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SUPPLY CHAIN IN SLOVENIA

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1 Introduction to the dairy sector

Dairying is one of the most important agro-food sectors in Slovenia. It is based on the well organised production of raw milk on relatively small-scaled farms and an efficient system of buying-in and processing in medium-sized dairies. Milk production accounts for around 15% of gross agricultural output, and the dairy industry provides around 15% of food processing industry turnover.

In Slovenia, 659,000 tonnes of cow's milk was produced in 2005. Total milk production has been relatively stable over the last few years, although the number of dairy cows has fallen by around 20,000 (-14%) since 2000 to a level of 120,000 at the end of 2005, mostly as a result of production being abandoned on many small farms alongside greater specialisation on larger holdings. Sales to dairies have been constantly on the rise. In 2005, 508,000 tonnes of milk, 77% of total production, were sold to dairies, of which around 46,000 tonnes (9%) were exported as raw milk and the rest was processed by domestic dairies. 2005 was the first year in which Slovenia exported raw milk.

Since the mid-1990s, there have been rapid structural changes in milk production including a continuous decrease in the number of producers, increasing average herd size per holding and rising yields per cow. Nevertheless, small holdings still dominate milk production. According to the most recent structure survey (2005), the average number of dairy cows per holding was only 6.6 (EU 25 2003: 13.3).

Enterprises in the dairy processing industry employ about 1,500 workers in 22 companies, but the three largest handle more than 90% of total milk collected from farms. The dairy industry is the second largest food sector in terms of turnover, after meat processing. Business performance of the sector deteriorated significantly in 2005, mainly due to the changes in the economic environment caused by EU-Accession (import growth, loss of export markets, etc.).

In September 2006, there was no foreign capital invested in the ownership of the Slovenian dairy industry. However, there was considerable activity during the summer and autumn of 2006 in this regard concerning the largest Slovenian dairy company. Therefore the ownership of this business might have changed significantly by the end of 2006 with possible investment of foreign capital.

The dairy industry is one of the few agro-food sectors in Slovenia in which production consistently exceeds domestic consumption. Net exports measured in raw milk equivalent totalled around 90,000 tonnes in 2005. That year saw a significant rise in imports and exports compared to the year before. Whilst the countries of the former Yugoslavia were by far the most important export markets before Slovenia's Accession to the EU, in 2005 these markets were replaced by old EU members (almost 60%). On the imports side, however, the EU members have always been Slovenia's main trading partners, and their share in total imports increased further after Accession (2005, 96%).

Given the important role of dairy production in Slovenian agriculture, the dairy market has always received a lot of attention in agricultural policy considerations. In the pre-Accession period, support to the market was predominantly based on a combination of high border protection against imports (comparable with levels in the EU at that period) and export supports allowing the sale of surpluses on foreign markets. After EU Accession, greater competition on the domestic market and changes of foreign trade regimes toughened the conditions for the dairy

sector in Slovenia. Thus in 2005, some measures used in the EU were put in place for the first time (i.e. aids for private storage of cheese, and subsidised milk in schools).

EU Accession has not yet caused any major shocks for milk producers. The quota system, which has been fully implemented in Slovenia as from the milk year 2005/06, has not yet caused any serious production restrictions. In fact, the quotas have not been fully met, mainly because of a drop in the on-farm sales of milk. On the other hand, EU Accession brought dairy premiums which in Slovenia have been paid per kg of quota and in 2006, together with national top-ups, reached 95% of the full amount applied in the EU-15 Member States. (The de-coupled Single Farm Payments will be adopted in 2007.) The farm gate prices of milk, dropped slightly in 2004/05, but recovered again in 2005/06. According to the available data (Eurostat), the farm gate price of milk in Slovenia is still lower than in most EU-15 countries and higher than in other new Member States except Cyprus.

2 A dual sector?

Before the transition, Slovenian dairy production was typified by its dual size structure. On the one hand, there were many small farms with a few cows and on the other hand there were large farms in social ownership with from 200 to 400 cows per holding. This structure changed significantly during the transition with the numbers of very small family holdings and of very large "social" farms decreasing while those of medium sized farms increased.

Despite these changes, the size structure of dairy farms in Slovenia remains unfavourable. According to the structure survey of 2005, 40% of holdings bred only 1-2 dairy cows, and further 18% kept 2-4 cows. Only a mere 7% of holdings kept more than 20 dairy cows, but they accounted for 33% of the total national herd. Farms with the smallest herds of dairy cows produce milk predominantly for their own consumption. Despite small volumes of production, the proportion of these farms is still important. The data on the number of individual milk quotas granted for 2005/06 show that less than 11,000 holdings are engaged in commercial dairy production i.e. delivery to dairies and direct sale at the farm gate: this is only slightly more than half of all holdings with dairy cows (20,000). These commercial farms sold on average around 50 thousand kg of milk per holding per year.

The majority of Slovenia's milk is sold to the highly concentrated industrial milk processing sector. The largest dairy processed more than half of the total delivered milk, while the second and third largest companies hold about the same share of between 18% and 20% each. There are two more industrial dairies of a smaller scale that mostly operate at the national market level, but the rest of them are of only regional importance. It is expected that there will be further consolidation within the Slovenian dairy sector in the future. If Slovenian companies intend to successfully compete within European markets they will either need to specialise and benefit from economies of scale, or focus on high quality or specialty products and niche positioning.

The segment of on-farm dairy (small scale) processing is of a very limited importance in terms of quantity (not more than 1%), but it has been increasing in the last decade. It is not of a semi-subsistence nature and is usually run by advanced farmers with entrepreneurial skills. Their products are perceived by consumers as high quality alternatives to the industrial ones. The majority of the production is sold at farmers markets and specialty shops.

The dual size structure is no longer a clear feature of the milk production sector in Slovenia. One can expect further abandoning of production on small semi-subsistence holdings while the size of those remaining should increase. The process of concentration can be expected to continue in the dairy processing sector also.

3 Prospects for dairy product consumption

According to the supply balance sheets, total annual human consumption of milk (in raw milk equivalents) is estimated to be around 240 kg per capita. Of this, some 125 kg is in the form of fresh milk and fresh milk products, 12 kg is cheese, 7 kg is cream and 1.2 kg is butter. Consumption of concentrated milk and milk powder is less important. Total consumption is relatively stable but there is a slight upward trend, especially for the processed products.

Data from the statistical household budget survey for 2004¹ show that the average consumption of milk and dairy products per year was: 73.4 l of drinking milk, 14.4 kg of yoghurts and sour milk, 9.2 kg of cheeses and 1.5 kg of other milk products (e.g. desserts). Drinking of fresh milk has clearly been in decline in Slovenia over the last decade (Index 2004=77.8; 1995=100) with a growing preference for more processed dairy products. Cheese consumption has increased considerably in the same period (Index 2004 = 170.4; 1995 =100).

Some two thirds of milk drunk is in the form of sterilised milk, with the remaining third is pasteurised. Consumption of raw milk is very limited in Slovenia; there is some direct sale of milk from farms, although it is rapidly decreasing.

Simultaneously with the changes in drinking milk categories, there have been changing demands as regards the fat content. About one third of the drinking milk consumed in Slovenia is in the semi-skimmed category, with the remainder being full fat. Changes of demand towards low fat products are not so evident among the drinking milk categories, but for other dairy products (especially yoghurts) the trend is radical. The majority of fermented dairy products sold in Slovenia have a reduced fat content.

The “probiotic” fermented drinks (probiotic yogurt) segment is especially well developed. This type of product has the highest share in the “yogurt category” with “ordinary” yogurts rapidly losing their market share. The categories “indulgence products” (e.g. milk deserts) and “kids segment” (reduced portion size) are also well in demand. The cheese market is rather static in terms of segment development, but supply is changing due to imports of standard quality semi-hard cheeses under favourable prices.

An important occurrence on food markets in Slovenia is a rapid growth in the market shares of retailer “Own Brand” labelled products which is strongly related to the highly concentrated market structure of the retailing sector. In the dairy segment, virtually all product categories are also offered under “Own Brand” labels. Suppliers of the products sold under these labels are mainly Slovenian processors who are trying to strengthen their strategic alliance with the retailers. However, the market shares of leading national brands are also being cannibalised by “Own Brand” products and the producers are rapidly losing their negotiation position versus the retailers.

¹Household budget survey, Slovenia, 2004; Statistical office of the Republic of Slovenia, 2006. Household budget survey covers only a part of total consumption.

Since Accession, the Slovenian market for dairy products has experienced radical changes with intensive import penetration, especially in the yoghurt and cheese segments but also in drinking milk. Relative prices of dairy products have decreased, which might stimulate higher consumption. It is expected that in the future consumption will grow in line with the indicated trends, and increasing imports will be an important determinant of developments in the milk processing sector. Increasing imports will also have inevitable effects on the structure of the primary sector.

4 Expert views on the challenges at the level of the milk production

Over the last few years, milk production has undergone intensive specialisation and consolidation. While in 1997 a solid half of all agricultural holdings (51%) were engaged in dairy production, this share slumped to a mere 26% by 2005. Also, the average size of dairy herds almost doubled (from 3.8 to 6.6 dairy cows per farm). Hand in hand with specialisation there has been a change in the breed structure of herds with the proportion of specialist milk breeds increasing and that of dual purpose breeds (for milk and meat) falling. This, together with technological advances in breeding, has led to higher average milk yields. Despite a drop in the total number of dairy cows, the sale of milk to dairies has constantly risen, and the quality of purchased milk has improved. In 2005, almost 99% of purchased milk was classified as containing less than 100,000 micro-organisms per ml (or 94% classified with less than 50,000 micro-organisms per ml.) and almost 92% had somatic cell counts of less than 400,000 per ml of milk, which are the standards for quality milk according to the EU legislation.

Rapid structural changes and higher quality of milk could be largely attributed to producers responding to gradual stiffening of conditions in the market even before EU Accession, farm gate prices having fallen ever since 2002. Also the restrictions which are expected to result from the introduction of milk quotas have no doubt contributed to the restructuring.

As a result of a relatively favourable outcome of the negotiations on the level of total milk quota in the first two years after Accession the quotas have not yet been fully met; Slovenia was granted an additional quota for restructuring in 2006, and it is not expected that the quotas at the national level will be exceeded in the near future. The introduction of quotas has nevertheless already affected production decisions at the level of individual farms. In the opinion of some commentators, the slight drop in average milk yield in 2005 was a consequence of the fears of producers of exceeding quotas. Moreover, some problems have also been perceived in planning on-farm investments.

The requirements related to cross compliance as preconditions for premiums have also caused new problems. These are mostly related to meeting the requirements of the nitrate directive. Many farms do not yet have adequate capacity for storing cattle manure. Therefore, in the Rural Development Programme 2004-2006 substantial funds have been reserved and granted for supporting investments related to the adjustment to the EU standards.

In the future, milk yields are expected to rise, the process of consolidation should continue and growth in production up to the national quota level is foreseen. One can also expect great pressure on prices as a consequence of greater competition with possibly further related restructuring of the dairy processing sector due to changes in ownership of these businesses. On the other hand, the enforcement of CAP reform after 2007 is foreseen to ameliorate the effects of

competition on individual farmers. Slovenia has decided that the farms which in 2006 hold a milk quota, will receive 80% of the present dairy premiums in the form of historic entitlements in the period 2007-2013, as well as land-based single farm payment (separately for arable land and grassland). This will have a positive impact on the incomes of farms remaining in the sector. In addition, as the decoupled area payments allow the recipients to receive the payments regardless of whether they produce milk or not this is expected to lead to even faster restructuring of the sector.

5 Expert views on the challenges at the stage of milk collection from farms

Slovenia has a well developed and smoothly operating system of milk collection. It is largely organised through cooperatives but in some cases it is the dairies themselves that collect milk. In the case of large farms, milk is collected directly, whereas smaller producers bring their milk to common collection stations on the milk route. The collection infrastructure (refrigerated pools) and transport of milk (refrigerated tanks) is adequate and allows the quality of milk to be preserved. Milk is collected once a day, but a system of collecting milk every two days is being gradually put in place. Before accession, milk was purchased only by domestic dairies, but afterwards some producers also organised some export trade.

The costs of collecting of milk average almost 10% of the total milk price. Collection costs are raised by the relatively widespread network of milk routes and the purchasing of milk from more distant mountain farms.

In the future a significant reduction of collecting costs is expected, which will lead to the abandonment of smaller producers living in more distant areas. Also, substantial structural changes are foreseen among the cooperatives, which are now the most important collectors of milk. Some dairies are expected to establish direct relations with milk producers.

6 Expert views on the challenges at the milk processing stage

The milk processing industry has traditionally been among the leading food sectors in Slovenia in terms of business performance and also in terms of technological progress. However, the sector did benefit from a protectionist policy. For more than a decade prior to EU Accession, high import tariffs for milk products alongside substantial export support were the main pillars in the economics of the dairy sector. Up to the 2001 farmgate price for raw milk was fixed by the government and until 1998 fixing of the milk price at the farmgate level was supplemented by a control on the retail price of standard pasteurised milk (maximum price was set by the government). The quality requirements and hygiene standards were always high in Slovenia, which has partly been an advantage to Slovenian dairies during the EU Accession process.

There has been no closing of processing plants as a result of EU requirements, but enterprises have invested a substantial amount of capital to harmonise the sanitary procedures with *acquis communautaire* during the pre-Accession period. This can surely be considered an important success of recent years.

The sector structure has also been improved since the end of the 1990s and beginning of the new millennium. Now it is dominated by three important dairies, which are still, however rather small in comparison with foreign competitors. Consolidation has initiated some restructuring activities in terms of optimisation product range and plant specialisation, but the competitiveness of this industry in Slovenia is currently rather weak. This is mainly due to a pre-accession dairy policy which protected Slovenian processors from international competition and provided preferential trade agreements with the countries of the former Yugoslavia.

Following EU-Accession, high tariff barriers for dairy products were removed and imports increased, and continue to do so. The main factor in the success of import penetration into the Slovenian market is lower prices rather than quality or product range. Therefore, if domestic enterprises want to retain their market shares, they should intensify their efforts towards cost reduction and rationalisation of the processing infrastructure. Furthermore, Slovenian companies are facing serious challenges in trade reorientation, since the European dairy markets are highly saturated and require competitive prices, adequate product range and supply capacities. The third important recent challenge for the sector is the outflow of raw material to the Italian market instituted by large farmers and some cooperatives due to dissatisfaction with the prices offered by domestic dairies. This outflow forced the largest processor to source some of its raw material from abroad (mainly from Slovakia and Hungary). However, the outflow somewhat eased the pressures caused by the reduction of market outlets.

The Slovenian dairy sector faces a challenging short term future. The largest influence is expected from domestic market developments and the extension of import growth. The ability of Slovenian processors to integrate into the EU Market and to identify sales opportunities will not only reduce pressures on the domestic market but will identify conditions for further sector development.

One important development factor is the potential change in the ownership of the largest dairy enterprise and consequential economic restructuring. Due to the size of the company, implications are surely to be expected at the sector level and in the entire dairy supply chain.

The long term prospects might be more optimistic, since Slovenia has comparative advantage in the dairy sector in terms of good quality raw material, well equipped processing facilities, technological knowledge and geographical location. The improvement is, however, dependent on the ability of the players in the Slovenian dairy chain to work together to identify common development objectives and improve coordination up and down this particular food chain.

7 Conclusion

The Slovenian dairy food chain is faced with some important challenges. They stem largely from the changing economic environment, foreign competition and weak domestic competitiveness. EU Accession and further changes to the CAP (liberalisation of the market, introduction of decoupled payments) have reduced the levels of direct market protection, which crucially contributed to the stability and attractiveness of the dairy sector in the past. The pressures arising from reduced supports have been felt more in the processing industry, which is faced with tighter competition on the domestic market thus forcing producers to increase exports. However, a large part of dairy processing industry has still to achieve the required competitiveness in terms of prices or quantities.

On the other hand, raw milk producers have been in a somewhat more favourable position thanks to the relatively high quality of raw material and the nearness of the Italian market, where there has been good demand for this product at relatively favourable prices. However, even they face problems of poor competitiveness, due mostly to small volumes of production per farm.

The entire chain faces further structural change, which will result in increased production on larger farms, movement of production away from more distant areas, consolidation in the milk processing industry and in various measures aimed at reducing production costs such as lowering of labour costs and focusing on a narrower range of the economically most attractive products. All these trends have already begun and are expected to intensify in the future.

Changes in the whole production and marketing chain can be further accelerated by the entry of foreign owners, who will doubtless give a higher priority to commercial rationalisation than to the social dimension which is still present in the dairy sector. It will be the entry of foreign owners that may bring dramatic changes in the short term, particularly for small producers. There is public debate relating to various scenarios and rather negative prospects (shrinking of domestic production, moving production across the border), but all of these forecasts can still be considered mere speculations.

In the long run it is believed that the destiny of the dairy food chain will not differ much from that in other European countries. Thanks to the tradition of a high level of technological development and efficient adjustment so far, one can expect that it will effectively adjust also to the new conditions. A slight rise in production can be anticipated along with a considerable drop in the number of producers and consolidation in the milk processing industry.

Annex 1: Information on the primary production

Table 1: Agricultural output at basic prices (nominal) and share of milk output; Slovenia

	1997	1998	1999	2000	2001	2002	2003	2004	2005
AGRICULTURAL OUTPUT (mill. EUR)	1,031.5	1,001.5	958.6	988.9	985.2	1,072.3	962.6	1,105.1	1,104.3
ANIMAL OUTPUT (mill. EUR)	498.4	507.5	496.8	505.4	537.3	522.4	514.9	520.5	530.8
Milk (mill. EUR)	128.8	150.0	156.7	159.4	165.0	172.6	162.1	159.4	161.5
Share of milk in animal output (%)	25.8	29.6	31.5	31.5	30.7	33.0	31.5	30.6	30.4
Share of milk in agricultural output (%)	12.5	15.0	16.3	16.1	16.7	16.1	16.8	14.4	14.6

Source: Statistical Office of the Republic of Slovenia (SORS)

Table 2: Cattle number (end of the year); Slovenia

	1997	1998	1999	2000	2001	2002	2003	2004	2005
Cattle, total	445,724	453,097	471,425	493,670	477,075	473,242	450,226	451,136	452,517
Cows, total	182,612	181,174	185,583	194,132	188,582	194,991	185,876	182,074	177,229
- Dairy cows	147,608	146,495	149,077	140,236	135,805	139,980	130,711	134,009	120,273
- Other cows	35,004	34,679	36,506	53,896	52,777	55,011	55,165	48,065	56,955
Share of dairy cows (%)	80.8	80.9	80.3	72.2	72.0	71.8	70.3	73.6	67.9

Source: (SORS)

Table 3: Cow's milk production and quality; Slovenia

	1997	1998	1999	2000	2001	2002	2003	2004	2005
Milk production, total (000 t)	586.7	599.3	633.8	648.6	652.8	727.6	661.7	650.4	659.0
Sales of milk to dairies (000 t)	398.6	432.7	448.0	453.9	472.8	487.7	498.7	503.3	508.3
Quality of purchased milk									
Average fat content (%)	4.06	4.08	4.10	4.10	4.12	4.14	4.14	4.16	4.15
Average protein content (%)	3.29	3.33	3.35	3.36	3.34	3.33	3.34	3.36	3.36
Share of milk in Bacteriological class extra (%)*	68.3	69.2	69.9	85.7	90.5	90.8	91.8	93.0	93.8
Share of milk in Bacteriological class 1 (%)**	14.5	14.9	16.0	9.5	6.2	6.4	6.4	5.6	4.8
Share of milk with Somatic Cell Count up to 400,000/ml (%)	83.4	82.1	85.2	91.2	93.4	92.7	92.2	92.7	91.9

* up to 50,000 micro organisms/ml

** 50,000 to 100,000 micro organisms/ml

Source: (SORS); <http://www.odkupMLEKA.com>

Table 4: Export and import of Dairy produce, eggs, natural honey (CNCT 04); Slovenia

	2000	2001	2002	2003	2004	2005
Export (000 EUR)						
EU 15	4,874	5,802	6,121	10,185	14,954	38,503
EU 10	:	:	:	4,067	4,258	2,799
Former Yugoslavia Countries	35,472	42,700	39,576	31,668	30,321	23,084
Other countries	:	:	:	2,706	1,877	911
Total export	42,197	51,015	47,624	48,626	51,410	65,298
- Share of former YU in export (%)	84.1	83.7	83.1	65.1	59.0	35.4
- Share of EU 15 in export (%)	11.5	11.4	12.9	20.9	29.1	59.0
Import (000 EUR)						
EU 15	7,884	8,273	10,844	13,228	22,472	38,977
EU 10	:	:	:	426	1,600	5,350
Former Yugoslavia Countries	3,852	4,131	3,602	3,626	2,197	1,899
Other countries	:	:	:	101	67	32
Total import	12,719	13,245	15,063	17,381	26,336	46,259
- Share of former YU in import (%)	30.3	31.2	23.9	20.9	8.3	4.1
- Share of EU 15 in import (%)	62.0	62.5	72.0	76.1	85.3	84.3

Source: SORS

Annex 2: Information on the processing and manufacturing sector

Table 5: Basic economic indicators of Slovenian dairy industry

	2000	2001	2002	2003	2004	2005
No. of enterprises	20	20	23	23	24	22
- share in total food industry	5.2%	5.3%	5.8%	5.7%	5.7%	5.2%
No. of employees	1,756	1,737	1,771	1,705	1,663	1,472
- share in total food industry	9.0%	9.0%	8.9%	9.0%	9.2%	8.0%
Revenues from sales (EUR mill.)	270.5	277.0	281.7	280.8	271.3	252.5
- share in total food industry	15.6%	15.4%	15.2%	15.2%	14.9%	14.3%
Value added (EUR mill.)	41.5	43.9	47.4	44.2	31.2	34.3
Share of export in revenues from sales	14.9%	16.8%	15.7%	15.9%	18.1%	19.9%