

## Milk Quotas: an Instrument of the EU Common Agricultural Policy for Market Stabilisation

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**Abstract.** The Common Agricultural Policy (CAP) of the European Union (EU) as a market-stabilising instrument was introduced in 1984 to prevent overproduction. The dairy industry plays an important role in agriculture in both the EU and Latvia, as this industry has provided 14% and 22%, respectively, of the total value of final agricultural products, measured at base prices, in 2010. The total milk quota is almost 146 million tons a year, and 70% of it is allocated to six EU Member States; Latvia's milk quota accounts for only 0.5% of the total EU quota. After the accession to the EU, the milk quota in Latvia was implemented by 85% on average and it was not fully implemented in any quota year, which points to unused opportunities for the industry. Milk producers have to be prepared for the abolishment of milk quotas in 2015 to be able to compete on a free market.

**Key words:** European Union, Common Agricultural Policy, milk quotas.

**JEL code:** Q13, Q18

### Introduction

Europe is the second smallest part of the world, which occupies almost 5% of the land area of our planet. Rural areas and forests occupy the largest part of it. Latvia, after its accession to the EU on 1 May 2004, became one of the members of the largest world market, and it had to comply with terms of the EU CAP in agriculture. The EU CAP is a basis for the development and competitiveness of not only agriculture but also the agricultural food industry with more than 19 million jobs. The CAP ensures the coordination of preservation of agriculture and the environment. It assists in shaping the economic and social structure of rural society. It plays a significant role in facing such challenges as climate change, management of water resources, biodiversity etc. Presently, the EU CAP pursues two main goals – to assist European farmers to compete on the world market and to promote rural development, especially in the poorest municipalities where GDP per capita does not reach 75% of the EU average (EUR-Lex, no year).

It is envisaged to abolish milk quotas in 2015, thus, the EU scientists conduct extensive research on changes in the CAP and their effects on the further development of the industry. For instance, in Germany, B.Brummer, J.P. Loy, and T.Requate T. (2011) emphasise that "the main features of the German milk quota exchanges are the state reserves that cover excess demands free of charge". In Belgium, H.De Frahan, A.Baudry, R.De Blander, P.Polome, and R. Howitt (2011) point that "a quota removal with a 20% reduction in milk prices keeps aggregate milk supply and farm income at about the same level of the 2006 reference year". After completing a research on the dairy industry in individual EU Member States, C.Wieck and T.Heckelei (2007) concluded that "milk output, milk yield, herd size, labour input, and fodder production could be attributed to significant marginal cost differentiation of

farms, whereas, for crop and animal output, grassland, stock of other animals, and depreciation only minor differentiation could be found".

In Latvia, J.Ozolins (2010, 2011), A.Krievina (2010), A.Krievina and A.Miglavs (2011), D.Jasjko, L.Frolova, A.Dobele, E. Pancenko, T.Ivanova, A.Radionova (2007) et al. researched various economic aspects of the dairy industry. Yet, due to changes in the market situation and considering the expected CAP reforms, it is necessary to conduct new research. Therefore, the **research aim** is to analyse milk quotas of the EU CAP in the EU and Latvia. The following **research tasks** were set based on the research aim:

- 1) to assess the milk quota mechanism in the EU;
- 2) to analyse milk quotas in Latvia after its accession to the EU;
- 3) to investigate the possible development of milk quotas in the future.

Analysis and synthesis, the logical and constructive method as well as statistical analysis and PESTEL analysis (effects of political, economic, sociological, technological, legal, and environmental factors on the further development of the dairy industry in Latvia and the EU) methods were exploited to perform the research tasks. Research materials of scientists from various countries, information of the Ministry of Agriculture of Latvia (MoA), the Central Statistical Bureau (CSB), the Rural Support Service (RSS), and the state agency Agricultural Data Centre (SA ADC) etc. were used to investigate the topic.

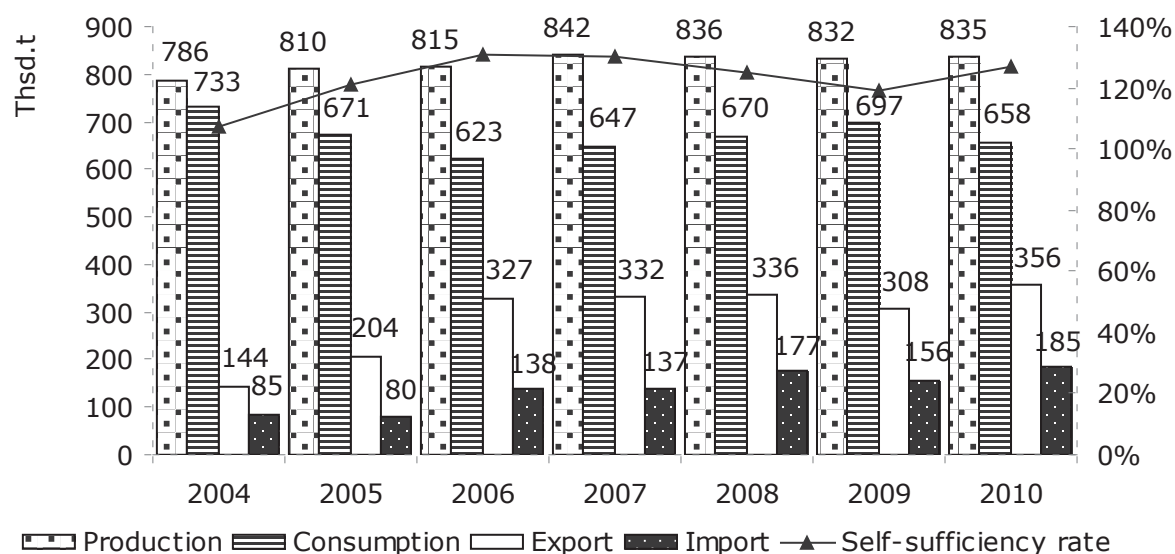
### Research results and discussion

#### 1. Milk quotas in the European Union

The dairy industry takes a significant position in the EU agriculture. More than a million dairy farmers annually produce 148 million tons of milk, the value of which amounts to EUR 41 billion (in direct producer prices). Approximately 400 000 individuals are engaged

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Source: authors' construction based on the CSB, the SA ADC, no year

Fig. 1. Milk balance, thou t and the self-sufficiency rate, % in Latvia in 2004-2010

in milk processing, and the turnover of this industry totals EUR 120 billion a year. Milk fats and proteins are used in cheese and butter production. The EU implements a dairy policy that is mostly oriented towards market balancing, price stabilisation, providing a sufficiently high standard of living to producers, and increasing the competitiveness of producers (European Court of Auditors, 2009). It is provided by the CAP's Common Market Organisations (CMO), which integrate various agricultural policy instruments, to regulate the price of some product or group of products and the market balance, and to provide a free flow of goods in the entire EU (Council Regulation ..., 2007). The CMO's measures include intervention purchases or product storage measures, export refunds, a production-limiting system (quotas), and market support measures. Quotas of the EU CAP are applied to reduce disparities between supply of and demand for agricultural products and improve market balance, i.e. by quantitatively limiting the output of a certain agricultural product. Quotas are the right of milk producers to sell their milk within the quotas allocated, actually the limit imposed by quotas relates only to milk sales (Orlova I., 2009). Higher prices on milk and dairy products may be kept by limiting milk sales. Thus, surplus stocks of dairy products (butter, cheese, milk powder), price falls, and producer (farmer) income decreases may be efficiently avoided.

The purpose of the milk quota system is to stabilise the market, thus, providing precise accounting and control of milk output and sales from both quantitative and qualitative aspects and prerequisites for restructuring milk production. A milk quota (national milk quota) is a quantity of milk set for each EU Member State on which a levy has to be paid if the quota is exceeded. The total national quota consists of two types of quotas: *wholesale quotas* for raw milk sold to a buyer that is usually a processing enterprise, and *direct sales quotas* for raw milk, milk and/or dairy products sold to a direct consumer (hospital, school, kindergarten, local marketplace etc.).

A milk quota year is a period from 1 April to 31 March of the next year.

The EU milk quota system has been functioning since 1984, maintaining stability in the milk market. The European Union is the world's leading milk-producing region, with just under 23 million dairy cattle in 2005 (Oliver E., Caspari C., 2008). The wholesale quota for the quota year 2009/2010, which was allocated to all the EU Member States, totalled 144 921 617 tons. Of the total quota, 70% was allocated to six EU Member States: Germany (20%), France (17.2%), the United Kingdom (10.5%), the Netherlands (7.9%), Italy (7.6%), and Poland (6.6%), while Latvia's milk quota accounted for only 0.5% of the total EU quota (European Commission, 2011).

In the quota year 2010/2011, the following five EU Member States exceeded their total milk quota by almost 200 thousand tons of milk: Denmark, the Netherlands, Austria, Cyprus, and Luxembourg. Irrespective of over-implementation of the quota in these EU Member States, the EU total output of milk did not exceed the total milk quota. Denmark and the Netherlands both exceeded their wholesale quotas for dairy processing enterprises and direct sales quotas, whereas, the other EU Member States exceeded only their wholesale quotas (Waite R., Reyniers J., 2011). Those farmers who exceeded their milk quotas by more than 6% had to pay a levy that was 50% higher than a regular levy in the quota years 2009/2010 and 2010/2011. The EU legislation stipulates that if a Member State exceeds its quota, producers that made this over-implementation have to pay a levy. The size of levy is 27.83 EUR/100 kg or 0.19 LVL/100 kg (Eiropas Ekonomikas un..., 2011), which significantly exceeds a milk purchase price not only in Latvia but also in the EU countries. It indicates that irrespective of a common use of CAP instruments in the EU-27; there are significant differences among their dairy industries, which can affect the development of these industries in the future.

## 2. Milk quotas in Latvia

In Latvia, dairy farming is a traditional agricultural industry, which developed very fast in the second half of the 19<sup>th</sup> century, becoming a significant exporting industry. After the accession to the EU, any milk producer needed a milk quota to sell the milk produced. The purpose of the milk quota system is to provide precise accounting and control of milk output and sales from both quantitative and qualitative aspects and prerequisites for restructuring milk production (MoA, 2011a).

The dairy industry is one of the most important industries in Latvia, as it accounted for 22.1% of the total value of final agricultural products measured at base prices (on average 14% in the EU) in 2010. Compared with 2009, the proportion of this industry in the output of goods rose by 5.4 percentage points (owing to increases in price and quantity) (MoA, 2011a).

Since the accession to the EU, the output of milk has had a stable upward trend, slightly decreasing due to the global economic crisis (Figure 1). However, in case the domestic consumption of milk decreases, the dairy industry can grow only owing to an increase in exports. Over the period of analysis, the exports of milk have increased 2.2 times, yet, it still lagged behind the increase rate of imports, which was 2.5 times. Owing to an increase in output, the self-sufficiency rate was steadily high. Other characteristics of the dairy industry in Latvia for 2010 – the number of cows (164 thousand), the number of herds (approximately 30 thousand), and the average milk yield per cow (approximately 5000 kg) (SA ADC, no year) – point at concentration and an efficiency increase in the primary production of milk. The introduction of milk quotas in Latvia

indisputably contributed to the growth of the dairy industry, providing stability, and growth opportunities for it.

One can draw the following conclusions from the information summarised in Table 1.

- After the accession to the EU, Latvia's milk quota increased by 55.3 thousand tons or 8%; the wholesale quota was the most significant quota, as it accounted for 96% of the total milk quota.
- There are development opportunities for the dairy industry in Latvia, as the total milk quota allocated to the country was not implemented. The highest quota implementation rate or 92.2% was registered in the quota year 2007/2008. In the quota year 2009/2010, a quota reserve of 115.3 thousand tons was available for the industry's growth.
- The number of milk quota owners has declined almost by half over the period of analysis, and every quota owner had a milk quota of 47 tons on average in the quota year 2009/2010, while the real quota implementation was even smaller – 40 tons on average.
- An analysis of the percentage distribution of milk quota owners points to problems in the primary production of milk in Latvia. Regardless of a decrease in the number of quota owners over the recent years, almost 95% of milk quotas belonged to dairy farms having less than 29 cows, while only 2.8% of quota owners had more than 50 cows.

## 3. Development of the milk quota system

Overproductions of milk were observed in the EU before the introduction of milk quotas (until the middle

Table 1

Characteristics of milk quotas in Latvia in 2004-2009

Indicators/ Quota year	2004/ 2005	2005/ 2006	2006/ 2007	2007/ 2008	2008/ 2009	2009/ 2010	Structure of quotas/ owners, %
Wholesale quota, thou. t	631.9	677.6	715.4	717.3	725.5	719.7	95.9
Wholesale quota implementation, thou. t	460.0	567.6	637	661.8	661.1	609	95.8
Quota implementation rate, %	72.8	83.8	89.0	92.3	91.1	84.6	x
Direct sales quota, thou. t	63.5	17.8	13.2	11.3	17.7	31.0	4.1
Direct sales quota implementation, thou. t	10.4	10.7	10.5	10.3	12.9	26.4	4.2
Quota implementation rate, %	16.4	60.1	79.5	91.2	72.9	85.2	x
Total milk quota, thou. t	695.4	695.4	728.6	728.6	743.2	750.7	100
Total milk quota implementation, thou. t	470.4	578.3	647.5	672.1	674	635.4	100
Quota implementation rate, %	67.6	83.2	88.9	92.2	90.7	84.6	x
Number of quota owners	x	30855	30068	20620	18417	16033	100
incl. less than 9 cows	x	28547	27565	17696	15468	13162	82.1
incl. 10-29 cows		1773	1898	2151	2129	2024	12.6
incl. 30-49 cows	x	249	276	359	389	394	2.5
incl. 50 and more cows	x	286	329	414	431	453	2.8

Source: authors' calculations based on the SA ADC, no year

Table 2

## Characteristics of special support for milk in Latvia in 2010

Quota	Rate, LVL*/t	Tons confirmed	Number of applicants	Sum paid out, LVL	On average, LVL per farm
30-79 t of milk sold within a quota of at least 30 t	7.63	90092	1899	686071	361
80 t of milk sold within a quota of at least 80 t	6.87	428829	1343	2940953	2190
Total	x	518921	3242	3627024	1119

\* Latvian lats

Source: authors' calculations based on *Ipasais atbalsts par...*, 2010

of the 1980s); however, after the introduction of milk quotas, the EU could get rid of intervention stocks, thus, proving that the initial goal of introducing milk quotas was achieved. Therefore, the abolishment of milk quotas is envisaged from April 2015, and milk producers will have to assess seriously their competitiveness and ability to continue a profitable business, as a guaranteed maximum quantity of milk purchased in every country would not be ensured due to the abolishment of milk quotas. Milk processors, too, will have to search for the best option for purchasing milk; it is possible that the number of cases when enterprises purchase raw milk in another EU Member State increases. E. Oliver and C. Caspari (2008) emphasise that regardless of the abolishment of milk quotas, it is necessary, at the same time, to maintain the industry's strategic place in the EU's rural economy as a whole and the local socio-economic fabric of many of its regions.

The EU ensures a gradual adaptation to the new conditions by increasing quotas by 1% within the period from 2009/2010 to 2013/2014 to get prepared for free competition in the primary production of milk.

To ensure this transition and gradual adaptation to the new market conditions, and activity in the dairy industry after milk quotas are abolished, a new type of support is available to farmers from 2010 – special support for milk. The legal framework for special support for milk is stipulated in Article 68 of Regulation 73/2009 (Padomes Regula ..., 2009). The purpose of granting this support is to provide financial support to milk producers in order to ensure a transition and gradual adaptation to the new market conditions and activity in the dairy industry after the abolishment of milk quotas. This support is available to economically vulnerable dairy farms, which sell more than 30 tons of milk a year to the market and can develop and continue operating in the EU dairy industry in a long-term and which will be directly affected by the abolishment of milk quotas (MoA, 2011). In 2010, any milk producer could receive special support for milk within the available quota for the previous quota year (in the period from 1 April 2009 to 31 March 2010) if:

- 1) the available quota of milk producers was 30 or more tons of milk and the milk producer had sold at least 30 tons of milk in the period from 1 April 2009 to 31 March 2010;
- 2) the milk producer had submitted an area payment application to a Regional Agricultural Board of the RSS, stating that s/he had applied for special support for milk.

Table 2 shows that totally 3242 applicants have applied for special support for milk in 2010 and they were paid LVL 36 million, of which 19% was received by farmers having a quota within 30-79 t of milk, while 81% was paid to farmers having a quota of more than 80 t of milk. Thus, the amount of support paid to relatively stronger farmers exceeded that paid to small farmers 4.3 times on average regardless of the fact that the support rate for small farmers was 11% higher. Besides, only approximately 5% of the total number of milk quota owners received this special support, which may be explained by the high proportion of small milk quota holders (milch cow owners) in their total number.

To identify the most significant and influential factors affecting the dairy industry in the future, a factor ranking assessment based on PESTEL analysis was performed in November-December of 2011. A questionnaire, which included the most significant factors of the respective field, was developed, and four experts of the industry were interviewed thereof. One of the experts represented the Ministry of Agriculture of Latvia – the director of the Department of Agriculture, the second one – the SA ADC – the director of the Department for Milk Quotas, the third one – the Latvian Rural Advisory and Training Centre (LLKC) – a specialist of the Livestock Department, and the fourth one – X Ltd, which had specialised in milk production (its herd consisted of 700 cattle, including 350 milch cows) – the chairman of the executive board of this enterprise.

Two questionnaires were developed – one on the factors affecting the dairy industry in Latvia, the second one – on the factors affecting the dairy industry in the EU. The experts had to assess whether a particular factor promoted and affected the development of the dairy industry and to what extent it was exploited. The following ranks were assigned to the factor rating scale: 1 – a factor affects minimally, 2 – a factor affects partially, it has a medium effect, and 3 – a factor affects maximally. In the result, several indicators were obtained; their use allowed comparing and identifying the factors affecting the dairy industry:

- a score of ranks for each factor – to assess the most significant factors of each category (PESTEL) for the dairy industry;
- a sum of ranks for the effects on the dairy industry – to assess, which effect (maximal, medium, minimal) on the dairy industry is the most significant;
- a normalised score of ranks for the factors affecting the dairy industry as a percentage of total value of ranks for a particular effect (maximal, medium, minimal).

Table 3

## Summary of the ranking of the factors affecting the dairy industry in Latvia and the EU

LV / EU	Experts	SA ADC	LLKC	Ltd	MoA
<b>Sum of ranks</b>					
LV	Factor developing dairy industry	69	70	71	<b>72</b>
LV	Factor hindering dairy industry	34	39	46	56
LV	Factor having no effect on dairy industry	28	27	45	34
EU	Factor developing dairy industry	69	67	68	<b>72</b>
EU	Factor hindering dairy industry	34	45	39	56
EU	Factor having no effect on dairy industry	28	27	55	34
<b>Total sum of ranks</b>					
LV		131	136	162	162
EU		131	139	162	162
<b>Normalised score, %</b>					
LV	Factor developing dairy industry	<b>52.7</b>	51.5	43.8	44.4
LV	Factor hindering dairy industry	26.0	28.7	28.4	34.6
LV	Factor having no effect on dairy industry	21.4	19.9	27.8	21.0
EU	Factor developing dairy industry	<b>52.7</b>	48.2	42.0	44.4
EU	Factor hindering dairy industry	26.0	32.4	24.1	34.6
EU	Factor having no effect on dairy industry	21.4	19.4	34.0	21.0
<b>Scattering, %</b>					
LV	Factor developing dairy industry	<b>0.24</b>	<b>0.24</b>	0.28	0.28
LV	Factor hindering dairy industry	0.37	0.36	0.36	0.33
LV	Factor having no effect on dairy industry	0.39	0.40	0.36	0.40
EU	Factor developing dairy industry	<b>0.24</b>	0.26	0.29	0.28
EU	Factor hindering dairy industry	0.37	0.34	0.38	0.33
EU	Factor having no effect on dairy industry	0.39	0.40	0.33	0.40

Source: authors' calculations based on expert questionnaires, 2011

$$\text{normalised score} = \frac{\text{sum}}{\text{total sum}} \cdot 100, \quad (1)$$

where:

*sum* – sum of ranks for the effects on the dairy industry;

*total sum* – total sum of ranks for the effects on the dairy industry.

A scattering of ranks for the dairy industry is a free component, which is changeable; it assesses the effect power of the factors and determines the free area for unused opportunities for the dairy industry (maximal, average, minimal) and their effect:

$$\text{scattering} = \frac{1}{2} \left( 1 - \frac{\text{sum}}{\text{total sum}} \right), \quad (2)$$

where:

*sum* – sum of ranks for an alternative (dairy industry);

*total sum* – total sum of all alternative ranks (Radzele-Sulce A., 2011).

The result of the analysis is summarised in Table 3.

Table 3 shows that the experts gave 69-72 points to the factors that developed the dairy industry in Latvia and 67-72 points to the factors promoting the dairy industry in the EU, 34-56 points to the factors hindering the dairy industry in Latvia and the EU. However, the greatest range of points (27-55) was given to the factors having no effect on the dairy industry in Latvia and the EU.

A normalised score shows that the experts rated 44.4-52.7% of the factors as the ones promoting development in Latvia and the EU. Of the factors, 26-34.6% did not promote (hindered) development, while 21.4-34.0% of the factors were neutral (had no effect) both for Latvia and the EU.

After assessing the most significant factors of each category (PESTEL), according to the experts for the dairy industry, and based on a normalised score of ranks, which assesses the effect power of the factors and determines the free area for unused factors, for the factors affecting the dairy industry, one can conclude that the factors affecting the dairy industry function at a capacity of 77.3% in Latvia and 75.8% in the EU, which means that presently 22.7% of the factors promoting development in the dairy industry are not exploited in Latvia and 24.2% - in the EU. This means that approximately a third of the factors promoting the dairy industry are not

exploited and, thus, the dairy industry has a 23% extra capacity for its development on average.

The experts pointed that the factors hindering the dairy industry in Latvia and the EU were quite similar. The main such factors were as follows: more attention had to be paid to financial support for agricultural infrastructure and business development, political support for the market and the elaboration of an agricultural strategy for at least 5 years, establishment of strong milk producer organisations or inter-industry organisations, development and availability of information and communication technologies in agriculture, development of milk-processing technologies, reduction of effects of climatic conditions, regulation of the consumption and prices of electrical energy as well as oil products, stability and predictability of Latvian and EU legal acts as well as tackling of employment problems.

### Conclusions

1. Quotas of the EU CAP are applied to reduce disparities between supply of and demand for agricultural products and improve market balance. The CMOs of the EU guarantee that quotas are the right of milk producers to sell their milk within the quotas allocated. The EU milk quota system has been functioning since 1984, while in Latvia – since 1 May 2004.
2. The wholesale quota for the quota year 2009/2010 in the 27 EU Member States totalled 144 921 617 tons. Of the total quota, 70% was allocated to six EU Member States: Germany, France, the United Kingdom, the Netherlands, Italy, and Poland, while Latvia's milk quota accounted for only 0.5% of the total EU quota.
3. In the period of 2004-2010, the milk quota was implemented by 85% on average in Latvia, and it has not been fully implemented in any quota year, which pointed to unused opportunities for the industry to increase both the output and sales of milk. A reserve for development was approximately 115 thousand tons a year.
4. Regardless of the process of concentration in the primary production of milk in Latvia after its accession to the EU, the stabilisation of quantities of milk produced and domestically consumed as well as an increase in dairy exports. Totally, 95% of milk quotas still belonged to dairy farms having less than 29 cows and only 453 dairy farms with more than 50 cows were in the country.
5. Preparing for the abolishment of milk quotas in the EU in 2015, which means free competition in the primary production of milk, a gradual adaptation to the new conditions is provided by annual increasing quotas by 1% and paying special support for milk to farmers if their milk quota is at least 30 tons. Milk quota owners do not exploit these measures sufficiently intensive.
6. According to a survey of competent experts, the factors affecting the dairy industry function at a capacity of 77.3% in Latvia and 75.8% in the EU. Thus, presently 22.7% of the factors promoting development in the dairy industry are not exploited in Latvia and 24.2% – in the EU, which means that the dairy industry has a 23% extra capacity for its development on average.

### Proposals and recommendations

- The Ministry of Agriculture of Latvia and the Latvian Rural Advisory and Training Centre have to expand informative and explanatory activities, so that farmers apply for eligible special support for milk, thus, preparing for free competition and potential threats on the dairy market after abolishing milk quotas in 2015.
- Farmers, especially owners of small herds of cows, have to use opportunities for joining various cooperatives to increase their market potential and prepare for free competition in milk production after abolishing milk quotas.
- Farmers have to intensify milk production by exploiting the funding of support measures allocated to the Rural Development Programme 2007-2013.

### Bibliography

1. Brummer, B., Loy, J.P., Requate, T. (2011). Auction Experiments and Simulations of Milk Quota Exchanges. Paper Prepared for Presentation at the EAAE 2011 Congress. Retrieved: [http://ageconsearch.umn.edu/bitstream/114377/2/Loy\\_Jens-Peter%20\\_340.pdf](http://ageconsearch.umn.edu/bitstream/114377/2/Loy_Jens-Peter%20_340.pdf). Access: 3 February 2012.
2. De Frahan, H., Baudry, A., De Blander, R., Polome, P., Howitt, R. (2011). Dairy Farms without Quotas in Belgium: Estimation and Simulation with a Flexible Cost Function. *European Review of Agricultural Economics*, Vol. 38, No. 4, pp. 469 - 495.
3. EUR-Lex (b.g.). Kopeja Lauksaimniecības politika (*Common Agricultural Policy*). Retrieved: [http://eur-lex.europa.eu/lv/dossier/dossier\\_42.htm](http://eur-lex.europa.eu/lv/dossier/dossier_42.htm). Access: 7 October 2011.
4. European Commission. (2011). Agriculture in the European Union - Statistical and Economic Information. Milk and Milk Products. Agriculture and Rural Development, 2006-2010. Retrieved: <http://ec.europa.eu/agriculture/agrista/>. Access: 1 October 2011.
5. Eiropas Ekonomikas un sociālo lietu komitejas atzinums par tematu Priekšlikums Eiropas Parlamenta un Padomes Regulai Nr. .../..., ar ko izveido lauksaimniecības tirgu kopīgu organizāciju un paredz ipasus noteikumus dažiem lauksaimniecības produktiem (Regula par vienotu TKO). COM (2010) 799 galīga redakcija – 2010/0385 galīga redakcija (2011/C 132/17) (*Resolution of the European Economic and Social Committee on the Proposal for European Parliament and Council Regulation No. .../... which Establishes a Single Organisation for Agricultural Markets and Provides Special Terms for Several Agricultural Products*). Retrieved: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2011:132:0089:0091:LV:PDF>. Access: 1 October 2011.
6. Ipasais atbalsts par pienu (IPKV) (*Special Support for Milk*) (2010). Retrieved: <http://www.lad.gov.lv/lv/es-atbalsts/tiesie-maksajumi/ipasais-atbalsts-par-pienu-%28ipkv%29/>. Access: 19 October 2011.
7. Jasko, D., Frolova, L., Dobeļe, A., Pancenko, E., Ivanova, T., Radionova, A. (2007). Pilsaimniecības nozares attīstības analīze un konkurencespejas novērtējums Latvijā un Eiropas Savienības tirgū

- (*Development Analysis and Competitiveness Assessment for the Dairy Industry in Latvia and the European Union Market*). Retrieved: [http://www.llu.lv/?mi=81&projekti\\_id=497](http://www.llu.lv/?mi=81&projekti_id=497). Access: 1 February, 2012.
8. Krievina, A. (2010). Evaluation of Resource Price Preferences and Resource Utilisation Efficiency in Dairy Sector. *Research for Rural Development: Annual 16th International Scientific Conference Proceedings*, Jelgava: LLU, pp. 84-91.
  9. Krievina, A., Miglavs, A. (2011). Comparative Strategy and Efficiency Analysis of Milk Production Chains in Different EU Countries. In: Traditions, Innovations, Sustainability. X. Wellmann International Scientific Conference, Hodmezovasarhely: University of Szeged, pp. 66-72.
  10. LR Zemkopības ministrija (ZM) (2011a). Latvijas lauksaimniecība un lauki 2010.gada (*Latvian Agriculture and Rural Areas in 2010*). Rīga, 148 lpp.
  11. LR Zemkopības ministrija (ZM) (2011b). Piena kvotas Latvija – informācija (*Milk Quotas in Latvia*). Retrieved: <http://www.zm.gov.lv/?sadala=1798>. Access: 5 October 2011.
  12. Orlova, I. Cīņa ar pārprodukciju – kvotas (*Struggle against Overproduction: Quotas*). *Saimnieks LV*, Nr.3 (57), 2009, 80.-82. lpp.
  13. Ozolins, J. (2010). Baltic States Dairy Sector Integration Sustainable Development Aspects. *Journal of Social Sciences: Human Resources – the Main Factor of Regional Development*, No. 3, pp. 134-142.
  14. Ozolins, J. (2011). Economic Effect of Latvian Dairy Sector Secondary-level Integration. *Economic Science for Rural Development: Proceedings of the International Scientific Conference*, No. 24. Jelgava: LLU, pp. 92-99.
  15. Oliver, E., Caspari, C. (2008). The Future of Milk Quota: Different Scenarios. Policy Department Structural and Cohesion Policies Agriculture and Rural Development Study. Retrieved: <http://www.ceasc.com/Images/Content/2355%20final%20report.pdf>. Access: 30 October 2011.
  16. Padomes Regula (EK) Nr. 1234/2007 ar ko izveido lauksaimniecības tirgu kopīgu organizāciju un paredz ipasus noteikumus dažiem lauksaimniecības produktiem (2007) (*European Council Regulation (EC) No. 1234/2007 Establishing a Common Organisation of Agricultural Markets and on Specific Provisions for Certain Agricultural Products*). Retrieved: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2007:299:0001:0149:LV:PDF>. Access: 1 October 2011.
  17. Radzele-Sulce, A. (2011). Logistikas pielietojuma ekonomiskie ieguvumi agrarajā sfērā. Promocijas darbs (*Economic Benefits of Logistics Application in the Agriculture Sector. PhD paper*). Jelgava: LLU, 236 lpp.
  18. VA Lauksaimniecības datu centrs (VA LDC) (s.y.). VA LDC portāls (*State Agency Agricultural Data Centre (SAADC). SAADC portal*). Retrieved: <http://www.ldc.gov.lv/> Access: 13 October 2011.
  19. Eiropas Revīzijas Palāta (2009). Ipasais ziņojums. Vai piena un piena produktu tirgus parvaldības instrumenti ir sasnieguši galvenos mērķus? Nr. 14 (*European Court of Auditors. Special Report. Have the Management Instruments of Dairy and Dairy Product Markets Achieved the Main Goals? No. 14*). Retrieved: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=SRCA:2009:14:FIN:LV:PDF>. Access: 15 October 2011.
  20. Waite, R., Reyniers, J. (2011) Quota year 2010/11: Five Member States have Exceeded their Milk Quota. European Commission - Press release, 18 October 2011. Retrieved: <http://europa.eu/rapid/pressReleasesAction.do?reference=IP/11/1204&format=HTML&aged=0&language=EN&guiLanguage=en>. Access: 30 October 2011.
  21. Wieck, C., Heckeley, T. (2007). Determinants, Differentiation, and Development of Short-term Marginal Costs in Dairy Production: An Empirical Analysis for Selected Regions of the EU. *Agricultural Economics*, 36, pp. 203-220.