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SUPPLY CHAIN IN CROATIA

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1 Introduction to the dairy sector

Croatia has vast natural resources for the production of milk and milk processing and there is a long tradition of these enterprises in Croatia. According to data obtained from the Croatian Chamber of Economy cattle production contributes 14.2 % of the Croatian agricultural GDP and dairy production specifically, 7.3%.

So far as the economics and development of milk production are concerned, Croatia is far behind the EU member states. Most Croatian milk is produced on family farms, and that production is expensive and insufficient to meet the needs of the dairy industry.

The low level of milk production is to some extent a consequence of war activities and unfavourable results of reconstruction and privatisation, but essentially the agricultural structure is underdeveloped with a large number of small farms (2.8 cows per farm on average) and poor production capacities, 10,000 producing only 6,000 litres each per year.

In the immediate future it will be particularly important to encourage the setting up of modern farms or to help the existing ones to improve their facilities.

However, despite a decreasing trend in the total number of cows and farms, milk production is rising. There were 239,000 milking cows in Croatia in 2005, a fall of 15,000 since 2000. By contrast, the total milk production increased by 179m litres to a total of 766 m litres over that same period.

Domestic production meets about 80% of the annual needs for milk and dairy products. Due to insufficient domestic milk production and the outdated and inadequate processing facilities, Croatia needs to import milk and dairy products. In recent years, the share of imported milk has decreased, while the import of high-quality dairy products has increased.

The main outputs of the processing sector are liquid cow milk (65.60%), fermented products (11.35%), cheeses (4.5%) and other products (13.58%). In the period 2000-2005, there was an increase in the volume of industrially processed milk in Croatia. Nevertheless, the dairy industry does not have sufficient equipment to manufacture enough high-quality dairy products to satisfy the demands of the local market.

According to the national activity classification, 36 companies were operating in the milk processing sector in Croatia in 2002, of which 6 were large, 3 medium and the remainder were small-sized enterprises. Most of the companies are in private ownership. Among the ten largest companies in the food processing sector in terms of revenue, there are several milk processing companies.

Consumption of milk and dairy products is about 170 kg/head (in milk equivalent). When compared to consumption in the EU, there would seem to be room for an increase of more than 100 litres per capita.

The Law on state support for cow milk production includes the following subsidies:

Table 1 Croatian Milk Subsidies

Description	Basic payment	Minimal subsidized quantities in 2003.	Minimal subsidized quantities in 2004.
Milk (cow)	0,65 (1,05*) kn/l** {€0.088 (0.142)/ l}	6.000 l	9.000 l
Milk (goat and sheep)	1,0 (1,35*) kn/l {€0.136 (0.184)/ l}	1.500 l	2.000 l

*subsidies for areas with especially hard conditions of production

** 1 euro = 7.35 kn

Source: Ministry of Agriculture, Forestry and Water Management

This legislation takes into consideration several parameters of milk quality: fat, protein, somatic cell count and total bacterial count. Milk has to be negative on the 72% alcohol test, with no added water and no veterinary drugs. Milk is divided into 4 classes according to its quality. The minimal requirement for the quality of milk is that it must contain more than 3.2% of fat, more than 3.0% of protein, no more than 100,000 bacteria/ml and no more than 400,000 somatic cell count/ml.

Each dairy plant determines its premiums using its own standards. Given the deficit in Croatian milk production, premiums are often invested in subventions for boosting production at the farms. The quality of fresh milk has been improving significantly, but is still below the required standards, especially regarding hygiene, mainly because of poor equipment on the predominantly small farms. Gradual adoption of the standards of the European Union is being attempted through the creation of larger farms, updating their equipment and training of the farmers.

The Government cattle production development Programme (introduced in 2004 and currently under implementation) is designed to ensure more competitiveness and create the conditions for higher milk quality and improved animal welfare.

Croatia has passed regulations on the quality of fresh milk (Regulations on quality of fresh raw milk NN) and regulations on the quality of cattle carcasses (Regulation on evaluation and classification of cattle carcasses and calves in slaughter lines NN).

2 A dual sector

The farm structure of the dairy segment in Croatia is unsatisfactory with only 23.39% of farms keeping four or more cows. Households with 3 cows per farm dominate with average land areas of 0.10-3.0 acres and they own 46% of the total number of cows.

The structure of milk producing farms has changed significantly in the last few years. The number which produce less than 6,000 litres annually has decreased by 2000 in the last two years, and there is also a decrease in those producing up to 10,000 litres of milk. The number producing more than 20,000 litres is increasing.

Under presently agreed development conditions, total cow milk production can increase by 42% by 2008 with average yield rising from 2703 litres to 4000 litres per dairy cow.

3 Prospects for dairy product consumption

The average milk consumption per person in 2004 in Croatia was 84.6 l. Consumption of cheese was estimated at 7.1 kg, of butter 0.38 kg and margarine 2.25 kg. 0.07 kg of preserved, condensed and evaporated milk was consumed, along with 16.4 l. of other dairy products.

Consumption of dairy products is growing, with the accent on milk drinks, yogurt, UHT milk and fermented products. Also consumption of home – produced cheeses has grown significantly because of their high quality and increased presence in the market.

Considering that worldwide most milk is consumed locally (where it is produced), the fact that Croatia has a long tradition of consumption of milk and dairy products, and the further fact that nowadays consumers want exclusive products of known identifiable origin, we believe that the Croatian dairy sector will not only survive but will develop into the main engine of agricultural production and processing as has been, and is, the case in other EU countries.

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

Croatia needs to raise its milk production in order to satisfy its own needs for milk and dairy products. The size of the dairy farms and the production per cow will be increased. The farms which are not market oriented (presently almost half of all milk farms) are going to disappear while bigger farms with modern technology are going to develop.

In the process of EU integration, Croatia needs not only to enhance the production of milk in order to ensure meeting the annual quota of processed milk (1,1 million litres) and to achieve 70% of the average milk production in member states, but also to improve the quality of the raw milk in terms of hygiene and health standards. In the EU, over 90% of the milk meets the international norms for 1 extra class while in Croatia only 30% of fresh milk attains the international standards.

The implementation of the Ordinance on fresh, raw milk quality (Official Gazette 102/2000) began in 2000. Later, with the aim of improving the quality control of the milk produced, the Central Control Laboratory for Milk (CCLM) was established in Križevci at the beginning of 2003. This laboratory was HRN EN ISO/IEC 7025:2000 accredited in 2004.

From the moment the milk testing system was established, quality improved significantly, although only 30% of the raw milk satisfies international standards. However, investments in the modernisation of dairy farms are also necessary in order to strengthen commercial holdings so that they can compete on the market and increase the supply and improve the quality of milk to satisfy the unfulfilled demand in Croatia.

The milk payment system is based on the quality of milk, which is regulated by the Ordinance on the quality of fresh raw milk (OG No.102/2000).

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

The collection of milk and transport to the dairy factories is well organised. In the villages there are one or more milk collecting points with a bulk tank cooler. These tanks belong to the dairies. Dairy factories organise a collecting point on some big farms, but all other farmers must bring their milk to the milk collecting points as soon as possible after milking. One farmer is charged to check the amounts and sample the milk for quality control.

The organisation of the collection system and transport of milk in Croatia is adapted to the poor production level and to the large number of sub-contractors who supply only small quantities of milk. Because of the small sizes of farms, the dairy factories finance the costs of milk collection and its transport which is not the case in many EU countries. However, the system of milk collection is very complex organisationally and very costly. Apart from that the major issue with this kind of system is control and maintenance of milk quality, especially hygienic quality. This unsatisfactory situation makes it difficult for the Croatian milk and dairy sector to compete on the international market

The increasing importance of the foreign supermarket chains in the domestic market and the fact that they sell imported milk products means that the domestic dairy industry is losing its market share

6 Expert views on the challenges at the milk processing stage

Croatia's industrial milk processing is in a much better condition than that of basic production. Croatia has several large and medium size dairies, created by privatization of former socially owned operations. The dairies are quite successful in supplying the market with an assortment of high quality dairy products that meet the EU standards. At frequent intervals, these dairies put attractive new dairy products on the markets, the most outstanding being the fat reduced items and a series of pro – biotic types.

One should also note a growing number of small family owned dairies. These dairies are gradually specializing in the production of specific indigenous regional products whose recognition is growing both locally and internationally. A significant number of family farms on the islands and in the mountain regions are focusing on the manufacturing of such autochthonous sheep and goat cheeses that are in high demand both in the domestic and foreign markets. In that segment Croatia has opted to produce a small range of exclusive dairy products using traditional recipes for specific taste, texture, scent and appearance.

The dairy industry is a segment of the food processing industry that requires large investments in processing equipment that will meet prescribed technical, technological and sanitary European standards. To keep abreast of the competition, the dairy industry will have to reform the way it structures the range of its products. Large industrial dairies will have to focus on mass consumer products and the smaller ones on specific autochthonous products primarily for the domestic market. Croatian milk producers cannot yet supply the full needs of the processing industry.

The development of the processing industry will depend on investment in the production of raw milk in the immediate vicinity of dairy plants. The development of the dairy industry will also depend on the development of Croatian food production and agriculture.

7 Conclusions

One of the biggest weaknesses of the Croatian milk sector regarding the competition is prevailing orientation towards the domestic market. Foreign dairies are likely to penetrate the Croatian market much faster than home based companies will be able to penetrate other European markets. The greatest competition will come from dairy companies in the close vicinity: Slovenia, Austria, Hungary, Germany, Italy and Netherlands.

The opportunities for the Croatian milk sector are the strong preference for native products in the domestic market, direct marketing, the image of Croatia as a “clean country” and attractive tourist destination, hence tourist demand and possible exports. The changes in the market will mostly affect the processing industry, and indirectly, but more seriously, the non-competitive small producers of milk.

Dairies will have to reduce the costs of doing business, standardize and increase the value added of their products. The process of concentration will speed up, especially in the production of liquid milk, fermented products and standardized types of cheese.

The producer price of milk will not change significantly. Furthermore, dairies will abandon marginal producers and marginal areas of production i.e. they will rationalize the collection and the transport of milk. All of the above factors will increase costs of production of milk, reduce farm incomes and speed up the process of differentiation between producers.

In the dairy sector only a small number of producers of liquid milk will survive, and others will stop producing or get taken over by market leaders. However, the demand for higher quality milk will drastically increase. Small processors must specialise in the production of specific items for niche markets, since they will not be competitive in the production of mass consumer goods. Only a proportion will be able to adapt to new conditions, improve the quality of milk, reduce production costs and increase the volume of milk production.

A certain number of producers will turn to direct sales and production of traditional milk processed goods. However, most producers will abandon milk production completely or they will just produce milk only for personal needs.

The speed and the success of adjustment in the Croatian dairy sector will depend on a number of factors. One of the most important is the capability of dairy industry and producers to learn what is needed and to change accordingly. National economic policy and the Ministry of Agriculture will be important in this process. Agricultural policy initiatives should encourage only those programmes which will ensure the long term survival of this sector in a competitive market and/or those programmes which ensure some desirable social benefits.

If the programme for the development of cattle production in Croatia is successful it will ensure a good position for negotiations with the EU regarding quotas for milk, and also result in increased supplies to help meet the currently unsatisfied demand.

Annex 1: Information on the primary production

Table A1: Trend in milk production in the Republic of Croatia

Year	Number of milking cows	Total production (.000 l)	Average production per cow (l)
1990	460,142	888,927	1,932
1995	308,336	571,511	1,854
1998	270,348	614,910	2,275
1999	268,284	602,292	2,245
2000	254,702	587,634	2,307
2001	254,293	635,000	2,495
2002	257,019	674,767	2,625
2003	237,472	641,986	2,703
2004	238,050	663,158	2,786
2005	239,000	766,252	3,202
