WORLD IMPORTANCE AND PRESENT TENDENCIES OF DAIRY SECTOR

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Abstract: The general objective of this paper is to present the world importance of dairy sector and to illustrate present tendency of milk production, consumption, trade and prices mainly based on FAO data base. World milk production was 711 million tonnes in 2010 and it is expected to increase in the future. The most significant milk producers are the EU(27), the United States and from the Asian countries, India and China. Developed countries give one-third of world milk production, while more than two-third of world dairy herd can be found in developing countries. Milk production growth is a future tendency mainly in China, India, Pakistan, Argentina and Brazil. The average level of consumption of milk and milk products is 103,6 kg/capita/year and it will increase in developing and developed countries as well. The ratio of international trade of milk and milk products to production is 6 percent and it may expand in the future. New Zealand, the EU(27), the United States and Australia are the major exporters. There is a strong demand for milk and milk products among others from the Asian countries, the Russian Federation, Algeria, Mexico, Saudi Arabia and the United States. Analysis of world market price of the most important dairy products it represents a strong recovery from last year, but it still remains 20 percent below its peak value in early 2008. However prices have doubled compared with prices of period of 2002–2004.

Key words: dairy sector, production, consumption, trade, price

1. Introduction

In the 1990s world dairy market went through significant changes. Until late 2007 and early 2008 milk production expanded by almost 2,1 percent in every year, while prices of milk and milk products gained stability. First half year of 2008 can be considered a favourable period of dairy sector with extremely high prices.

However the financial crisis in the global economy caused decline in dairy sector in late 2008 and had a dramatic impact on product prices during the first half year of 2009. The financial crisis impacted on every aspect of the dairy business: production, trade, consumption and prices. Growth of world milk production slowed down in 2009. Low milk prices and high input costs discouraged many farmers around the world.

Nevertheless the second half year of 2009 and the year 2010 brought changes. World trade increased rather slowly during the first part of 2009 but showed a remarkable recovery during the second part. During the first half year of 2010 prices recovered in addition production also improved.

In conclusion 2009 showed a mixed picture: a stagnating first half year and a strong recovery during the second part. Dairy sector looks much more balanced and this paper tries to represent the positive tendencies in 2010.

2. Materials and Methods

Present study is a secondary research mainly based on FAO data base and the Bulletin of the IDF. On the basis of these data I carried out statistical evaluations and illustrated the main tendencies in case of production, trade and prices and finally analysed these trends. The main objective of this study is to prove the significance of dairy sector in world economy.

FAO data base provides the appropriate numbers in connection with production, consumption, trade and prices. By the utilization of these numbers I prepared figures and tables and analysed the changes during years. I made relative numbers and examined the percentage changes of the different values. In addition I tried to reveal those causes which contribute to the changes experienced.

3. Results and Discussion

3.1. Production

On the basis of assumption world milk production in 2010 reaches 711 million tonnes. Milk production is expected to increase and it can even rise above 794 million tonnes in 2017. *Figure 1.* shows the tendency of world milk production between 1996 and 2010. In 2010 there is an increase of 1,6 percent from last year, but it remains below the 2,1 percent average annual growth experienced in the past decade.

The major contributors of the production growth in 2010 are India and China, but Brazil, the EU(27) and the United States also play important role in it.

With an output of 257 million tonnes Asia remains the region with both the largest production and the highest rate of annual growth in 2010. In Asia India gives the most

significant part of milk production, its output is forecast to reach 114 million tonnes. China is the second with its 44 million tonnes milk production.

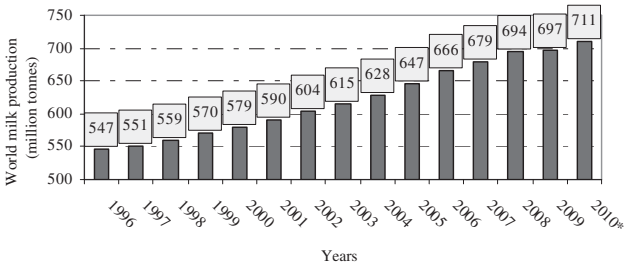

Figure 1.: World milk production from 1996 to 2010
*2010: estimated value
Source: FAO, 2011

In North America the production of the United States may increase by 1,1 percent in 2010, and reach 87 million tonnes. Improvement in cow yields and a slowing of cow slaughter rates ensure higher rate of production (FAO, 2010).

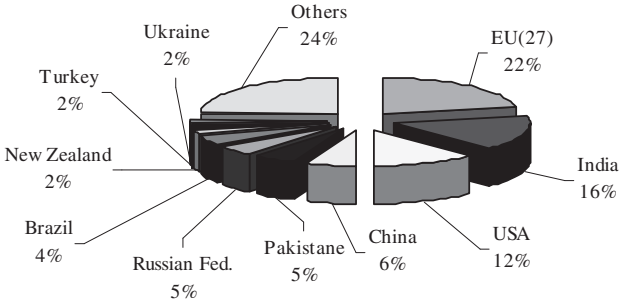

Figure 2.: Distribution of world milk production (697 million tonnes) in 2009
Source: FAO, 2011

Figure 2. illustrates the top 10 milk producers of the world and their contribution to world milk production. The EU(27) is the most significant milk producer in the world with its 153 million tonnes production, although its production rate remains at the same level in 2010.

The production of the Russian Federation is 33 million tonnes in 2010, and there is only a slight growth in it due to the increase of feed prices. In 2010 production increases by almost 3 percent to 61 million tonnes in South America, where Brazil gives one-third of total milk production.

In Oceania farmers could expand output last year due to good weather conditions. New Zealand is expected to reach 18 million tonnes production, which demonstrates a 6 percent growth, while in Australia growth is only 2 percent due to high feed prices, so production is more than 9 million tonnes.

In Africa milk production reaches 37 million tonnes in 2010, it demonstrates a slight 1,3 percent growth.

In accordance with *Figure 2*. EU(27) is the largest contributor to the world milk production. *Figure 3*. demonstrates the distribution of milk production within the EU(27), where France, Germany, the United Kingdom, Italy, Poland and Netherlands give the 67 percent of total milk production. Hungary with its 1 percent contribution to the EU(27) production is placed as 19.

The number of the world's dairy cows is almost 250 million heads. *Figure 4*. illustrates the distribution of it among the world's main regions. More than two-thirds of the herd can be found in developing countries, although developed countries give more than one-third of world milk production. The reason for this is the higher yields in developed countries (FAO, 2010).

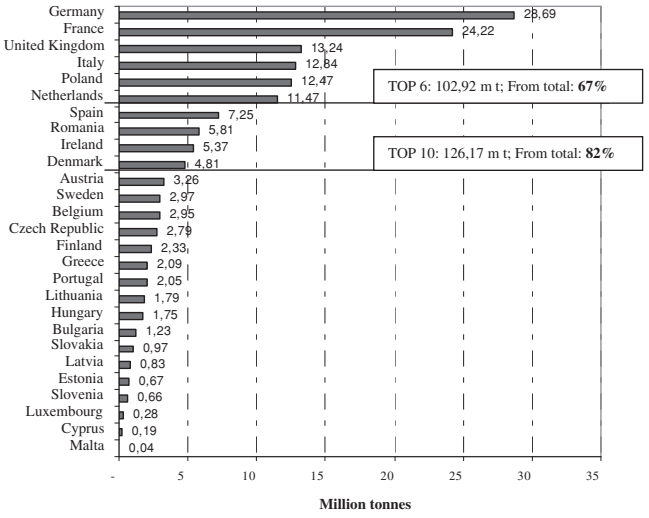

Figure 3.: Distribution of milk production (153 million tonnes) within the EU(27) in 2009
Source: FAO, 2011

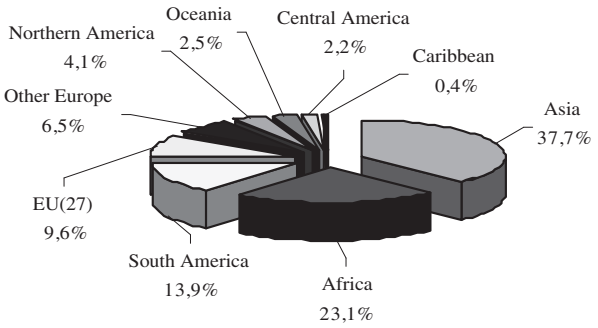

Figure 4.: Distribution of the world's dairy cows in 2009
Source: Bulletin of the IDF, 2010

3.2. Consumption

All over the world people cover approximately 13 percent of their protein requirement from milk and milk products based on the available data and estimates. There is a continuous growth in consumption of milk and milk products and this tendency will probably not change. In 2009 however, for the first time in years the global per capita consumption of milk declined by 0,4 percent. The main reason for the decline was the crisis in the world economy. Another reason for the decrease was the slowing down in the growth of Chinese dairy consumption due to the melamine crisis. On the basis of FAO data per capita milk and milk product

consumption was 103,0 kg in 2009. As regards the consumption of developed countries the average level of it is 245 kg/capita/year, while in developing countries it is only 66,2 kg/capita/year. The consumption level of milk and milk products is expected to expand by 1 percent and reach the value of 104,3 kg/capita/year (FAO, 2010).

Figure 5. illustrates per capita milk consumption in the world from 2000 to 2010. The ideal and healthy level of milk and milk product consumption would be 260–270 kg /capita/year. Developed countries approach this level, but in developing countries the level of milk consumption is far below the healthy value (Nábrádi-Béri, 2006).

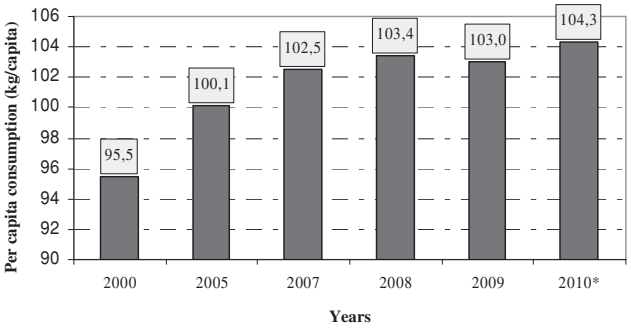

Figure 5.: Tendency of per capita consumption in the world
*2010: estimated value
Source: Bulletin of the IDF, 2010

Table 1. provides a good overview of global consumption by region in 2009. Total consumption of the world was almost 700 million tonnes in 2009. *Table 1*. illustrates the share of each region from consumption as well.

Table 1.: Global consumption by region in 2009

Name	Consumption /million tonnes/	Share (%) world consumption
Asia	268,3	38,4
Europe	206,8	29,6
EU(27)	145,8	20,8
Non-EU	61,0	8,7
North America	93,0	13,3
South America	58,3	8,3
Africa	42,6	6,1
Central America	19,7	2,8
Oceania	10,6	1,5
World	699,5	100,0

Source: Bulletin of the IDF, 2010

On the basis of the bulletin of the IDF liquid milk consumption in million tonnes is the largest in India, the EU(27), the United States, China, Brazil and the Russian Federation. However in case of per capita consumption, the above-mentioned order is modified Iceland, Australia, Norway, Canada, Switzerland and the United States take the first six places.

The average liquid milk consumption in the EU(27) was 32,2 million tonnes and 64,5 kg/capita in 2009. These values show a 1,2 percent decrease in comparison with the year 2008. Within the EU(27) the top six consumers are Estonia, Ireland, Finland, the United Kingdom, Sweden and Denmark. In 2009 the level of liquid milk consumption increased by 8,9 percent in Hungary, so per capita consumption reached 58,7 kg/capita.

Consumption of milk and milk products significantly depends on income. Liquid milk can be considered an inferior good which demand declines as the level of income or real GDP in the economy increases. As people's income starts to increase instead of buying more liquid milk they will rather buy processed products, mainly butter, cheese and yoghurt.

India, the EU(27), the United States, the Russian Federation, Turkey and Iran are the top six countries in butter consumption in million tonnes. In case of per capita consumption Switzerland, Iceland, Australia, Norway, New Zealand and the EU(27) take the first six places.

As liquid milk consumption butter consumption also decreased in the EU(27) in 2009. Its average value was 1,7 million tonnes and 3,5 kg/capita. France, Germany, the Czech Republic, Austria, Poland and Estonia are on the top of butter consumption. Hungarians consumed only 1,0 kg butter per capita in 2009, but still their consumption increased by 10 percent.

The largest cheese consumers in the world in million tonnes are the EU(27), the United States, Turkey, the Russian Federation, Brazil and Argentina. In per capita consumption the most important countries are Iceland, Switzerland, Turkey, the EU(27), Israel and Norway.

Cheese consumption of the EU(27) was almost 8,3 million tonnes in 2009 and it increased by almost 1 percent in comparison with the previous year. The average per capita cheese consumption was 16,6 kg. Greece, France, Germany, Netherlands, Italy and Finland consumed cheese in the largest quantity. The average consumption level was 11,0 kg/capita in Hungary in 2009.

Table 2. shows the average consumption of dairy products in the world and gives a forecast for 2019.

Table 2.: Consumption of dairy products

Name	Average 2007–2009	Forecast 2019	Change
	billion tonnes		*%*
Butter	9,7	12,3	+26,8
Cheese	19,3	23,1	+19,7
SMP	3,2	3,7	+15,6
WMP	4,2	5,5	+30,9

Source: Bulletin of the IDF, 2010

3.3. Trade

The ratio of international trade of milk and milk products to production is 6 percent, i.e. 42 million tonnes, and it may expand, driven by strong demand from Asian countries and

the Russian Federation. Export growth results from the United States, New Zealand and the EU(27). As the *Figure 6.* demonstrates the above mentioned countries are the major exporters in the world. *Figure 6.* and *7.* illustrate the distribution of the export and import of milk and milk products in the world in 2009.

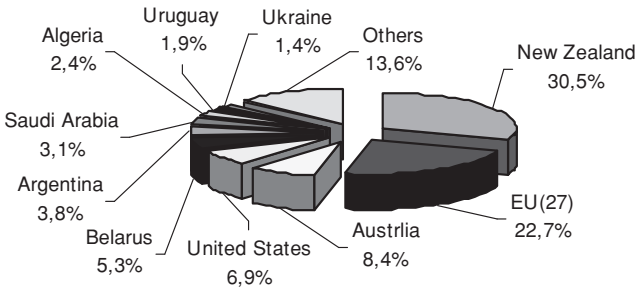

Figure 6.: Export of milk and milk products in the world in 2009
Source: AKI, 2010

Table 3. illustrates the major exporters of different dairy products, and it also shows the percentage changes in export quantities 2010 over 2009. Larger exports from the EU(27) stem from the release of public stocks, in the United States

Table 3.: Major exporters of dairy products

Name	2006–2008 Average	2009	2010 /estimated/	Change 2010 over 2009
	million tonnes			*%*
WHOLE MILK POWDER				
World	1919	1962	1982	1,0
New Zealand	644	818	880	7,6
EU*	428	420	420	0,0
Australia	142	133	105	-21,1
Argentina	140	146	125	-14,4
SKIM MILK POWDER				
World	1180	1347	1526	13,3
New Zealand	279	408	470	15,2
United States	314	249	299	20,1
EU*	155	227	360	58,6
Australia	148	167	130	-22,2
BUTTER				
World	854	916	968	5,7
New Zealand	370	475	500	5,3
EU	202	143	160	11,9
Belarus	55	86	87	1,2
Australia	64	84	88	4,8
CHEESE				
World	1835	2000	2098	4,9
EU*	579	577	660	14,4
New Zealand	285	290	284	-2,1
Australia	195	162	186	14,8
Belarus	92	121	133	9,9

*From 2007: EU-27
Source: FAO, 2010

traders have increasing interest in attractive export prices, while in New Zealand expansion of exports is due to higher milk production.

Figure 7. sums up the demand side and shows the most significant importers in the world. There is a strong import growth in Asian countries and the Russian Federation. In addition, Algeria, Mexico, Saudi Arabia and the United States are also relevant importers.

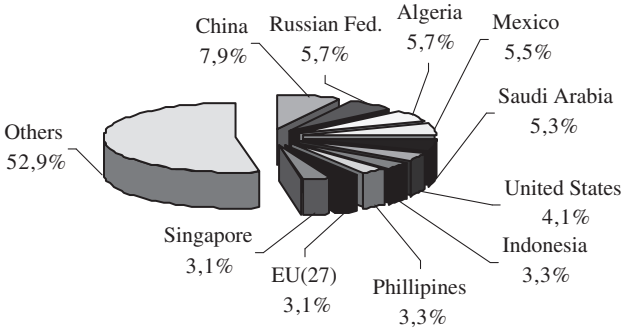

Figure 7.: Import of milk and milk products in the world in 2009
Source: AKI, 2010

3.4. Prices

Since the start of 2009 the dairy market was confronted with a period of extraordinary law prices. The financial and credit crisis in the world economy had a dramatic impact on product prices during the first half of the year 2009. After bottoming out, prices were slowly stabilising during the second part of 2009. At the end of the summer international prices started to strengthen. The strong recovery in prices was triggered by increases demand, mainly from oil exporting countries, but also from China. The last quarter of 2009 was characterized by steady rise in prices.

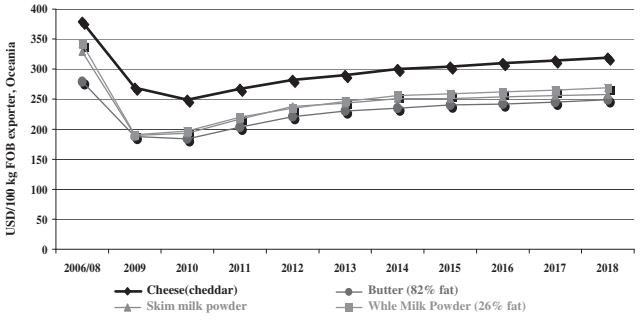

Figure 8.: World market price of dairy products
Source: Popp, 2009

Analysis of the world market price of the most important dairy products it represents a strong recovery from last year, but it still remains 20 percent below its peak value in early 2008. However prices have doubled compared with prices of period of 2002–2004.

Export prices in Oceania in September 2010 were USD/tonnes 4100 for butter, 3140 for SMP, 3360 for WMP and 3950 for cheese. *Figure 8.* illustrates the tendency of world market price of dairy products.

3.5. Outlook

Considering the forecasts of FAO and OECD 24,2 percent growth can be predicted in world milk production until 2019. China, India, Pakistan, Argentina and Brazil may give more than half of this growth due to the increase in the size of dairy herds and in the level of milk production. In production of EU(27) is expected a slight 2,8 percent growth. Forecasts project in the United States 11 percent, in New Zealand 18,5 percent growth between 2010 and 2019. The international trade of cheese will increase in the most significant way among milk products (*Popp,* 2010).

Currently 40 percent of the world population consume milk daily. Consumption of milk and milk products will increase in developing countries, while in developed countries mainly cheese consumption shows significant growth.

World dairy prices will also increase after the fall in prices in 2009. International comparisons represent that the most important dairy products (butter, cheese and milk powders) have lower market price in New Zealand, Australia and the United States than in the EU(27) (*Popp, 2*010).

One of the biggest challenge of dairy sector is the growing world population with a continually growing demand for dairy products. In developed countries the aging society, while in developing countries the growing number of children and the young ones will cause this demand. Another factor is urbanization, which also contribute to this (*Siposné,* 2010).

In my opinion milk has been one of the most important basic foods for thousand years, and it will be an integral part of healthy human consumption in the future as well. After the economic crisis of the year 2009 dairy sector shows improvement for the future. This study also supports this positive tendency and forecast the further development of dairy sector in developing countries, mainly in Asia.

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