

## Dairy market in Slovenia

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### Abstract

Dairy production keeps being the most important orientation of Slovenian agriculture. It accounts for about 15% of the total value of agricultural production in recent years, and 32% of the value of livestock. Milk production in Slovenia consistently exceeds domestic consumption. The paper presents important data on dairy market balances with milk and dairy products production, consumption and trade. In addition, it presents and compares prices and policies in Slovenia and the other European Union (EU) countries. Finally, it assesses the market potential for organic products and products produced, processed and traded according to three EU quality schemes: protected designation of origin, protected geographical indication and traditional speciality guaranteed.

**Keywords:** dairy market, market balances, prices, geographical indications, traditional specialities, Slovenia

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## 1 Introduction

The aim of this paper is to present dairy market in Slovenia. Dairy production keeps being the most important orientation of Slovenian agriculture. It accounts for about 15% of the total value of agricultural production in recent years, and 32% of the value of livestock production.

The Slovenian dairies, which are the members of the Slovenian Dairy Association (Ljubljanske mlekarne, Mlekarna Celeia, Pomurske mlekarne, Mlekarna Planika, Mlekarna Škofja Loka and Mlekarna Krepko) together employ almost a thousand people a year and buy more than 320 million liters of milk from almost 5000 Slovenian farms. They sell the most of milk on domestic market and are regular suppliers of Slovenian schools and kindergartens (GIZ, 2014).

Domestically produced drinking milk products in Slovenia are dominated by the three biggest dairy manufacturers, Ljubljanske Mlekarne, Pomurske Mlekarne and Mlekarna Celeia, which sell drinking milk products under their own brands as well as under the retailers' labels in the country. The biggest market share, however, is obtained by Ljubljanske Mlekarne, due to the domination of its brand Alpsko Mleko within the most popular long-life/UHT milk. Despite the growing competition within the lower priced segment, the company retained its value share at around 38% in 2014 due to the well established distribution network and consumer trust due to its long-term presence. Ranked second is the leading retailer label supplier, Poslovni Sistem Mercator. Pomurske Mlekarne is ranked third with around 12% market share, whereas Mlekarna Celeia is far behind in seventh position with around 1% market share (Euromonitor, 2014).

The rest of the paper is organized from the following two sections. The next second section presents some empirical facts about dairy farm structures in Europe and particularly about dairy chain in Slovenia. Final section concludes.

## 2 Dairy chain

### 2.1 Milk cows, milk yield per a cow and number of dairy farms

The Farm Accountancy Data Network (FADN) data for 2011 show that average Slovenian dairy farm has about 16 ha of forage area and about 19 cows. Milk production amounts to about 107 tons per farm (EC, 2014).

Table 1: Structural information on specialised milk farms by EU member states (2011)

FADN 2011	Specialised milk farms							
	Dairy cows — LU	Forage area — ha	Total labour — AWU	Share of family labour — %	Milk yield — kg/cow	Milk production /farm — tons	Milk price — €/ton	Share of national milk production — %
Belgium	56	47	1.82	98%	7 090	398	338	84%
Denmark	142	102	2.38	49%	8 421	1 193	371	99%
Germany	55	52	2.07	69%	7 632	420	343	92%
Greece	.	.	.	.	.	.	.	.
Spain	41	20	1.74	89%	7 384	299	313	100%
France	53	71	1.90	91%	7 099	373	345	95%
Ireland	62	57	1.62	86%	5 461	337	329	99%
Italy	45	23	2.03	80%	6 924	314	460	95%
Luxembourg	53	78	1.85	91%	7 610	406	326	94%
The Netherlands	82	48	1.73	89%	8 019	654	394	99%
Austria	16	26	1.54	97%	6 604	105	349	86%
Portugal	30	17	1.74	86%	7 246	214	293	98%
Finland	31	40	2.05	85%	8 711	270	411	99%
Sweden	62	87	2.25	73%	8 546	534	386	99%
The United Kingdom	119	101	2.58	63%	7 432	885	315	99%
EU 15	54	51	1.93	81%	7 337	396	357	95%
Cyprus	.	.	.	.	.	.	.	.
The Czech Republic	138	252	15.99	9%	6 814	942	335	58%
Estonia	81	178	5.79	19%	7 445	606	313	99%
Hungary	76	92	7.11	15%	7 199	544	309	78%
Lithuania	11	22	1.81	81%	5 482	63	276	85%
Latvia	16	43	2.18	68%	5 595	90	279	96%
Malta	56	4	2.36	86%	6 664	371	463	99%
Poland	16	13	1.91	94%	5 319	86	286	83%
Slovakia	217	788	29.57	2%	5 732	1 242	334	55%
Slovenia	19	16	2.14	99%	5 519	107	310	91%
EU 10	19	24	2.28	75%	5 695	109	297	80%
Bulgaria	13	8	2.18	67%	3 140	40	311	89%
Romania	4	2	1.34	96%	3 524	14	323	72%
EU 2	4	3	1.40	93%	3 445	16	321	75%
EU 27	29	29	1.82	82%	6 905	203	349	93%

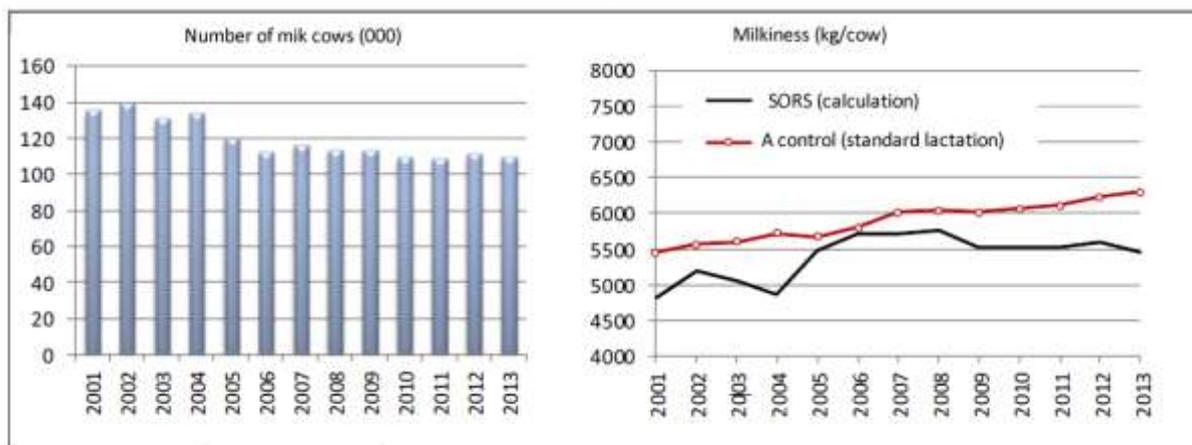
Source: EC, 2014

There is significant diversity of specialised milk farms across the European Union (EU) countries (Table 1). Farms in the EU-15 are much larger on average and have higher yields per a cow than in the EU-10 and EU-2. On average, specialised milk farms in the EU-15 have 54 dairy cows, with a milk yield of 7337 kg/cow, producing 396 tonnes of milk per year, whereas in the EU-10 they have 19 dairy cows, with a yield of 5695 kg/cow, and produce 109 tonnes of milk per year. Farm size is even lower in the EU-2 where farms have 5 dairy cows on average, with a yield of 3445 kg/cow, and produce 16 tonnes of milk per year. These data reflect the diversity of specialised milk farm structures in the EU-27, which are linked to the differences in natural potential and also in the social, economic and regulatory context (EC, 2014).

The structural changes in the Slovenian dairy sector during the last decade have been the most intense among the all livestock orientations. Since 2007, the number of farms rearing dairy cows has declined by more than 40%, and compared to 2000, by almost two-thirds (see also Tables from A1 to A3 with associated text in Appendix). At the same time, since 2007 the number of milking cows fell by 13%, and compared to the year 2000, by a quarter. The average number of milk cows per holding has doubled during the last decade and in 2010 stood at 9.9 heads. In 2010, only 15% of all agricultural holdings were engaged in the production of cow's milk, while in 2000 this proportion was 33% (MAERS, 2014).

The data of regular annual statistical research show that the number of milk cows in 2013 decreased compared to the previous year: at the end of the year one percent fewer cows (110 thousand heads) were recorded as at the end of 2012 (Figure 1). According to statistics, the average milk yield per a cow has also decreased compared to a year earlier, (-2%). However, in contrast to the data statistics, according to the Cattle Breeding Service Slovenian, the average milk yields of cows in A control in 2013 increased by one percent. This suggests that the main progress in milk cow production has been achieved on farms and with cows, which are in a special A control.

Figure 1: Number of milk cows and average milk yield per a cow, 2001-2013



Source: Statistical Office of the Republic of Slovenia (SORS) and Agriculture Institute of Slovenia, 2014

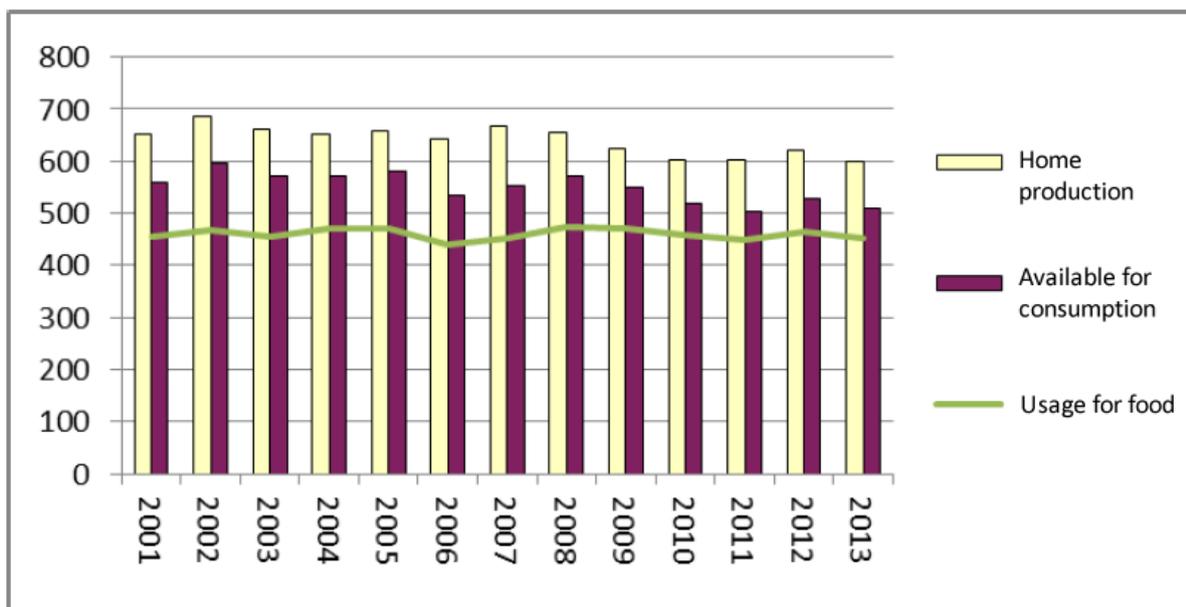
After falling for several years the total amount of milk in 2012 increased but declined again in 2013 to around the same level as in 2011. According to statistical data, in 2013, milk production was around 598.6 thousand tonnes of milk, which is 3% less than in 2012 (620.9 thousand tonnes). By a similar percentage sales of milk to dairies (517.0 thousand tonnes) decreased, which represents about 86% of the total amount of milk production. The average quality of milk collected, in terms of fat and protein content has a slightly improved over time (MAERS, 2014).

## 2.2 Production and consumption of milk

Milk production in Slovenia consistently exceeds domestic consumption. Consumption of milk is rather stable or a slightly declined (Figure 2). The consumption of milk per capita varies between 220 and 230 kg.

The pattern in development in milk production is similar to domestic consumption. The rate of self-sufficiency varies at around 116% (MAERS, 2014).

Figure 2: Production and consumption of milk (000 t, the equivalent of raw milk), 2001-2013

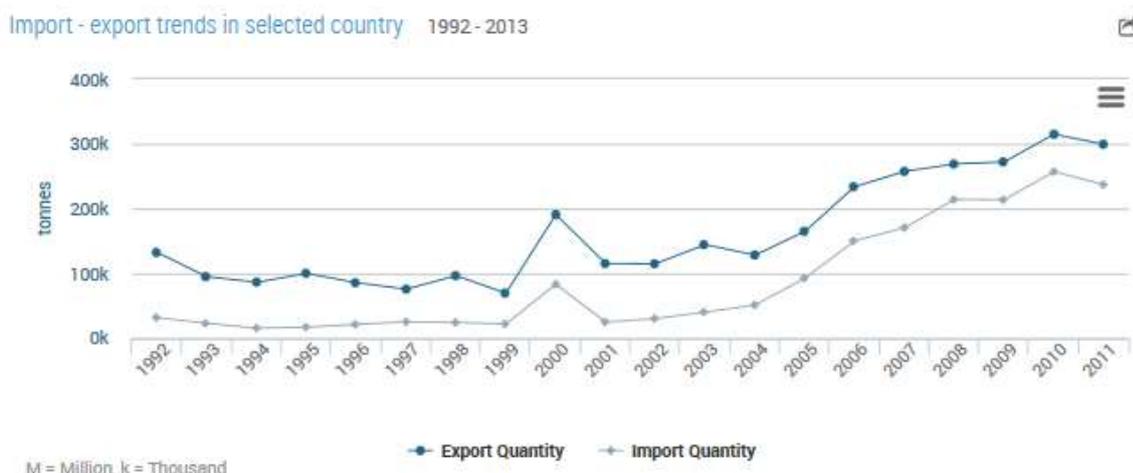


Source: SORS, Agriculture Institute of Slovenia, 2014

### 2.3 Foreign trade

According to FAOSTAT (2014) data import and export of milk in Slovenia have been relatively small until the year 2000. After a peak in 2000 and a decline in the following year, imports and exports have been steadily rising since 2004 (Figure 3). Amount of imported milk has always been lower than the amount of exported milk.

Figure 3: Import and export of milk in Slovenia



Source: FAOSTAT, 2014

### Export of raw milk

Since the entry of Slovenia into the EU in 2004, a part of the raw milk is bought directly by foreign dairies. This is mostly by Italian dairies and since the entry of Croatia in the EU in 2013 a small amount is also bought by Croatian dairies). Since the beginning of 2005 to mid-2007 such sales to Italy have grown rapidly, and then stabilized at a level close to 160 thousand tonnes of purchased milk in 2012, but increased again, and in 2013 it was over 188 thousand tonnes. The share of purchased milk by dairies outside Slovenia in 2012 covered more than 33% of the total purchase of milk in Slovenia, and in 2013 this increased and amounted to over 36%.

### Trade in milk and dairy products

In recent years, the volume of foreign trade in milk and dairy products varies slightly (Table 2). Following a decline in 2011 and increase in 2012, the volume of foreign trade with milk and dairy products decreased again in 2013 and reached 543 thousand tonnes (in equivalent of raw milk), which is one percent less than the previous year. Exports fell by around 3%, while imports increased by a percentage. The excess of exports over imports of milk and dairy products fell below 100 thousand tonnes (specifically, 91.6 thousand tonnes) and compared to 2012 decreased by 11%. In the structure of total exports of milk and dairy products, the export of raw milk dominated for many years (59% in 2013), while on the side of total imports dominate imports of dairy products (more than 88% in 2013) (MAERS, 2014).

Table 2: Import and export of milk and dairy products (000 t), 2009-2013.

	Import					Export				
	2009	2010	2011	2012	2013*	2009	2010	2011	2012	2013*
<b>Milk together</b> (the equivalent of raw milk)	188,5	231,9	217,9	223,0	225,8	267,0	311,9	313,3	326,4	317,4
- Raw milk	21,9	41,9	37,5	34,7	26,7	161,0	155,6	161,0	179,2	188,1
<b>Dairy products</b>										
Fresh and UHT milk	54,9	84,2	82,4	85,6	74,8	61,5	95,7	90,7	95,0	88,4
Fermented products	16,3	17,0	15,5	16,1	15,3	9,6	8,8	9,9	10,7	12,1
Cream	2,8	1,2	1,8	1,2	1,8	2,1	3,0	2,3	1,9	1,3
Cheese and cottage cheese	14,9	15,0	14,8	15,1	17,1	3,9	4,3	4,0	3,0	3,5
Butter	1,1	1,2	0,9	1,2	1,4	0,7	0,9	0,6	0,4	0,1

\*provisional data

\*\*together with imported milk for processing

Source: SORS, 2014

Among dairy products, in 2013 in comparison to the previous year exports of fermented products increased again (+13%), as well as the exports of cheese and cottage cheese (+15%). On the other hand exports of fresh and long-life milk and other export products were significantly lower (fresh and UHT milk by -7%, cream -33%, and butter -79%). Compared to the year 2012, the largest increase in imports were for cream (+49%), butter (+18%), cheese

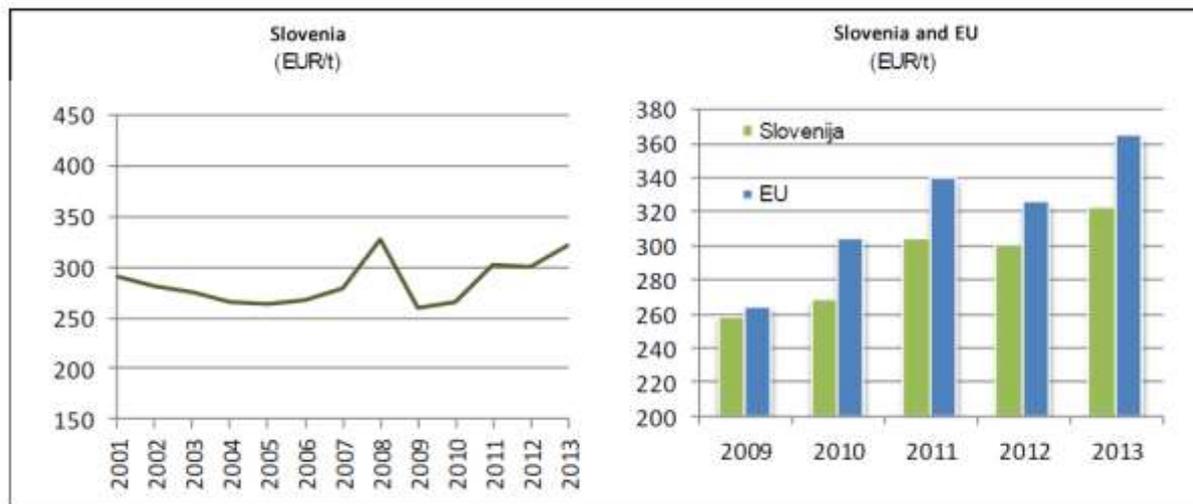
and cottage cheese (+13%), while import of fresh and UHT milk and fermented products was smaller (-13% or -5%) (MAERS, 2014).

### 2.4 Farm-gate purchase prices of milk

Changes in the Slovenian farm-gate purchase prices of milk have mainly followed the changes in the EU market (Figure 4). After strong fluctuations in the farm-gate purchase prices of milk in the 2007-2011 period, there have been significant changes also in 2013 in relation to the previous year, especially at the EU level. Compared to the previous year the average farm-gate purchase price of milk in the EU increased on average by 12%. According to the SORS, the Slovenian farm-gate purchase price rose by 7%.

On Italian market, which is the most interesting one for Slovenia for the Slovenian dairy sector, the farm-gate purchase price of milk, on average, increased by 5%, but was still in on average 20% higher than in Slovenia. For a similar percentage the price on the Italian market was higher in the five-year 2008-2012 period.

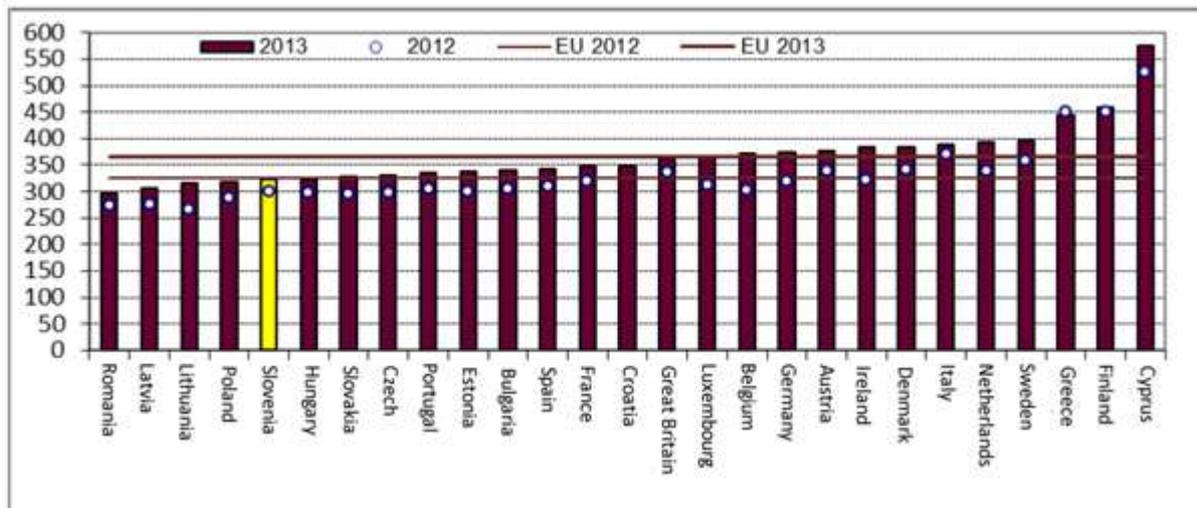
Figure 4: Farm-gate purchase price of milk in Slovenia and in a comparison with the EU average



Source: SORS, European Commission, 2014

In 2013, farm-gate purchase prices of milk increased in almost all EU member states, except for Greece, which the latter is not one of the major milk producers. The farm-gate purchase price of milk in Slovenia can be included among the EU countries with lower price (Figure 5). In 2013, only 4 new EU member states (Romania, Latvia, Lithuania and Poland) had a lower price than Slovenia (MAERS, 2014).

Figure 5: Farm-gate purchase prices of milk (actual quality) in EU countries in the years 2012 and 2013



Source: TIS, 2015

## 2.5 Agricultural policy and payments

The introduction of the reform of the Common Agricultural Policy (CAP) in 2007 brought changes in agricultural policy and payments in the dairy sector. In 2007, the greater part (80%) of the former premium payments for milk claimed by farmers was transformed into an individual (historical) addition to payment entitlements, while the remainder was included in the regional single payment per hectare that is different for arable land and permanent grassland. In 2010, in the mid-term review of the CAP two new measures were introduced. The first is aimed at mountain altitude and steep farms producing milk, and the support is bound to the annual individual reference quantity of milk of the individual farmer. The amount of payment per farm depends on the sum of all quantities of dairy farm claiming these payments. In addition, the holdings of breeding milk cows, like other breeders of cattle, sheep and goats, and horses, could also claim support to keep the livestock on grassland, which takes the form of an addition to paying the rights of the individual holding (MAERS, 2014). In 2013 direct payments represented an important measure to supplement the income of dairy breeders (Table 3).

Table 3: *Direct payments and intervention prices on the dairy market, 2007-2013*

	2007	2008	2009	2010	2011	2012	2013
<b>Direct payments</b>							
Premiums (EUR/t)							
- Premium and additional payment	-	-	-	-	-	-	-
- Payment for milk on the mountain steep highland farms*	-	-	-	17,06	17,5	16,57	16,67
Single regional payment (EUR/ha)							
- Fields	332,00	332,00	332,00	332,00	332,00	332,00	338,15
- Permanent grassland	108,70	108,70	108,70	108,70	108,70	108,70	114,85
Individual historical supplement (EUR/ha)							
- For milk	*	*	*	*	*	*	*
- For livestock farming on grassland	-	-	-	**	**	**	**
<b>Intervention prices (EUR/t)</b>							
- Butter	2.595,2	2.463,9	2.463,9	2.463,9	2.463,9	2.463,9	2.463,9
- Skimmed milk powder	1.746,9	1.746,9	1.746,9	1.746,9	1.698,0	1.698,0	1.698,0

\* 80% of the full amount of the premiums for both milk and individual quota on 31 July 2007, calculated on a payment entitlements

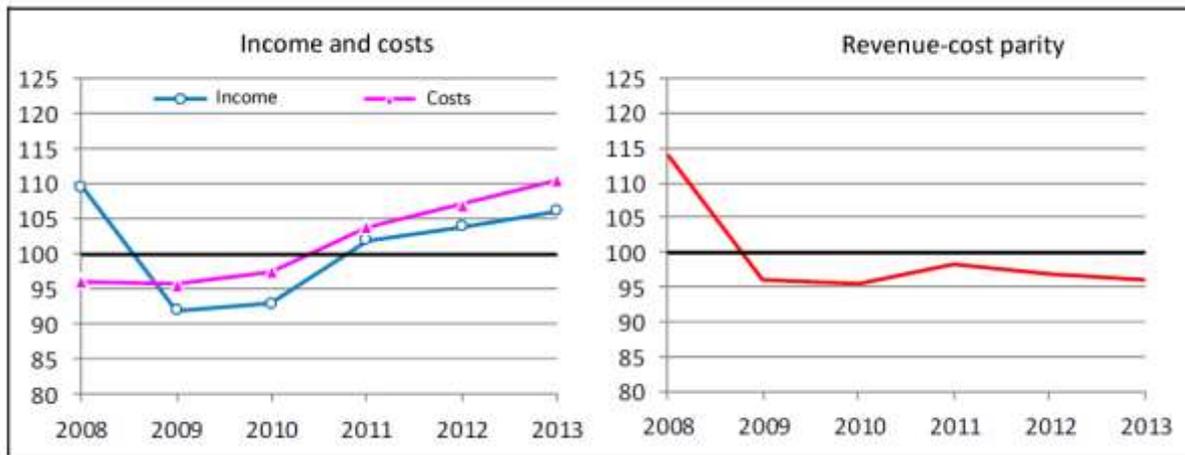
\*\*calculated from the national envelopes (5.8 million EUR) and the number of eligible hectares of grassland, depending on the state in 2009, and calculated on a payment entitlements of each holding

Source: Ministry of agriculture, forestry and food, Agency for agricultural markets and rural development, 2014

Similar to other livestock activities from 2007 onwards, dairy breeders are also entitled to payment for protecting livestock against diseases in 30% of the insurance premium, and may apply also for the entitlement to a refund of part of the excise duty on fuel used in agriculture that since mid-2009 amounts to 70%.

As can be seen from Figure 6, the economic situation for milk production in 2013 was less favourable. According to the model estimates by Agricultural Institute of Slovenia, in 2013, the costs of milk production increased by an average of almost 3%. For a similar percentage costs of materials and services increased, of which feed cost increased the most. The rise of the prices of purchased feed (+9%) contributed the most to the increase in feed costs, while the home grown feed was by about one percent more expensive. By contrast, the cost of feed, the other major material cost, i.e. costs of livestock, compared to 2012 decreased by almost 3%. During the same years, revenues for milk production have increased by around 2%, which is slightly less than the increase in cost. The revenue-cost parity has thus somewhat deteriorated and was in 2013 similar to that in the 2009-2010 period (MAERS, 2014).

Figure 6: Basic economic indicators in milk production (index, average 2008-2012=100)



Source: Agriculture Institute of Slovenia, 2014

## 2.6 Market potential for protected dairy products

The EU offers three quality schemes for protection of special national foodstuffs: protected designation of origin, protected geographical indication and traditional speciality guaranteed. In Slovenia are four milk products – cheeses – protected under the scheme protected designation of origin: Nanos cheese, Mohant, Tolminc, and Bovec cheese. In addition to these, there are also a set of cheeses protected under national designation Higher quality - Semi-hard cheese without preservatives – semi-hard cheeses of Zelena dolina.

There are rare studies about market value of protected dairy products in Slovenia. (Ogorevc, 2007) studied consumers' knowledge, attitude and perception of quality identified foods and the factors influencing the formation of such perception and attitudes. Methods applied were mainly qualitative (focus groups) and also quantitative (questionnaire). The research found out that consumers in Slovenia rarely check origin of the products. The most important factors are taste and quality. The research showed that consumers rarely buy protected Slovenian cheeses. This is due to a high price and improper package (too large packages and outlook of the package). The most known protected cheeses are Tolminc cheese and Bovec cheese. Mohant is little known.

It seems that the Slovenian consumer practices have changed a slightly in more recent years. According to GFK (2014) research, 41% of consumers regularly check the origin of the product, 38% of consumers check the origin only in new products and 21% check it very rarely. The research also showed that less than 50% of consumers prefer Slovenian products and are willing to pay more for them. About 60% believe that national products are safer and about half of consumers think that Slovenian products are not tastier than the foreign ones.

There is little known much about specific purchase practices concerning traditional cheeses in recent years. Only Dairy Celeia and the company Aragon carried out a research in 2015 about consumers' knowledge of Higher quality designation. In 2015, 32% of consumers noticed the designation Higher quality (on one of the cheeses). Compared to the year 2013, when the designation was noticed only by 12% of consumers, the share has grown

substantially. This might indicate that consumers' knowledge about the designation Higher quality has improved (Zelene doline 2015).

### 3 Conclusion

The dairy sector in Slovenia and generally in Europe can expect some changes in future. One reason is the abolishment of milk quota, which was used for controlling of milk production. The abolishment of milk quota system in 2015 will create a new context for economic operators, who have been dealing with milk quotas for about 30 years. This measure concerns the Slovenian farmers who fear that foreign milk producers (e.g. French and German) might take over the dairy market. However, on the other hand milk producers can be also more optimistic as market changes might not be so drastic. Slovenian farmers can increase efficiency and cow milk productivity. There are also opportunities for farmers to use new knowledge, technologies and market opportunities with developing new products with higher value added such as green or ecological milk and dairy products. On demand side, there is need to invest in promotion and better awareness of consumers, especially about the dairy quality schemes in Slovenia.

## Appendix on milk and dairy products market balances in Slovenia, 2001-2013

Table A1: The total balance of production and consumption of cow's milk (the equivalent of raw milk, 000t)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013*	Index 2013/12
Milk	652,8	686,0	661,7	650,4	659,0	642,3	666,5	653,7	625,5	603,9	601,6	620,9	598,6	96,4
Initial stock	10,9	11,7	22,1	14,6	16,8	12,9	13,1	12,4	19,0	16,5	21,4	25,3	14,1	55,8
Import:	28,3	36,5	44,9	50,0	83,9	139,9	155,0	198,9	188,5	231,9	217,9	223,0	225,8	101,2
- import for processing	0,0	0,0	0,0	0,0	6,9	36,1	25,5	39,9	21,9	41,9	37,5	34,7	26,7	77,0
- import of products	28,3	36,5	44,9	50,0	77,1	103,7	129,5	159,0	166,6	190,0	180,4	188,3	199,0	105,7
Export	120,0	116,6	141,6	126,8	165,7	247,5	268,1	275,3	267,0	311,9	313,3	326,4	317,4	97,2
- export of raw milk	0,0	0,0	0,0	0,0	45,8	121,6	147,2	163,2	161,0	155,6	161,0	179,2	188,1	105,0
- export of milk for processing	23,0	18,2	17,8	37,0	28,5	34,1	23,4	15,1	18,7	22,6	21,5	26,9	17,2	64,0
- export of products	97,0	98,4	123,7	89,8	91,3	91,8	97,5	97,0	87,3	133,6	130,8	120,2	112,0	93,2
Final stock	11,7	22,1	14,6	16,8	12,9	13,1	12,4	19,0	16,5	21,4	25,3	14,1	13,0	92,2
Available for use	560,3	595,4	572,5	571,4	581,2	534,4	554,0	570,7	549,5	519,1	502,4	528,8	508,1	96,1
- lost	17,8	20,6	18,2	18,0	17,9	17,1	17,4	17,1	16,3	16,1	16,1	21,7	15,5	71,5
- use for fodder	88,6	106,7	97,6	82,6	92,4	77,6	85,0	80,1	63,7	44,4	37,0	42,6	39,4	92,4
- use for food	454,0	468,2	456,6	470,8	470,9	439,7	451,6	473,4	469,6	458,5	449,3	464,5	453,2	97,6
<b>Per capita consumption (kg)</b>	<b>227,9</b>	<b>234,6</b>	<b>228,7</b>	<b>235,7</b>	<b>235,3</b>	<b>218,9</b>	<b>223,6</b>	<b>234,1</b>	<b>229,9</b>	<b>223,7</b>	<b>218,9</b>	<b>225,9</b>	<b>220,1</b>	<b>97,4</b>
<b>Self-sufficiency rate (%)</b>	<b>116,5</b>	<b>115,2</b>	<b>115,6</b>	<b>113,8</b>	<b>113,4</b>	<b>120,2</b>	<b>120,3</b>	<b>114,5</b>	<b>113,8</b>	<b>116,4</b>	<b>119,7</b>	<b>117,4</b>	<b>117,8</b>	

\* provisional data

Source: SORS, Agriculture Institute of Slovenia, 2014

Table A1 shows data for production and consumption of cow's milk in Slovenia in the 2001-2013 period. The data show that per capita milk consumption has been relatively steady, about 220-235 kg per capita, fluctuating by a few kilograms every year. The self-sufficiency rate has always been positive, more than 110%.

Table A2: Market balance of production and consumption of dairy products – fresh and UHT milk, fermented products (000 t)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013*	Index 2013/12
<b>FRESH AND UHT MILK**</b>														
Production from domestic milk	179,7	172,1	159,0	178,8	171,9	120,1	139,0	115,7	120,7	121,5	118,2	116,9	126,3	108,0
Import of milk for processing	0,0	0,0	0,0	0,0	6,9	36,1	25,5	39,9	21,9	41,9	37,5	34,7	26,7	77,0
Production together	179,7	172,1	159,0	178,8	178,8	156,2	164,5	155,6	142,6	163,4	155,7	151,6	153,0	100,9
Initial stock	2,2	2,4	3,3	3,6	3,6	5,1	4,3	3,3	5,2	4,9	5,3	5,6	5,8	103,3
Import	0,6	0,3	0,1	1,2	7,3	16,5	14,0	24,0	33,0	42,2	44,9	50,8	48,1	94,5
Export	58,3	48,0	35,5	57,7	57,6	70,3	69,9	60,3	61,5	95,7	90,7	95,0	88,4	93,0
Final stock	2,4	3,3	3,6	3,6	5,1	4,3	3,3	5,2	4,9	5,3	5,6	5,8	5,7	98,0
Domestic consumption	121,7	123,6	123,3	122,2	127,1	103,1	109,7	117,4	114,4	109,6	109,5	107,2	112,8	105,2
<b>Per capita consumption (kg)</b>	<b>61,1</b>	<b>61,9</b>	<b>61,7</b>	<b>61,2</b>	<b>63,5</b>	<b>51,3</b>	<b>54,3</b>	<b>58,0</b>	<b>56,0</b>	<b>53,5</b>	<b>53,4</b>	<b>52,2</b>	<b>54,8</b>	<b>105,0</b>
<b>Self-sufficiency rate (%)</b>	<b>147,6</b>	<b>139,3</b>	<b>129,0</b>	<b>146,4</b>	<b>135,2</b>	<b>116,4</b>	<b>126,7</b>	<b>98,6</b>	<b>105,5</b>	<b>110,8</b>	<b>107,9</b>	<b>109,0</b>	<b>112,0</b>	
<b>FERMENTED PRODUCTS**</b>														
Production	40,6	38,9	37,2	35,3	33,5	34,5	33,3	33,2	32,1	31,6	33,7	33,9	34,9	103,0
Initial stock	0,3	0,5	0,6	0,6	0,8	0,9	1,0	1,0	1,4	1,4	1,5	0,6	0,5	87,4
Import	1,1	1,4	2,4	4,8	8,2	9,9	12,2	13,8	16,3	17,0	15,5	16,1	15,3	95,3
Export	15,8	15,2	12,0	10,3	8,4	8,8	9,4	10,7	9,6	8,8	9,9	10,7	12,1	112,9
Final stock	0,5	0,6	0,6	0,8	0,9	1,0	1,0	1,4	1,4	1,5	0,6	0,5	0,6	103,2
Domestic consumption	25,7	25,0	27,6	29,6	33,2	35,4	36,1	36,0	38,8	39,8	40,1	39,3	38,1	96,9
<b>Per capita consumption (kg)</b>	<b>12,9</b>	<b>12,5</b>	<b>13,8</b>	<b>14,8</b>	<b>16,6</b>	<b>17,6</b>	<b>17,9</b>	<b>17,8</b>	<b>19,0</b>	<b>19,4</b>	<b>19,5</b>	<b>19,1</b>	<b>18,5</b>	<b>96,8</b>
<b>Self-sufficiency rate (%)</b>	<b>158,0</b>	<b>155,5</b>	<b>134,9</b>	<b>119,2</b>	<b>101,1</b>	<b>97,3</b>	<b>92,3</b>	<b>92,1</b>	<b>82,8</b>	<b>79,5</b>	<b>83,9</b>	<b>86,3</b>	<b>91,7</b>	

\* provisional data

\*\*without processing and sale in holdings

Source: SORS, Agriculture Institute of Slovenia, 2014

Table A2 shows data for Market balance of production and consumption of dairy products – fresh and UHT milk, fermented products in Slovenia in the 2001-2013 period. The data show that per capita consumption of fresh and UHT milk has dropped by about 10%. The self-sufficiency rate has also dropped, but still stayed above 110%. On the other hand consumption of fermented dairy products has risen from 12.9 kg in 2001 to 18.5 in 2013 and the self-sufficiency rate dropped substantially from 158% in 2001 to 91.7% in 2013.

Table A3: Market balance of production and consumption of dairy products – cream, cheese and cottage cheese, butter (000 t)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013*	Index 2013/12
<b>CREAM**</b>														
Production	13,2	14,7	15,6	18,3	15,5	13,8	15,2	15,9	14,9	14,7	14,2	13,3	12,8	95,9
Initial stock	0,3	0,3	0,3	0,4	0,4	0,4	0,4	0,5	0,5	0,5	0,5	0,2	0,2	100,3
Import	0,0	0,1	0,2	0,3	0,2	0,3	2,3	3,7	2,8	1,2	1,8	1,2	1,8	149,2
Export	0,5	0,3	0,2	1,7	1,1	0,2	1,7	2,4	2,1	3,0	2,3	1,9	1,3	67,2
Final stock	0,3	0,3	0,4	0,4	0,4	0,4	0,5	0,5	0,5	0,5	0,2	0,2	0,2	100,5
Domestic consumption	12,6	14,4	15,5	16,8	14,7	13,9	15,7	17,2	15,5	12,8	13,9	12,6	13,2	105,4
<b>Per capita consumption (kg)</b>	<b>6,3</b>	<b>7,2</b>	<b>7,7</b>	<b>8,4</b>	<b>7,3</b>	<b>6,9</b>	<b>7,8</b>	<b>8,5</b>	<b>7,6</b>	<b>6,2</b>	<b>6,8</b>	<b>6,1</b>	<b>6,4</b>	<b>105,2</b>
<b>Self-sufficiency rate (%)</b>	<b>104,4</b>	<b>101,7</b>	<b>100,6</b>	<b>108,8</b>	<b>105,8</b>	<b>99,4</b>	<b>96,8</b>	<b>92,6</b>	<b>95,9</b>	<b>114,5</b>	<b>101,9</b>	<b>106,1</b>	<b>96,6</b>	
<b>CHEESE AND COTTAGE CHEESE**</b>														
Production	21,7	22,6	24,2	23,8	22,0	20,4	18,7	19,5	18,5	18,7	18,7	18,0	16,3	90,7
Initial stock	1,6	1,6	2,3	1,8	2,1	1,5	1,5	1,0	1,6	1,1	1,2	1,4	1,3	95,2
Import	2,0	2,5	3,0	4,4	6,5	9,3	11,9	14,4	14,9	15,0	14,8	15,1	17,1	113,1
Export	4,0	3,9	6,2	5,1	4,7	3,4	2,9	3,1	3,9	4,3	4,0	3,0	3,5	114,6
Final stock	1,6	2,3	1,8	2,1	1,5	1,5	1,0	1,6	1,1	1,2	1,4	1,3	1,1	81,7
Domestic consumption	19,8	20,5	21,5	22,8	24,5	26,2	28,2	30,3	30,0	29,3	29,3	30,1	30,1	100,1
<b>Per capita consumption (kg)</b>	<b>9,9</b>	<b>10,3</b>	<b>10,8</b>	<b>11,4</b>	<b>12,2</b>	<b>13,0</b>	<b>14,0</b>	<b>15,0</b>	<b>14,7</b>	<b>14,3</b>	<b>14,3</b>	<b>14,6</b>	<b>14,6</b>	<b>100,0</b>
<b>Self-sufficiency rate (%)</b>	<b>109,6</b>	<b>110,3</b>	<b>112,4</b>	<b>104,6</b>	<b>89,9</b>	<b>77,8</b>	<b>66,5</b>	<b>64,5</b>	<b>61,5</b>	<b>63,7</b>	<b>63,6</b>	<b>59,8</b>	<b>54,2</b>	
<b>BUTTER**</b>														
Production	3,6	4,0	5,0	4,1	3,9	2,9	2,6	2,3	2,3	2,7	2,7	2,6	2,3	88,1
Initial stock	0,1	0,2	0,5	0,2	0,3	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	86,7
Import	0,2	0,2	0,2	0,2	0,3	0,5	0,6	0,7	1,1	1,2	0,9	1,2	1,4	117,9
Export	1,6	1,8	3,5	2,1	1,9	0,9	0,7	0,6	0,7	0,9	0,6	0,4	0,1	21,0
Final stock	0,2	0,5	0,2	0,3	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	72,4
Domestic consumption	2,0	2,1	2,0	2,1	2,5	2,4	2,5	2,5	2,6	3,0	3,0	3,4	3,6	107,7
<b>Per capita consumption (kg)</b>	<b>1,0</b>	<b>1,1</b>	<b>1,0</b>	<b>1,1</b>	<b>1,2</b>	<b>1,2</b>	<b>1,2</b>	<b>1,2</b>	<b>1,3</b>	<b>1,4</b>	<b>1,5</b>	<b>1,6</b>	<b>1,8</b>	<b>107,6</b>
<b>Self-sufficiency rate (%)</b>	<b>175,1</b>	<b>191,0</b>	<b>245,0</b>	<b>192,9</b>	<b>156,5</b>	<b>119,5</b>	<b>102,2</b>	<b>93,0</b>	<b>86,7</b>	<b>89,8</b>	<b>89,1</b>	<b>76,8</b>	<b>62,8</b>	

\* provisional data

\*\*without processing and sale in agricultural holdings

Source: SORS, Agriculture Institute of Slovenia, 2014

Table A3 shows data for Market balance of production and consumption of dairy products – cream, cheese and cottage cheese, butter in Slovenia in the 2001-2013 period. While the consumption of cream has been fluctuating, consumption of cheese and cottage cheese rose by about 50%; consumption of butter has also risen significantly, especially in the last few years, from 1 kg per capita in 2001 to 1.8 kg in 2013. Accordingly, the self-sufficiency rate dropped significantly for cheese, cottage cheese (by 54.2%) and butter (by 62.8%), but fluctuated at a rate between 90 and 110% for cream.

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## Project information

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- Title:** International comparisons of product supply chains in the agri-food sectors: determinants of their competitiveness and performance on EU and international markets (COMPETE)
- Funding:** Collaborative research project (small or medium-scale focused research project),  
FP-7-KBBE.2012.1.4-09, total EU contribution is 2,422,725 €
- Duration:** 01/10/2013-30/09/2015 (36 months)
- Objective:** The objective of the COMPETE project is to gain a more comprehensive view on the different elements which contribute to the competitiveness of the European agri-food supply chain in order to provide better targeted and evidence based policies on the EU as well as on the domestic level. The project investigates selected determinants of competitiveness like policy interventions and the business environment, productivity in agriculture and food processing, the functioning of domestic and international markets, the choice of governance structures, and innovative activities in food processing. The research results will enable a congruent, coherent and consistent set of policy recommendations aiming at improving competitiveness of European product supply chain.
- Coordinator:** IAMO, Germany, Prof. Heinrich Hockmann
- Consortium:** 16 Partners from 10 European countries. COMPETE brings together academics, trade bodies, NGOs, agricultural co-operative, industry representative advisory



This project is funded by  
the European Union