Project no.
513705

Project Acronym
CEEC AGRI POLICY

Project title
Agro economic policy analysis of the new member states, the candidate states and the countries of the western Balkans

Instrument Specific Support Action

Thematic Priority Scientific Support to Policies

D12-3 Third 6-monthly report
STRUCTURE AND COMPETITIVENESS OF THE MILK AND DAIRY SUPPLY CHAIN IN BULGARIA

Due date of deliverable: 30.11.2006
Actual submission date: 30.11.2006

Start date of project: 01.05.2005 **Duration**: 24 Months

Project co-funded by the European Commission within the Sixth Framework Programme (2002-2006)		
Dissemination Level		
PU	Public	X
PP	Restricted to other programme participants (including the Commission	
RE	Restricted to a group specified by the consortium (including the Commission	
CO	Confidential, only for members of the consortium (including the Commission Services)	

Acknowledgement

This report forms part of the deliverables from a project called "CEEC AGRI POLICY" which has been awarded financial support by the European Commission under the 6th Framework Programme.

The project aims to establish a network of experts involved in agricultural policy analysis and rural development in the New Member States, in the Acceding Candidate Countries and in the countries of the Western Balkan. More detailed information on the project can be found at www.agripolicy.net.

DOCUMENT HISTORY

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CONTENT

1 Introduction to the dairy sector

The dairy sector in Bulgaria has undergone dramatic changes in the period since 1992 when the dairy farms (fixed assets and livestock) were privatised. Today, the dairy sector continues its dramatic development in an effort to respond to upcoming EU competition and to meet EU sanitary and hygiene standards. Major efforts are being directed towards investment at all stages of the dairy chain, starting from investment in high quality genetic material; the upgrading of farms, milk collection stations and dairy processing plants; and the promotion of trade, especially exports. Factors contributing to the revitalization of the sector are the development of the retail and food industries, as well as increased exports of processed dairy products over the last 3 years.

The collapse in the dairy sector has been comprehensive as evident in the changes in different areas of production. In comparison to the socialist period, the number of livestockhas more than halved. The decline in sheep farming is the most serious one. The national sheep flock dropped from 8.6 million in 1989 to 1.6 million in 2003, according to the most recent agricultural census in Bulgaria. Just within the period 1990-1994, the number of sheep fell by 4.3 million.

Between 1989 and 2003 the number of cattle fell by 54% from 1.5 million to 683,000. (The Census of Agricultural Farms 2003, carried out by MAF). The reasons for the sharp fall in Bulgarian livestock numbers are many and varied, including the sharp decline in domestic demand as a result of income reduction and the economic crisis, the significant fall in dairy exports and the abolition of state subsidies for dairy production.

During the last two decades significant changes have occurred in Bulgarian dairy farming, mainly relating to the organisation, number, scale and management of farms. Dairy farms represent 70% (about 406,000) of all farms in Bulgaria and account for 33% of livestock exports by value. In Bulgaria, the main dairy livestock includes cows, sheep, buffaloes and goats; because of the similar problems, their investigation as a common group is appropriate. As far as the scale of the dairy farms is concerned, 97% of cow and buffalo farms, 93% of sheep farms and 99% of goat farms are classified as small households.

Even though large scale farms have a minor share in the total number, there was an increase in the number of cow, sheep and buffalo farms in 2004 of 24%, 23% and 36% respectively. The main problems that have been observed in previous years and which unfortunately have not entirely been solved yet in the dairy sector, can be outlined as follows:
1. The great uncertainty experienced by dairy farmers for more than a decade regarding the regularity of milk purchases by processing firms and other terms of the contracts between them such as payment.

2. The lack of sufficient competition between dairy firms during the transition period led to the possibility of them acting very opportunistically. They maintained a low price of milk, some avoiding payment of agreed prices. The farmers reacted to the firms' opportunism by modifying the primary properties of the milk either by diluting it in order to increase the quantity available, or by adding ingredients to increase the fat content.

3. The low relevance of property rights, as in most cases, dairy farmers have been restricted from enforcing their violated contract rights. The defence of their rights has incurred relatively high transaction costs because of the failure of the judicial system to establish a well-working mechanism.

2 A dual sector?

The decline in volumes, which started in the early 1990's and was overlooked during the whole transition period, was ascribed mostly to a significant reduction in farm scale but also, and more correctly, to the dominant position that small farms occupied in the overall pattern of dairy production. These farms are characterised as small, self-subsistent and driven by a motive to satisfy their family needs rather than to maximise profit and market exposure.

A particular phenomenon in Bulgaria during the last 15 years was the widespread practice of farmers selling their dairy production directly to customers, bypassing the processing and manufacturing companies. Farmers are able to get higher prices from selling fresh milk or home-made cheese than if they sell their output to the dairy businesses. At the same time farmers can sell their products at prices that are 20 – 30% lower than market prices by ignoring quality and hygiene issues.

Bargaining by peddling is difficult for farmers burdened by other troubles such as finding customers and selling their products, but the prices they get tend to recompense their efforts. In many cases, dairy businesses cannot compete effectively and offer farmers an acceptable price. These matters result from ineffectiveness of production and unsophisticated management of the dairy businesses. The problem with the direct sales by the farmers has been critical from the middle of the 90's until the beginning of this decade, as in some years (2000, 2001) the quantity of milk sold directly to consumers has been twice the quantity of milk delivered to the dairies

The production and consumption of different types of raw milk during 2003 and 2004 have been considered in the Annex. The increase in the total market output of milk in 2004, compared to 2003 (1101 million litres in 2004 compared to 1023 million litres in 2003) was rather due to the direct sales of farmers than the greater quantity purchased by dairies. During 2004 the amount of milk provided for processing increased, which resulted in a slight increase in dairy product output in this year. The amount of milk directly sold by the farms has increased by 25% (up to 294 million litres). The amount of milk designated to satisfy the internal needs of households (human consumption and fed to stock) has not changed substantially compared with 2003**.** A significant increase of direct sales of sheep and buffalo milk has been reported, respectively by more than 10 and 3.5 times, although the supply of cow milk has increased more slowly. Regarding the milk designated mainly for self-consumption the most substantial increase has been reported for sheep milk (by 50%) and goat milk (by 29%).

The dual situation in processing and manufacturing of dairy products is not a typical situation in the dairy sector, since particular companies have been striving to expand through vertical integration, incorporating stages for milk collection, processing, product manufacturing and commerce. Hence the existence of separate processing and manufacturing factories is beginning to disappear.

3 Prospects for dairy product consumption

According to the detailed consumption prospects for dairy products as stated by an assessment report by IAMO (January 2004), the positive trend in dairy consumption seen during the last years in all CEEC, will not occur in Bulgaria. The reasons for this conclusion can be attributed to the slight change of dairy consumption during the observation period (covering the years before the research) and the fact that dairy products are a staple good, which is considered as necessary and consumption fluctuates in stable frontiers, relatively independent of market indicators. Besides, the consumption of dairy products depends on the customer preferences and nutrition habits of people, e.g. a great number

of customers are prone to substitute great quantities of different milk products for smaller quantities of more delicious and high quality food.

However, according to the IAMO report, the consumption of cheese, which is a traditional national product (the brine and yellow kinds), is projected to rise gradually during the following years due to customers' preferences and raising income of the population. However, the data for cheese consumption reported by Agro-statistic department of MAF indicate a slow change of cheese consumption during the last 3-4 years per capita, which can be explained by lack of tangible increase of people incomes dubbed with higher prices of particular products.

According to data presented by the National Statistical Institute (NSI), during 2005, the consumption of milk and dairy products has decreased by around 3% compared to the previous year. The average consumption amounts to 62,3 kg per capita (consumption during 2004 – 64,3 kg). The data presented in the annex give information about the average annual consumption of milk and dairy products per person during the referent years. The average annual consumption of milk was subject to the most substantial decrease up to 22,2 litres per capita (-7,5%) compared to years before 2005. The consumption of yoghurt has also decreased by 1,5% but in spite of this, its consumption still remains the highest – on average 25,7 kg annually per capita. The consumption of cheese, other dairy products and milk butter has retained the levels from the previous year, respectively - 10,0 kg, 1,3 kg and 0,5 kg per capita. During 2005, only the consumption of yellow cheese has increased by 8,3% as compared to the previous year – 2,6 kg per capita.

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

A large amount of the milk is produced on very small farms, 1-2 cows per farm. According to industry sources, currently 75% of milk processed at dairy plants comes from such small farms. These farms cannot invest and maintain the necessary hygiene, feeding, genetics, best practices and overall management leading to production of good quality milk. Small dairy farmers are not motivated enough to produce high quality milk since the milk purchase prices are based mainly on the volume- per litre, and only afterwards on quality characteristics.

Milk quality is one of the major challenges to farmers in terms of responding to the EU quality standards. Currently the bulk of milk produced in the country has quality below the lowest quality standards of the EU. Reportedly, only about 1-2 % of raw milk meets the EU quality requirements. According to industry sources the amount/number of micro-organisms is the most difficult requirement to meet. On average, the number of micro-organisms in milk should be reduced to less than one third of their present level in order to meet the average EU criteria – currently, the bulk of milk contains on average 360, 000 micro-organisms per millilitre and the EU standard requires less than 110, 000 micro-organisms per millilitre. According to Mladenova (2005), about 80% of milk produced in Bulgaria is characterised by poor quality thus it is not compatible with the EU standards.

Additional efforts aimed at establishing economically viable farms should be a priority. Further incentives for breeding larger numbers of cows should be provided in order to encourage farmers to invest in expanding agricultural holdings. Government aid in the form of subsidies can be provided in order to foster the development of smaller farms and eventually help them meet higher quality requirements for the production of raw milk.

The competitiveness of farmers can be improved by introducing training programs for cattle and cow breeders, focused on improving both the quality and the quantity of milk yield. One of the factors hindering the development of milk farming is the volatility of farmgate prices. Although the average

price of cow milk in 2005 was €0.20, during the previous years it had dropped to €0.10 in some regions.

According to a research conducted by the Institute of Agricultural Economics (Boyukliev, Popov, 2004) milk producers experience incorrect behaviour by processors – the milk is not paid on time, its quality is not properly valued and sometimes breaches of the stipulated provisions are reported. The existing subsidies for high quality milk during last years have not achieved their aim – middlemen and processors have just lowered the prices thus counteracting the premium paid to farmers. Moreover, according to farmers, part of the subsidy is paid to illegal claimants. The cost of producing milk is rising due to the continuous increase of the prices of animal feed, fuels, chemicals, veterinary aid, etc. but at the same time the output price for milk does not change adequately.

Another problem is the bureaucratic attitude of the officials from the National Veterinary Department during the laboratory qualification of milk and the conduction of veterinary prophylaxis as well as the incorrect behaviour of the State Agency for Selection and Reproduction of Livestock during the performance of insemination. A significant problem arises from the inaccessibility of bank credits due to the refusal to accept the animals and buildings in villages as a bank collateral, which renders the participation in the investment programs of the State Fund "Agriculture" and SAPARD impossible.

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

According to the assessment report for the Bulgarian progress on the way of accession to the EU (EU Commission), released in 2004, the total number of registered milk collection stations countrywide was 3 500. All of these stations have executed measures for meeting the EU requirements for quality control. In this respect, the recent modification of the SAPARD program includes incentives to group together and to acquire cooling tubs and other equipment in order to ensure a good quality of their dairy production, prior to its supply to the collection stations.

However, the major problem concerning the milk collection stations is that the number of these units is not sufficient to ensure convenient gathering of the whole milk yielded in the country. The structure of Bulgarian rural areas, especially in the mountainous regions, which represent prominent dairy production realms, is characterised as very disperse hence very often in a village more than one collection station should be available. Abreast with the number of collection units, the problem can be extended to the lack of proper testing of milk quality at the stations due to poor equipment. Frequently such testing is very basic and is not individual for a farm/farmer but rather a general testing is done for all milk delivered from the milk station to the plant.

Another problem is that only a limited number of milk collection stations have separate collection of various types of milk – cow, sheep and goat milk. Frequently the milk is mixed. For this reason those processors who want to be more competitive by producing and selling higher value products from sheep and goat milk have difficulties in procuring raw materials. In most cases this means higher logistical, collection and testing costs since they need to collect directly from a large number of small farms (there is a small number of large commercial sheep and goat farms).

Due to general shortage of fresh milk and the competition for good quality milk, frequently milk collectors (companies who visit villages and collect milk on certain days) have to compete on a territorial/regional basis.

As far as quality is concerned, advanced quality assurance can be introduced by conducting frequent quality checks and veterinary inspections, especially in remote rural areas. In order to achieve higher levels of quality performance, improvement of laboratory facilities and modernization of sanitary equipment has to take place in many regional divisions of the National Veterinary Service.

6 Expert views on the challenges at the milk processing stage

For Bulgaria, some 80 dairies will be granted an exemption from EU hygiene rules until the end of 2009, with products from these plants – amounting to roughly 30% of raw milk production – for the domestic market only and duly labelled as such. About 20 specific dairies will have the possibility of producing both "EU-compliant" and "non-compliant" milk, under certain conditions. The Sofia government has also negotiated a derogation until the end of April 2009 to market 2% fat milk as "semi-skimmed" and 3% fat milk as "whole milk" – for the Domestic market and/or non- EU markets.

According to data reported by the "Agro-statistics" of MAF during 2004 the amount of raw milk provided for industrial processing has decreased by 2,9% compared to the previous year, up to 843 729 tons: cow milk - 797 530 tons, sheep milk – 41 957 tons, goat milk - 2 427, buffalo milk and mixed milk – 1 806 tons. Processed milk represents around 52.8% of the milk yielded during the year. The information provided by the "Agro-statistics" Directorate based on a survey conducted in 341 milk-processing factories shows that during 2004, the total number of dairies in operation fell by about 3% compared to the previous year. At the end of the year, 297 of them were still functioning, 22 had terminated their activity (because they did not meet European standards) and 22 were not working temporarily.

Milk quality is one of the biggest challenges to the dairy industry today. There are a number of issues related to this problem. Although milk quality testing at dairy plants is much better compared to collection stations the general shortage of milk forces most dairy plants to compromise with quality and search for other ways to improve milk quality, such as using additives, powder milk, whey, etc. For example due to extra water content (since the milk prices are based on delivered litres) in the raw milk, especially in milk at collection stations, processors often use additives, such as gelatine or starch to improve milk density. Frequently non-fat powder milk is added to the fresh milk to improve low protein content.

However, these additives are not recorded on the labels due to expected negative consumer reaction. In Bulgaria consumers are sensitive regarding any additives to milk, they prefer the taste of pure milk. Only in recent years due to diversified market sugar and fruit flavours mainly in yoghurt and less in fresh milk have become popular.

Due to the quality issues the major processors who want to secure good quality and safety of their products work with their own selected network of farms. These farms are regularly inspected by the processors, technical assistance and financial help is provided to the regular milk suppliers. Such policy is performed by market leaders Danone, United Milk Company, BBB group, TriBul, L B Bulgaricum, Zorov Ltd. and by other small dairy plants, most often on a regional basis.

Additional investments are needed to overcome the obstacles before the development of the Bulgarian milk industry. Many of the big milk processing companies have already launched investments in refrigerating equipment for their milk producing suppliers but this could hardly solve the problem.

7 Conclusion

In Bulgaria there are favourable conditions for the production of milk and dairy products. This is a natural prerequisite for the development of the processing and trade of these products. The overcoming of the weaknesses concerning the raw material requires the rationalisation of the "milk producer – milk processor" relations, a better access to financial and information sources, efficient systems for knowledge dissemination, and extension services and qualification improvement. The creation of producers` groups through which part of the discussed problems would be resolved is of special importance (Boyukliev, Popov, 2004).

The major conclusion concerning the condition of the milk sector is that it is not ready yet for an active expansion on the European market. The raw milk production does not comply with EU standards. Recently, it was reported that many small and the medium dairy farmers have intended to increase their capacity through enlargement of the dairy herds, new buildings, investments in new equipment (milking and cooling machines, tubs and others) and/or the establishment of different fodder basis.

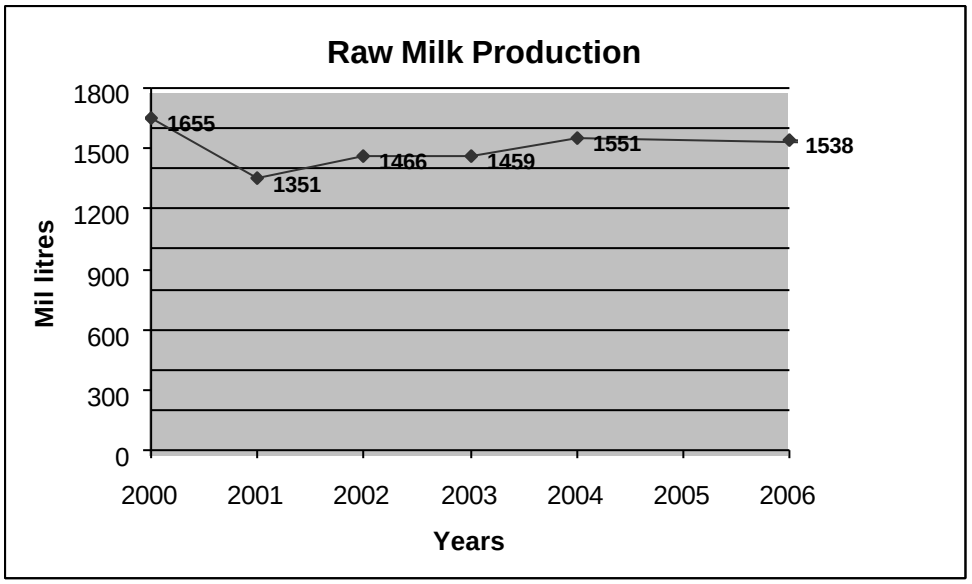
The problems are related to the existence and wide spread of non – regulated and non – organised milk marketing (vast practice of direct selling – peddling of milk from farmers to final consumers), along with a very divergent constellation of farms, predominated by small, self-subsistent and mixed livestock production structures. In comparison to the period during the 90's, at present the number of dairies has dropped to about 300, which has resulted in quality improvement of dairy merchandises, heightened efficiency of processing and manufacturing and better conditions for control of Veterinarian Offices and other Inspectorates. This assumes elimination of different negative factors from previous years.

However, the problem with widespread obsolescent equipment on dairy farms is very painful and crucial, because it does not allow productivity enhancement as well as it suppresses the farm scale enlargement. Frequently, the farmers possess some equipment but they cannot use it because of technical faults and problems. To collect the milk in sufficiently hygienic conditions, to store it properly through the different stages and to deliver it to the final consumer is a real problem for the Bulgarian dairy industry. Recently, thanks to different support programs, such as SAPARD and the State Fund "Agriculture", many Bulgarian milk delivery middlemen and processing companies have managed to provide and install cooling equipment, tubs, sophisticated tanks in the milk collection stations thus this problem is on way to be solved.

However, this good practice covers a minor part of the dairy sector and improving the situation will be a crucial challenge for the Bulgarian milk sectormarketing joining the EU. Moreover, in the next years, farmers will have to meet the high EU standards for milk quality, animal keeping, hygienic conditions in the barns and pens, so it will be a challenge for them and those who are ready to continue with this production will be forced to exert efforts for applying all measures and requirements.

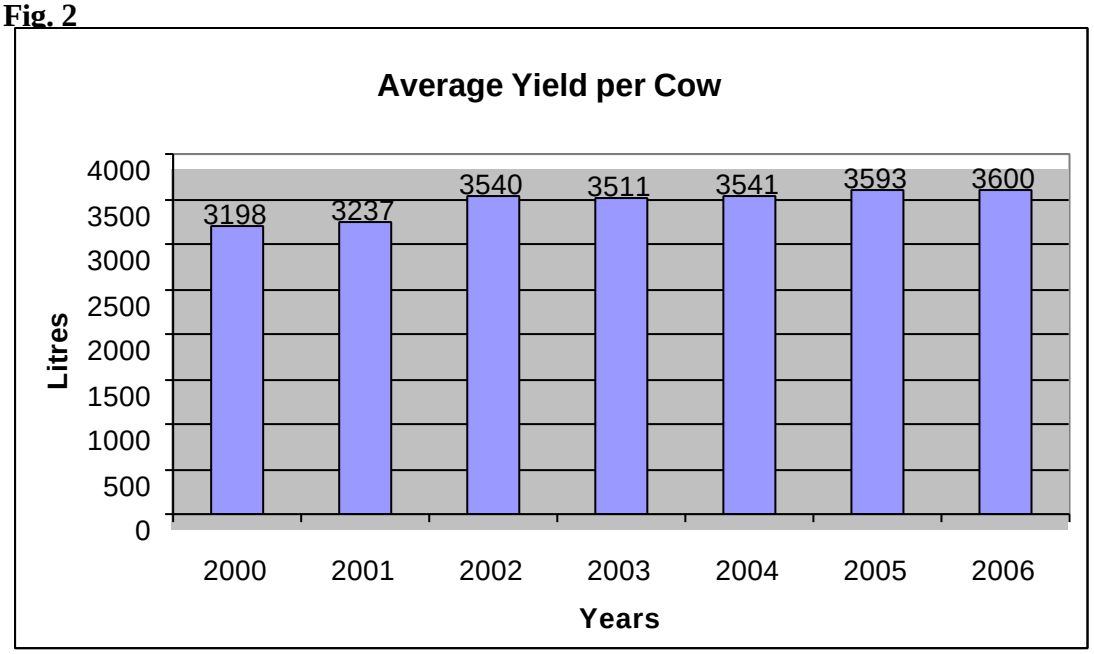
Annex 1: Information on the primary production

Fig. 1



Source: MAF, NSI

Fig. 2



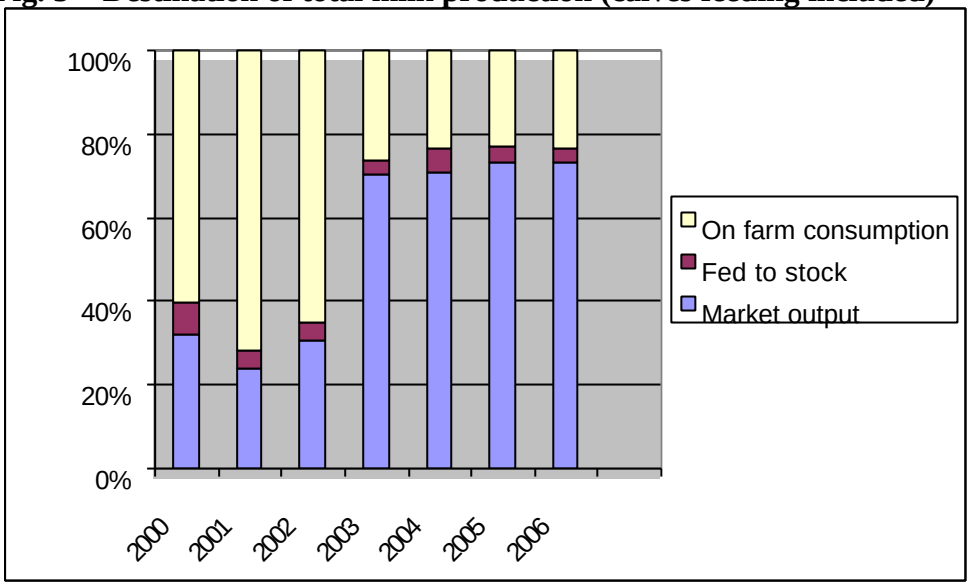
Source: MAF, NSI

Table 1. Structure of the dairy herds and cows in 2003, 2004 and 2005

	2003				2004				2005			
Herd size	**Number of herds**	**%**	**Number of cows**	**%**	**Number of herds**	**%**	**Number of cows**	**%**	**Number of herds**	**%**	**Number of cows**	**%**
1to 2	151728	87	202272	56	148727	85	184210	50	125604	83	155500	45
3 to 9	19184	11	86688	24	22746	13	92105	25	21186	14	90100	26
10 to 19	1744	1	25284	7	1750	1	33158	9	3026	2	34900	10
20 to 49	698	0.4	21672	6	700	0.4	25789	7	757	0.5	27816	8
= 50	1046	0.6	25284	7	1050	0.6	33158	9	757	0.5	38247	11
Total	**174400**	**100**	**361200**	**100**	**174973**	**100**	**368420**	**100**	**151330**	**100**	**347700**	**100**

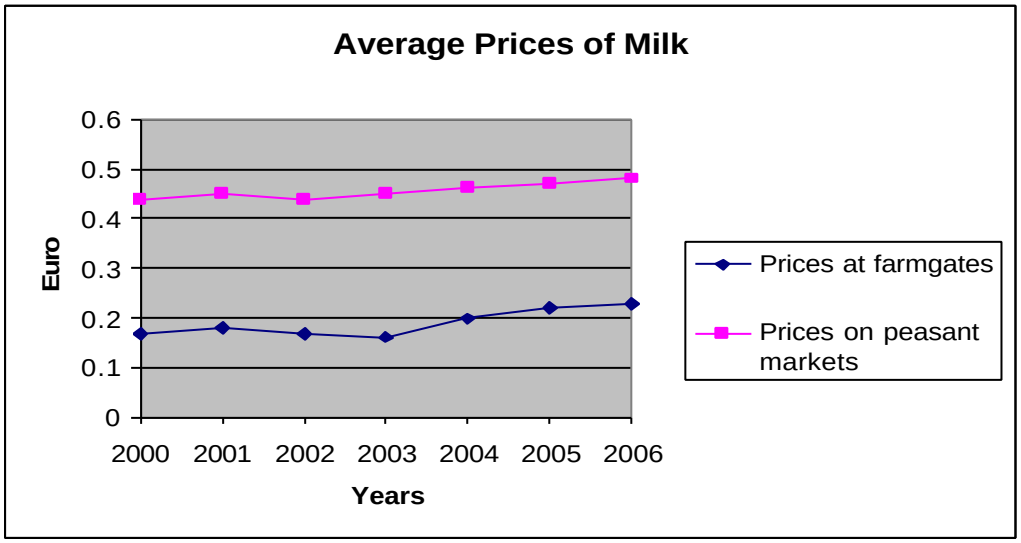
Source: MAF

Fig. 3 Destination of total milk production (calves feeding included)



Source: MAF, NSI

Fig. 4



Source: MAF

Annex 2: Information on the processing and manufacturing sector

Table 1. Number of processing factories and factories licensed for EU export

Year	No. of processing units	Number of processing units which have met the requirements of the EU	Share of milk processed by processing units which have met the requirements of the EU -%-
2000	445	9	3.5
2001	404	4	2.8
2002	397	12	13.2
2003	350	16	15.3
2004	341	28	35.7
2005	303	54	49.2
2006	n.a.	n.a.	n.a.

Source: MAF

Annex 3: Common dairy sector information

Table 1. Structure of dairy farms and herds, milk production and manufacturing of dairy products

Dairy Sector Study		2000	2001	2002	2003	2004	2005	2006
								(Forecast)
Whole Milk (raw material)								
Fat content	%	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Number of Holdings	000s	169	190	153	174	175	151	148
Dairy Herd	000 head	419	367	358	361	368	347	354
Average yield	Litres per year	3198	3237	3540	3511	3541	3593	3600
Production	Million litres	1655	1351	1466	1459	1551	1508	1538
On farm human consumption	Million litres	998	955	952	381	363	343	360
Fed to stock	Million litres	125	60	64	55	87	58	55
Market Output (sales)	Million litres	532	336	450	1023	1101	1107	1123
Value of production	Million €	455	422	315	285	338	358	373
Average producer price	€ per litre	0,17	0,18	0,17	0,16	0,20	0,22	0,23
Milk Products								
Fresh milk product (except cream)								
Production	Million tonnes	0,0195	0,0203	0,0285	0,032	0,036	0,044	0,044
Imports	Million tonnes	0,0002	0,0003	0,0003	0,0004	0,0003	0,0003	0,0003
Exports	Million tonnes	0,0003	0,0004	0,0005	0,0004	0,0005	0,0005	0,0005
Consumption	Million tonnes	0,0194	0,0202	0,0283	0,032	0,0358	0,0438	0,0438
Stock Change	Million tonnes	0	0	0	0	0	0	0
Cream								
Production	Million tonnes	0,00067	0,0006	0,0006	0,001	0,0012	0,0016	0,0016
Imports	Million tonnes	0,0002	0,0002	0,0003	0,0004	0,0008	0,0006	0,0005
Exports	Million tonnes	0,00002	0,00002	0,00002	0,00001	0,00001	0,00001	0,00001
Consumption	Million tonnes	0,00084	0,00078	0,00089	0,00137	0,002	0,00218	0,00211
Stock Change	Million tonnes	0,00001	0,00001	0	0,00002	0,00001	0,00002	0,00001
Concentrated milk								
Production	Million tonnes	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Imports	Million tonnes	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Exports	Million tonnes	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Consumption	Million tonnes	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Stock Change	Million tonnes	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Whole Milk Powder								
Production	Million tonnes	c.d.	c.d.	c.d.	c.d.	c.d.	c.d.	c.d
Imports	Million tonnes	0,0052	0,0027	0,0053	0,009	0,0093	0,0066	0,007
Exports	Million tonnes	0,0009	0,0003	0,0005	0,0005	0,00009	0,00008	0,00009
Consumption	Million tonnes	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Stock Change	Million tonnes	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Skimmed Milk Powder								
Production	million tonnes	c.d.	c.d.	c.d.	c.d.	c.d.	c.d.	c.d
Imports	million tonnes	0,0009	0,0008	0,0012	0,0008	0,0022	0,0011	0,0013
Exports	million tonnes	0,0001	0,0001	0,0001	0,0001	0,0002	0,0002	0,0002
Consumption	million tonnes	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Stock Change	million tonnes	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Butter								
Production	million tonnes	0,001	0,0009	0,0007	0,0008	0,001	0,0036	0,004
Imports	million tonnes	0,0011	0,0011	0,0011	0,0017	0,002	0,0018	0,0019
Exports	million tonnes	0,00006	0,00006	0,00002	0,00003	0,0001	0,0023	0,0023
Consumption	million tonnes	0,00201	0,00194	0,00179	0,00246	0,00289	0,00312	0,00359

Stock Change	million tonnes	0,00003	0,00003	0,00002	0,00003	0,00004	0,00002	0,00003
Cheese								
Production	million tonnes	0,031	0,029	0,082	0,082	0,084	0,089	0,091
Imports	million tonnes	0,0019	0,0017	0,002	0,0025	0,0041	0,0037	0,004
Exports	million tonnes	0,0063	0,0085	0,01	0,013	0,015	0,016	0,019
Consumption	million tonnes	0,0256	0,0212	0,074	0,0705	0,0741	0,076	0,077
Stock Change	million tonnes	0,001	0,002	0,002	0,003	0,002	0,004	0,003

Abbreviations

NSI - National Statistical Institute
MAF - Ministry of Agriculture and Forestry
n.a. – Not available
c.d. – Confidential data because of extremely few number of surveyed units

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Timetable

- First draft national report by 08.09.2006.
- Revision by a project partner from the CEEC by 15.09.2006
- Sending of the report to John Malcolm by 22.09.2006
- Revision consultation by 6.10 2006.
- Final report for the 30.10.2006.