually for all dairy products and world prices for dairy products to rise. However, economic growth and strong demand seem to be the key elements for the outlook.

It also seems that in the future there will be greater attention paid to consumers’ concerns. While in recent decades the main attention of agricultural policy analysts was aimed at the supply side of the market, it is increasingly obvious that demand is getting into the driving seat. Health concerns, food safety, push for an organic movement and animal welfare, these are now everyday words and issues driven mainly by consumers. Farmers and dairy companies, as well as governments should be conscious of these trends.

Civil society is becoming increasingly aware of the potential consequences of modern methods of food production, especially in the livestock sector. These concerns go well beyond food safety and human health. For example, the debate over the use of rBST hormone in milk production is gradually expanding from human safety toward the health and welfare of the dairy herd. Although it may be possible to respond to these issues via a market-oriented approach, some lobbyists are vigorously urging more and stricter government regulation.

To finish on a more cheerful note, the recent attention to the demand side is also seeing a revival of the school milk lunch programmes. Recently China announced a national school milk programme and a 2nd Asia/Pacific School Milk Conference in Shanghai was scheduled for 19-21 November 2001. The consequences of the national school milk programme in China may be tremendous. To give some idea of the potential impact consider the fact that in China there are over 200 million school children and at national level, milk consumption is only 6 kg/person (in Milk Equivalent). If every school child in China drank one extra litre of milk per week of the school year, this would increase world milk consumption by 1%! What will be the impact if China significantly increases milk consumption, for example to the level of Japan?

School milk programmes are also being introduced in other developing countries. The Swedish food packaging company Tetra Pak plans to help establish school milk feeding programmes in Vietnam and Bangladesh in 2002. Tetra Pak would be involved in dairy-based school feeding projects covering 500 000 children in Vietnam starting in January 2002 and 700 000 children in Bangladesh starting in February 2002.

6. In 1995 Canada changed its milk pricing policies and introduced various classes of which classes 5(d) and 5(e) allowed dairy processors to purchase surplus milk at a discount rate - determined by the government - for the production of dairy products for exports. The United States and New Zealand requested investigation of these practices by a WTO Compliance Panel. In consecutive decisions in 1999 by the Compliance Panel, an Appellate Body and a Dispute Settlement Body, classes 5(d) and 5(e) were ruled to be financed through government intervention and therefore were judged to be export subsidies (WTO, 2001). Canada appealed the panel’s decision on 4 September 2001. The ruling by the WTO Appellate Body is expected on 3 December 2001).

The school milk lunch programmes are experiencing a revival also in developed countries. For example, Austria has been running a successful school milk programme since 1993. In the UK, while Mrs. Thatcher abolished free school milk, it has made a comeback, and a major campaign called “white stuff” was launched in October 2001. While school milk lunch programmes clearly benefit children they are also equally important for current and future milk producers, as the habits one learns in childhood will likely remain for the rest of one’s life.⁷

7. To follow developments in school milk programmes visit FAO’s Dairy Outlook and School Milk discussion groups at <http://www.fao.org/es/esc/esce/ESCB/dairy/dairye.htm>

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MARKET AND STRUCTURAL CHANGE IN THE DAIRY SECTOR

By Dr. David Colman

Paper 1. Dr. Pavel Vavra

The comprehensive overview of recent and prospective changes in the global dairy market presented by Dr. Vavra for OECD, reflects well the views which are generally held. The recent developments are not a matter of dispute, and there are only one or two points about the presentation to pick up on.

The fact that growth in global milk production has lagged behind population growth since the mid-1980s does not imply any sense of failure by the industry or of shortage. Prior to 1986 milk supply growth had been outstripping demand growth, backed by support policies in nearly all the major players (EU, USA, Canada, Australia and New Zealand) in the international market. The surpluses of butter and milk powder in the EU and USA mounted and a costly competition to export them with subsidies developed, along with large supplies for food aid. Policy reforms were initiated to partially bring this situation under control. In the EU, cuts in production were made after 1984 by imposing milk-marketing quotas, which were reduced progressively until 1990/1; but high market price support was maintained. New Zealand removed all price support from 1988, while Australia progressively reduced cross-subsidisation of exports by domestic consumers. In the USA also slow progress was initiated in the 1985 agriculture Act to reduce price supports which had peaked in cost in 1986. All of these steps steadily began to move the international market into better balance, and commitments agreed at the end of the GATT Uruguay Round imposed limits on the use of export subsidies, although these have persisted.

In addition, it should be noted that the growth in global population has been concentrated in countries with comparatively low levels of per capita consumption of dairy products, such as China, where annual milk consumption is less than 10 kg per person. Thus, there has been no failure of the dairy industry to meet past growth in demand. What is taking place is a restructuring of supply towards the Southern Hemisphere (New Zealand, Australia, Argentina and India) as protective milk sector policies have been partially dismantled in the North.

That said, as with many basic agricultural commodity markets, the world market is comparatively thin. Most product is consumed in the country where it is produced. New Zealand is a remarkable exception, particularly in milk, exporting an astonishing 97% of what it produces as dairy products. Despite that Dr. Vavra is right to set the international trade in products at the equivalent of only 5-7% of total cows' milk production (excluding intra-EU trade). An implication of this is that international prices tend to be volatile. This we have observed for dairy products in the second half of 2001. Prices of major products (butter, skimmed and whole milk powder) have declined quite sharply since mid-2001. This has not been helped by the market shock of the attack on the World Trade Centre in New York, but started before then as economic recession began to take hold. This has dented somewhat the rosy scenario painted by OECD's projections (in Figure 10) of product prices up to 2006. It may well also lead to more resistance in the EU, USA and Canada to further rapid liberalisation of dairy sector policy. Such liberalisation is easier to achieve politically when returns to all industry sectors are high, and when there is optimism about the future.

Paper 2. Dr. Thomas Cox

Dr. Cox has presented a fascinating and challenging paper. Many will have been aware of the rudiments of the story he presents, but will not have been aware of the latest developments and those, which he explains might be to come. In OECD countries long gone are the days when liquid milk had its fat and protein composition simply determined by the milk as it left farms. The processes of pasteurisation and homogenisation involve separating the cream from the rest and then recombining it in exactly the proportions required to meet the minimum fat for skimmed milk, 4% fat milk, 3.5%, whole milk or whatever. With these processes there is no need to have any more cream in milk than is required to meet the trade description of the product. As skimmed and low-fat milk consumption has grown, increasing quantities of cream have been released to trade. This is the simplest example of fractioning milk into its components, but has been mirrored by the increasing attention cheese-makers have given to the processing of whey and butter-makers apply to casein as a means of adding value.

However, Dr. Cox reports how these processes are being taken further, particularly in the USA, as an increasingly sophisticated market in food ingredients develops. The question for the Baltic states, is should they be frightened or excited by the picture of high-technology filtration and fractionation which has been spelled out. We are not given any data on the current value of the various ingredient markets in the USA relative to the value of the main commodities, or of their unit prices as against to cost of producing them – although costs will presumably depend also on the scale of plant involved. Whatever the prospects for proteins fractionated from may be, it has to be said that the main outlets of milk everywhere, and certainly for the Baltic states will continue to be in traditional commodities. Modernisation of processing facilities may well provide opportunities to extract extra value from the markets highlighted in whey and casein, and presumably attention will be paid to these. However, the immediate implications of these developments for the Baltic states would not appear to be great.

The last issue does link to the question raised in the Workshop, of which companies will carry forward the modernisation of the industry. Will foreign capital be involved, and will any such involvement be motivated by the availability of the qualities of raw milk required for the sort of high-technology processing outlined to us. Other sessions of the workshop did not give an unequivocal answer to this.

Dr. Cox has also raised other issues. One, which is striking, is his view that “The prospects for additional market access via multilateral WTO traded liberalisation appear somewhat limited.” The dairy sector has been one of the most difficult to liberalise in the USA, EU and Canada, and in all three major players complex political manoeuvring is taking place between political administrations committed to carrying the WTO Millennium Round forward, and milk producers and other industry groups anxious to retain support. It seems highly unlikely that all support will be withdrawn; the case for some continued price stabilisation appears to have been strengthened by the recent sharp drop in dairy product prices.

EMERGING STRUCTURE IN THE DAIRY PROCESSING SECTOR

By Dr. Michael Keane

Abstract

The milk-processing sector internationally has experienced enormous change over the last 30 years with movement from a large number of small firms to domination by a limited number of giant dairy firms. The main drivers of change include economies of scale, increased size and internationalisation of customers, growing demand for dairy products and the steady liberalisation of dairy trade.

Changes in the Irish dairy industry are outlined, as Ireland represents a good example of this change which may be of relevance for the Baltic states.

Introduction

There are three main components to this paper:

- A review of past changes in dairy structures.
- A discussion of the drivers of change.
- Comments on the emerging dairy processing structures.

Past changes in dairy processing structures

Enormous changes have been occurring internationally in dairy processing structures over the past few decades. A structure involving a preponderance of small local dairies was dominant in many parts of the world in the first half of the 20th century, however this has been steadily replaced by the emergence of a limited number of national and, increasingly, international giant dairy firms which have now come to dominate the industry in recent years.

A detailed review of past changes in dairy processing structures internationally would be very difficult, as there is great variation between countries in terms of the rate and kinds of change and the specific causative factors. Hence the first section of this paper is confined to taking one country, Ireland, as an example. It is hoped that this may be helpful in providing some insights for the Baltic states, as Ireland is a small country on the periphery of Europe and has had the experience of being an EU member since 1973.

Table 1. **Country comparisons**

	Population (million)	Milk production (million litres p.a.)
Estonia	1.5	610
Latvia	3.0	760
Lithuania	4.0	1 460
Ireland	3.8	5 230

Source: AgraFocus, Brussels

In population terms Ireland, Latvia and Lithuania are rather similar, however Ireland's milk production is currently about 3.5 times that of Lithuania and about 7/8 times that of Latvia and Estonia (Table 1). More detailed statistics on Ireland's dairy industry relative to the EU are shown in Appendix Table 1.

Prior to joining the EU in 1973, Ireland's manufacturing milk output was about 2 300 million litres, however this output doubled approximately between 1970 and 1984 when EU milk quotas were introduced. Output has been static or even slightly declined since then, under EU quota constraints (Table 2).

The rapid growth in milk output from 1970 to 1984 was due primarily to very favourable economic conditions for growth, as reflected in a 7-fold increase in the nominal manufacturing milk price between 1970 and 1990 (Table 2). Unfortunately, the Baltic states, in proposing to join the EU will be joining at a time when a quota regime is in place and thus the same scope for growth in milk production will not exist, regardless of the potentially favourable economic circumstances.

Table 2. **Evolution of Irish milk deliveries and prices**

	Manufacturing milk deliveries (million litres)	Index	Manufacturing milk price (nominal index)
1970	2 314	100	100
1980	3 791	164	429
1990	4 678	202	731
2000	4 481	194	857

Source: Central Statistics Office, Dublin.

While not central to this paper, it might be of interest in the Baltic states to observe the changes in the structure of Irish dairy farms over approximately 30 years of EU membership. This shows that average herd sizes went from 14 cows in 1973 to an estimated 48 cows in 2003, while herd numbers declined by nearly 75%. More detail on farm level changes is available in Keane (2001).

Table 3. General evolution of dairy herds (excluding 1-2 cows)

	Dairy herds, '000	Dairy cows '000	Average herd size Cows
1973	97	1 362	14
1983	68	1 509	22
1993	43	1 269	29
2003 (Forecast ¹)	25	1 200	48

Source: Livestock Enumeration, Central Statistics Office, Dublin.

¹ Forecast (Own Estimate).

Table 4. Evolution in herd structure, 1973-2003 (number of herds '000)

Herd size, Cows	1973	1983	1993	2003 ¹
3-19	74.8	39.6	17.5	3.5
20-29	11.8	11.1	9.0	5.0
30-49	7.6	10.7	10.0	9.0
50+	2.8	6.5	6.7	7.5
Total	97.0	67.9	42.3	25.0

Source: Livestock Enumeration, Central Statistics Office, Dublin.

¹ Forecast (Own Estimate).

Changes in dairy processing structures in Ireland, like in very many countries, have been enormous over the last four decades. This can be illustrated by comparing the state of the industry in the mid-1960s (prior to EU membership), the early 1980s (EU quota introduction) and the present.

In the mid 1960s Ireland's dairy industry consisted of around 200 very small dairy enterprises with average annual milk intake of less than 20 million litres (Appendix Table 2). The general milk supply network consisted of about 450 local cream separating stations, normally less than 10 kilometres apart, farmer delivery to these local branches, and (often) the return of skim milk for animal feeding. Impending EU membership dramatically changed this structure, where the prospect of increased international competition and the opportunity to develop a milk powder industry, with scale of paramount importance, led to a large number of mergers by the mid 1970s (Table 5). Thus in just a decade, from the mid 1960s to the mid 1970s, four fifths of all butter manufacturing enterprises had disappeared, primarily through mergers, while the number of cheese enterprises had also nearly halved. Output per enterprise had increased by eight-fold for butter and five-fold for cheese (Tables 5 and 6). This process of scale expansion with fewer and larger enterprises has continued at a steady but more modest pace to the present day (Tables 5, 6, and 7).

The gradual but steady change in the scale of Irish dairy enterprises over the past 20 years as depicted in Tables 6-8 does not reflect the more dramatic developments within the industry during this time, as recently outlined by Pitts (2000).

Table 5. **Butter manufacturing enterprises, Ireland**

Year	No. of enterprises	Output, '000 tonnes, p.a	Average output per enterprise '000 tonnes, p.a.
1965	154	60.8	0.4
1976	32	100.0	3.13
1988	27	132.6	4.9
2000	15	137.0	9.1

Source: I.D.F., I.C.O.S., Irish Dairy Board.

Table 6. **Factory cheese manufacturing enterprises**

Year	No. of enterprises	Output, '000 tonnes, p.a	Average output per enterprise '000 tonnes, p.a.
1965	21	17.0	0.8
1976	12	49.0	4.1
1988	12	75.0	6.3
2000	10	96.0	9.6

Source: I.D.F., I.C.O.S., Irish Dairy Board.

Table 7. **Milk powder manufacturing enterprises, Ireland**

Year	No. of enterprises	Output, '000 tonnes, p.a	Average output per enterprise '000 tonnes, p.a.
1976	15		11.5
1988	15		9.2
2000	13		9.4

Source: I.D.F., I.C.O.S., Irish Dairy Board.

Two main forces were at work (a) internationalisation, (b) changes in legal structure from co-operatives to public limited companies (PLC's). At the time of EU milk quota introduction in 1984, there were 6 dairy processing firms of broadly similar scale in Ireland, each accounting for about 10% of the industry. Also, the whole industry was co-operatively owned at this time. None of the six larger firms had foreign subsidiaries and much of their exporting was conducted through the Irish Dairy Board, a second level co-operative owned by the primary co-operatives. Constrained by the milk quota regime, the six large co-operatives embarked on a major programme of merger/take-over and internationalisation (dairy and other food), so that now there are three large processing firms that dominate the industry, Kerry (PLC), Glanbia (PLC) and Dairygold (co-operative). Some of the smaller enterprises have also merged. All three large processing enterprises have extensive international divisions which, in the case of Kerry and Glanbia, are greater than their domestic Irish activity. The Irish Dairy Board, which still accounts for a substantial part of the international marketing of Irish dairy produce, is now also an international food marketing enterprise. Overall, the last 35 years has seen a change from about 200 small enterprises to about 20, with four dominant enterprises (one solely marketing), which have become increasingly international.

Drivers of structural change

The role of economies of scale in driving structural change is outlined in standard economic textbooks, involving a range of factors at both factory and overall enterprise level. At factory level, the benefits of greater scale derive from division of labour and learning processes, through to technological benefits involving machinery and indivisibilities. At overall enterprise level, further benefits of scale arise in the areas of advertising, research development, information technology and services and management, Hay (1991), Scherer (1990). In the case of dairying, involving a perishable raw material which is nearly 90% water, usually produced in small widely dispersed farms, the issue of economies of scale must be combined with that of milk collection costs (and, to a lesser extent, product distribution costs). Determination of the optimum or least cost structure at factory level then normally involves a balancing of decreasing average factory costs with increasing scale against increasing milk collection costs. The specific optimum scale will depend on local conditions including in particular labour costs and availability relative to capital, available technology and the nature of the market prospects on the one hand and the milk supply structure on the other. The Baltic states, with their own particular economic circumstances, can seek to establish their own unique optimum while hopefully learning from the experiences of others as discussed here. Many studies have been conducted internationally to determine optimum structure under differing circumstances. One such study for example was completed by the author in the 1990s involving the Irish cheese sector, Keane (1998). A more broadly based study of the drivers of change in the Irish dairy industry, using the Porter (Harvard) diamond model as a basic framework has also been completed in recent years, O'Connell (1998). Future possibilities for structural change in the Irish dairy industry at processing level have recently been outlined, with alternatives ranged from continued incremental development of structure to the establishment of a single large dairy processing business for the whole country, ICOS (2000).

The drivers of structural change are further discussed in an international context in the next section.

Emerging structural change at global level

While the focus earlier was narrowly confined to developments in Ireland, representing one possible direction for dairy industry development for the Baltic states, the dairy industry at global level has been undergoing enormous change, involving a continuous wave of mergers, acquisitions and alliances as documented recently by Zwanenberg (2001). Rabobank International has documented over 500 mergers and acquisitions in the last four years, or one every 2.5 days. While some are between small dairy companies, others are between dairy giants. The latter include, for example, the establishment of Fonterra Co-op in New Zealand this year, involving 95% of the total New Zealand dairy industry. Its milk intake as a single company of about 13 million tonnes p.a. is about 2.5 times the total Irish milk production or 4.5 times total milk production in the Baltic states combined. Other recent examples of giant dairy company mergers include that of Suiza Foods and Dean Foods in the USA to form the world's second largest dairy company (after Nestle) and the transnational Danish/Swedish merger that formed Arla Co-op. As documented by Zwanenberg (2001), the top 20 dairy companies in 2000 had combined sales of USD 100 billion (Table 8). Increasingly, as the bigger companies have dairy businesses which are larger than the total dairy industries of smaller countries, major challenges lie ahead for smaller countries in terms of their approach to industry ownership and control and the maintenance of competition.

The main drivers of this global change are:

- the increasing size and internationalisation of customers *i.e.* retailers and food service companies;

- increasing search for milk supply to meet growing demand for dairy products;
- the liberalisation of dairy trade through GATT/WTO agreements.

Table 8. Top 20 dairy companies in the world 2000 dairy turnover including mergers through to May 2001

Company	Sales USD billion	Company	Sales USD billion
Nestle	13.0	Arla Foods	4.4
Dean Foods (Suiza Foods + Dean Foods)	9.0	Friesland Coberco Dairy Foods	4.2
Dairy Farmers of America	6.7	Campina Melkunie	3.6
Philip Morris (Kraft)	6.1	Bongrain	3.6
Danone	6.0	Land O'Lakes	3.5
Parmalat	5.7	Meiji Milk Products	3.2
Snow Brand Milk Products	5.5	Morinaga Milk Industry	2.9
Lactalis	5.1	Sodiaal	2.8
Fonterra	5.0	Dairy Crest	2.5
Unilever	5.0	Nordmilch	2.4

Source: Zwanenberg, 2001.

In order to compete effectively with the large global companies that have emerged, all dairy companies that seek a long term future will have to actively respond. A list of the required responses has been suggested by Zwanenberg (2001) as follows:

- have a clear strategy and move quickly to implement it;
- know what core dairy activities one wishes to concentrate on (through assessment of future markets, company capabilities and competitors);
- be efficient in all operations;
- develop sustainable brands;
- constantly seek innovative opportunities;
- increase market power;
- strengthen relationships throughout the value chain.

By adopting this focus, dairy companies in the Baltic states can secure their long-term future and I wish them well.

Conclusion

The milk processing sector internationally has experienced enormous change over the last few decades, with movement from a preponderance of small local dairies in many parts of the world towards a limited number of giant international dairy firms. Ireland, as a small country on the periphery of the EU, may be a good example of this transformation for the Baltic states. At dairy farm level in Ireland, over the last thirty years, milk output doubled between 1970 and 1984 when EU quotas first applied, milk supplier numbers fell by about 75% and average herd sizes increased from 14 to 48 cows. At milk processing level, the number of dairy enterprises fell from 200 to about 20, three of which are dominant and have also become international food firms. The drivers of change include economies of scale, the increased size and internationalisation of customers, increasing international demand, scarcity of milk supply and the steady liberalisation of international dairy trade.

In this environment, dairy companies in the Baltic states and elsewhere will need to have a clear strategy, know what core activities they should concentrate on, be as operationally efficient as possible, be innovative and seek to strengthen relationships throughout the value chain.

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Appendix Table 1. **Basic dairy statistics 2000**

	Ireland	EU (15)	Ireland as % of EU
Cows milk deliveries, million kgs	5 160	114 765	4.5
Dairy cow numbers, '000	1 280	20 281	6.3
Milk yield/cow, kgs	4 120	5 767	71
Number of dairy farmers, '000	29.0	724.1	4.0
Number of dairy cows per farm	44.1	28.0	157
Average milk production per farm, '000 kgs	181.8	161.5	113

Source: Jaaroverzicht 2000, Productschap Zuivel.

Appendix Table 2. **Dairy processing structure, Ireland, 1966**

1.	<u>Butter</u>	
	Number of creameries	154
	Average milk Intake per creamery, million-litre p.a.	9
2.	<u>Cheese</u>	
	Number of factories	21
	Average milk intake per factory, million-litre p.a.	29
3.	<u>Liquid (fluid) milk</u>	
	Number of plants	40
	Average milk intake per plant, million-litre p.a.	6
4.	<u>No. cream separating stations</u>	451

Source: Cook. H.L., Sprague, G.W. Irish Dairy Industry Organisation, Department of Agriculture and Fisheries, Dublin, 1968.

STRUCTURAL DEVELOPMENTS IN THE DAIRY PROCESSING SECTOR

By Dr. Adriaan Krijger*

Abstract

The growth strategy of many companies has led to a wave of mergers, acquisitions and strategic alliances. An appealing event is the recent New Zealand merger to form Fonterra. This is not an isolated event. It fits in the trend of scale enlargement observed during the last two decades: this period showed unprecedented structural developments in the dairy processing industry. It led to further concentration and internationalisation. This development is expected to accelerate also, because the prospects for the dairy sector world-wide are excellent. The expected growth in world population and world purchasing power will cause an increasing demand for dairy products. However, it is expected that also in the long term, supply will not be able to meet this increasing demand. Therefore, a hunt for milk to secure sourcing is most probable, allowing dairy companies to take advantage of these favourable market opportunities.

Introduction

On 1 October 2001, the New Zealand Dairy Group and Kiwi Dairies merged into one organisation named Fonterra Co-operative Group Ltd. The turnover of the company is estimated to be around EUR 5.4 billion, and puts Fonterra directly into the top ten of the world's biggest dairy industries. The company accounts for a third of the world trade in dairy produce. The first achievement of this new company was to make an agreement with Dairy America, accounting for 70% of the USA's exports of skimmed powder, to market their powder through Fonterra. Furthermore, the company announced plans for co-operation with Nestlé in North and South America, with Arla Foods in the United Kingdom and with Britannia Industries in India.

This is a revealing example of the latest developments in concentration and internationalisation. It may very well be an expression of the next stage in this process. Apparently, the creation of strategic alliances to control a product- or a regional market is the upcoming trend. It has a remarkable aspect: while on a national scale competition authorities screen the submitted proposals for co-operation, this mechanism is completely absent on a global scale.

The plan of the presentation is as follows. First we will present some recent data regarding mergers and acquisitions. Then we will look back to see what structurally happened during the last two decades. The result of these developments is a completely different dairy scene at the end of the 20th century. And, finally we will present our outlook.

Recent trends

Fonterra is certainly the example to illustrate the latest trend in internationalisation. Of course more familiar forms of internationalisation also continue and are abundant in those countries and those companies, which started their concentration and internationalisation process later. The growth strategy of many companies has led to a real wave of mergers, acquisitions and alliances in the global

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dairy industry. From January 1998 to September 2001, according to Rabobank International, a total of 529 mergers, acquisitions and alliances took place, ranging from the very small to large and significant market transactions. Notable is that consolidation activities have become increasingly international in nature.

Table 1. Mergers, acquisitions and alliances in the dairy industry

January 1998 - September 2001

Deals initiated by companies from:	Number of deals	Share in total
Europe	369	70%
North America	111	21%
Oceania	35	7%
Asia	7	1%
South America	6	1%
Africa	1	0%
TOTAL	529	100%

Source: Rabobank International, October 2001.

Table 2. Mergers, acquisitions and alliances in the dairy industry

January 1998 - September 2001

Geographic scope of deals:	Number of deals	Share in total
Domestic	305	58%
Regional	116	22%
Cross-continental	108	20%
TOTAL	529	100%

Source: Rabobank International, October 2001.

Structural change

But these developments can be put in a broader perspective. The last two decades witnessed very strong developments in this respect. A study published by the International Dairy Federation (IDF) at the beginning of this year is revealing¹.

Seven case studies of structural change in the dairy industry were prepared in the context of this study. The objective was to analyse the experience of structural change in the dairy sector in a number of countries over the period 1983 to the present, with particular reference to internationalisation. Internationalisation was defined as foreign direct investment (FDI).

The case studies prepared covered Canada, the United States of America and five countries in Europe, four being members of the European Union (Germany, France, Ireland and the Netherlands) and Poland.

All the studies deal with a description of structural development and try to identify drivers for internationalisation.

1. IDF, Structural Change in the Dairy sector, Bulletin of the IDF 360, Brussels, 2001.

A strong decline in the number of firms and plants in the dairy industry is the almost universal observation². Changes in the number of firms in milk collection ranged from -52% change in Germany, to -24% in Ireland; the number of butter manufacturing plants from -86% in the Netherlands, to -39% in Ireland; the number of powder plants from -83% in France to -20% in the USA; the number of cheese plants from -53% in Canada and the Netherlands, to -26% in the USA; the number of fresh milk plants ranged from -90% in France, to -31% in Canada.

To give an example in absolute terms: the German change in numbers of firms collecting milk from -52% means that Germany in 1983 had 528 firms collecting milk, and that of these in 1997, 256 were left. Indeed one sees very strong and unprecedented structural developments in the dairy industry.

The study also produced data regarding the average scale of plants in 1983 and 1997. These data, largely are the mirror image of the above, and are also impressive. To give a few examples. In the USA, the average milk volume collected increased from 100 million litres to 256 million litres: growth of 156%. In the Netherlands average butter production per plant changed from 5 461 tonnes to 19 220: an increase of 251%. In Canada average cheese production rose from 3 976 tonnes in 1983 to 15 299 in 1997: change of 285%. And finally the most striking example: average fresh milk production per plant in France rose from 4.3 million litres in 1983 to 46.4 million in 1997: an increase of almost 1 000%. These are just a few examples. It illustrates that the scale of dairy production moved more and more away from local production for a local market to national dimensions. And, for a number of countries, goes along with internationalisation.

Dairy industry at the end of the century

What did the dairy industry look like after the developments described in the last paragraph? In 1983, hardly any internationally operating companies existed except for multinationals like Nestlé, Unilever and Kraft. Exceptions for the dairy industry were Gervais Danone. This company already in 1983 owned several operations in a number of European countries. But also Sodima, franchiser of Yoplait, operated on a world scale and the same goes for CcFriesland with factories in South East Asia (Foremost). Finally, Dairy Boards had distribution firms in most important export markets.

The situation is completely different in 1997. Many companies, through mergers and acquisitions, have acquired substantial interests abroad. That is to say it applies mainly to that part of the dairy industry that already had an export orientation. The dairy industry in those countries turned from a nationally into an internationally orientated business with operations abroad.

The French company Danone, number one in fresh dairy products, in 1985 had operations in ten countries, and in 1998 it were 26. Another French company, Sodiaal, expanded its activities from 28 to 42 countries. Bongrain, Besnier and Bel witnessed similar developments. One fifth of the turnover of Bongrain for instance is generated in the USA and only 40% in France. Regarding internationalisation French companies lead the way.

Dutch dairy companies undertook mergers and acquisitions in Belgium and Germany, the newly defined home market. Foreign direct investment beyond this home market is rather modest compared to what French companies have done so far.

Irish dairy companies acquired operations mainly in the USA and the UK. Glanbia processes a third of the milk in Ireland, a third in the UK and a third in the USA. The company is the biggest processor in

2. *IDF*, 2001, p. 6.

Ireland and the UK. The second biggest company Kerry Foods initially developed the market for casein in the USA. By now, through a process of mergers and acquisitions, it has become one of the worldplayers regarding ingredients.

A distinction can be made between countries with a dairy industry investing abroad and countries merely confronted with a lot of investment by dairy companies from abroad. So developments in France, Ireland and the Netherlands, already export oriented, are different from experiences in Germany, the USA and Canada. Developments in the latter countries are mainly national and restricted to concentration developments and investments from outside.

German dairy companies made some small investments in central and eastern European countries. From outside, Campina, the Dutch Co-op, is the biggest investor in Germany. The USA is a very attractive market for investors because it is a big and high-income market. So apart from Saputo, Kerry Group and Glanbia, also Parmalat, Arla Foods, Danone, and many others invested in the USA.

It is somewhat difficult to categorise Canada in this respect because a Canadian dairy company made a substantial acquisition in the USA and at the same time a big foreign dairy company entered the Canadian market. The first refers to Saputo, the dairy operation in Canada, that bought, in the USA, Stella Foods, the fifth biggest cheese producer in the USA. The second refers to Parmalat, present since 1997 in Canada, that developed by mergers and acquisitions into the biggest dairy processor in Canada.

It is difficult to assess general drivers for internationalisation. We wish to refer to the IDF study for this³. Developments are much time and place related. The study concluded that primarily, there must be a bias to export. For the countries of the EU the introduction of the quota system in 1984 and the announcement of the European single market in 1993 seem to be important drivers.

Outlook

Indeed the last two decades can be characterised by concentration in many countries, matched with internationalisation in some countries. This process will continue and new forms will develop on the way as illustrated by the example we presented in the introduction. Our expectation that the present trend of concentration and internationalisation will continue is based on the following considerations.

We live in a competitive world. Power to compete, to a large extent, is determined by the scale of activities. That is why structural development, for the individual company, as well for the sector as a whole, is an important condition for the power to compete. As a natural consequence, internationalisation is the most important strategy to improve competitiveness. This is an important driver, valid for all sorts of businesses. In addition to this, other drivers that specifically apply to the dairy industry have to be taken into account as well.

First, we must recognise that dairy produce is perishable. As a consequence there will always remain a need for local production to meet at least the demand for fresh products. For this reason we will always keep a relatively high number of separate operations all over the world *e.g.* dairy farming and processing. This means that the dairy business will never concentrate to such an extent, that a few large operations will supply the whole world. Many of those operations, however will be part of international operations, and thus participate somehow in an international dairy network.

3. IDF, 2001, p. 8.

Second, we must realise that dairy production is to a very large extent determined by the availability of soil under conditions that are favourable (climate) for dairying, whereas capital, labour, know-how, cattle can be obtained from everywhere around the world. Marginal grounds will be taken into production or dropped, depending on world prices. In this way (in the mid term), supply and demand will be balanced by world market prices. But, and this is crucial for the argument, at the end of the day supply will be limited, because the availability of appropriate circumstances for milk production is limited. In the longer term, this situation will result in favourable price developments for the dairy sector as a whole.

Third, we must be aware that demand increases. Income increases world-wide, and so does population. This means more mouths to feed. And it is a well-known fact that the share of dairy products in the budget increases with higher income. Provided “normal” conditions prevail, this means that growth is perpetual. Demand for dairy produce therefore, in theory, is infinite. On the other hand, also the form of demand is changing. Consumers these days are demanding, heighten their expectations, wanting better, newer and healthier products. Retailers do not only have a strong position in distribution, but also in articulating these expectations of the consumer. This has far reaching consequences for the way to meet demand. It requires tailor made products for certain groups or/and for certain regions.

To conclude the argument: in the long term supply will not be able to meet the increasing demand. The recent OECD Agricultural Outlook foresees strong increases in demand until 2006. Though world dairy production is on the increase, in sum, supply and demand projections suggest higher prices for dairy produce, which means that supply obviously will not be able to meet demand in the period under consideration⁴. We dare say that it is very likely that also after 2006, this situation will prevail.

This has serious consequences for the major dairy producers of the world and will accelerate structural developments in all countries. Since what is more awkward than a shortage of milk in a buoyant market, when your job is to process milk? So, for the coming years the primary aim should be to secure sourcing by FDI or alliances. After all, milk remains scarce. This puts locally based dairy industries in a favourable position, because they form attractive business partners for international dairy companies.

But that is not enough to be in a good position for the future. Consumers are more and more demanding. To cope with this attitude, research and development, as well as brand development are essential elements to get, in an increasingly competitive world, a “piece of the pie”. The modern, future oriented dairy industry should therefore be active on two fronts: to get enough milk and to satisfy the needs of the consumer in a proper way.

Conclusions

The last two decades of the 20th century witnessed impressive structural developments. Scale of production increased substantially. At the end of the day, some dairy industries turned into world players.

The outlook for the dairy sector is positive. Demand is expected to be strong not only in terms of volume, but also regarding the nature of demand. Supply to meet demand is limited.

This will lead to a hunt for milk on a global scale. Mergers, acquisitions and especially strategic alliances will therefore speed up in the dairy sector.

4. *OECD Agricultural Outlook*, p. 7–80, Paris, 2001.

IMPLICATIONS FOR THE DAIRY SECTOR IN THE BALTIC COUNTRIES

By Mr. Michael Ryan

First of all, let me thank our two lead speakers Dr. Michael Keane and Dr. Adriaan Krijger for their excellent exposition of developments and trends in the dairy industry in the EU and globally.

In his paper, Dr. Keane presents an interesting overview of the evolution of the dairy industry in Ireland over the last 30-40 years. There are many similarities between Estonia, Latvia and Lithuania and Ireland. For example, all four countries are situated at the periphery of Europe, have small open economies with liberal economic policies, and high importance of agriculture in terms of its contribution to GDP, employment and export revenues. In addition, the dairy sector is the dominant sub-sector within agriculture. Many of the structural problems that are currently faced by the three Baltic countries are similar to those that the Irish industry faced over the last 30 years or so. The experience and lessons of the Irish dairy industry since joining the EU provide some valuable insights to policy makers and the industry in the three Baltic countries in their challenge to modernise and develop a competitive and sustainable dairy industry.

Over the last 30 years, the average herd size in Ireland more than tripled, the number of herds fell by 75% and productivity per animal rose sharply. While herd size in Estonia is relatively large by European standards, the average herd size in Latvia and Lithuania is small and fragmented with low milk output per cow. The overarching need for raising productivity through improvements in breeding, feeding and husbandry remains a significant challenge to farmers across the region. Moreover, with the small herd size modernisation is not economically feasible and the adoption and implementation of higher hygiene and quality standards are costly. A major restructuring and modernisation of dairy farms, increase in size and higher productivity are crucial if Baltic dairy farmers are to compete with EU dairy farmers. Much of the structural adjustments should be done prior to EU membership, as once the Baltics have joined the EU the milk quota regime will slow further adjustment in the sector. As we have seen in the case of Ireland, changes in farm structures are continuing, driven by ever rising competitive forces, even after 30 years of EU membership.

Accompanying the dramatic changes at the farm level, there have been massive changes in the milk processing sector in Ireland over the last three decades. In preparation for greater competition within the EU, many of the smaller milk processing co-operatives merged or amalgamated to form larger regional companies, in most cases, public limited companies. In addition to the key driving forces of scale economies, foreign direct investment and access to new processing technologies are important factors driving concentration in dairy processing at national, regional and global levels.

In his presentation, Dr. Krijger rightly emphasises the current global trend toward greater concentration and internationalisation in dairy processing and marketing. It would appear that this process has been accelerating in recent decades and is likely to continue in future years. The increasing concentration in the dairy industry is a natural response to a combination of both demand and supply pressures. The growth in demand for milk and dairy products rose steadily in recent years, and may accelerate in the future. This has resulted in ever increasing competition for the limited supply of raw milk. Certain regions and countries have a distinct comparative advantage in producing milk due to climatic and natural conditions while other inputs such as capital, labour and know-how are more easily transferable.

Demand for milk and dairy products is expected to continue to increase with growing real incomes and population; nevertheless, greater attention needs to be given to the different forms of demand. It is likely that the traditional demand for butter, SMP and traditional cheeses will continue to fall, but new demand segments will emerge in line with greater diversification of consumer preferences. The development of closer operations, and indeed, strategic alliances between the dairy giants in different regions of the world is an interesting new phenomenon in the process of concentration. These structural changes are expected to continue and may even accelerate in response to the gradual liberalisation of the trading environment for milk and dairy products. An important development in recent years has been the rise in foreign direct investment (FDI) in dairy processing in many countries, especially those that are more oriented to the export market. The paper concludes that internationalisation or FDI is the most important element to improving competitiveness in the industry.

Implications for the dairy industry in Estonia, Latvia and Lithuania

At this juncture, the structure of the dairy sector closely reflects the approach taken to privatisation and economic reforms during the 1990s and the extent of integration into the global economic system. As we heard this morning, the current structure of the dairy sector, both at the farm and processing levels, varies significantly across the three countries.

Since independence, the three Baltic countries have made great progress in developing full-fledged market economies. While the overarching goal of improving efficiency and competitiveness in the agro-food sector has been a high priority in all three countries, they have taken quite different approaches to achieving this goal. The pace and depth of economic policy reform has varied across the region with Estonia embracing a more liberal and open approach to trade, while Latvia and Lithuania took a more cautious approach. The pace of privatisation and restructuring of the food sector has been affected by the rather heavy debt overhang and outdated technology, as well as the lack of management expertise and market opportunities. This has had a direct impact on the degree of restructuring of the agricultural sector, and in particular the dairy sector, which is strongly export oriented in all three countries. Since independence and up to 2000, Estonia has maintained an open trading system with no border tariffs and no internal supports, while Latvia and Lithuania have had quite high border tariffs, as well as a range of ad hoc domestic support measures.

The implementation of the Baltic Agricultural Free Trade Agreement (BAFTA), as well as the Europe Agreement, has seen some convergence in policy measures across the region. However, support to the dairy sector differs significantly across the region, and this makes it more difficult to operate a unified market and to compete on equal terms (see Annex Table 1). A common problem in all three countries is the low level of investment in agriculture, which continues to impede the adoption of new technologies, as well as growth in productivity and improvements in farm incomes. Another major difficulty is the underdeveloped market infrastructure in the Baltic region, in particular, the lack of market structures and the low transmission of world prices to farm level.

Further deepening of co-operation under the BAFTA may well speed up the restructuring and rationalisation in the dairy processing sector and may lead to the emergence of several pan-Baltic dairy processing companies in the medium term.

Some additional factors to be considered in dairy sector restructuring

1. Timeframe for restructuring: Structural change is an ongoing process and is inevitably driven by the need to reduce production and processing costs through improving efficiency and competitiveness as well as modernisation. The relatively low utilisation of processing capacity continues to be a serious cost burden on the dairy industry in the Baltic region.
2. Supply concerns: The tremendous fall in herd size and milk production in all three countries during the 1990s places strong restrictions on the ability of the industry to lower unit costs. While productivity per animal is still relatively low by international standards, there is some evidence that productivity has increased in recent years.
3. Demand concerns: The consumer market is small, with a total population of about 8.5 million consumers. With the expansion in trade agreements, especially with respect to the multilateral agreement (WTO), the Europe Agreement and the BAFTA, new export markets have opened for dairy products. Developing these new markets requires significant investments as well as information and know-how. Another issue of key importance involves meeting the required quality and hygiene standards for the different markets.
4. Policy concerns: The current policy framework which is aimed at implementing the policy instruments of the CAP will have a significant impact on the pace and extent of structural changes in the dairy industry. In particular, if a system of milk marketing quotas is adopted similar to that in the EU, it may limit the scope for expansion in the region. Nevertheless, the development of a pan-Baltic dairy industry may emerge which focuses on the local Baltic market. At the regional level, the growth in market power of retailers is an additional pressure shaping the emerging structure of dairy processors.

Annex Table 1. **Producer support estimate (PSE) for milk and total PSE 1998-2000**
(percentage PSE)

	1998	1999	2000	1998-2000	Total PSE 1998-2000
Estonia	27	5	22	18	11
Latvia	12	-6	0	2	17
Lithuania	6	-9	-15	-6	12
EU	54	48	43	48	40

Source: OECD.

**SESSION 3. PROSPECTS FOR THE BALTIC DAIRY INDUSTRY AND
MARKET INFRASTRUCTURE**

THE ROLE OF SUPPLY SIDE FACTORS INCLUDING DIRECT INVESTMENT

By Mr. Sevki Acuner

Abstract

The availability of milk is the most important factor influencing the development of the processing industry in the Baltic region. Small herd size raises milk assembly costs, as well as quality control costs at farm level. The lack of financial resources continues to inhibit farm enlargement and the adoption of modern technologies. There have been significant FDI inflows into the dairy industry in all three countries, especially from the Nordic countries. Consolidation in milk processing is taking place across the region and is likely to accelerate in the future, as is the case in most western European countries, reflecting the growing need to reduce costs and the growing market power of the retail chains. Given the small size of the consumer base in Estonia, Latvia and Lithuania the development of a regional dairy market offers substantial opportunities for the dairy sector

I will confine my short presentation to a limited number of key issues, which I believe represent the main challenges for the development of a competitive and sustainable milk-processing industry in the Baltic states. Please note that the views expressed below are not made on behalf of, nor represent the views of the European Bank for Reconstruction and Development, where I work as Senior Banker, nor those of AB Rokiskio suris where I am the Chairman of the Board of Directors. Rather, they are made solely in my personal capacity and based on my experience.

The most significant issue facing the processing industry in Estonia, Latvia and Lithuania **is the availability of supply**. In the case of the dairy sector, the availability constraint has both qualitative and quantitative dimensions. The small herd size, still said to be around an average of less than 5 milk cows per farmer, precludes the achievement of 1) industrial scale milk production with the quality parameters that consistently meet EU standards, and 2) the quantum of income needed to invest in farms to meet those standards. This small, fragmented herd size also renders the actual milk collection costs highly expensive. The “milk collection points” then become the necessary, but, as we know, highly expensive infrastructure requirement in such an environment.

Apart from the logistical and associated cost implications, this mode of milk procurement also has serious quality implications. It is, as I understand, difficult to effectively manage, control and monitor for bacteria levels - and total bacterial counts of over a million are apparently commonplace - and any potential antibiotics contents, etc. under such a system of fragmented collection/procurement.

It is a rather perverse situation that is presently reigning in the milk supply side of the dairy industry in the Baltics: that is, the demand for the scarce milk supply is so strong and the resulting competition for milk among the processors is so fierce that the players in the sector cannot take their eyes off this “fighting rink”, to take steps to sort out and correct the inefficiencies, oddities, and the distorted structure of the supply side. In other words, everyone is way too busy fire fighting on a daily basis to take time to install fire prevention measures that will solve their problems in the long run. One would need to look no further than what is going on, on a daily basis, for milk supply among the three major Lithuanian processors, Rokiskio suris, Pieno Zvaigdes and Zemaitijos Pienas to appreciate this situation.

The answer to the question of what needs to be done on this front is obvious. The bigger question is how it is going to be done. Measures to:

- a. ***Encourage an increase in the average herd size in a meaningful way.*** I would note here that the EU average is around 24-25 milk cows per herd and in Denmark and the UK this number goes up to 50 to 70 cows. In addition, the ***institutionalisation of the milk production economic unit to a modern commercial enterprise status.***
- b. ***Differentiate meaningfully the pricing of milk according to its quality and quantity parameters.***
- c. ***Assist farmers to upgrade their equipment to increase both quality and quantity of milk.*** Perhaps some specialised lending programme, managed through a financial institution, would represent a possible remedy.

In sectors/industries with this degree of fragmentation, before participants can reach a critical level of institutionalisation to start generating solutions on their own, state guidance and assistance are essential for reinforcing the generation and implementation of “market oriented” solutions. In these efforts, we can say that the processors too have an interest and a clear responsibility to promote these solutions through their consistent actions and investments. These could be:

- refusal to buy raw milk below a certain quality threshold;
- adequate differentiation of the pricing structure for raw milk according to quality and quantity parameters; and
- support to farmers (*e.g.* at Roksikio suris, we extend low cost, long tenor financing for those larger farms which produce reliably high quality milk).

For producers, the lack of financial resources to grow towards the necessary critical size is a fundamental problem. Apart from the concept of financial facilitation by the state, as I mentioned above - and I am not talking about financial subsidisation - a good dose of technical and scientific assistance and guidance from the state can be crucial. In this regard, programmes such as SAPARD, Nordic Assistance, etc., can prove to be of major importance and must be continued. Also, a range of milk collection points, perhaps can be put under an umbrella of ownership, and if sufficient size can be created through such a process, access to finance from financial institutions to upgrade the equipment, etc. can then be achieved more easily. The case of Estonia is noteworthy here, where a relatively high proportion of farms are of a size where investment in ‘on-farm’ milk refrigeration is commonplace.

Another possible solution to this problem could be the formation of farm supply co-operatives. These organisations can generate not only major cost savings, but also sufficient cash flow to attract investments in individual farm improvement schemes. There is, however, a psychological/emotional, as well as an economic barrier here, as the de-collectivisation originally represented ‘freedom’ for most farm milk suppliers from a centralised command.

One of the major issues arising from the shortcomings of the milk supply side is the ***seasonality problem***. The wide fluctuations in the availability of milk from summer to winter months and the consequent fluctuation in the price of milk over these two seasons are dramatically higher than in western economies. Small farms cannot afford to invest in winter fodder to maintain milk supply levels. This extreme seasonality has a serious impact on capacity construction and utilisation, and thus leads to inefficient utilisation of capital, as the built-up capacity needs to be sufficiently high to handle

the summer volumes, which then sits idle during winter months. It is needless to point out the implications of the difficulties this situation creates in terms of management of the return on capital and cash flows, as well as end product pricing. The above mentioned measures aimed at increasing farm/herd size to efficient production levels and the institutionalisation of economic milk production units will represent significant steps toward the solution of the problems associated with seasonality as well.

To summarise the challenges for the dairy processing sector from the milk supply perspective, I can say that they boil down to ***the promotion of an increase in the herd size to an economically efficient and institutionalised production unit***, and to achieving this through co-ordinated policies (including financial), assistance and guidance, and not through intervention.

The political considerations of “short-termist” protectionist policies for the benefit of small, inefficient production units ought to be weighed against the economic and political benefits of having a longer-term healthier, competitive dairy and milk production industry.

Turning now to the presence of FDI in the Baltics dairy industry, I must admit that the interest of foreign investors has been and continues to be higher than the state/condition of the sector warrants. This may sound surprising to some, but had the Baltic countries not been in the geography of the Baltics, their dairy industry would have attracted much less foreign investment. It is, however, the benefits of proximity to countries with key dairy industry players on a global scale that has helped Lithuania and Estonia, if not Latvia, in this regard. This geographic advantage is something that should be used wisely by the dairy industry. We should note in this regard that the Nordic players not only see the Baltics as their natural front yard for “growth”, but also operate from “defensive” concerns. These players have reached, most likely, the natural maximum market share they can in their own markets, and have to look elsewhere for growth, or service of the potential markets post-EU membership – maybe even from 2004. We are seeing in this respect, not only strategic investors (SIs), but also financial investors coming in opportunistically early to capitalise on future bigger scale involvement from SIs, Swedish Farmers' investment in Pieno Zvaigdes in Lithuania and Valio's in Tapila in Estonia, East European Food Fund's and EBRD's investments in Rokiskio suris, for example. There are and will be others *e.g.* Rakvia in Estonia owned by UK interests, a small cheese and soft cheese producer Riga Pienas, and a Russian interest I believe, in producing butter.

SIs' resources both in terms of financing and technology and management are obvious. What the policy makers and potential investee companies have to focus on are the creation of the necessary conditions for FDI and the consequences of this FDI. I would say that the most immediate issue concerns the “size” of processors. Baltic companies will eventually need to represent a sufficient degree of importance in these foreign companies' operations in order to get the necessary attention and resources. This in turn means that further consolidation in the processing sector has to be viewed more from a realistic and constructive point of view than be seen as a threat to competition and a potential for consumer and farmer abuse.

Yes, monopolies are bad; but, duopolies or oligopolies in properly monitored and regulated economies are and can be quite competitive. ***The experience in all western countries has proven that consolidation is a necessary and unavoidable step*** in the dairy sector, and indeed both consumers and producers, and as a result, the subject country have benefited from this development. The Nordic countries are prime examples of this, with Holland and Ireland not far behind. I will touch upon this later on, but let me highlight the fact that the progress of big format retailers acts as a catalyst for this necessary and unavoidable consolidation, as well as a counter balance to the threat of economic/market dominance, attenuating the fears for consumer and farmer abuse.

It may be paradoxical, but clearly true, there is no better defender of consumer interest than a strong, competitive retailing sector. They will negotiate the best possible prices from their dairy processor suppliers. As regards the first level producers, the economic benefits flow to them through the necessity for these processors, in the face of such strong buyers, to procure the best and consistent quality at the right economic price and to pay for it. For these processors, profits do not necessarily or primarily lie in the lower raw material prices, but in increasing their value added and the range of products for consumers.

In Lithuania, we have seen significant consolidation of milk producers through acquisition and/or natural attrition of the uncompetitive ones and we are down to 3 main processors handling nearly 80% of milk sold off farms. It is some people's view that *perhaps there is room for only 2*, given that the milk supply to an internationally competitive dairy plant these days is 500 000 tonnes, whereas Lithuania in total only produces 3 times that volume, of which only 1.1 million tonnes are actually delivered for processing. The other 500 000 tonnes are consumed on farms or sold directly to local markets, albeit remaining a potential source of additional supply for processing.

In both examples of FDI in Lithuania, namely Rokiskio suris and Pieno Zvaigdes, it is most important to note that foreign investors, both financial and strategic, have opted to work with local management and ownership reflecting the level of technical competence and importance of local management.

One of the challenges for the sector in this regard is to ***reconcile local practices and philosophies with global practices and approach***. One observes the past practice of a strong General Manager and major shareholders exercising most decision making power reflecting the importance of a one-to-one, personalised, type of relationship in the sector. For western strategic investors to feel comfortable, local owner-managers must not be wary of ceding power into an institutionalised decision making process. At the EBRD's investment, Rokiskio suris, we have addressed this issue successfully with Mr. Antanas Trumpa and corporate governance practices that are at western levels.

I highlighted this as a challenge, for it is not only an issue for the dairy sector or for the Baltics, it is a universal problem for all transition economies. Those who recognise this and are flexible enough to address this concern simply attract more foreign capital, faster, and in a more organised way.

The fourth challenge relates to the changes in the fast growing retail market and the incursion of large size retailers/supermarkets into the Baltics. These operators require reliable, consistent quality, large volume, competitively priced, and well-packaged products. Processors now need to fight not only for the raw milk supply, but also for the shelf space to get their products in front of the ultimate consumers. ***'Category management' and 'own label' branding have arrived!*** The incursion of supermarkets has unfortunately caught the Lithuanian and Baltics processors in their infancy. Many of them do not really have a well-developed brand strategy. Even though the consumer is aware of the dairy, their products are not offered according to established brand development and management practices.

We all know that retailers want to develop their own label in a variety of product categories, and fresh milk products, in particular, are one of the first and key categories for own label development. At Rokiskio suris, we have been able to respond to this trend in a proactive way, and in the process acquired a handsome market share. We are also embarked on a strong brand development effort to complement our supermarket own label products. Processors must learn to respond to this challenge, otherwise they will quickly become marginal players.

As many cultures have observed, every threat also represents an opportunity. I would like to point out in this connection that the incursion of supermarkets will also give those processors, who are able to

take advantage of it, an opportunity to focus on value added products. Supermarkets represent a significant enhancement in the means of reaching consumers with sophisticated product presentations and product innovations. Don't forget the "Consumer" is the King!

Thus, the 4th challenge exists in the ability of the processors to respond to the progression of supermarkets in food and product retailing in the Baltics.

The final challenge that I would like to emphasise is in the ***development of a truly regional market throughout the Baltics***. While there is some trade, notably in ice cream and butter, the dairy markets are still "country confined". Given the size constraints of each of the Baltic countries, and the commodity type nature of dairy products, where huge volumes need to be processed at very high efficiency levels, the creation of a bigger trading market is essential for success. This requirement is both triggered and eventually satisfied by the growth of supermarkets. They have regional ambitions and will naturally want to be able to source dairy products on a pan-Baltic basis. As I mentioned earlier, this is also essential for attracting foreign direct investment. I will return to one of the criteria/attraction factors for FDI mentioned earlier, that is the size of the market.

So we can say, closer trade will help each of the countries to attract FDI more easily. Here co-operation in one sector helps progress in another sector. It can also help stimulate a solution to the herd size problems. In other words, it would appear that the ***creation of a true pan-Baltic market in dairy products could be a panacea with broad applications to the key ailments of the dairy sector***. Here, the largest role clearly falls on local politicians to further promote regional trade.

In closing, the challenges for the dairy sector are both internal and external. They were born as a consequence of past practices, but also as result of changes in the market place. There are however, also opportunities that can be mastered through conscious courageous, realistic and market focussed actions and policies.

I see the dairy sector as a clear point of strength for the Baltics and Lithuania, in particular, where a globally competitive industry can be developed and where the reform process in agribusiness can get a real moral boost.

THE DAIRY SECTOR IN THE CEC COUNTRIES: THE STATE OF RESTRUCTURING AND FUTURE CHALLENGES

**By Dr. Klaus Frohberg and Dr. Monika Hartmann
(Paper presented by Dr. Frohberg)**

Abstract

The first part of the paper discusses the performance of dairy processing in the CECs and compares that of the Baltic countries with the other CECs. In the second half, the impact of enlargement on the WTO commitments of the EU after accession are studied. The analysis shows that the performance of the processing industry still requires considerable improvement to become more competitive. Enlargement makes it very difficult for the EU to adhere to all WTO commitments without adjusting agricultural policies.

The dairy sector in the candidate countries of Central and Eastern Europe (CECs) had to cope with tremendous adjustment pressures in the 1990s. As a result of privatisation and liberalisation in most CECs, deliveries to dairies sharply declined, imports increased and a de-monopolisation of the milk processing industry took place. This contributed to rather intense competition on CEC dairy markets. In general, the de-monopolisation process resulted in a fragmented structure which now constitutes a major problem for dairy plants, since the firms have difficulties in taking advantage of economies of scale. In fact, a tendency towards higher concentration can now be observed. As financial means are increasingly needed for investments to meet the EU requirements on product quality and standardisation, as well as sanitary regulations, the number of mergers and/or liquidations of dairy processing enterprises can be expected to keep on rising.

The performance of the dairy sector in the CECs shows a very diverse picture. On the one hand, the dairy processing industry in these countries benefits from low milk prices and low wages as well as from qualified labour. On the other hand, all these countries suffer from over-capacities leading to high fixed costs per unit of output, thus hampering competitiveness on domestic and international markets. In addition, deficiencies exist in most of the dairy enterprises in meeting EU requirements for hygiene, food safety, quality and environmental standards. Thus, as a result of harmonising national laws with the *acquis communautaire*, considerable investments will be necessary in these countries to upgrade processing plants to EU standards. The SAPARD programme of the EU plays a decisive role in this respect. Further advantages for the sector will come from the considerable rise in consumption of dairy products expected to take place in the future.

The paper is structured as follows. Due to space limitation only a few indicators with regard to the performance of the processing industry are presented in the following paragraphs. Emphasis is put on comparing the dairy sector in the Baltic countries with the other CECs. Thereafter, an assessment of the impact of EU-enlargement on trade policies is provided. The last part of the paper is devoted to a brief discussion of the comparative advantage of milk production and processing in the Baltic countries.

Factor productivity is one of the indicators which is often used to judge performance of an industry. For the CECs, this indicator has been calculated only for labour¹, due to lack of data on the use of other inputs and production factors. Labour productivity in the dairy processing industry is compared to that in the entire food processing sector as well as across countries. The results are provided in Table 1. For comparison, data for Germany are added. In 1999, average labour productivity in the dairy industry varied considerably across countries. Only in Romania is labour productivity lower than in the Baltic countries. Since the utilisation of capital affects largely labour productivity, differences in this indicator points among others, to variations in the size of the capital stock employed by the dairy processing industry. Not only does this branch in the Baltics depict relatively low labour productivity in relation to all other CECs, but the entire food processing industry compares unfavourably. On the other hand, with the exception of Romania, dairy plants have a higher labour productivity than the food sector as a whole. This might be seen as an indication that the dairy branch of the food industry has a competitive advantage.²

Over the period 1995 to 1999 labour productivity in the dairy sector increased in all CECs, but Romania. This rise was especially pronounced in Lithuania and Hungary. In these two countries the workforce in the dairy sector was considerably reduced despite a noticeable increase in output. Compared to the food industry, the increase in labour productivity was steeper in all countries except the Baltics, pointing to the fact that the dairy branch lost out relative to total food processing in the latter countries.³

When compared with Germany the much lower labour productivity in the CECs should not be assessed as inadequate performance of the dairy sector and the food sector more generally in those countries. Labour productivity should be different if the structure of factor prices and/or the input/output price relations deviate. This certainly holds for the countries considered. While in Hungary the milk price at the farm level reached 84% of that in Germany in 1999, wages in the Hungarian food industry were about 12% of the corresponding German value (BMELF 2000, p. 567).⁴ However, the gap in labour productivity between the CECs and an EU country such as Germany will narrow as wages in the former countries come closer to those of the latter. In addition, through the extension of the Common Agricultural Policy to the CECs agricultural producer prices will be harmonised. This necessitates restructuring the whole economy, including food processing, to cope with the new economic conditions.

Another determinant affecting the industry's performance considerably is the level of capacity utilisation. Due to much reduced milk delivery there has been a noticeable decline in the utilisation of processing capacities. The situation is especially severe in Bulgaria and Romania, where, in 2000, it

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1. Labour productivity is measured as gross output per employee. Net value added per employee would have been preferable but was not available across countries.
 2. However, one needs to be careful with this conclusion. The high raw material intensity of dairy processing compared to total food processing leads to relatively higher production costs, which are also reflected in the value of gross output. Thus, gross output per employee might be inflated because of this and might therefore not hint at a true competitive advantage.
 3. Hungary in particular reveals a much higher change in the labour productivity of dairy processing compared to the food industry. Thus, while in 1995 labour productivity in these two areas was about equal, in 1999 there was a considerable divergence in these two values. This partly reflects the much higher reduction in labour force in the dairy sector compared to food industry (cf. Table 1 in section 2).
 4. It is interesting to note that the relation in labour productivity of Hungary's food industry to that of Germany matches almost exactly their wage differential.

reached only 20% and 33%, respectively. In Poland, processing capacity utilisation is in the range of 30% to 60%, depending on the kind of dairy product manufactured and the season. Compared to butter, the utilisation rate is considerably better for high value products such as yoghurts and cheeses, as well as during summer months relative to winter months. The same observation can be made for most of the remaining CECs. A medium level of capacity utilisation of between 50% and 70% is achieved in the Baltics, the Slovak Republic, the Czech Republic and Hungary. Over-capacity to the extent mentioned above leads to high fixed costs per output unit and thus hampers the competitiveness of the dairies on domestic and international markets.

Table 1. Labour productivity in the dairy and the entire food industry in the CECs and Germany for 1999 and its development over the period 1995 to 1999¹

Country	Dairy Industry		Food Industry		Farm gate prices of milk
	1999 EUR 1 000	% change 1999/95	1999 EUR 1 000	% change 1999/95	in % to EU-prices in 1999
Estonia	38.3	25.03	25.9	39.76	52 ⁷
Latvia ²	25.4	21.89	24.2	21.52	48
Lithuania	32.6	110.29	28.3	113.14	54
Poland ³	41.7	44.67	41.2	35.81	50
Czech Rep.	69.7	33.11	44.6	25.73	67
Slovak Rep.	57.9	23.85	33.9	14.39	62
Hungary ⁴	77.7	71.81	50.4	14.83	84
Slovenia ⁵	168.9	25.72	87.7	18.70	94
Romania ⁶	8.0	-36.16	13.4	-39.51	81
Germany	507.9	16.15	414.0	-1.66	54

1. Measured as gross output per employee; no information was available for Bulgaria.

2. Data refer to 1998, changes in % refer to period 1996 to 1998.

3. Sales value taken as a proxy for gross output, referring to enterprises with more than 50 employees.

4. Sales value taken as a proxy for gross output.

5. Sales value taken as a proxy for gross output, gross value added being available for 1998, only.

6. Changes in % refer to 1999 compared to 1997.

7. Data refer to 1998.

Sources: Taken from Hartmann (2001).

Expenditure on raw material is by far the most important cost component in manufacturing milk products.⁵ Thus, prices to be paid for raw milk by the dairies is an important competitive factor for the performance of this industry. A comparison of producer prices in the CECs with those in the EU-15 reveals that in 1999 the former were still much lower. Milk prices ranged between 48% in Latvia and 94% in Slovenia of those paid in the EU (see Table 1). Even after considering the 15% decline in EU intervention prices for milk products, due to the implementation of Agenda 2000, and assuming that it would lead to an equal reduction in market prices for the raw product, a substantial price gap is expected to remain for all CECs, except Slovenia and Hungary. At present, low raw material prices are

5. In Germany the share of the raw material costs in total costs amounts to about 50% for milk and curd cheese, to 58% for cream, to 64% for Gouda, to 73% for butter. Only for the production of yoghurt are these costs at 18% much lower (Wissenschaftlicher Beirat beim BMELF, 2000, pp. 62). In Poland the raw material and energy costs together amount to about 75% of total costs in the processing of dairy products (Główny Urząd Statystyczny, 1998).

favourable for the dairy industry in these countries compared to their competitors in the EU. However, with accession to the EU these price differentials will level off,⁶ leading to a considerable cost increase for dairy plants in the CECs.

Besides price, the quality of its products also determines the ability of a sector or branch to compete on domestic and international markets. The quality of dairy products crucially depends on milk quality. Low raw material quality leads to rising costs for thermal treatment in processing, because of an increase in the input/output ratio and thus to higher input costs. In addition, it narrows the variety of dairy products that can be produced. In most of the CECs, a large share of the milk reaching the dairy plants does not fulfil EU standards. The situation is especially problematic in Bulgaria and Romania, where the quality of raw milk is low and varies considerably, leading to severe problems in processing. Also Poland, Latvia and Lithuania still have a long way to go to make their milk meet EU standards. In Poland at present only about 40% of the delivered milk fulfils the highest quality standard and thus conforms to EU norms. The Polish government has assessed the cost of upgrading Poland's dairy sector to EU norms at about EUR 4 000 million; for dairy processing alone an amount of about EUR 625 million is said to be necessary. It is estimated that only about 40% of the existing enterprises will be able to satisfy EU standards in the future and probably only half of those will survive competition in an enlarged EU market. Polish exports of dairy products into the EU were banned in 1997 on grounds of quality and hygienic deficiencies. At the end of 1999, exports to the EU were authorised again, with 5 dairy plants being granted this license. In the meantime, twenty additional plants have been approved for exports. In Latvia nine plants and in Lithuania, eighteen were licensed by the EU Commission. (*e.g.* Osteuropa Agrarmärkte – aktuell, 01/2001, p. 8; Agra Europe, AgraFood East Europe No. 03/2001, p. 15).

Estonia, the Czech and Slovak Republics, Hungary and Slovenia lead the way in meeting EU hygienic standards with 82%, 95%, 84%, 84% and 85% of milk production corresponding to EU norms. Seven dairies and thus 16% of all Estonian enterprises possess a licence to export to the EU. Their share in total production of the sector amounts to more than 50% (*e.g.* Osteuropa Agrarmärkte – aktuell No. 20/2000, p. 1, No. 01/2001, p. 5 and p. 19; Agra Europe, AgraFood East Europe No. 12/1999, p. 26, 06/2001, p. 10). However, in these countries considerable investments are still necessary in dairy farms and in the dairy industry to adapt to EU quality and hygiene legislation. Even in relatively advanced countries such as Hungary, improvements in factory hygiene are urgently needed. Deficiencies exist in many dairy plants with respect to cooling effectiveness and hygiene of raw milk procurement, as well as sewage treatment, waste disposal and utilisation of whey. At present, most Hungarian dairy plants are producing cheese using outdated equipment from the 1970s, which does not allow for close-circuit production like in the EU, although domestic regulations set a lower limit for microbiology contamination than in the EU. Thus, it is not surprising that around 70% of Hungarian cheeses available in shops fail to meet national quality standards (*e.g.* Agra Europe, AgraFood East Europe No. 01/2001; Szabo, 2001). For Hungary, it has been estimated that EUR 130 million needs to be invested in dairy farms, milk collection centres and transport vehicles to make them meet quality standards (Kiss and Weingarten, 2002).

One of the main impediments to economic growth in the candidate countries' dairy sector is the outdated and inefficient capital stock. At the same time, most dairy enterprises suffer from both insufficient liquidity and inadequate access to credit at reasonable conditions due to less developed financial and banking sectors in transition economies. Therefore, foreign direct investment (FDI) inflows are regarded as essential for successful economic transformation of the dairy sector and the whole economy in the CECs. An additional argument in favour of FDI is its stimulating impact on

6. This only holds if the milk quality in the CECs is comparable to that in the EU.

competition in the local market, thereby increasing the efficiency of the whole industry. This, in turn, leads to enhanced export opportunities and the inflow of specific, often intangible assets through foreign investors. Thus, the level of foreign investments seems to determine to a considerable extent the performance and the future prospects of a sector (*e.g.* Eiteljörge *et al.*, 1999, p. 202).

Data on FDI for specific branches of the food industry are not easily available for most of the CECs. In general, only qualitative information is accessible. From the material obtained the following conclusions can be derived. For foreign interest groups, dairy processing in the CECs has been an ambiguous endeavour. On the one hand, it has been a very attractive investment target, mainly because of the excellent prospects for the development of consumer demand for dairy products in these countries. In addition, especially the Baltic countries, but also Poland and Bulgaria can be regarded as an exceptional location from which to enter markets to the East, which are also likely to show a strong increase in demand for dairy products in the future. Other factors that have encouraged FDI in this sector include low raw material prices, as well as cheap and skilled labour. However, at the same time there have been several factors impeding foreign investment in the dairy sector of the CECs. These include the fragmented ownership of share capital due to privatisation goals, the fragmented dairy farm structure and the low quality of the raw material.⁷

The most commonly used quantitative indicators for measuring and comparing financial performance of enterprises or sectors in one country or between countries are either net or gross profit as a percentage of sales, called net income ratio and gross income ratio, respectively. However, it should be noted that these indicators have shortcomings, if employed for comparing enterprises of different legal status and/or between countries. Problems with the former comparison arise because, for some legal forms such as co-operatives, paying high milk prices to producers might be more important than making profits. For the latter, difficulties with profit indicators are due to the fact that countries have different tax rules, which influence the level of this indicator to a considerable extent. This should be kept in mind when interpreting the results (*e.g.* Wellert, 1994, p. 106; Gloy, 1995, p. 124).⁸

Information on gross and/or net income ratios were available only for Poland, the Slovak Republic and Hungary. These figures indicate that the profitability of dairy production increased in Poland and in the Slovak Republic over the period for which data were available (see Table 2). However, the levels of gross and net income ratio were much lower in the latter country. In both countries, profitability in the dairy industry exceeded that in the food industry in recent years. In Hungary, the opposite situation and development can be observed. The dairy sector reveals a much lower profitability than the food industry and even had to cope with losses during more recent years. This also holds for the aggregate of the six largest dairy plants that had a combined market share of 68% in 1999.⁹

Those dairy plants incurring losses over several years will have to leave the market leading to further consolidation and to higher profitability in the sector. The latter is supported by the results of

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7. Other factors of great importance for the decision of foreigners to invest are the progress made in the transformation process, the level of bureaucratic barriers, and the predictability of the legal framework, particularly of taxation.
 8. While in Poland co-operatives are the dominant legal form - 270 of the 340 enterprises have the status of a co-operative – this is of much lesser and declining relevance in the Slovak Republic and especially in Hungary.
 9. All but one of these enterprises are being owned by foreign investors. The only leading Hungarian owned dairy company, MiZo-Baranyatej is at present under liquidation. It is one of those companies that have accumulated considerable losses over the last years (Szabo, 2001, p. 44).

analysing the investment ratios¹⁰ of Poland and Hungary. For other CECs, these ratios are not available. For the Hungarian dairy industry this figure increased over the period 1996 to 1998 from 1.4 to 2.1, but declined in 1999 to 1.7. Nevertheless, the value is far above unity indicating that there has been sufficient room for net investments. This also holds with respect to the Polish dairy industry. However, in this country the investment ratio was especially high in 1996 and 1998 with 2.0 and 1.9, respectively, while it was somewhat lower in 1997 (1.7) and 1999 (1.4).

The description of how the dairy industry performs was made assuming the enlargement does not force the EU to change its trade and domestic policies for dairy products. However, this hypothesis needs careful scrutiny because the enlarged EU may have to adjust its dairy policies in order to fulfil the commitments it made during the Uruguay Round. This depends largely on two conditions. Firstly, it depends on the commitments the CECs made themselves either during this latest GATT-Round or when they negotiated the conditions for their membership in the WTO. These commitments will be added to those of the EU-15 after enlargement. Secondly, it depends on the net trade position of the EU-25. In turn, this rests decisively on how production and demand in the CECs will adjust under the implementation of the Common Agricultural Policy (CAP) after enlargement. The three policy areas of the agreement which are relevant in this respect - aggregate measure of support (AMS), market access and export subsidies – will be briefly discussed focusing on the dairy sector.

Table 2. Gross income ratio (GIR) and net income ratio (NIR) of dairy plants as a percentage of total sales for selected CECs¹

	Poland ²				Slovak Republic ³			Hungary				
	Dairy		Food		Dairy		Food	Dairy			Food	
	GIR	NIR	GIR	NIR	total	big 10	GIR	total	total	big 6	GIR	NIR
	GIR				GIR	GIR		GIR	NIR	NIR		
1995	0.38	-0.29	3.12	1.12	n.a.	-0.48	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1996	0.68	-0.21	3.80	1.90	n.a.	0.46	n.a.	0.34	-1.08	n.a.	1.55	n.a.
1997	1.02	0.90	2.82	1.28	-0.85	0.53	-0.68	1.80	0.77	0.98	2.85	1.82
1998	0.41	-0.47	1.85	0.59	0.42	0.58	-1.96	-0.35	n.a.	-0.81	2.72	1.94
1999	1.21	0.26	0.95	-0.39	n.a.	n.a.	n.a.	-0.53	n.a.	n.a.	2.56	n.a.
2000	2.41	1.15	1.86	0.75	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

1. GIR (NIR) is equal to gross (net) profit as a percentage of sales.

2. Refers to enterprises with 50 and more employees.

3. 1997 includes all companies; 1998 includes only companies with 20 and more employees.

Sources: Information on the references used is available from the authors on request.

Regarding the AMS, its level has been calculated for the CECs after enlargement. The results are depicted in Table 3. The production quantities were taken from simulation results obtained with the model CEEC-ASIM (Wahl *et al.* 2001). The AMS will be increased by almost EUR 5 billion due to the new EU member states. This is roughly the amount of these countries' joint commitments and which is added to that of the EU-15. The enlarged EU will have in total EUR 40 billion AMS, an amount considerably below EUR 73 billion of the EU-25.

A different perspective arises if the blue box instruments, the direct payments, were to be included into the AMS. Currently, they are not. It is estimated that the direct payments will amount to about

10. Investments as percentage of depreciation.

EUR 7 billion for the CECs (Frohberg and Hartmann 2001). Together with the EUR 27 billion paid as area compensation and animal premiums to farmers in the EU-15 the total would be EUR 34 billion. If this sum is added to the EUR 40 billion AMS for market support the total AMS would be EUR 74 billion, slightly above the limit of EUR 73 billion. In other words, if direct payments were part of the AMS the enlarged EU would be expected to exceed its limit; implying an adjustment of the CAP.

Table 3. Estimates of financial support considered in calculating the AMS in the CECs after accession to the EU

Product	Administered price	External Reference price	Production in 2007, 1 000 t			Market price support
	EUR/t	EUR/t	CECs 1. Round	CECs 2. Round	CECs-10	Bill. EUR
	(1)	(2)	(3)	(4)	(5)=(3)+(4)	(6)= ((1)-(2))*(5)
Wheat	101.3	86.5	17 576	14 394	31 970	0.473
Coarse grains ¹	101.4	82.6	32 797	23 373	56 170	1.058
Sugar	631.9	193.3	3 336	648	3 983	1.747
Butter ²	2 789.7	943.3	266	61	321	0.593
Skim Milk Powder ²	1 746.9	684.7	235	61	296	0.314
Beef ³	2 224.0	1 729.8	909	589	1 498	0.740
Total						4.925

1. In the analysis, coarse grains consists of barley, maize, oats, rice and sorghum. Both the administered and the external reference price are weighted with the corresponding output quantities of the CECs simulated for 2007 with the model.

2. In the model only milk is considered and not its processed products such as skim milk powder and butter. However, only for the latter can external reference prices be obtained. Therefore, it was assumed that the share of milk processed into skim milk powder in 2007 is similar to the level in 2001.

3. Beginning in 2002 intervention is carried out only if the market is very tight; *i.e.* beef prices have to decline below 1 560 EUR/t for two consecutive weeks. If this price were to be taken as the administered price, it would be above the external reference price. For the current analysis it was assumed the base price which is in use since the beginning of 2002 is the one to be taken as the administered price.

Source: Own calculations based on simulation results obtained with the CEEC-ASIM (Wahl *et al.* 2001).

An important aspect with regard to enlargement are the bound tariffs, because they have to be adjusted so that there is a common level for all of the then 25 member states. However, WTO rules make it necessary that the average bound tariff does not exceed the one the countries had before expanding the customs union. In the case of dairy products this requires some adjustments. In Table 4 the bound tariffs as notified at WTO are listed for four dairy products. The different ways the bound rates are expressed makes it difficult to compare them. Most of the CECs bind their tariffs at ad valorem rates while the EU prefers to use specific rates. Table 4 reveals that there is quite a lot of variation in these rates among the CECs. Poland, Slovenia and, especially Romania, have the highest bound rates among the candidate countries, while the Baltics are on the low side.

To enhance comparison of the bound rates, those of the CECs are expressed relative to those of the EU in Table 5. This was done for the two most heavily traded commodities among dairy products, butter and skim milk powder. The specific rates of the EU were converted to ad valorem values using current world market prices. As can be seen from this table the bound rates in most CECs are below that of the EU-15. The exceptions are Romania and Slovenia for butter and skim milk powder, as well as Poland for skim milk powder. For all other countries, the bound tariffs of the candidate countries are lower

than those of the EU. This means that the EU will have to modify its tariff structure after enlargement for dairy products. Due to the share of more than 50% held by Poland and Romania in milk production of all 10 candidate countries, the downward adjustment of the aggregate bound tariffs in the enlarged EU will be somewhat dampened. Nevertheless, the EU is expected to be forced to reduce its protection of the dairy sector after enlargement. On the other hand, for the majority of the joining countries, their dairy market will become more protected if AGENDA 2000 is not changed before accession takes place. This holds especially for the Baltic countries since they have the lowest bound rates among the CECs.

Table 4. Tariffs of the EU in 2000 and bound tariffs of the EU and the CECs in 2000/2001

		Milk	Skim milk powder	Butter	Cheese
MFN-tariff in 2000	EU-15	227 EUR/t to 248 EUR/t ¹	1 254 EUR/t to 1 306 EUR/t ¹	1 896 EUR/t to 2 074 EUR/t ¹	1 852 EUR/t to 2 026 EUR/t ¹
Bound tariffs in 2000/2001	EU-15	227 EUR/t	1 254 EUR/t	1 896 EUR/t	1 852 EUR/t
	Estonia	27%	30%	35%	35%
	Latvia	30%	30%	36%	36%
	Lithuania	30%	30%	60%	45%
	Poland	102%	102%, min 1 828 EUR/t	102%, max 2 313 EUR/t	160%
	Czech Republic	29%	37%	68%	9%
	Slovak Republic	68%	9%	34%	38.50%
	Hungary	101.80%	52.50%	71.70%	51.90%
	Slovenia	10.9%	9%	9%	10.9 %
		+1 796 EUR/t	+1 501 EUR/t	+1 264 EUR/t	+356 EUR/t
	Romania	248%	248%	200%	270%
	Bulgaria	60%	60%	13%, +2 387 EUR/t	120%, min 817 EUR/t

1. Depending on the time of the year; the lower tariff is levied during the second half of the year
Source: WTO (2000).

There is one additional effect with regard to tariff rates and enlargement. This concerns compensation for lost trade opportunities by third countries after enlargement. The increase in tariff rates in many CECs is likely to make third-country trading partners request the EU to compensate them for losses they incur due to worsening trade conditions. According to WTO rules such requests have to be fulfilled. During the former enlargements the EU granted such compensations.

Table 5. Level of bound tariff in the CECs relative to that of the EU-15 (in %)

	Skim milk powder	Butter
Estonia	34	24
Latvia	34	25
Lithuania	34	41
Poland	146	70
Czech Republic	42	47
Slovak Republic	42	47
Hungary	58	70
Slovenia	130	73
Romania	280	138
Bulgaria	68	135

Source: Own calculations.

The WTO-commitments with regard to quantity and value restrictions on subsidised exports are also likely to require adjustments in agricultural policies. Already in 2001, for some commodities such as cheese the quantity limits on subsidised exports became binding for the EU, thereby hampering shipments of these products to foreign countries. As Table 6 reveals, commitments do not increase very much with the enlargement because the CECs have little to add to the EU-15. An exception is skim milk powder, of which, quantity limits in particular go up by more than 40%. It is to be expected that in future, exporting with subsidies will be less restricted by the value, but more by the quantity constraint. This is due to the fact that the EU keeps administered prices nominal constant, in contrast with world market prices. A narrowing of this gap is likely to occur, reducing the subsidies per unit of export. Hence, the restrictions on quantities of subsidised exports are likely to become increasingly important.

The extent to which the quantity commitments will restrict exports depends also on the change in exportable quantities due to enlargement. Due to price alignments in the CECs after enlargement, production of milk and beef will become more competitive. However, the introduction of the milk quota will constrain output increases. On the other hand, demand will react in the opposite direction leading to more exports. In the case of beef, production gets a strong competitive push due to price increases. Without production constraints, output can rise to its optimal level. In addition, demand for beef is going to decline and that of pork and poultry, to increase. Therefore, beef exports of the CECs might show an even stronger increase than milk exports.

Table 6. Value and quantity commitments on subsidised exports by the EU-15 and candidate countries

	Value commitment			Quantity commitment		
	EU-15	All CECs	Ratio of CECs to EU-15	EU-15	All CECs	Ratio of CECs to EU-15
	Bill. EUR	Bill. EUR	%	1 000 t	1 000 t	%
Butter and Butter oil	497.8	3.5	0.7	399.3	15.6	3.9
SMP	275.8	46.9	17.0	272.5	119.3	43.8
Cheese	341.7	5.8	1.7	321.3	18.5	5.8
Other dairy products	697.7	42.0	6.0	958.1	69.9	7.3

Source: WTO (2000).

If AGENDA 2000 is implemented in the CECs without adjustment, then beef production will gain relative to milk production in the Baltic countries. The question is whether this is a long term trend. The current competitive advantage of producing milk is largely due to low wages. Without that, the dairy sector would hardly be competitive. But labour is going to become relatively more expensive than capital. Hence, much more capital intensive production techniques will be required in the future to increase labour productivity. This also necessitates an expansion of herd sizes. In the EU, herd sizes of at least 50 dairy cows are required to capture some advantage of economies of scale. Any size below this is seen to be too small.

Not only herd size, but yield per dairy cow is a decisive factor for competitiveness in milk production. Optimal yield depends on many determinants. One is the availability of high yielding breeds with about 8 000 kg milk p.a. and more. Since these animals can produce about half of the yield from roughage, nutrients for the other 4 000 kg must come from feed concentrates. This indicates that pasture is about to lose its advantage as a basis for milk production. If, in addition, such a region also has some location disadvantage such as long and hard winters and low demand for fluid milk in the immediate vicinity, milk production may decline.

Conclusions

The analysis shows that substantial deficits still exist with regard to the competitiveness of the dairy processing industry. One decisive factor for improving the situation is the availability of investment capital.

Agricultural policy is affected by enlargement, because problems in fulfilling WTO commitments are expected to occur.

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OVERVIEW OF THE EU DAIRY SECTOR POLICY

By Dr. David Colman

Abstract

This paper explains the dairy sector policy of the European Union in terms of types of policy measures and their evolution. Because the imposition of quotas is one of key issues for countries joining the EU, a detailed section on how the quota operates is included.

General outline of the policy

In common with many OECD countries, the EU has offered a high degree of protection to its milk sector, although this has declined steadily from 1992 to the present as measured by the Producer Support Estimate (PSE). According to OECD, the percentage PSE (the proportion of milk producer revenue attributable to the support system) in 2000 was 43% in the EU, 50% in the USA, 59% in Canada and 81% in Japan. This contrasts with 0% in New Zealand and 16% in Australia, the two largest exporters of dairy products outside the EU (OECD 2001), and the strongest advocates of removing barriers to free-trade in milk and other agricultural products.

This support arises principally through measures to maintain higher dairy product prices in the EU than would occur under laissez-faire trade. A high proportion of the cost is borne by consumers paying higher prices for dairy products than would occur in the absence of the EU dairy policy regime, but a significant amount arises from the budgetary costs of market management measures. However, in recent years these costs have accounted for only 5% to 6% of the total EU farm support budget (see Table 1 for details of the costs incurred).

Table 1. **EU-15 budget for farm support 1998-2001 (ecu m)**

	1998 Expenditure	1999 Expenditure	2000 Expenditure	2001 Budget
Total farm support	38 748	39 876	40 363	44 024
Milk sector support	2 597	2 510	2 544	2 345
<i>Milk sector's share</i>	<i>(6.7%)</i>	<i>(6.3%)</i>	<i>(6.3%)</i>	<i>(5.3%)</i>
Details of milk sector support:				
Export refunds of	1 427	1 439	1 671	1 266
which:				
Butter/oil	337	298	338	326
SMP	133	197	276	114
Cheese	181	157	226	251
Other	775	788	831	575
SMP:				
Intervention	90	108	-283	-2
Feed/casein subsidy.	654	744	708	563
Butter:				
Intervention + PSA	-23	108	82	44
Internal disposal	584	520	449	480
subsidy.				
Cheese storage aids	74	87	85	75
Buyout of milk quota	2	6	-	-
Super-levy income	-214	-498	-161	-89

The internal EU market is protected from foreign competition by import tariffs. As Table 2 shows these remain high. The EUR 1 896 per tonne import tariff for butter compares to a March 2001 price for butter of around EUR 4 260, and that of EUR 1 671 for Cheddar cheese compared to a UK average cheese price of around EUR 3 780 per tonne; tariffs of 44% in both cases.

Table 2. **EU import tariffs and export refunds (EUR/tonne)**

	82% butter	Butteroil	WMP (25%-27% fat)	SMP	Cheddar cheese	Gouda cheese
Tariffs	1 896	2 313	1 304	1 188	1 671	
March 2001						
Refunds	1 700	2 160	680	150		1 060
May 2001						

These measures largely arise from the handling, storage and disposal of output in excess of that which EU consumers are prepared to buy at the cost level that includes policy prices. The specific expenditure measures in place to deal with the surplus production, which is estimated to be around 10% of the total, are:

1. Support (or intervention) buying of butter and skimmed milk powder (SMP) at pre-announced prices, when market prices fall below certain pre-determined levels.
2. Private storage aid for butter and SMP, which is designed to engage the private sector, as opposed to the public, in the process of handling stocks of surplus dairy products.
3. Export subsidies for butter, SMP, whole milk powder (WMP) and cheese. These are designed to enable surplus EU product to find outlets in the international market in competition with both unsubsidised and subsidised supplies from other countries.
4. Domestic disposal subsidies (a) of butter for pastry and ice cream production, and for consumption in non-profit organisations (*e.g.* prisons, the armed forces) and to deprived persons and for social assistance, and (b) SMP for animal feed.

These budgetary costs would be substantially greater if it were not for the system of marketing quotas which were introduced into the EU dairy regime in 1986, when there were only 10 members of the Community¹. The quotas, which restrict what can be sold off the farm, even if it is processed on the farm, were then progressively reduced up to 1991 by which time marketed milk had been reduced to 92.5% of the level marketed in 1984, and the surplus had been capped. Had this not taken place, the high support prices in place would have resulted in supply continuing to grow faster than demand. The alternative means of bringing supply more closely into line with commercial demand would have been to reduce the EU price of raw milk by cutting (a) the intervention support price, (b) import tariffs, and (c) export and domestic disposal subsidies. For political reasons, and because imposing quotas appeared a more precise means of supply control than price adjustment, that was the adopted solution. Because the imposition of quotas is one of the key issues for countries joining the EU, a more detailed section on how the quota regime operates is presented below.

Changes in the policy 1986 to 2001

Intervention (support buying) prices have changed surprisingly little since 1984, and are in fact higher. That for butter stood at EUR 3 282 per tonne in 2001 as against 3 197 in 1984/5, while for SMP the support price has risen from EUR 1 659 to EUR 2 055 per tonne. Thus internal price support policy has remained essentially unreformed during this period, but under a general policy reform agreement in 1999 (the so-called Agenda 2000 reform) modest change has been agreed to start in 2005/6 with a 15% cut in intervention prices phased in over three years.

Perhaps the most significant change to the dairy regime during the recent past came about as a result of the Uruguay Round Agreement (URA) of the GATT, with the agreement to restrict export subsidies by both value and volume, and to agree to increased import access in the form of tariff quotas. For the most part, it is the accession countries which have taken advantage of this preferential access. The actual amount of restriction which resulted from the URA has in practice been relatively small, in that the EU has been able to keep within its export subsidy limits, and in 2000 and 2001 was able to appreciably reduce export subsidies for some products or to eliminate them at times. Nevertheless, the

1. Belgium and Luxembourg are counted together as one country.

URA entailed the EU signing up to the process of agricultural trade liberalisation and extending it to the dairy sector in a modest way.

Milk marketing quota

Marketing quotas were first imposed for the EU-12 in the 1984/5 milk marketing year on the basis of reference production in the early 1980s. The quota was then progressively reduced until in 1991/2 it was 91.4% of the amount initially imposed. Since then there have been minor adjustments only for the EU-12, and quota has been allotted to Austria, Finland, and Sweden which joined the EU in 1995. Table 3 shows the quota allocations by country in 2001/2 and the additional quotas assigned at the 1999 Berlin meeting which agreed the so-called Agenda 2000 reforms of the Common Agricultural Policy.

The marketing year runs from the 1st April until midnight on the following 31st March, and the quota limits the amount of milk which can be marketed by milk production holdings. Marketing takes the form of raw milk delivered to milk purchasers and of products processed directly on producing holdings and sold by them. Thus there are two forms of quota, wholesale quota and direct sales quota. Typically, wholesale quota accounts for over 98% of the total (see Table 2 for details), and direct sales quota applies to the amount of milk processed on holdings rather than the amount of product produced.

All production holdings and milk purchasers have to be registered with the appropriate authority acting as regulatory agent for the European Commission. The greater the number of small producers and small milk purchaser/processors the greater the administrative burden imposed by the system. This is clearly a major problem for many of the central and eastern European countries (CEECs) currently in line to join the EU, and will certainly be so for the Baltic states, where administrative costs are likely to be higher in proportion to average farm milk sales than they are in other northern EU member states.

Table 3. **EU quota allocations, 2001-02, and proposed increases ('000 t)**

	Deliveries	Direct sales	Total	Increase for 01-02	Increase for 05-08*
France	27 687	96	37 865	-	+1.5%
Germany	23 832	404	24 236	-	+1.5%
UK	14 428	182	14 610	7	+1.5%
Netherlands	10 991	82	11 072	-	+1.5%
Italy	10 316	214	10 530	216	-
Spain	6 029	88	6 117	200	-
Ireland	5 386	9	5 396	54	-
Denmark	4 455	1	4 455		+1.5%
Belgium	3 171	139	3 310		+1.5%
Sweden	3 300	3	3 303		+1.5%
Austria	2 563	166	2 729		+1.5%
Finland	2 397	9	2 406		+1.5%
Portugal	1 863	9	1 872		+1.5%
Greece	700	1	701	25	-
Luxembourg	268	1	269		+1.5%
Totals	117 468	1 403	118 871		

National production is managed by charging a “superlevy”, or fine, equal (in recent years) to 115% of the EU milk target price on every litre of production above the butterfat adjusted quota as necessary. This acts as a disincentive to over-production, and requires that the penalty be imposed on individual milk producers. In general, it has been effective in keeping production in most countries within one or two per cent of their national quota, but in Italy most noticeably there has been continuous slippage because of “difficulties” in imposing the superlevy at the producer level.

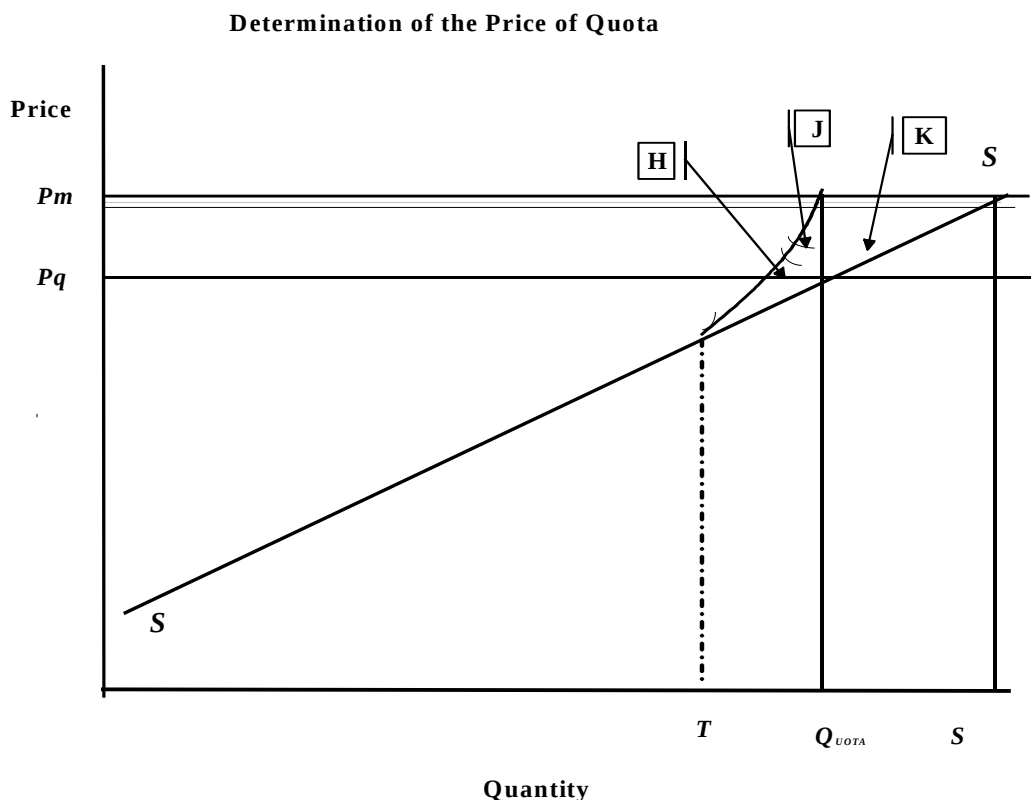
Managing the quota system involves assigning specific shares of the national quota to individual producers. However, under EU regulations, countries can opt to assess levy liability on wholesale quota at either individual producer or first purchaser level. The latter system was adopted by most member states, and would certainly seem the most appropriate for the Baltic states and all other acceding countries with large numbers of small dairy farmers. The first purchaser might be a co-operative or a processing firm which collects the milk of many producers. This means that any underproduction by some producers can be used to cancel out an equivalent amount of the overproduction of others supplying the particular purchaser. “Liability for wholesale levy is assessed initially at the level of first purchaser which then recovers the money (*superlevy*) from its producers.” (Dairy Council, 2000 p. 44)

If a country as a whole is 1% over-quota, there may be purchasers whose producers collectively have unused quota at year end equivalent to, say, 2% of national quota, this 2% can be allocated other purchasers who collectively are more than 2% over-quota to reduce their producers’ liability for penalty. Because there may be a significant number of under-producers, this “threshold” for the over-producers exists each year. However, because it cannot be finally assessed until all details of production and quota trades are registered after the year-end, no over-producer knows exactly the extent of his/her liability for penalty until some months after the end of the marketing year. This

creates a state of uncertainty in which a surprisingly large number of producers miss their individual quota allocations by significant margins in both directions².

Quota value

When quotas are imposed so as to restrict supply (marketings), quota assumes a value. This can be explained in a simple way using the following diagram.



In the diagram P_m is the average producer price received for wholesale milk, and the period analysed is the marketing year. With no quota in place supply is at S . The imposition of quota cuts supply to $Quota$. If it is assumed that no change in price policy occurs the total annual producer surplus, or economic rent initially declines by areas H , J and K . K is a permanent loss, but H and J can be recovered by producers collectively if the amount of quota traded is $Quota$ minus T . That would represent the optimal annual trade, and the clearing quota price would be $P_m - P_q$. There may be no EU member state where the quota lease market works perfectly, but in those with the most liberal reading, such as the Netherlands and the UK that is the position towards which the quota market operates.

There are annual quota rental markets and also markets for permanent transfer of ownership; although national regulations in these markets differ, as briefly indicated below. Naturally the quota sale price exceeds the annual lease price, and theoretically the sale price should be the discounted value of expected future lease prices. Given that EU milk marketing quota might only be in place it would

2. For details of over and under production in the UK, see Colman *et al.* (1998) pages 34-38.

seem logical that the time horizon for this discounting exercise should be only to 2008. It would appear unsound for EU-15 dairy farmers to assume currently that quota will continue beyond that date.

One further thing portrayed by the diagram, is that the introduction of quota causes asset value to be transferred from the traditional assets in dairy farming (buildings, cows, labour and (in particular) land). Because the area above the supply curve is the same, except for the loss of area K, the total economic surplus is largely the same, but the area $(P_m - P_q) \times \text{Quota}$ becomes allocated to quota. Since, where there are markets, quota is readily rentable or saleable, a more liquid form of asset value has been created. That is something many dairy farmers in the UK, for example, have taken advantage of to leave dairy farming with a capital sum to assist the restructuring of their farming.

Use of quota

The ownership, and transfer rights of producers in quota are highly variable in the member states. There are EU level regulations with which national systems must comply, but these allow for quite a wide variation in national practice. The UK and the Netherlands are probably the most liberal in the way they permit use and ownership of quota to be transferred. Use can be acquired by lease, and in the UK there is no limit on the amount of quota a producer can temporarily acquire provided the lessor ceases milk production on the appropriate amount of land - technically the lessor has leased this land with its quota. Moreover, the cut off date for leasing quota in the UK is now the last day of the marketing year, which provides maximum flexibility to producers. Other countries which allow leasing, typically impose a deadline to leases before the end of the marketing year.

Other member states also apply various types of restriction on the lease and transfer of quota. A few illustrations of this are:

1. The Netherlands sets upper and lower limits on the size of quota leasing transactions of 75 000 and 10 000 kg respectively.
2. In France, when a new owner takes over a dairy farm but ceases milk production, the quota reverts to the State. Thus in an ultimate sense the quota is the property of the state, and the right of use is ceded by France to dairy farmers.
3. In France also, a so-called “siphon” applies to certain types of transfers of quota rights, whereby a certain proportion of the quota is reclaimed by the State for distribution to new entrants.
4. In Italy a siphon system also operates, but transfers of ownership across demarcated regions are not allowed. Thus there is a restriction on the internal movement of quota.

What these few examples serve to illustrate is the quite large degree of latitude member states have to design quota transfer and lease systems to what are perceived as their own national requirements. They all comply with the underlying EU regulations, which are designed to ensure that ownership of milk marketing quota does not pass to speculators and those who have no commitment to milk production. The regulations also ensure that any quota owner who leases quota to another producer for the marketing year cannot him or herself produce milk on the land that he would have required to produce the milk quota leased to another.

From the standpoint of economic efficiency, free-trade in quota is the ideal. Carrying that to its logical conclusion, there would be freedom to transfer quota between EU member states. This has not

happened, as those countries, which might suffer a diminution of their dairy sector, have ensured that the issue of inter-country trade in milk marketing quota has never been on the political agenda. Beyond that, as the few examples above show, some member states restrict movement of quota between regions within country boundaries, and impose other restrictions on re-allocation of quota.

Quota allocations to accession countries

Given the EU's obligations to restrict export volumes and values following the Uruguay Round Agriculture Agreement (URAA), and also its desire to minimise the use of public intervention stocks as a means of dairy market management, the negotiations about quotas for new member states were always likely to prove difficult. The acceding countries themselves are signatories to the URAA, and have also accepted obligations to restrict subsidised exports. However, their industry structures are quite different from those of the existing member states, insofar as almost 33% of their production is not delivered to dairies, but is sold directly from farms. Thus, to offer quotas at the level of production rather than deliveries, might be seen as creating the potential for additional surpluses of commodities requiring subsidised disposal.

That cautious position appears to have prevailed in the initial offer of quota made to eight of the first round accession countries, if the data reported in Table 4 are correct³. It can be seen that the quotas apparently offered so far are less than the reported level of milk production in 2000, but greater than the level of deliveries to dairies; but only just greater than deliveries in the cases of the Czech Republic, Slovakia, and Slovenia. At the time of writing, it might be presumed that these offers are not the final word, and that the final position may be more generous.

There are several reasons why a less cautious approach could be justified. Even allowing for the possibility that the production estimates for some of the eight countries might be uncertain, much of the milk currently not being delivered to dairies is being consumed as liquid milk, butter or cheese and is not surplus to domestic commercial requirements. The total production of milk recorded in Table 4, is equal to approximately 18% of the EU-15 quota, whereas the population of the eight countries at 75 million people is around 20% of the EU-15 population. Thus, there is some headroom for increased per capita consumption of dairy products.

3. At the same time provisional milk quota offers have been made to Malta and Cyprus of 60 and 150 thousand tonnes.

Table 4. **CEEC milk quota offers, February 2002 ('000 tonnes)**

	Requested	Offered	Percentage of request	Actual 2000	
				Production	Delivered to dairies
Poland	13 740	8 875	-35%	11 300	6 520
Czech Rep.	3 100	2 506	-19%	2 700	2 500
Hungary	2 800	1 946	-30%	2 080	1 680
Lithuania	2 250	1 459	-35%	1 560	1 100
Slovakia	1 236	946	-23%	1 100	940
Estonia	900	563	-37%	630	410
Latvia	1 200	490	-59%	820	400
Slovenia	695	463	-33%	650	450
Total	25 921	17 240	-31.6%	20 840	14 000

Source: DIN, Vol. 13, No. 2; AgraFacts Brussels.

Outlook

Whatever the outcome of further negotiations about the amount of quota allocated to the accession countries, the question of whether milk marketing quotas are to continue beyond 2008 is a material issue. There are countries which, at the mid-term review of the EU dairy regime later this year, certainly will be arguing for abolition by 2008, and may even press for abolition in 2006. That is a factor which might temper any disappointment on the part of the eight CEEC countries about the amount of quota they have been initially offered.

The dairy sector has been slow to liberalise in the EU, USA and Canada relative to the cereal and oilseeds sector. That may well be a major factor in the up-coming WTO trade liberalisation round, insofar it would appear to be a leading target for reform. Certainly a number of modelling groups have all been working recently on the implications of further reductions in export subsidies, import tariffs and even the removal of quota⁴. What will actually happen remains uncertain, but a head of steam for reform is steadily building up.

4. A list of these studies is included in the references below.

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THE EU DAIRY POLICY AND STAGE OF ADOPTION IN THE BALTIC COUNTRIES

Presentation by Ms. Julie Brayer

Introduction

- Dairy production: foremost agricultural activity in EU and in Baltic countries: EU: 18%, Estonia: 28%, Latvia: 23%, Lithuania: 16% of GAO.
- The challenge is to prepare: the two pillars of the CAP (Common Market Organisation, Rural Development), the implementation of the accompanying social measures for the agricultural population and quality measures.
- Key features of the EU dairy policy.
- Assessment of the stage of adoption of the “acquis communautaire” in Estonia, Latvia, Lithuania.

The EU dairy policy reform: taking up the new challenges

- Sustainability
- Food quality
- Food safety/“farm to table”
- Animal welfare
- Control mechanisms

The two pillars of EU dairy policy

- The new Common Market Organisation (CMO) for milk and milk products:
 - Contents
 - Milk quotas
 - Intervention system
 - Direct payments to producers
 - Trade with third countries/import or export licence

Milk and milk products: what products are covered?

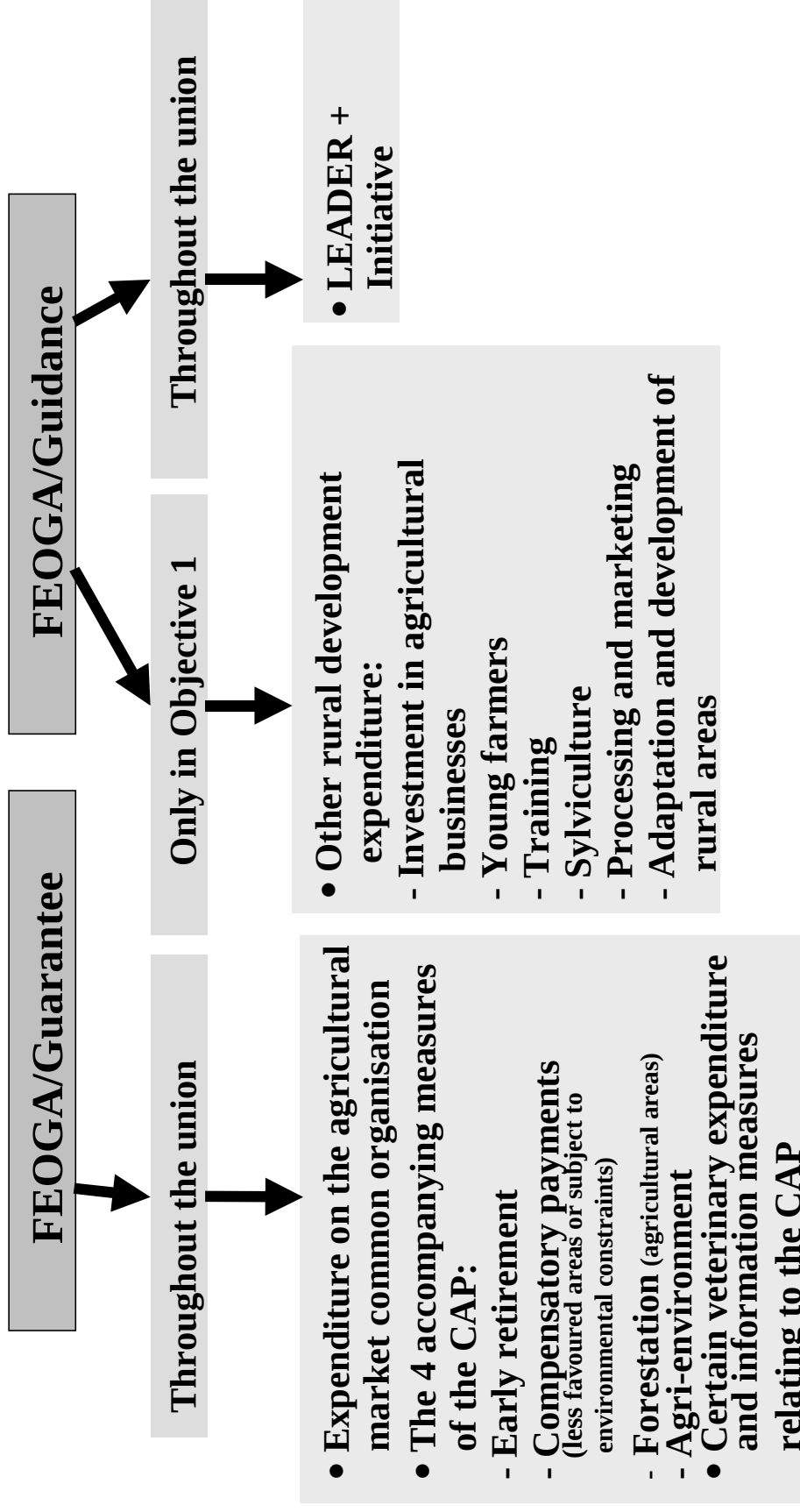
- Milk and cream
- Buttermilk, curdled milk and cream, yoghurt, kephir and other fermented or acidified milk and cream not flavoured or containing added fruit, nuts or cocoa
- Butter and other fats and oil derived from milk; dairy spreads with fat content of 75%-80%
- Cheese and curd
- Whey and products consisting of natural milk constituents not elsewhere specified or included
- Lactose and lactose syrup
- Preparations of the kind used in animal feeding

Support for rural development

- Principles
- Rural development measures:
 - Agri-environmental measures
 - Less favoured areas and areas subject to environmental constraints
 - Human resources: early retirement, setting-up young farmers, vocational training
 - Forests
 - Investments in farm businesses
 - Improving processing and marketing of agricultural products
 - Facilitating the development and structural adjustment of rural areas

Financing of the EU Dairy policy

- European Agricultural Guidance and Guarantee Fund (EAGGF) or FEOGA, guarantee and guidance sections should finance CAP in Baltic countries.
- IACS (Integrated Administration and Control System).



Pre-accession instruments in the dairy sector

- PHARE programme:
 - Institution Building (30% of budget)
 - Investment support (70% of budget)
 - Estonia: 30 Latvia: 30 Lithuania: EUR 42 Million
- SAPARD (Special Accession Programme for Agriculture and Rural Development)
 - Full decentralisation of programme management
 - Application of the FEOGA clearance of accounts procedures
 - Estonia: 12.1 Latvia: 22.2 Lithuania: EUR 30 Million

SAPARD offers candidate countries the possibility of funding projects in the following areas

- Investments in agricultural holdings;
- Improvement to the processing and marketing of agricultural and fishery products;
- Improvement to the structures for quality, veterinary and plant-health controls, for the quality of foodstuffs and for consumer protection;
- Agricultural production methods designed to protect the environment and maintain the countryside;
- Development and diversification of economic activities, providing for multiple activities and alternative income;
- Setting-up farm relief and farm management services;
- Setting up producers groups;
- Renovation and development of villages and the protection and conservation of rural heritage;
- Land improvement and reparcelling;
- Establishment and updating of land registers;
- Improvement of vocational training;
- Development and improvement of rural infrastructure;
- Management of agricultural water resources;

- Forestry: including afforestation of agricultural areas, investments in holdings owned by private forest owners and processing and marketing of forestry products;
- Technical assistance for the measures covered by this regulation, including studies to assist the preparation and monitoring of the programme, information and publicity campaigns.

Stage of adoption of the EU dairy policy in the Baltic countries

- Horizontal questions related to the dairy sector
 - FEOGA
 - IACS
 - Rules of Organic agriculture
- The 2 pillars of the CAP
 - CMO dairy and dairy products
 - Rural development and forestry
- Veterinary controls and Food safety

Discussant Paper

CHALLENGES AND OPPORTUNITIES TO DEVELOPING A COMPETITIVE MILK PROCESSING SECTOR

By Mr. Antero Tuominen

The many excellent presentations we have heard have covered the topics to be discussed in depth. As I am the last scheduled speaker, I am in a somewhat awkward situation. Almost everything has already been said, so it is difficult to add something new to the discussion. Nevertheless, I will offer some personal reflections and comments on the presentations we have heard today.

If we look back in history we find that generally the dairy sector of the Baltic countries was considered to be quite competitive in the 1930's. In the pre-war Europe it certainly did not differ too much from the situation in, say, Denmark, Sweden or Finland. In principle, the Baltic countries could have a competitive dairy sector - by European terms, of course - also to-day in the context of the European Union.

However, the legacy left by the Soviet Union is a rather heavy one. Although production in the dairy sector has dropped dramatically in almost all the CEECs after the regime change, the production decrease experienced in the Baltic countries was even more important and comparable in part to what has happened *e.g.* in Ukraine. During Soviet times the sector was designed to serve Soviet interests as defined by Moscow, and thus the adjustment needed after the Baltic countries regained their independence was far greater than in the other CEECs.

The previous speakers have pointed out the major problems that have to be resolved to improve the competitiveness of the dairy sector, which nevertheless remains the backbone of the agro-food sector in these countries. I will comment on some of them.

I will first focus my attention on the demand side for dairy products. We note that consumption of milk per capita (in all forms) is low compared to the present European Union members. This is, of course, mainly the result of the low purchasing power of the population, and when the purchasing power improves there should be room also, for an increase in consumption. But, what forms will this increase take?

I will give one example. In Finland, butter consumption per capita has decreased rather dramatically in the past 15-20 years, and this trend has continued even after our accession to the EU, when the price of butter fell noticeably. The reason is the health consciousness of the population and the association of milk fat with cardiovascular diseases. Fluid milk consumption is also on the decline, whereas, cheese consumption is increasing.

The situation in the Baltic countries is admittedly different, but nevertheless I think it is important to look at some consumption trends in other countries. The Baltic countries - even as a whole - are a rather small market and the sales of value-added products whose consumption over time will increase (some cheeses, yoghurts, prepared desserts, various health products) could very easily be captured by big dairy companies in other countries of the Union. The same is true for example of export opportunities to other new members or old members for that matter. To profit from the growth potential that undoubtedly exists the Baltic dairy industry has to become competitive very quickly. But, it must also focus its attention on those value-added products that consumers will be interested in

as incomes rise. There may even be some local speciality products that may be profitable. But, I do not believe that the Baltic dairy industry should concentrate exclusively on bulk products, where margins in the future are bound to be small.

As pointed out by the previous speakers there is overcapacity in the dairy industry at present - a heritage from the Soviet times. Many of the existing units will not be able to meet the EU hygiene requirements unless they get outside financing, because capacity utilisation rates are also low. On the other hand, the more modern units that at present can export to the EU tend to be larger and produce a major share of production so that perhaps, the EU requirements should also be seen as a chance to consolidate the sector and reduce the number of dairy units. There will be big structural changes, and in this case they should not be resisted. The proper government policy would be to facilitate this inevitable restructuring and not try to slow it down or, even worse, to try to maintain the present structures.

There is a further aspect to this consolidation. Unprofitable units that cannot easily be brought up to EU standards will simply have to go out of business. This will have employment and other consequences, and emphasises the need for effective rural development programmes. The governments should take an active role in promoting ambitious rural development programmes, especially when EU funds for this purpose will also be available. When we talk of foreign direct investment and foreign investors, we will have to keep in mind that they will look at the dairy sector as a Baltic dairy sector and not as a Latvian, Lithuanian or Estonian dairy sector. All three countries are small, and the national borders must not stand in the way of a wider restructuring of the industry. I understand, that this can be a very sensitive issue, but the European Union is a large internal market. At a time when concentration proceeds rapidly in the old member states you may need Baltic dairy enterprises instead of national or local ones.

The increased productivity and competitiveness that should be the result of the structural change is absolutely necessary, so that producer prices of raw milk can increase to the European level and consumer prices at the same time stay reasonable and competitive. At the moment, it is a little difficult to make a direct comparison of the prices farmers receive, because in some countries an important share of raw milk does not meet EU standards. Often it is the small farmers who cannot meet the standards, and who also lack the money to invest in the necessary equipment and whose farm unit may simply be too small to have a future.

Thus, a consolidation of the farm structure is necessary as well so that the necessary investments can be made in improving milk quality, in reducing seasonal variations in milk production and in reducing collection costs of milk for dairies. As pointed out by one of the speakers, a guaranteed milk supply is a necessity for the dairy industry. We should not underestimate this problem. High collection costs can to some extent be borne by farmers who receive a lower price for their milk, but this would not improve the farmers' situation or motivation.

Farm restructuring should be a priority for the governments (admittedly the situation in Estonia is somewhat different), because it will be complicated by the quota system that exists in the EU. It is true that some member states would like to abolish the milk quota system, but it is equally true that others will like to keep it. I do not wish to speculate what will be the result of the mid-term reviews of Agenda 2000. I would just like to point out that the reform of the milk marketing organisation was delayed to the years 2005 to 2008 at the Berlin European Council, and that radical reforms are hardly possible in a situation where the EU expands, and where there is considerable - at least theoretical - potential for an increase in milk production and a likelihood for more stringent limits on the use of export subsidies as a result of the new WTO round of negotiations. Even if milk quotas are abolished

over a longer term, they will still be with us for most of this decade, and thus have to be implemented by new member states as well.

Our experience is that quotas do not prevent farm restructuring, there are always farmers who cease production and their quotas can be redistributed, but undoubtedly it makes restructuring and rationalisation more complicated and more expensive. I think that the governments should now use the pre-accession funds available to encourage a consolidation and restructuring of the milk-producing sector, and thus also alleviate the long-term situation of the dairies.

The larger farms can also increase the milk yields per cow, which have improved but are still rather low compared to present EU members. This whole process requires a stable long-term relationship between the dairies that collect the fluid milk and the farmers. In this respect, I find it regrettable that the Soviet times have given co-operatives a bad name. To my respect there was a very strong co-operative movement in the Baltic countries - similar to that in Scandinavia - before World War II. It may be too late to re-establish such a movement, but a close relationship between the dairies and the producers is required. Otherwise the restructuring process may be too brutal. Maybe, the government policy should also try to facilitate co-operative solutions (co-operatives that collect milk and even process it) by appropriate means at its disposal. Here, the pre-war history of the period of the first independence could serve as a good example. I am convinced that other creative solutions can be found and devised by the Baltic countries to ensure that they have a competitive milk-processing sector within the enlarged European Union. The government should play an active role in this context, not so much intervening in the market, but rather facilitating the structural change so that the net results of the adjustment remain positive.

SESSION 4. OVERALL CONCLUSIONS AND IMPLICATIONS

WORKSHOP SUMMARY, CONCLUSIONS AND IMPLICATIONS

By Mr. Michael Ryan

Abstract

The final panel discussion, plenary comments and concluding remarks of the “Workshop on Agro-Food Policies in Estonia, Latvia and Lithuania: Opportunities and Challenges for the Dairy Industry” are summarised in this paper. First, issues related to the structure of dairy production and processing in the Baltic region are discussed. Second, market and structural changes in the global dairy sector are summarised. Third, in relation to the regional and global developments, prospects for the Baltic dairy sector are presented.

Session 1: The production and processing sector in the Baltic region

Milk processing and marketing structures

Lithuania, Latvia and Estonia have a long tradition in producing, processing and trading milk and dairy products. Since all three Baltic countries are more than 100% self-sufficient in milk production, further output increases will largely depend on developing export markets. The structure of milk production, processing and marketing is facing increasing pressures and challenges arising from the need to reduce costs and respond to changing consumer preference.

Milk processing is a major component of the food industry in all three Baltic countries, accounting for about 25% of employment and over one-third of industry output and exports. Since independence, the Baltic dairy industry has already undergone enormous change arising from privatisation and the development of a market economy. Dramatic changes have occurred in several areas, including a reduction in the number and size of dairy processing plants, changes in ownership and management structure, a fall in the volume of raw milk processed, and a sharp fall in domestic consumption of dairy products. These transformations have been combined with a decrease in the raw material base, an increase in competition, especially from imported dairy products, and the loss of traditional export markets in Russia and the NIS. The structure of the dairy industry is continuing to evolve in terms of improving efficiency, reducing costs and adding value to the raw material.

The process of industry concentration accelerated in the latter half of the 1990s, with a rise in the number of bankruptcies, mergers and acquisitions. The emerging dairy processing enterprises closely reflect the type of privatisation process adopted in each Baltic country during the transition decade. For example, the privatisation and consequent consolidation process has led to the formation of producer (enterprise) groups in Lithuania, with the three largest processors accounting for over 80% of raw milk supplies. The situation in Latvia is similar to that in Lithuania with the establishment of a small number of large processors in recent years. However, the situation is different in Estonia, where there has been little change in the overall number of milk processors. At this juncture, the 12 largest milk processors control more than 70% of raw milk processing, as well as most of the domestic retail market.

While the excess processing capacity in the dairy industry, inherited from the Soviet era, has fallen during the 1990s, it remains a serious cost burden on the industry, in light of the sharp decline in milk production in the region. This adds significantly to fixed costs and reduces the efficiency of the industry. In the Baltic region milk production fell by over 50% during the 1990s. The low capacity utilisation is more pronounced in the processing plants that produce cheese, milk powder and butter, while the more specialised plants that produce ice cream, yoghurts and cottage cheeses have a much higher utilisation rate. While there is growing competition in the liquid milk market for supplies of raw milk, there is little evidence of an increase in vertical integration in the sector. In general, there still tends to be little co-operation and trust between farmers and milk processors. However, vertical integration is likely to increase in the future as milk processing companies attempt to establish more consistent supplies of raw milk by entering into long term contracts with producers.

The sharp decline in raw milk production has also impeded diversification in the dairy product mix to reflect changes in consumer tastes and preferences, especially limiting growth in higher value added products. During the transition decade consumption of milk and milk products almost halved in response to higher price and lower purchasing power. However, in recent years domestically produced dairy products have started to regain market share due to improved cost competitiveness, an increase in the variety, as well as further improvements in product development and quality.

Significant changes have occurred in the geographic destination of dairy exports with a significant rise in exports to the European Union and the US, while exports to Russia and the NIS collapsed after the financial crisis in 1998. The composition of exports has also changed with a surge in cheese exports and a sharp decline in butter exports. Although the Baltic countries are significant net exporters of milk and dairy products, there has been a substantial growth in imports of consumer ready milk products over the last decade, albeit from a low base. While much progress has been made to ensure that Baltic dairy exports meet the EU hygiene standards, this process has been rather slow and very costly.

Further development of the industry faces many challenges, not least of which are the forthcoming accession to the European Union, changing legislation, developments in primary production, changing consumer preferences, increased foreign direct investment, and changes in marketing and terms of trade. The culmination of these factors is likely to lead to greater concentration in the dairy processing industry. Another important factor driving change is the limited supply of raw milk resulting in increased competition amongst processors and further consolidation in the processing sector.

A further area of focus is the need for greater investment in the modernisation of plant and equipment. This is particularly evident among many small and medium size enterprises, most of which are unlikely to be sustainable in the medium-term. The implementation of the SAPARD may provide some of the investment funding needed to improve efficiency and hence competitiveness in the Baltic countries. One of the major factors contributing to structural adjustment in the sector has been the changes in government policies, in particular, the deregulation of the processing and retail margins for dairy products and farm gate milk prices. Moreover in Estonia, the implementation of a new Food Act in January 2003 should bring about further structural changes in the processing sector.

The dairy industry is the domestic leader in terms of structural reforms and innovation in the Baltic food industry. Nonetheless, there are still substantial opportunities and challenges facing the industry, not least of which is how to respond to changing consumer preferences. In Estonia, the industry is debating whether to move towards production of inputs to the food industry *e.g.* cheese, powder, butter, etc, or to focus on producing higher value added products. The Estonian government is currently developing a collective marketing strategy to promote consumption of Estonian products as

well as to increase their competitiveness. Further consolidation in the processing industry is essential to improve efficiency and reduce costs in the sector.

The processing industry will continue to evolve in response to how internal and external forces affect the structure of production, processing and marketing. This process of change may further accelerate due to increased pressures from higher concentration at the retail level. Given the small size of the home market, the Baltic dairy companies should broaden their horizon to view the region and the EU as the domestic market. For many of the large international dairy companies such as Fonterra Foods or Arla Co-op., national borders do not exist and companies are tending to operate on a regional basis. The Baltic dairy industry should focus on niche products with relatively high margins, as it is unlikely they will be able to compete in the high volume segment of the market.

Emerging farm structure and trends in milk production

After more than a decade of transition, the emerging dairy farm structure differs widely across the three Baltic countries. For example, a large average farm (herd) size is emerging in Estonia, while a small and fragmented dairy farm structure is emerging in Lithuania and Latvia. In both countries the small farm size is a serious impediment to lowering production costs, hinders improvement in raw milk quality and contributes to increased seasonality in production. In Estonia, however, milk production is quite concentrated at the farm level with about 10% of dairy farmers producing almost 80% of milk output. Despite the sharp fall in the size of the national cowherd during the 1990s, the fall in output has been partially offset by a rise in productivity. Government policies are targeted at improving milk quality and farm incomes through an array of measures including subsidised credits, tax relief and investment supports. These efforts have resulted in increased investments in modern milking facilities and equipment and consequently a significant improvement in milk quality.

In both Lithuania and Latvia farm privatisation resulted in the establishment of a large number of small family farms. This resulted in milk production becoming extremely fragmented and created serious problems for dairy processors, including unstable raw milk supplies, low quality of raw milk and high milk assembly costs, which may represent 10-15% of the farm gate price. In Latvia, where dairy is a priority industry in the national development strategy, milk production is highly fragmented with the majority of dairy cows on farms of less than 5 head. However, in recent years there has been a move toward medium sized dairy farms of 10-199 cows with modern milking equipment and facilities. Since the mid-1990s there has been an increase in state support through both direct and indirect subsidies to milk producers with the aim of modernising dairy farms and increasing productivity and milk production. Both producers and processors suffer from the additional cost burden associated with high seasonality in milk production. The implementation of the new Milk Producers Register in 2002 should help to ensure greater consistency in the production of high quality milk.

In Lithuania the process of reform and privatisation during the 1990s has resulted in a small average dairy farm size with most producers having less than three cows. The average milk yield in Lithuania is lower than in Latvia and Estonia, and increasing productivity is proving difficult. Moreover, many dairy farmers are elderly, have a low level of education, and lack the resources needed to expand and modernise. This situation increases production and assembly costs as well as costs associated with improving quality standards. Nonetheless, there is some scope for better co-operation between dairy farmers in the sharing of information and new technologies at all stages of production.

An efficient dairy-processing sector depends significantly on an efficient primary production sector. Given the fragmented production structure it is extremely difficult for dairy enterprises to develop clear development strategies, formulate priorities and work out short and medium term action plans to

rationalise operations, increase efficiency and improve competitiveness. An increase in farm (herd) size, improved breeding and feeding technology, as well as investment in modern milking facilities and equipment should help to increase productivity and improve milk quality. This should lead to a reduction in production costs (through the adoption of new technologies, veterinary services, etc.), as well as to higher milk quality, and higher earnings and incomes for dairy farmers. The regular provision of reliable price information to all stakeholders and high price transmission efficiency are important components in the building process. Moreover, improving investment support, education and training are crucial elements in modernising and developing the sector.

In Lithuania and Latvia a major adjustment process is needed at the farm level in order for the dairy farms to reach a sufficient size to ensure economic viability. An adequate dairy herd size is important in order to have the financial resources needed to modernise and improve milk quality. An increase in the number of larger producers has important implications for dairy processors, as it tends to reduce milk assembly costs and ensures a more consistent supply of consistently high quality raw milk for processing. As regards consumers, many of them have a preference for domestically produced products, preferably locally produced, provided that products are competitively priced and of high quality. The funding constraint should ease with the full implementation of the SAPARD in the Baltic countries, although finding the necessary “matching-funds” may be problematic.

Session 2: Market and structural changes in the dairy sector

Global market developments and prospects for dairy products

One of the key emerging trends in the global dairy market is the growth in demand for dairy-based ingredients. This provides new and challenging opportunities to develop a dairy industry to meet these new demand trends. Other factors that influence future market growth include the adherence to national and international standards of identity, WTO requirements and regional trade barriers, as well as market demand factors such as rising incomes and population growth and changes in stock levels.

Much of the current growth in world dairy demand is in the form of “industrial” demand for milk based ingredients. This trend is strongly driven by several factors including: advances in food processing technology, special characteristics of input and final products, the search by processors for low cost ingredients, and improved product functionality *e.g.* whey proteins. Production of dairy-based ingredients largely depends on processing with rather sophisticated membrane technology, and, consequently, economies of scale are an important dimension of these processes and technologies. From a dairy component-based marketing and procurement perspective it is essential to develop a corresponding marketing plan, incentive structure and quality standards to facilitate the development of a competitive dairy sector.

The Codex Alimentarius imposes standards on the types and amounts of dairy-based ingredients for internationally traded processed products. Some recent developments include the proposed Codex and identity standards for different cheeses. With the continued evolution of the Codes standards it will become more difficult and controversial to reconcile domestic and international standards. In essence, these issues will tend to highlight the relative political power of consumers and processors on the one hand, and farmers on the other.

Moreover, the development of dairy product markets must occur within the context of the evolving WTO trade legislation. However, progress in this area is expected to be limited due to the lack of motivation of policy makers in the most heavily protected dairy economies such as Canada, the US,

EU and Japan. On the other hand, the low cost dairy exporters like Australia, New Zealand and Argentina will continue to push for additional market access and lower export subsidies. While the prospects for multilateral dairy trade liberalisation are rather limited, there are opportunities for the expansion of regional trade agreements. EU enlargement will give preferential access to the new member countries, including the Baltics, but managing the supply/demand balance in light of WTO commitments is likely to become a major challenge.

Further growth in consumption will depend on growth in population and rising incomes in different regions and countries. However, the current downturn in the world economy will dampen consumption in both developed and developing countries. For example, the financial crisis in Russia in 1998 has had a major negative spillover effect on the Baltic dairy industry. For domestic dairy products, growth in demand will also depend on the share of value added products in the output mix. While potential supply shocks may occur in the major exporting or importing regions, the competition from established, low-cost high quality exporters is likely to be substantial. The recent expansion of milk production in low cost producing regions indicates intensified competition on export markets and consequently a fall in world dairy prices.

World dairy market prices have been quite robust in recent years, largely driven by growth in demand in key importing markets, especially South East Asia. In 2000, world market prices for all products, except butter, improved substantially. The spot prices for skim and whole milk powder increased by 36% and 18% respectively, over 1999. Over the last decade the most dramatic fall in milk production has been in Central and Eastern Europe and to a lesser extent Western Europe, while production in South East Asia, South America and Oceania has risen. In overall terms production of butter and skim milk powder has declined, while production of cheese, whole milk powder and value added dairy products has increased.

Over the medium term the market prospects for milk and dairy products are favourable with strong demand emanating from both OECD and non-OECD countries. The higher demand is likely to stimulate stronger milk prices, which in turn is set to expand production, especially outside the OECD area. Strong demand will also lift world prices for all dairy products, but demand for skim milk powder is likely to be dampened by rising competition from whey powder and whole milk powder. Over the period 2000-2006 world milk production is expected to increase by about 67 million tonnes, with the largest increases expected in non-OECD countries, especially China, India, Brazil and Argentina. The average growth rate in these countries is projected at 3% a year, or about three times the rate of growth in OECD countries. OECD countries that have production and/or marketing quotas are expected to see their share of world milk output shrink substantially. On the other hand, the non-quota OECD producers such as Australia and New Zealand are expected to experience a sharp rise in milk production, and should maintain or increase their share of world markets. Following the major adjustment pressures of the 1990s, milk production in the CEECs is expected to rise, accelerated by the greater market opportunities associated with EU membership. Robust GDP growth in the key importing countries is critical to the realisation of these favourable medium term prospects.

The world market for dairy products is relatively thin as dairy products are mainly consumed in the country where they are produced, with some exceptions. Since international trade in dairy products is equivalent to only 5-7% of total milk production, this leads to wide fluctuations in international prices. As the market for milk is becoming increasingly sophisticated and segregated into markets for different milk ingredients, the implications of high technology membrane processing would appear to be rather limited for the Baltic countries.

Growth in trade of dairy products will depend on additional liberalisation of world dairy markets and the reduction or removal of high tariffs and protection under the tariff rate quota system. The dairy

sector has been one of the most difficult areas to liberalise in the US, EU and Canada as progress depends on complex political negotiations between political administrations committed to carrying out the WTO commitments and milk producers and other industry groups anxious to retain support. The sharp drop in dairy product prices during the latter half of 2001 is likely to make it more difficult to reduce support in the sector in the short-term.

Structural changes in the international dairy processing sector

Changes in the Irish dairy industry over the last 30 years provide some useful insights into possible future structural changes in the Baltic dairy industry. Ireland has many similarities to the Baltic countries: a small open economy, favourable climatic conditions, and a large dairy industry that accounts for a significant share of employment and exports. In the first 10 years after joining the EU, Ireland's milk output more than doubled, but since the introduction of quotas in 1984 production has remained more or less static. However, the structure of Irish dairy farms has changed substantially with the average herd size increasing by more than threefold; the number of dairy herds has declined by about 75%; and productivity has increased.

Accompanying the changes at the farm level there have been enormous changes in dairy processing structures in all countries. Historically, dairy processing was dominated by small local dairies, which often concentrated on supplying local markets. This structure has now been replaced by the emergence of a limited number of national and international dairy processing giants, which now tend to dominate the global dairy industry. The pace of structural change as well as the specific causative factors vary with the different countries and different regions.

For Ireland, the dramatic change in the structure of the Irish dairy processing sector can be attributed to two main driving factors, internationalisation and changes in the legal structure from co-operatives to public limited companies (PLCs). When the EU dairy quota system was introduced in 1984, six dairy processing firms accounted for over 60% of output and the industry was entirely co-operatively owned. With the rigid constraints associated with the milk quota regime the six large co-operatives embarked on a major programme of rationalisation thorough a series of mergers and internationalisation. This has resulted in the emergence of three large processing firms (Kerry, Glanbia and Dairygold) and these three dominate the industry. Another interesting feature is that the three large processing enterprises have established large international divisions, which are often significantly larger than domestic activities. Over the last 35 years there has been a dramatic reduction in the number of processors from over 200 to about 20 enterprises. At this juncture, despite the increase in size, the structure of production, processing and marketing is undergoing further changes in order to achieve greater economies of scale.

At the global level, the dairy industry has undergone enormous change involving a continuous wave of mergers, acquisitions and strategic alliances. Most international dairy companies are substantially larger than the dairy industry of many small dairy-exporting countries. This development is expected to accelerate as dairy processors seek to capitalise on the favourable global growth prospects for dairy products and increased competition for supplies of raw milk. Thus, small countries face new challenges in terms of their approach to industry ownership and competition policy. One example of concentration is the creation of Fonterra Co-operative Group Ltd, through the merger of the New Zealand Dairy Group and Kiwi Dairies. As an indication of its size, Fonterra is now one of the ten largest dairy processing firms in the world and accounts for about one-third of world trade in dairy products. According to Rabobank International, there were an estimated 529 mergers, acquisitions and alliances in dairy processing between January 1998 and September 2001. About 70% of the mergers occurred in Europe.

Dairy companies in export oriented countries such as France, Ireland and the Netherlands have turned from domestic to international businesses with substantial investments abroad. On the other hand, dairy firms in Germany, Canada and the US have mainly restricted their developments to greater concentration. The optimum industry structure in the Baltic countries will depend on a range of factors such as labour costs, availability of capital and technology, the nature of market prospects and the structure of milk supply.

The trend toward increased concentration and internationalisation is expected to continue driven by competitive pressures on the domestic market, as well as rising incomes and population growth. While growth in milk supply is limited, there is likely to be increased competition for the available milk. Moreover, the nature of demand is also changing with greater emphasis by consumers on healthier products. Another upcoming trend is the creation of strategic alliances to control a product or a regional market. This development tends to circumvent national competition rules as at national level competition authorities screen proposals for co-operation, but this mechanism is absent on a global scale.

Session 3: Prospects for the Baltic dairy industry and market infrastructure

Developing a competitive milk processing sector: challenges and opportunities

One of the most pressing issues influencing the development of the Baltic processing industry is the availability of a consistent supply of high quality milk. The small and fragmented farm production structure raises milk assembly costs due to the extensive infrastructure required in this environment and consequently lowers farm gate prices. The small herd size also impedes the development of viable production units with the quality parameters consistent with EU standards, and, moreover, does not provide sufficient investment income to adopt modern technology to meet these requirements.

Access to financial resources continues to be a fundamental problem across the region and slows down the pace of farm enlargement. Improved co-ordination of credit and investment programmes would greatly help in increasing access to credit for all producers. The large fluctuations in milk supply between summer and winter require an increase in processing capacity, which remains under-utilised for large parts of the year. This raises processing costs significantly compared to Western European countries and lowers farm prices. An increase in farm/herd size to efficient production levels and the development of economic milk production units would represent a significant step toward resolving the problems associated with seasonality in supply.

There has been considerable foreign investment in the dairy sector in Estonia, Latvia and Lithuania, especially during the latter half of the 1990s. The close geographic proximity to countries with global dairy processing companies has been one of the key factors encouraging significant strategic investment in the Baltic dairy industry, *e.g.* investment by Swedish farmers in Pieno Zvigdes in Lithuania, investment by Valio in Tapila in Estonia, and the EBRD in Rokiskio Suris. In addition to the financial benefits arising from foreign direct investment, strategic investors also bring new technology, management and marketing expertise to the sector.

Further consolidation is a necessary and unavoidable step in the dairy industry and will bring additional benefits to producers, processors and consumers. The development of large retailers and supermarkets has acted as a catalyst for this development and may act as a counter balance to the threat of market dominance by processors. The large supermarkets demand reliable and consistent quality products, large volume, and competitively priced dairy products. Baltic processors have to

compete not only for the raw milk supply, but also for the limited shelf space in the supermarkets. Moreover, the incursion of own label brands has caught Baltic processors in their infancy and most do not yet have well-developed brand strategies. While retail own labels are being pursued in many product areas, fresh milk products constitute one of the first and key categories for own label development. Processors need to adapt and respond to this challenge, as the development of large supermarket chains will provide additional opportunities for processors to develop value-added products.

In all CEECs, there have been enormous structural changes in the production, processing and marketing of milk and dairy products. During the transition decade, private property rights were restored, agricultural land, processing and marketing facilities were privatised, dairy cow numbers declined and milk output fell dramatically. While consumption of milk and dairy products has fallen sharply across the region, imports of high value added products have risen. In recent years there has been some reversal of this earlier trend, as the restructured dairy sectors in most CEECs have begun to produce a more diversified range of dairy products and to reclaim domestic market share.

The dairy industry in the Baltic countries is not unique in Central and Eastern Europe, but has undergone similar changes to the dairy industry in neighbouring countries. As a legacy of the Soviet era, the dairy industry inherited an array of structural impediments that have slowed adjustment to a market based industry. The dairy sectors in Lithuania and Latvia, in particular, have been burdened by the low quality of raw material, high milk assembly costs, excess capacities and low investment. These factors have tended to slow down the rate of modernisation of processing technologies, as well as quality improvements and adjustments in hygiene standards. In all CEECs, substantial improvements in technical and economic efficiency are urgently needed in both the primary and processing sectors to improve competitiveness. Given the favourable conditions in the region, the three Baltic countries appear to have a strong comparative advantage in the production of livestock products, especially milk and beef.

Over the last decade several of the CEECs introduced policy measures such as subsidised loans, grants and collateral guarantees to speed up restructuring of the dairy sector, while at the same time they abolished consumer subsidies. Consumption of milk and dairy products declined sharply and is now substantially lower than in Western Europe. This would tend to suggest that there is a substantial upside for an increase in per capita consumption across the region. Moreover, demand for dairy products may be further enhanced by an increase in real incomes resulting from an upturn in economic activity across the region. One of the greatest challenges facing the industry is the need for additional investment funding to meet the EU requirements concerning sanitary, quality and environmental standards. Considerable levels of investments will be required by all countries to modernise their milk production and processing facilities. While funding under the SAPARD will provide some of the funding needed for this major task, there is some concern that the limited domestic finance available for co-financing may constrain the utilisation of these funds.

The role of agricultural policies and policy makers

There are several key challenges facing all EU accession countries including Estonia, Latvia and Lithuania. These include implementation of the two pillars of the CAP (Common Market Organisation for milk and dairy products and Support for Rural Development), as well as implementation of the accompanying social measures for the agricultural population and the veterinary controls and food safety measures. For the implementation of the CAP in the Baltic countries there are two main sources of financing: the European Agricultural Guidance and Guarantee Fund (FEOGA) and the Integrated Administration and Control System (IACS). Funding for modernisation and restructuring to facilitate

integration into the EU is provided through the PHARE programme (mainly institution building and investment support) and the SAPARD. Since all production holdings and milk purchasers have to be registered with the appropriate authority acting as agent for the EU, the greater the number of small producers and small milk purchaser/processors the greater the administrative burden imposed by the system. This is clearly a major problem for the Baltic countries, where administrative costs are likely to be higher in proportion to average farm sales than in other EU member states.

There are high expectations of substantial economic benefits accruing from EU accession, in particular, related to increased investment and export possibilities to other EU countries. The implementation of the policy instruments of the CAP has important implications for the whole dairy chain with the opening up of market opportunities for export enterprises, as well as substantial financing to facilitate structural adjustment of the sector. On the other hand, Membership will also result in intense competition from the established dairy companies in EU countries on both the domestic and EU markets. Without further radical restructuring of the dairy sector, it will be very difficult for the dairy industry in the Baltic countries to compete effectively in the enlarged market. The possibility of developing a pan-Baltic dairy industry or forming strategic alliances with established market players might provide suitable options to meet the challenges that lie ahead. Increased inflows of funds through the SAPARD and direct payments should accelerate structural change in the Baltic dairy sector.

However, there is considerable uncertainty in the agricultural sector, and dairy in particular, concerning the future terms after accession. In particular, uncertainty over the size of milk quotas for new Member states in the short-term, and in the longer term, the possible abolition of marketing quotas. Nevertheless, preparations for the implementation of the milk quota management system and the associated administrative measures are progressing in Lithuania, Latvia and Estonia. The future of direct payments in agriculture is also an important policy concern in the Baltic countries. From an overall perspective, policies for other commodity areas may have important spillover effects on the dairy industry of new member states.

The management of the dairy regime in the EU is rather complex involving several different policy instruments including import tariffs, support buying of dairy products, export subsidies, private storage aid and marketing quotas. Expenditure by the EU on farm support has fallen slightly in recent years, estimated at EUR 44 billion in 2001, of which, the milk sector accounted for about 5%, mainly for internal milk disposal and export refunds. During the period 1984-2001, the internal price support system has remained unreformed, but modest changes have been agreed to come into force in 2005/06 with a 15% reduction in intervention prices. To-date the most significant change to the dairy regime has resulted from the implementation of the Uruguay Round Agreement in agriculture with the agreement to restrict export subsidies in both value and volume terms and increased import access in the form of tariff quotas. The accession countries, for the most part, have taken full advantage of the preferential access given to them under the Europe Agreements.

Marketing quotas were first introduced for the EU 12 in the 1984/85 milk-marketing year on the basis of reference production in the early 1980s. The quota was then gradually reduced until in 1991/92 it was 91% of the amount initially imposed. At the current prices prevailing in the EU, demand is about 10% less than supply. The Agenda 2000 milk regime reforms contain a number of key changes including a 15% reduction in support prices over a three year period starting in 2005, the introduction of direct compensation to producers (EUR 17 per tonne of quota), a national envelope of funds to top up basic payments, and extension of the quota system to March 2008. An important element of the milk regime reforms is a mid-term review, which is expected to begin in 2003. Further debate on changes to the quota system is expected to be intense with growing pressure for the abolition of milk quotas due to the high costs of implementation. For new member states, negotiations on quotas are

likely to be difficult, given the increased desire to minimise the use of public intervention stocks as a means of dairy market management.

The dairy industry continues to be the backbone of the agro-food sector in the three Baltic countries, as well as being the most dynamic and innovative industry. There is a strong recognition that the dairy industry must increase its competitiveness through further restructuring and rationalisation at both the primary production and processing level. The higher productivity anticipated from restructuring should ensure that producer prices increase to the European level, while at the same time consumers have access to high quality dairy products at reasonable and competitive prices. Following the dramatic fall in consumption of milk and dairy products over the transition decade, there is some potential for a rise in per capita consumption as incomes increase across the region. Nonetheless, with changing consumer preferences driven by various factors, including health concerns and rising demands for high value added products, per capita consumption of dairy products is unlikely to return to the pre-1990 level. While the Baltic countries largely focus on the production of bulk dairy products, greater emphasis needs to be placed on developing niche markets for local specialities and high value dairy products.

At this juncture, farm restructuring should be a key priority for policy makers in Lithuania and Latvia (situation is different in Estonia), because it will become more complicated and more expensive once the EU quota system has been implemented. With impending EU membership, this offers the Baltic countries a unique window of opportunity to accelerate the process of consolidation at the processing level and to create a more economically viable and sustainable dairy industry. The Government has an important role to play in this process by ensuring that the correct monetary and fiscal policies are followed to enhance economic growth and to ensure a stable and predictable price environment for businesses. In addition, any policies that may hinder or impede the necessary restructuring of the sector should be removed. Moreover, effective social and rural development programmes should be in place to deal with the outflow of labour from farming and from the closing of unprofitable dairy plants and those that do not meet EU hygiene requirements.

The dairy industry is a clear point of strength for Lithuania, Latvia and Estonia where a competitive and sustainable dairy sector can be developed. There are many challenges facing the industry, some of which arise as a legacy of the Soviet era, while others are the result of changes in the market place. These opportunities, if addressed, can lead to an economically viable and sustainable sector. Policy makers have an important role in creating the environment to facilitate the structural changes needed to ensure that the Baltic region has a competitive milk sector within the enlarged EU. For the long-term success of the sector, it is crucial that there be good co-operation, information flow and stable relationship between all stakeholders in the dairy value chain - producers, processors, distributors, retailers and consumers.

ANNEX

Agenda

WORKSHOP ON AGRO-FOOD POLICIES IN ESTONIA, LATVIA AND LITHUANIA: OPPORTUNITIES AND CHALLENGES FOR THE DAIRY INDUSTRY

4-5 December 2001, Vilnius, Lithuania

The purpose of this Workshop is threefold: First, to follow-up on the Ministerial Meeting on Baltic Agro-Food Policies, Riga 1998, by enhancing dialogue on dairy policies between policy makers in the Baltic countries and OECD countries. Second, to inform producers, processors, consumers and Government policy makers of the major developments in international dairy markets, as well as trends in the global industry. Third, to provide a context to help policy makers in Estonia, Latvia and Lithuania to develop their industry strategies and to improve efficiency and competitiveness of the sector.

Tuesday, 4 December 2001

9:30-10:00 **Opening Statements:** Mr. Alfonsas Tamošiūnas, State Secretary,
Ministry of Agriculture, Lithuania
Ms. Taina Kiekko, Ambassador of Finland to Lithuania
Mr. Ken Ash, Deputy Director, Directorate for Food,
Agriculture and Fisheries, OECD

SESSION 1: The production and processing sector in the Baltic region

This Session provides an overview of the problems and opportunities that result from the emerging structure of milk production, processing, marketing and trade in dairy products in Estonia, Latvia and Lithuania. Changes in agricultural and trade policies as well as other factors that influence the development of this structure would also be discussed.

Chair: Mr. Raimundas Dužinskas, Office of the President, Lithuania

The structure of milk processing and marketing in Estonia, Latvia and Lithuania

10:00-10:15	Estonia	Ms. Piret Hein, Ministry of Agriculture, Estonia
10:15-10:30	Latvia	Mr. Andris Miglavs, Latvian State Institute of Agrarian Economics
10:30-10:45	Lithuania	Mr. Alvydas Ramanauskas, Parliament of the Republic of Lithuania, Lithuania
10:45-11:00	<i>Discussant:</i> Implications for producers, processors, consumers and policy makers	Dr. Adriaan Krijger, Dutch Dairy Board, Netherlands

11:00-11:30 Plenary session

11:30-11:40 *Coffee break*

The emerging farm structure of milk production and trends in production

11:40-11:55	Estonia	Mrs. Tiina Saron, Ministry of Agriculture, Estonia
11:55-12:10	Latvia	Ms. Inga Jēkabsone, Ministry of Agriculture
12:10-12:25	Lithuania	Mr. Vytautas Lekešys, Agricultural Co-operative Union “Lietuviskas pienas”, Lithuania
12:25-12:40	<i>Discussant:</i> Implications for producers, processors, consumers and government policy	Mr. Håkan Loxbo, Swedish Board of Agriculture, Sweden
12:40-13:00	Plenary session	
13:00-14:30	<i>Lunch</i>	

SESSION 2: Market and structural changes in the dairy sector

In this Session an overview of global market trends and prospects for the standard dairy products is presented and discussed, as well as the trends in consumer demand for dairy products. In addition, a discussion of the major product and market developments is envisaged. The changing structure of the dairy industry in OECD countries is discussed, as well as the role of FDI in the sector.

**Chair: Mr. Andris Miglavs, Latvian State Institute of Agrarian Economics,
Latvia**

Market prospects and developments for dairy products

14:30-14:50	Recent trends in dairy product development and markets	Prof. Thomas Cox, University of Wisconsin - Madison, USA
14:50-15:10	Medium term market prospects for the main dairy products	Mr. Pavel Vavra, OECD

15:10-15:25	<i>Discussant:</i> Market and structural change in the dairy sector	Prof. David Colman, University of Manchester, United Kingdom
15:25-16:10	Plenary session	
<i>Structural changes in the dairy processing sector</i>		
16:10-16:30	Emerging structure in the dairy processing sector	Dr. Michael Keane, University College, Cork, Ireland
16:30-16:50	Structural developments in the dairy processing sector	Dr. Adriaan Krijger, Dutch Dairy Board, Netherlands
16:50-17:05	<i>Discussant:</i> Implications for the dairy sector in the Baltic countries	Mr. Michael Ryan, OECD
17:05-18:00	Plenary session	
18:45	<i>Gala Reception</i>	

Wednesday, 5 December 2001

SESSION 3: Prospects for the Baltic dairy industry and market infrastructure

The third Session would provide an opportunity to discuss and debate the challenges facing the development of the dairy industry in the Baltic region. In addition, policy measures, which are aimed at facilitating this development, would be discussed.

Chair: Mr. Ruve Schank, Permanent Representation of the Republic of Estonia in Geneva, Estonia

Challenges and opportunities to developing a competitive milk processing sector

9:30-9:50	The role of supply side factors including direct investment	Mr. Sevki Acuner, EBRD
9:50-10:10	The dairy sector in the CEC countries: the state of restructuring and future challenges	Dr. Klaus Frohberg, Institute of Agricultural Development in Central and Eastern Europe, Germany

What is the role of agricultural policies and policy makers in the process?

10:10-10:30	Overview of the EU dairy sector policy	Prof. David Colman, University of Manchester, United Kingdom
10:30-10:50	The EU dairy policy and stage of adoption in the Baltic countries	Ms. Julie Brayer, European Commission Office, Vilnius
10:50-11:10	<i>Coffee break</i>	
11:10-11:25	<i>Discussant:</i> Challenges and opportunities to developing a competitive milk processing sector	Mr. Antero Tuominen, Ministry of Agriculture and Forestry, Finland
11:25-12:30	Plenary session	
12:30-14:00	<i>Lunch</i>	

SESSION 4: Overall conclusions and implications

Chair: Mr. Ken Ash, OECD

14:00-15:00	Panel discussion Mr. Raimundas Dužinskas, Mr. Andris Miglavs, Mr. Ruve Schank, Dr. Michael Keane, Prof. Thomas Cox, Mr. Antero Tuominen
15:00-15:45	Plenary session
15:45	Concluding remarks Mrs. Alexandra Trzeciak-Duval, OECD

**WORKSHOP ON AGRO-FOOD POLICIES IN ESTONIA, LATVIA AND LITHUANIA:
OPPORTUNITIES AND CHALLENGES FOR THE DAIRY INDUSTRY
4-5 December, Vilnius, Lithuania**

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