

Final Report

**DAIRY INDUSTRY OF GEORGIA**

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For

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# GEORGIA DAIRY INDUSTRY ANALYSIS REPORT

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## DAIRY INDUSTRY ANALYSIS

### 1. Production

#### Background

Georgia is a mountainous country that stimulated the development of livestock production long ago. It has always been an important sector of agriculture and of the national economy in general. Farmers raised cattle, pigs and chicken in the lowlands, while in the highlands sheep farms were the major source of income. The transition has significantly affected the livestock sector in Georgia. During the social unrest in 1992-93 the number of livestock has sharply decreased, demonstrating the recovery only after 1995. Subsistence farmers diversify their production and own dairy cow(s), pig(s) and a few chickens. Milk, meat and eggs are produced for both, home consumption and cash sales. The daily cash income of rural households became largely dependent on the sales of livestock products, especially milk, cheese and meat. It increased the number of livestock in the private sector and also raised the interest in the feed crops, especially in maize, barley and alfalfa. The rapid increase of maize production area following the land privatization in mid-1990s should be attributed to its use for livestock feed.

The dynamics of livestock population before and after transition is given in the table below.

**Livestock Population in Georgia**  
(’000 heads as of January 1)

Year	Cattle all	Of which: Milk-cows	Pigs	Sheep and goats
1989	1547.8	620.2	1099.2	1894.0
1990	1426.6	587.8	1027.8	1833.5
1991	1298.3	551.7	880.2	1618.1
1992	1207.9	542.9	732.5	1469.6
1993	1002.6	502.0	476.2	1191.6
1994	928.6	486.5	365.1	958.1
1995	944.1	514.4	366.9	793.3
1996	973.6	531.3	352.6	724.8
1997	1008.0	543.6	332.5	652.0
1998	1027.2	551.0	330.3	583.5
1999	1050.9	575.0	365.9	586.7
2000	1122,1	640,1	411,1	633,4
2001	1177,4	646,3	443,4	627,6
2002	1180.2	678.3	445.4	659.2
2003	1216.0	704.8	446.1	699.5
2004	1242.5	728.0	473.8	722.2
2005	1250.7	735.6	483.9	804.9

*Source: State Department for Statistics, 2005*

The above numbers indicate the reduction of the livestock population in Georgia since independence in 1991. However, various sectors underwent different patterns of development during the transition. Number of dairy cows increased by 25% since 1990, while number of pigs went down by 52% and number of sheep & goats demonstrated a reduction by 56%.

### **Cattle Population**

Prior to transition, livestock production was organized in large centrally managed units with several thousand heads per farm. Privatization of state and collective farms resulted in the fragmentation of production units and in reverting the small-scale farming to subsistence agriculture. Number of livestock owned by farmer households and by agricultural enterprises is given in the table below.

**Number of Cattle by Categories of Farms**  
(’000 heads as of January 1)

	1986	1991	1996	2001	2002	2003	2004	2005
<b>Agricultural Enterprises</b>								
Cattle	676.2	468.9	56.7	6,8	5,2	4.3	3.5	3.3
Of which: milk-cows	188.1	138.6	25.4	2,8	2,2	2.0	1.8	1.6
<b>Household Farms</b>								
Cattle	969.3	829.4	916.9	1170,6	1175,0	1211.7	1239.0	1247.4
Of which: Milk-cows	461.1	413.1	505.9	643,5	676,1	702.8	726.2	734.0

Source: State Department for Statistics, 2005

The above table demonstrates that since independence the livestock sector in Georgia is clearly dominated by household farms. Privatization of livestock farms was marked by substantial deterioration of feeding and breeding practices, which negatively affected animal productivity.

Various parts of Georgia differ by the types and number of livestock. The major regions raising cattle are Imereti (21.5%), Samegrelo-Zemo Svaneti (16.1%) and Kvemo Kartli (14.2%). Livestock population by regions is given in the table below:

**Number of livestock by regions**  
(Heads as of 31 December)

Year 2004	Cattle	Of which milk-cows
Georgia all	1,250,672	735,649
Ajara AR	119,506	66,440
Imereti	269,459	143,515
Samegrelo-Zemo Svaneti	200,809	114,230
Guria	59,226	31,257
Racha-Lechkhumi & Kvemo Svaneti	41,528	22,185
Shida Kartli	85,018	52,817
Mtskheta-Mtianeti	61,275	45,837
Kakheti	130,645	79,861
Kvemo Kartli	177,216	113,763
Samtskhe-Javakheti	105,990	65,744

Source: State Department for Statistics, 2005

## **Farming Systems**

Georgian livestock sector is dominated by **family operated smallholder farms**, including 1-5 cows, some pigs and poultry. Historically it has always been a part of Georgian agricultural production system. During 1960s and 1980s a rural family was not allowed to have more than one cow. After 1992 all resident households of the rural area were allocated with about 1 ha agricultural land, which was exempt from land tax in 2005. Rural households use their plots for growing vegetables, fruits and feed crops (mostly maize, sunflower, barley) for their home consumption and for sale.

The majority of the smallholders does not own pastureland and does not cultivate fodder crops. Their cows graze during the day on communal plots and usually only crop by-products are being fed to them when they return home, also during winter period. The better managed units feed the lactating animals a small amount of supplementary feed, mostly wheat bran. Smallholders keep their animals inside the village overnight, in small buildings behind their houses. During winter period, especially when there is snow, animals are kept in sheds (1-3 months a year). During this period cattle is fed mostly maize stems and/or grass hay, in some cases wheat bran, sunflower meal (in Kakheti) or ground soybeans (in Samegrelo) are added to their daily ration. The condition of animals is significantly deteriorated during winter due to malnutrition.

The **more progressive dairy farmers** have larger number of cattle (30-100 cows) and recognize the need for better quality conserved forage and concentrates in the winter months. However, the upgrading of natural pastures for grazing is generally not practiced. 70.7% of meadows and 95.3% of pastures have not been privatized and are still in state ownership, having a portion leased by large-scale or co-operative farmers. Production of forage crops for conservation for the winter months is also restricted by the lack of appropriate silage making equipment.

After independence about 100 collective and state farms have been converted to **co-operative farms** with the previous workers and management staff as members. These farms are mostly mixed farms with cattle, sheep and crops. The farms operate 200 to 500 hectares of leased land and sometimes have different farming units within the same co-operative. These types of farms usually have 50 to 100 heads of dairy cattle. There are several co-operative dairy farms in Eastern Georgia (Kakheti region). In most cases they use facilities of old collective farms which need renovation. It indicates the shortage of replacement investment.

The feeding at the medium co-operative dairy farms is mostly based on grazing of established or natural pastures supplemented with agro-processing by-products like wheat bran, sunflower cake, etc. However, many of these farms have insufficient liquidity to regularly purchase these supplementary feeds. Pastures need improvement with forage grasses. Many farms in the Eastern and Central Georgia (Kakheti, South Georgia) are able to produce good grass hay on the mountains. Except for the Ninotsminda district in Southern Georgia hardly any arable land is used for the production of fodder crops or for sown pastures. Apparently, production of fodder crops under present conditions is not considered as a profitable alternative for grain production (maize, wheat, sunflower) or horticultural production (vineyards, fruits, vegetables). The main improvement therefore in the supply of roughage feed should come from permanent pasture on land that is less suitable for arable crops because of poor drainage, poor workability or steep slopes.

## **Breeds**

Most herds of livestock in Georgia are of mixed breed by origin. However, there are some distinct breeds that can be identified. The major **cattle breeds** are:

Caucasian Mountain breed is a small breed present in mountains and valleys in the North-East of Georgia. Mature cows weigh about 275 kg, with a spotted black/brown color. At present it is difficult to find pure breed animals. They graze on the alpine pastures and produce very little milk. This breed is mostly used for meat production. Bulls are fattened and sold at about 2.5 years of age when they reach 200 kg.

Megrelian breed is present in Western Georgia. The pure Megrelian breed is a small, dual purpose (meat and dairy) type of animal with a reddish or brownish coat. Mature cows weigh about 300 kg. Most bull calves are fattened by grazing up to about 2 year of age and 200 kg of weight. The milk production depends on the supplementary feed and varies from 500 to 1,500 liters per lactation. This breed has been crossed intensively with Caucasian brown during Soviet era but since independence is gradually shifting, through natural selection, back to its original type.

Caucasian Brown breed was developed by introducing Brown Swiss bulls into the local breeds and by further selection on the state farms. This is a dual purpose (meat&dairy) type of cattle. Mature cows weigh 450-500 kg and produce 2,500 - 3,500 liters of milk per lactation. This breed was present throughout Georgia on the state farms. After the collapse of the state farms the cows were given to smallholders. Currently artificial insemination services are not available and most animals are crossed to local breed bulls. It results in gradual degradation of the Caucasian Brown breed and it loses its better genetic qualities for milk production.

Russian Red breed was imported from Russia during the Soviet times. It was kept on the state farms for milk production. Mature cows weigh 450 to 500 kg and can produce 4,000 to 5,000 liters of milk per lactation. Now the pure animals are gradually disappearing as they cross with the local breed bulls.

Black & White Russian Friesian breed cows were imported for the milk production at the state/collective farms. Before 1990 there were up to 200,000 heads of this breed present in Georgia. Cows produce 3,000 to 5,000 liters of milk per lactation. Now there are only a few Friesian cows left in Georgia with no bulls of this breed. If AI services are not re-established, this breed will gradually disappear.

Jercy breed cows were introduced into Georgia from Denmark by UMCOR under USDA funding in 2002. There were selected two farms in Kakheti (located in Sagarejo and Signagi districts) which were provided with ten pregnant cows each. There were encountered health related problems during the adaptation period and cows in Sagarejo district did not survive. The farm in Signagi district has overcome encountered problems and has increased the number of pure Jercy breed cows to 20, having also one productive bull. This breed is reported to have higher milk yields than the local breeds and higher fat content of milk (4-5%).

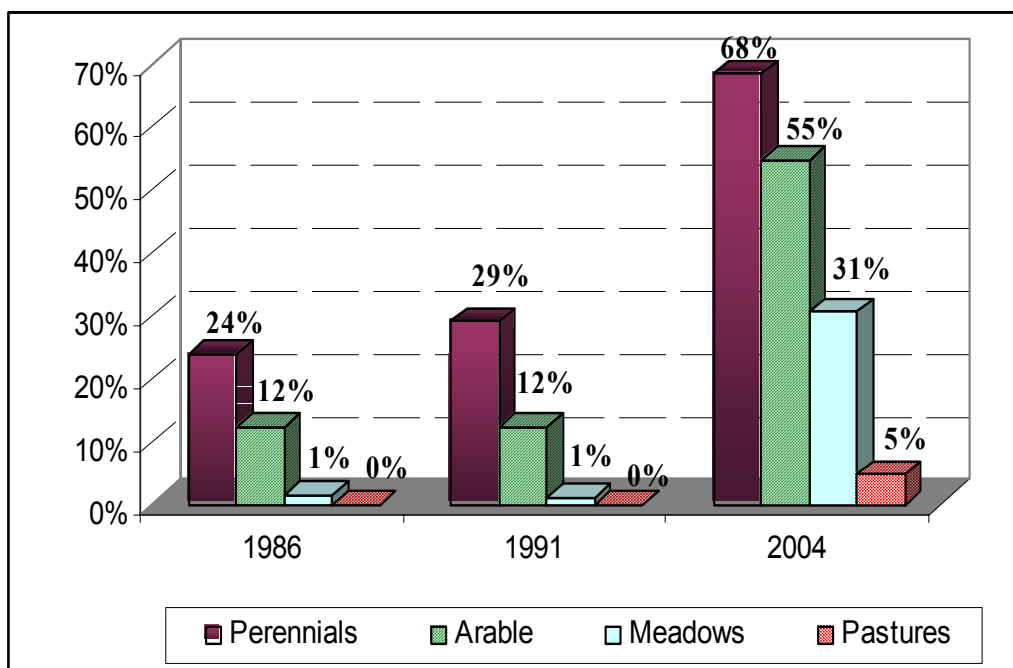
## **Feed Production**

**Dairy** farming is often integrated with the cultivation of field crops. Hence, dairy production is concentrated near grain producing areas and in areas with natural pastures. Conservation of grass, fodder crops or crop residues for the winter period is necessary in all parts of Georgia.

Fodder crops (maize and small grains) were extensively cultivated in the past for silage. Most large-scale livestock farms have large silage pits. Under the centrally controlled production system, fodder production and conservation systems were primarily adapted to the prevailing labor management practices and therefore were not geared towards optimizing the utilization of resources and maximizing quality. Except for some of the silage pits, virtually all components of the former large-scale forage harvesting and conservation system have broken down. For medium to large scale farms new systems of forage conservation have to be developed that are based on fodder crops adapted to the local conditions. Forage conservation on smallholder farmer level is limited to haymaking and storage of crop residues. The quality of the crop, already poor at harvest, often deteriorates further because of uncovered storage in winter. There is a need for developing suitable small-scale forage conservation practices. An alternative solution could be to reduce the need for forage conservation by introducing crops that can be harvested until late in the season (e. g. stubble turnips, annual ryegrass) or to produce forage early in the season (e. g. annual ryegrass).

Most of village herds are grazing on the communal pastures. During land privatization process since 1992 very little portion of meadows and pastures were transferred into private ownership. Farmers were more interested in getting title of plots with perennial crops and arable land parcels, most of which has been privatized. However, over 69% of meadows and 95% of pastures are still in the state ownership. It demotivates farmers to seek ways of improving feed crops on the public land with unclear perspective of availability. The share of private ownership of various types of agricultural land is shown in the graph below. The land distribution pattern may change in the following years, as the Government of Georgia plans to privatize more land in 2006-2016, based on the Law on Agricultural Land Privatization, enforced by the Parliament in 2005.

**Types of Land in Private Ownership**



Source: Georgian Agriculture. State Department for Statistics, 2005

## **Milk Production**

Cattle in Georgia are mostly raised for milk production. Number of bulls in the village herds is kept to minimum to reduce their feeding costs. Calves are also often sold or slaughtered by small-scale farmers as they cannot be given additional space and feed. Cows of local breed are usually milked for 12 years and then slaughtered as their milk production capacity goes down.

Farmers milk their cows twice a day: early in the morning and in the evening when cows come back from pastures. There are no special areas or equipment used for milking. Cows are milked by hand (predominantly by women) in the backyard of a household or in the cow shed. Calves are allowed to their mothers after the milking process is over.

The table and chart below illustrate milk production volumes in Georgia during last years:

### **Milk Production In Georgia**

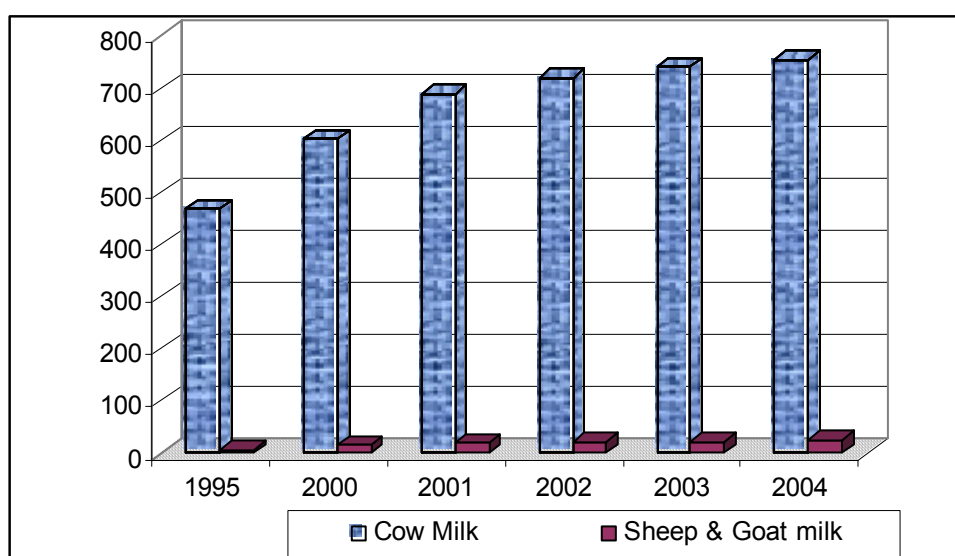
('000 tons)

<b>Years</b>	<b>1995</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>
<b>Product</b>						
Total milk	475.4	618.9	710	742.1	765.1	780.4
Cow milk	469.4	604.5	690.4	720.7	743.3	755
Sheep & Goat Milk	6	14.4	19.6	21.4	21.8	25.4

Source: Georgian Agriculture. State Department for Statistics, 2005

### **Milk Production In Georgia**

('000 tons)



Source: Georgian Agriculture. State Department for Statistics, 2005



Most important regions for milk production are Imereti, Kvemo Kartli and Samegrelo-Zemo Svaneti. Total milk production data (cow and sheep-goat milk) by regions in 2004 is given in the table below:

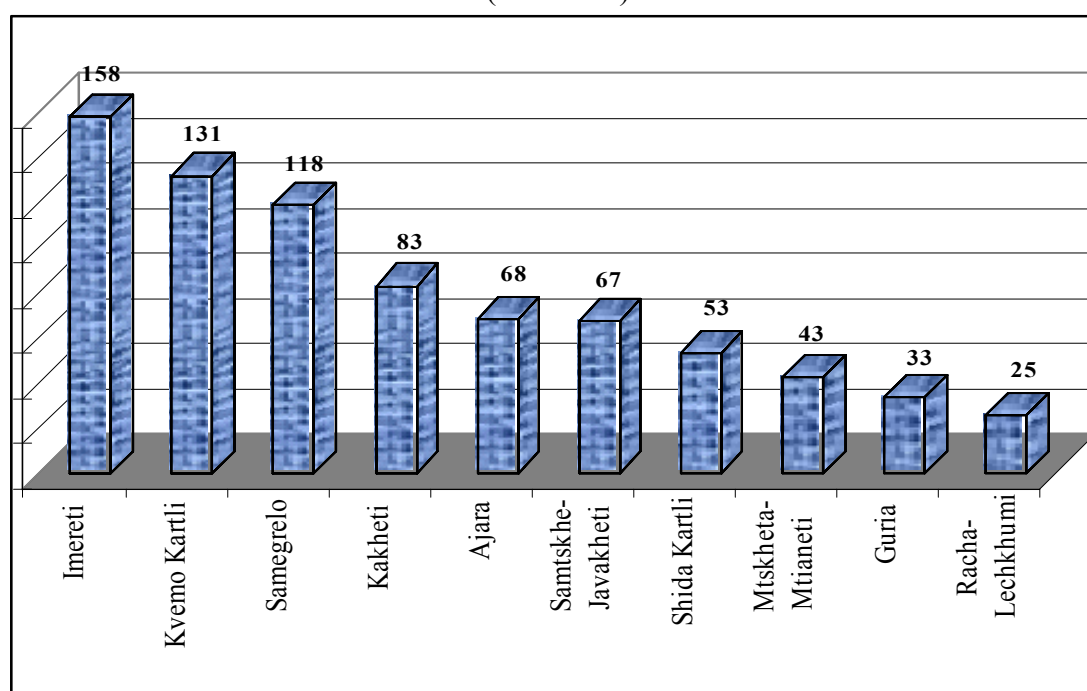
### Cattle and Milk Production by Regions in 2004

Year 2004	Cattle	Of which milk-cows	Milk, tons
Imereti	269,459	143,515	158,087
Kvemo Kartli	177,216	113,763	131,489
Samegrelo-Zemo Svaneti	200,809	114,230	118,237
Kakheti	130,645	79,861	82,666
Ajara	119,506	66,440	68,358
Samtskhe-Javakheti	105,990	65,744	67,164
Shida Kartli	85,018	52,817	53,194
Mtskheta-Mtianeti	61,275	45,837	42,660
Guria	59,226	31,257	33,457
Racha-Lechkhumi & Kvemo Svaneti	41,528	22,185	25,050
<b>Total</b>	<b>1,250,672</b>	<b>735,649</b>	<b>780,362</b>

Source: Georgian Agriculture. State Department for Statistics, 2005

### Milk Production By Regions In 2004

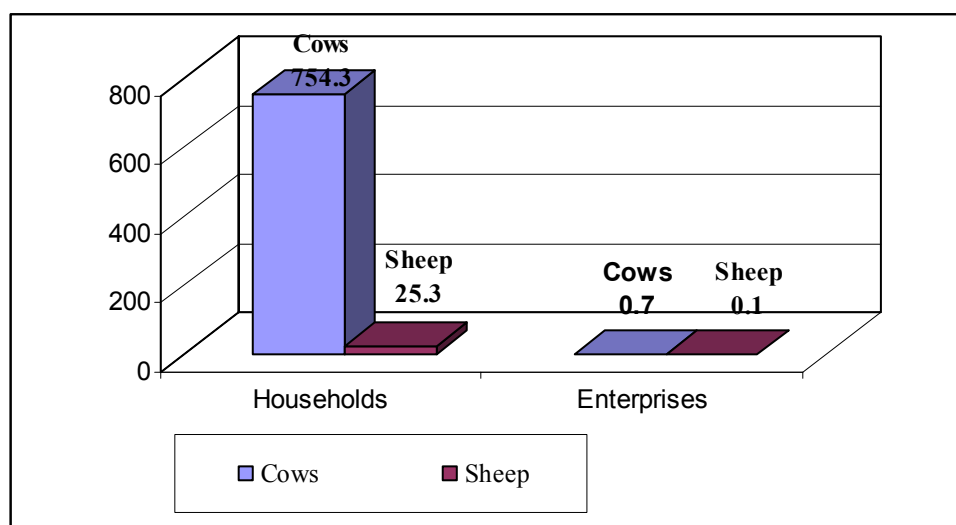
('000 tons)



Source: Georgian Agriculture. State Department for Statistics, 2005

The absolute majority of milk in Georgia is produced in the private sector by smallholder households. The chart below indicates the scale of milk production by households and by agricultural enterprises in 2004.

### Milk Production by Types of Producers ('000 Mt)



Source: *Georgian Agriculture. State Department for Statistics, 2005*

Yet another publication of the State Department for Statistics (*Households of Georgia 2003-2004. Economic and Statistical Collection*. Tbilisi, 2005) indicates rather lower quantities of milk produced by farming households in 2003-2004. These data are given below.

### Milk Produced by Households in 2003-2004 (Mt)

Year 2004	2003	2004
Mtskheta-Mtianeti	15,198	14,796
Guria	19,386	17,918
Ajara	25,899	32,636
Shida Kartli	32,153	33,232
Kakheti	36,438	36,070
Samtskhe-Javakheti	62,712	58,337
Samegrelo	68,954	67,186
Kvemo Kartli	91,494	89,865
Imereti	152,647	132,505
<b>Georgia, Total</b>	<b>504,881</b>	<b>482,545</b>

Source: *Households of Georgia. State Department for Statistics, 2005*

### Processing

Dairy processing in Georgia is done on three levels:

- Farmers/households processing milk from their own herds;
- Small scale cheese producers processing fresh milk collected from adjacent farms;
- Large scale industrial dairies, processing predominantly imported milk powder as well as locally collected milk.

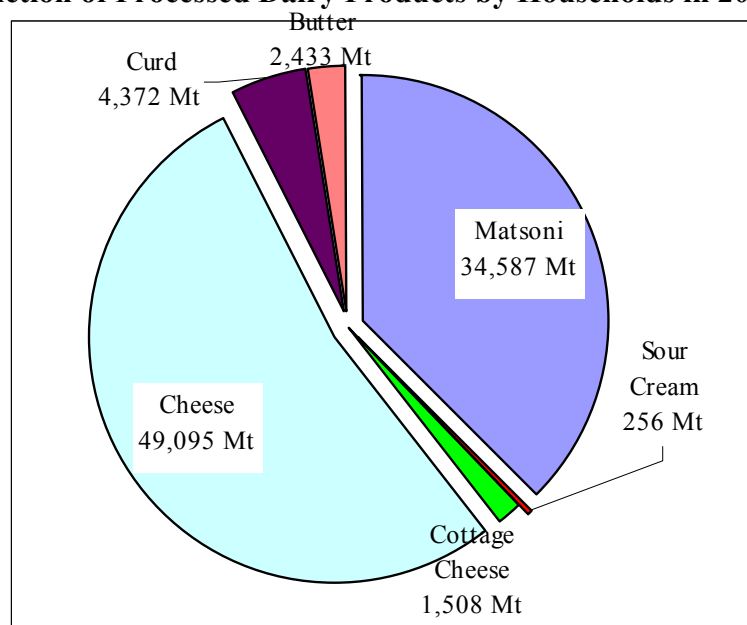
It is common for Georgian rural householders to process milk at home and sell various dairy products in the regional or central markets. Reported quantities of the processed dairy products by households in 2004 are shown in the table and chart below.

### Dairy Products Processed by Households in 2004 (Mt)

Year 2004	Matsoni	Sour Cream	Cottage Cheese	Cheese	Curd	Butter
Kakheti	3,202	4	285	2295	13	227
Ajara	7,648	3	153	1629	667	504
Guria	970	4	3	2298	374	4
Imereti	3,452	21	125	19780	2718	16
Kvemo Kartli	9,821	121	262	4940	36	793
Mtskheta-Mtianeti	2,684	4	122	886	5	99
Samegrelo	1,226		414	7614	417	19
Samtskhe-Javakheti	2,423	97	25	6219	122	678
Shida Kartli	3,161	2	119	3434	20	93
<b>Total Mt</b>	<b>34,587</b>	<b>256</b>	<b>1,508</b>	<b>49,095</b>	<b>4,372</b>	<b>2,433</b>

Source: Households of Georgia. State Department for Statistics, 2005

### Production of Processed Dairy Products by Households in 2004 (Mt)



Source: Households of Georgia. State Department for Statistics, 2005

Most of fresh milk is transformed into cheese or matsoni (yoghurt) by the farmers in their houses. Transforming fresh milk into cheese and matsoni extends the marketing window for the dairy products and allows farmers to trade with the value-added goods. Most cheese is sold as unbranded large block. The retailers cut them at the time of sale. There is some linkage between cheese makers at the village level and traders, buying large quantities at the farm gate or at the market place. However, in general the dairy sector is characterized by its lack of formal structure and of the obvious channels of farmer to dairy and dairy to retail outlet.

There are a number of small-scale cheese producers throughout the country with the capacity of processing one to five tons of milk per day. They collect milk from their neighbours, produce Sulguni cheese (Mozzarella type) in a basement of a village house adjusted to such processing operation and sell cheese in Tbilisi or in a central town of the region. These small processors usually employ 5-8 people, however are operating without proper registration and certification. Their production is subject to seasonal fluctuation and stops or sharply drops in winter season when most of cows dry off. Shortage of milk stimulates increase of its price and makes collection more expensive. At the same time, these factors drive the cheese price up, so that those processors who stay in operation during winter season can maintain viability. These small dairy units usually have a few pigs and feed whey to them. This is an advantage over the centralized larger dairies which waste whey and are required to conduct its additional treatment before discharging it into sewage system.

Large and medium-scale dairy plants are located in Tbilisi, the capital of Georgia. They have made considerable investments into their processing and packing equipment and keep the product quality high. The lack of the appropriate cooling tanks and refrigerated trucks, poor condition of rural roads and the fragmentation of dairy farms inhibit the collection of raw milk from regions to the processing plants. Products, principally matsony, milk, sour cream and cottage cheese, are sold to supermarkets and small shops mainly in Tbilisi and other cities. Dairy factories' production is mainly based on reconstituted powdered milk. Only few of them are processing raw milk, although significant efforts are made by some processors to incorporate local natural milk in their products. This tendency is further supported by economic considerations. As processors indicate, production of reconstituted milk costs more than buying and transporting fresh milk from the remote regions, such as Dmanisi, Dedoplistskaro, and Signagi which are on two-three hours drive distance from Tbilisi. Milk collection drops in winter time when most of cows dry off and those who don't - drop milk yields by half due to poor feed and temperature stress. Reduced supply of raw milk drives its price up by 100 per cent in winter and makes collection more difficult and expensive. Therefore most of large dairy plants cease raw milk collection in winter.

## **2. Markets**

### **Consumption**

In accordance with the data of the State Department for Statistics, human consumption of dairy products in Georgia increased from 684,000 tons to 1.044 mln tons during the last ten years (milk equivalent). The growth of the demand was rather steady, with the exception of the period 1997 – 2000 when reduced consumption was reported.

Dairy products represent an integral part of the diet for various age groups in Georgia. Raw or reconstituted milk is mostly consumed by children as its positive impact on the child development is widely acknowledged. Children are also regular users of other processed dairy products, such as yoghurt (Matsoni), cottage cheese, sour cream, butter and cheese. Adults most often consume cheese in various combinations, with or without butter on a piece of bread. Cottage cheese is consumed together with sour cream or Matsoni (fermented milk). Imeruli type cheese is used in Georgian pizza (Khachapuri), which is a very popular meal, especially in Western Georgia and its type varies from region to region. Sulguni cheese commonly goes into hot *Ghomi* (maize porage) or with *Chadi* (maize bread) and is a part of ethnic cuisine in Samegrelo region (Western Georgia).

Dairy market is dominated by smallholder farmers and its marketing channels are not organized. There are only a few milk collection centers throughout the country, which mostly operate in summer time, when milk price is low. There are no farmers cooperatives engaged in

milk/dairy marketing, even though daily cash incomes of most rural households largely depend on the sales of dairy products (predominantly fresh milk, cheese, matsoni). Those near the large cities deliver their products into the central markets and also sell directly to the families living in the block houses with which farmers have established relationships. Farmers deliver milk to the consumer in plastic bottles which are recycled from carbonated drinks. Matsoni is sold in 0.5 liter glass jars. The large dairy plants offer milk in Tetrapak and glass bottles, while matsoni, cottage cheese, sour cream and yoghurt are packed in plastic containers.

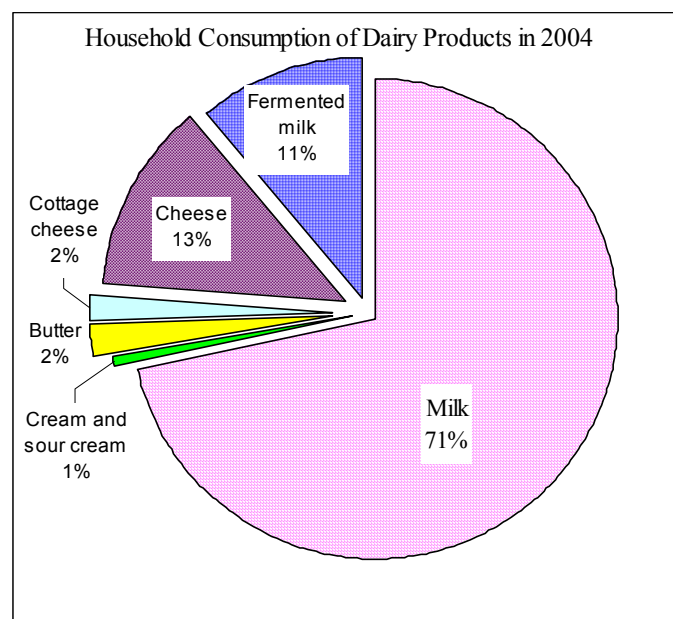
The table below shows the data from the household survey conducted by the State Department for Statistics regarding the quantities of various dairy products consumed by households in Georgia. These data do not cover the institutional consumption of dairy products (i. e. restaurants, catering, kindergartens, army, etc.). However, it provides an interesting quantification of the various segments in the dairy market.

### Consumption of Dairy Products per Capita in Households (Kg per year per capita)

Dairy Products	2000	2001	2002	2003	2004
Milk	69.6	65.8	60.8	59.5	59.9
Cream and sour cream	0.3	0.3	0.6	0.3	0.5
Butter	2.6	1.9	1.8	1.8	1.8
Cottage cheese	0.6	0.7	0.9	1.7	1.4
Cheese	11.6	11.4	11.7	11.5	10.7
Fermented milk	0.2	0.7	0.4	10.3	9.2
<b>Total dairy products (milk equivalent)</b>	<b>213.5</b>	<b>193</b>	<b>191.5</b>	<b>214.5</b>	<b>207</b>

Source: Households of Georgia. State Department for Statistics, 2005

The chart below summarizes the per capita consumption data in households in 2004. It indicates the large share of raw milk, cheese and fermented milk in the diet of an average Georgian consumer.



Source: Households of Georgia. State Department for Statistics, 2005

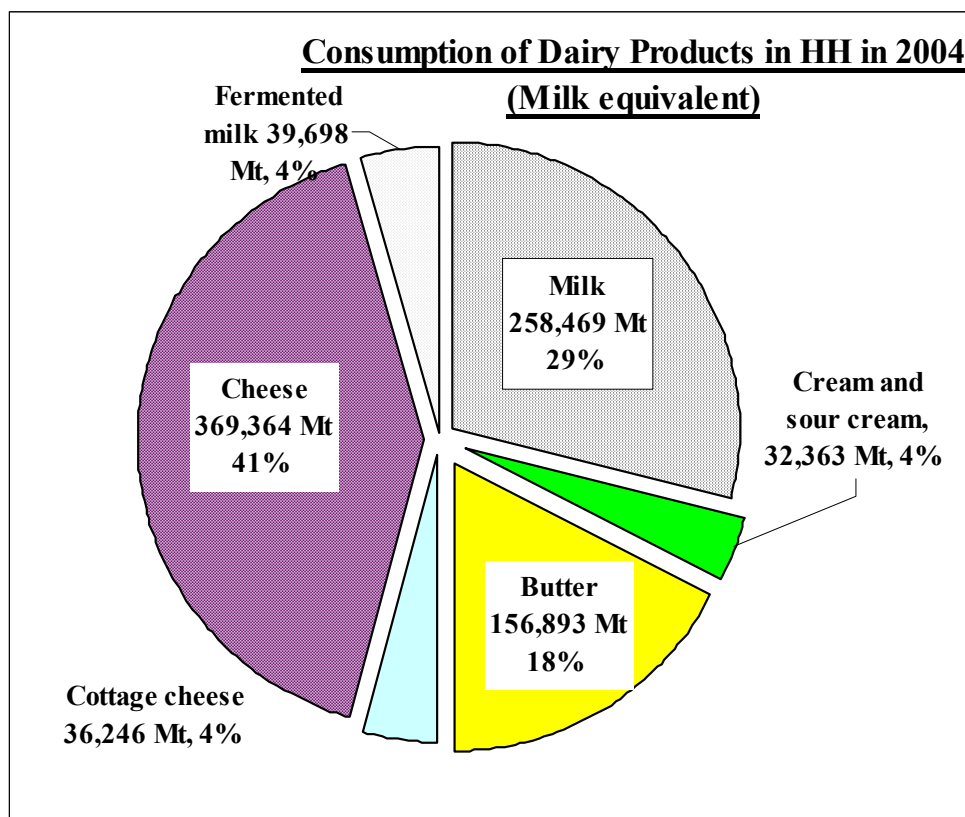
The above survey does not indicate the division of annual national consumption of dairy products. However, having the Department's figures on the population of Georgia we can construct the table of the national consumption of dairy products during the last five years.

**Total Consumption of Dairy Products in Households  
(Mt per year)**

Dairy Products	2000	2001	2002	2003	2004
Milk	306,310	287,612	264,054	258,409	258,469
Cream and sour cream	1,320	1,311	2,606	1,303	2,158
Butter	11,443	8,305	7,817	7,817	7,767
Cottage cheese	2,641	3,060	3,909	7,383	6,041
Cheese	51,052	49,829	50,813	49,945	46,171
Fermented milk	880	3,060	1,737	44,733	39,698
<b>Total dairy products (milk equivalent)</b>	<b>939,614</b>	<b>843,603</b>	<b>831,685</b>	<b>931,574</b>	<b>893,205</b>

*Source: Households of Georgia. State Department for Statistics, 2005*

Transforming the above data into milk equivalent shows the portion of each commodity in the consumption pattern which is given in the chart below.



*Source: Households of Georgia. State Department for Statistics, 2005*

These data suggest that the largest portion of the household consumption is taken by raw milk, cheese, butter and fermented milk. Those farmers who live far away from the major markets have to process milk into cheese or yoghurt (Matsoni) to expand its shelf life as they lack milk cooling tanks and cannot otherwise maintain milk quality. If other marketing opportunities become available to remote farmers, they will probably adjust their preferences in production.

### **Import and Export**

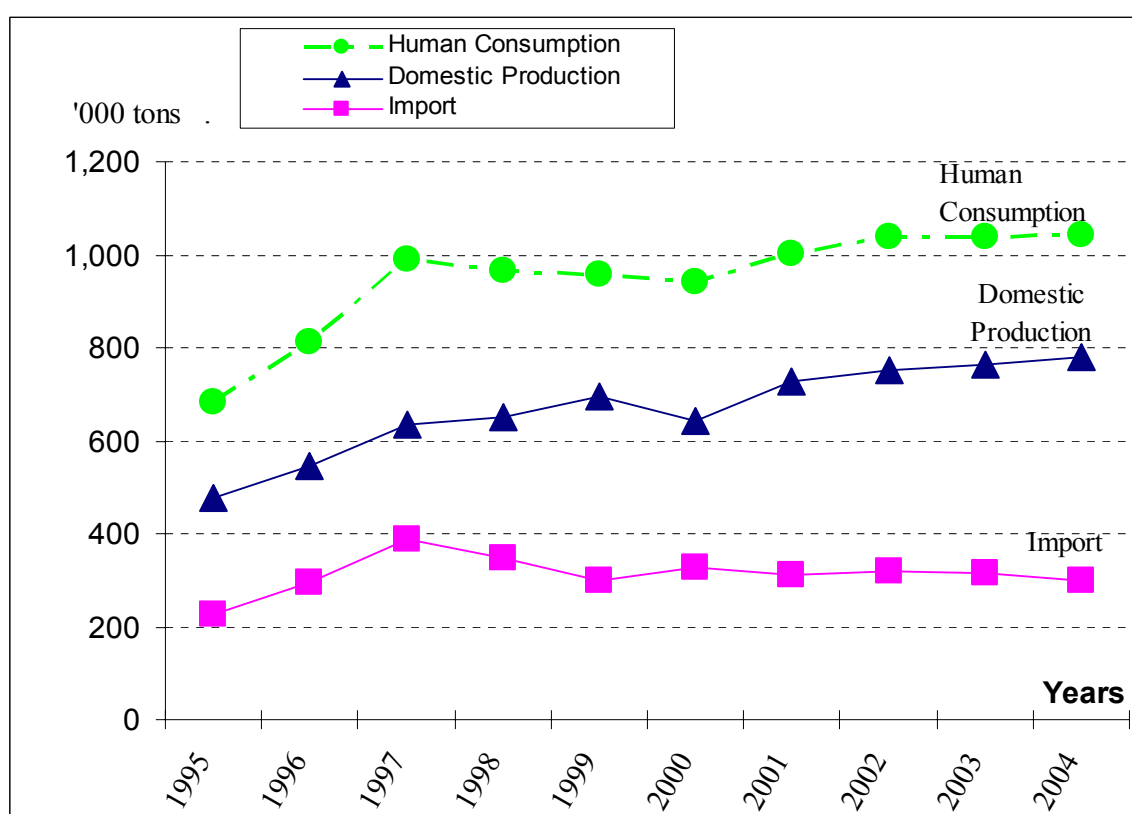
According to the available data, milk production in Georgia has increased by 64% during last ten years (from 475,400 tons in 1995 to 780,400 tons in 2004). However, Georgia remains heavily dependent on imports of dairy products. Quantities of imported dairy products (milk equivalent) are indicated in the table and graph below:

**Imported Quantities of Dairy Products**  
(‘000 tons, Milk Equivalent)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Thousand tons	228	296	386	349	297	329	312	319	315	298

Source: State Department for Statistics, 2004

**Production, Import and Human Consumption of Dairy Products in Georgia in 2004**  
(Milk equivalent)



Source: State Department for Statistics, 2004

Georgia has been a net importer of dairy products during the Soviet era too. And still a significant share of Georgian market is taken by imported dairy products. Customs department reported the import of 15,960 tons of dairy products from 26 countries in 2004 with the value USD 17.5 million. These data indicate a significant potential for the growth of dairy industry in Georgia which would subsequently lead to the reduction of imports and increasing exports. It concerns raw milk as well as the wide range of value-added products. Supplying countries and the corresponding quantities are indicated in the table below:

#### Import of Dairy Products into Georgia in 2004

#	Country	Quantity, Kg	Value, USD
1	USA	6,860,300	\$6,011,541
2	Ukraine	4,394,441	\$4,941,771
3	Russia	2,737,078	\$3,018,516
4	Finland	694,328	\$821,200
5	Netherlands	374,808	\$793,109
6	Germany	181,740	\$503,538
7	Turkey	123,713	\$116,108
8	Sweden	104,877	\$212,111
9	Cyprus	104,201	\$132,913
10	Ireland	75,000	\$78,750
11	Azerbaijan	59,195	\$22,645
12	Austria	43,347	\$332,103
13	France	41,343	\$130,919
14	Byelorussia	40,060	\$66,444
15	Belgium	28,384	\$105,045
16	UK	26,046	\$29,208
17	Switzerland	22,628	\$125,934
18	Chek Republic	22,500	\$24,987
19	Bulgaria	19,459	\$22,942
20	Armenia	3,154	\$6,612
21	Italy	1,825	\$10,685
22	Denmark	1,466	\$9,285
23	Korea	120	\$218
24	Arab Emirates	100	\$118
25	Israel	54	\$54
26	Greece	7	\$32
	<b>Total Imports</b>	<b>15,960,174</b>	<b>\$17,516,788</b>

Source: Customs Department, 2005

The available data also indicate quantities of the main categories of imported dairy products. Their description is given in the table below:

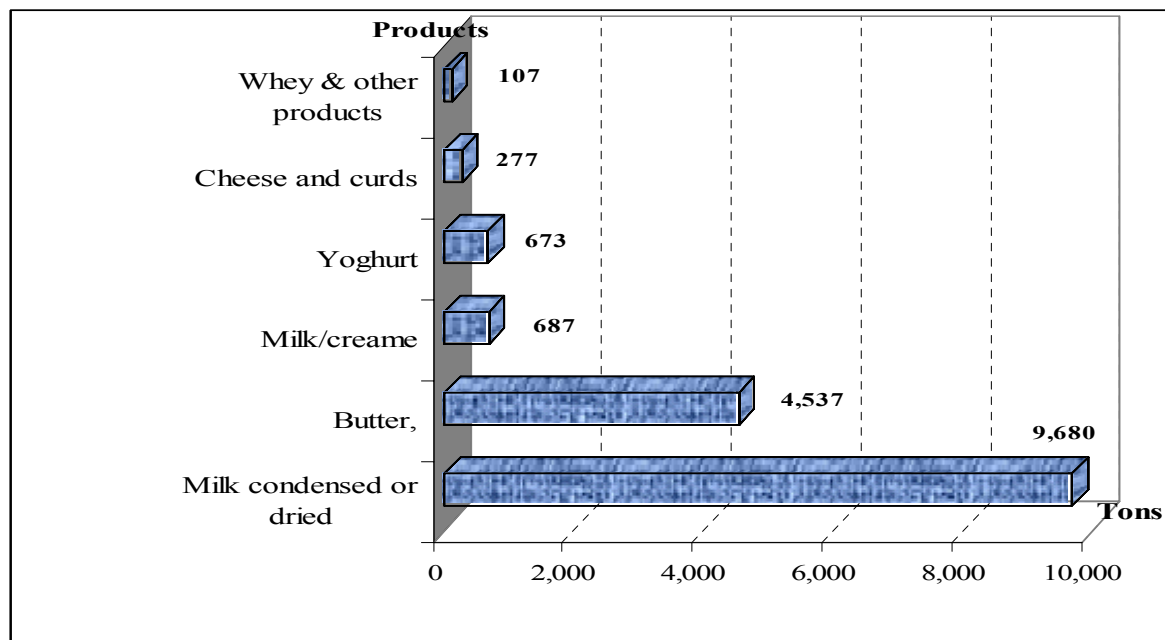


### Quantities of Imported Dairy Products into Georgia in 2004

Description	Quantity, Kg	Value, USD
Milk condensed or dried	9,680,357	10,407,434
Butter	4,536,533	5,037,952
Milk/cream	686,769	372,807
Yoghurt	672,915	783,609
Cheese and curds	276,880	878,720
Whey & other products	106,720	36,266
<b>Total Dairy products</b>	<b>15,960,174</b>	<b>17,516,788</b>

Source: Customs Department, 2005

### Imported Dairy Products into Georgia in 2004 (Tons)



Source: Customs Department, 2005

Customs department also reports on the significant quantity of dairy product exports from Georgia. We assume that a large portion of these quantities are re-exported commodities, which originate in other countries. Quantities of exported dairy products from Georgia in 2004 are shown in the table below:

### Export of Dairy Products from Georgia in 2004

#	Country	Quantity, Kg	Value, USD
1	Italy	1,865,800	\$1,716,536
2	Vietnam	1,479,775	\$1,337,393
3	Malta	425,000	\$391,000
4	Indonesia	400,000	\$368,000
5	Singapore	300,000	\$276,000
6	Arab Emirates	200,000	\$184,000
7	Armenia	48,453	\$67,864
8	Belgium	14,314	\$53,321
9	Azerbaijan	6,156	\$15,503
10	Cyprus	784	\$1,589
11	Russia	691	\$1,587
12	Latvia	648	\$763
13	Turkey	645	\$656
14	Mane Islands	618	\$463
15	Liberia	571	\$1,348
16	France	526	\$1,331
17	Panama	294	\$351
18	Norway	229	\$298
19	Belize	165	\$178
20	Bahamas Islands	71	\$110
21	UK	42	\$64
22	Ukraine	21	\$108
23	Israel	20	\$70
	<b>Total Exports</b>	<b>4,744,823</b>	<b>\$4,418,534</b>

Source: Customs Department, 2005

## 3. Legal Environment

### Taxes

Types and rates of various taxes in Georgia are specified in the Tax Code. Small-scale primary producers in Georgia enjoy substantial tax benefits. Until January 1, 2007 they are exempt from VAT, social, property and profit taxes if their annual sales do not exceed GEL 100,000. Household producers (those who do not employ hired labor) do not pay income tax either. It provides significant financial advantage to the small-scale and household farmers and stimulates tendencies towards fragmentation of production. Those producers who have a potential to increase the scale of operation prefer to split into two or three units to keep each one under the limits of the small-scale farm and not have tax liabilities. Thus the existing tax code stimulates fragmentation of agricultural production and demotivates the creation of large commercial units which could exploit economies of scale to their benefit.

Tax regime is more important for the dairy processors, such as cheese producers. Absolute majority of cheese produced in the country comes from household farmers as it is common for them to process their milk into cheese and sell it to wholesalers or to retail in regional markets. Household producers set market prices in the country for the common types of local cheese (i. e. Imeruli, Sulguni, Kartuli). The existing tax regime creates significant disadvantages to registered enterprises to compete with householders on the price basis, as registered

commercial producers are heavily taxed. It creates unfair competition among commercial and household cheese producers which favors small-scale producers. Those processors, who buy milk from the adjacent farms and process it into cheese, try to stay below the "radar screen" to reduce their tax liabilities and thus maintain the viability of their operation. Such form of production has serious implications for the product quality too. Unregistered processors avoid not only tax burden, but also the requirement to comply with the strict hygiene and sanitary conditions, which would otherwise require from them additional investment into expensive equipment, facilities and processes which they don't have in place. Large industrial dairies in Tbilisi do not produce cheese due to their inability to compete with the householders on the price basis. The exception is Sante Limited, which produces small quantity of cheese in summer (when milk price drops to a minimum point), ripens and sells it in winter (when milk and cheese prices increase to a maximum point).

There is also an additional tax disadvantage for those processors who buy milk from local farmers. As mentioned above, small-scale farmers in Georgia are exempt from VAT, but the processors are not. Relatively large-scale cheese producers, whose annual sales exceed GEL 100,000 are required to pay 18% of VAT from their total sales revenues. They are unable to deduct the cost of milk from the taxable amount if they buy milk from VAT exempt farmers. It means that the cost of milk in fact becomes by 18% more expensive for them than for small-scale producers or farmers who process their own milk. It can better be explained by an example. Let's assume that a processor X purchased 200 Mt of milk for 0.5 GEL/Liter, produced 25 Mt of cheese and sold it for 6 GEL/Kg, with the total sales revenues amounting to GEL 150,000. He will be required to pay 18% of VAT, e. i. GEL 27,000. Let's review two cases: (1) milk was purchased from local farmers who are exempt from VAT; (2) milk was purchased from an importer who is a VAT payer. If both these suppliers sell their milk for the same price (0.5 GEL/Liter) the processor will be better off buying milk from the importer who was a VAT payer (case 2) and provided the processor with the special receipt indicating that out of GEL 100,000 which he paid for milk GEL 18,000 was paid in VAT. In this case the processor would be able to deduct GEL 18,000 from his VAT obligation and would pay only GEL 9,000 after cheese sales. In the Case 1 when the processor bought milk from local farmers he would end up paying 18% of VAT for his suppliers and milk will cost him 0.59 GEL/Liter. The profitability of the cheese processor in these two cases is given in the table below, which shows that if local farmers and importers sell milk for the same price, the processor will be much better off buying milk from the importer.

#### Profitability of Cheese Processor in Case of Various Sources of Milk Supply

Description	Kg	GEL/Kg	Case 1 (Local milk, VAT exempt)	Case 2 (Imported milk, VAT paid)
			GEL	GEL
Cheese sales	25,000	6	150,000	150,000
Cost of milk	200,000	0.5	(100,000)	(100,000)
<b>VAT</b>		18%	<b>(27,000)</b>	<b>(9,000)</b>
Labor costs	25,000	0.20	(5,000)	(5,000)
Other costs			(5,000)	(5,000)
Gross profit			13,000	31,000
Profit tax		20%	(2,600)	(6,200)
<b>Net profit</b>			<b>10,400</b>	<b>24,800</b>

The above example indicates that while small-scale farmers enjoy significant tax benefits it creates additional problems for local processors and makes local supplies more expensive for them. The same is true for the processors of other agricultural products too (e. g. wheat mills).

However, the price/tax argument does not seem to be the only one which prevents local dairies from cheese production. They do compete with householders in milk, Matsoni, cottage cheese and sour cream markets, where dairies hold a small portion of the total market share but gradually increase it along with the increasing customer awareness regarding food safety issues. Dairies differentiate their products through better packaging and reliable quality control, which could also be attempted in cheese marketing. As locally produced cheese is unpacked and not branded, it should be relatively easy for the dairies to differentiate their products and position it for the higher-end market. The potential of the cheese market in Georgia is demonstrated by the quantity and value of imported cheese. As indicated above, there were about 277 Mt of cheese and curds imported in 2004 with the value USD 878,720. Some types of the imported cheese sell for much higher prices (e.g. Gouda from the Netherlands sells for 40 GEL/Kg) in the supermarkets than locally produced Sulguni (10 GEL/Kg). It indicates that there is some demand for high quality cheese in Georgia which can be increased with active promotion, customer education, product differentiation and development.

### **Food Safety**

Food safety issues in Georgia are specified in the Law on Food Safety and Quality, and in the Sanitary Code.

**The Law on Food Safety and Quality (LFSQ)** was adopted by the Parliament of Georgia in December 2005 and came into force in January 2006. It specifies the basic principles for protecting health and economic interests of food consumers on the local market, general requirements towards food quality, requirements regarding food labeling, producer's/distributor's responsibilities concerning food safety/quality, and state control mechanisms of food safety. LFSQ sets hazard analysis (risk assessment, communication, management and other measures), traceability, transparency and protection of consumers' interests as the basic principles of the food safety (Article 4). The Law prohibits putting on the market food which is not safe for health (Article 11). It also specifies that a producer/distributor is not allowed to produce, process, store, package or put on the market food/feed, if it is not registered properly (Article 14). The traceability requirement demands from each producer/distributor to have information on their suppliers and buyers, and also to have the product labeled to make it identifiable (Article 16). Food processors are obliged to introduce the HACCP (Hazard Analysis and Critical Control Points) system in order to identify and control risks associated with the safety of their produce (Article 17). The Ministry of Agriculture (MOA) sets the policy of food safety and quality. Its monitoring, supervision and control is implemented by a special division of the MOA (Article 25). Its authorized personnel can inspect the production facilities, offices, documentation, equipment, raw materials, ingredients, detergents, stages of production, processing, distribution and the labeling of food or feed (Article 22). The division is entitled to supervise the compliance of producers, processors and distributors with the current food/feed safety requirements, with the hygiene and sanitary regulations, also to take measures against food/feed adulteration (Article 29). MOA also issues bylaws and regulations related to food safety (Article 26). Functions of the Ministry of Health, Labor and Social Protection (MOH) is to specify parameters and characteristics of food safety, develop policy and legislation for baby food, conduct monitoring of food-borne diseases and maintain the relevant database, supervise the production of baby food, participate in emergency activities, and inform the population about food safety issues (Article 27). The Law requires from the Government of Georgia within two months from the effective date of the LFSQ to draft relevant changes in the Sanitary Code, Criminal Code, and Administrative Violations Code (Article 36, paragr. 7).

The LFSQ specifies that the implementation of the traceability and HACCP principles in food processing/distribution should start from January 1, 2009. These principles should be implemented in peasant/farmer/smallholder food processing sector from January 1, 2010 and in animal feed production sector from 2011 (Article 36, paragr. 8-10).

The LFSQ will have an important impact on the dairy producers, especially on milk collection centers and the cheese producers. Its requirement about labeling food products will force cheese producers to develop packaging for their produce and get it labeled. It will make them more visible for both, the food safety division of the MOA, as well as the Tax Inspection. However, the small-scale producers will not become subject to the implementation of the traceability and HACCP requirements, if they fall in the category of peasant/farmer/smallholder producers. But, the shops in Tbilisi and in other cities will become subject to the traceability requirement and will have to file data on their suppliers. The smallholder cheese makers will be able to stay unidentified if they sell all their products in the open market, or through the door-to-door delivery to the final customers. However, this segment of the market is estimated to gradually decrease due to increasing customer awareness on food safety issues and changing their shopping patterns.

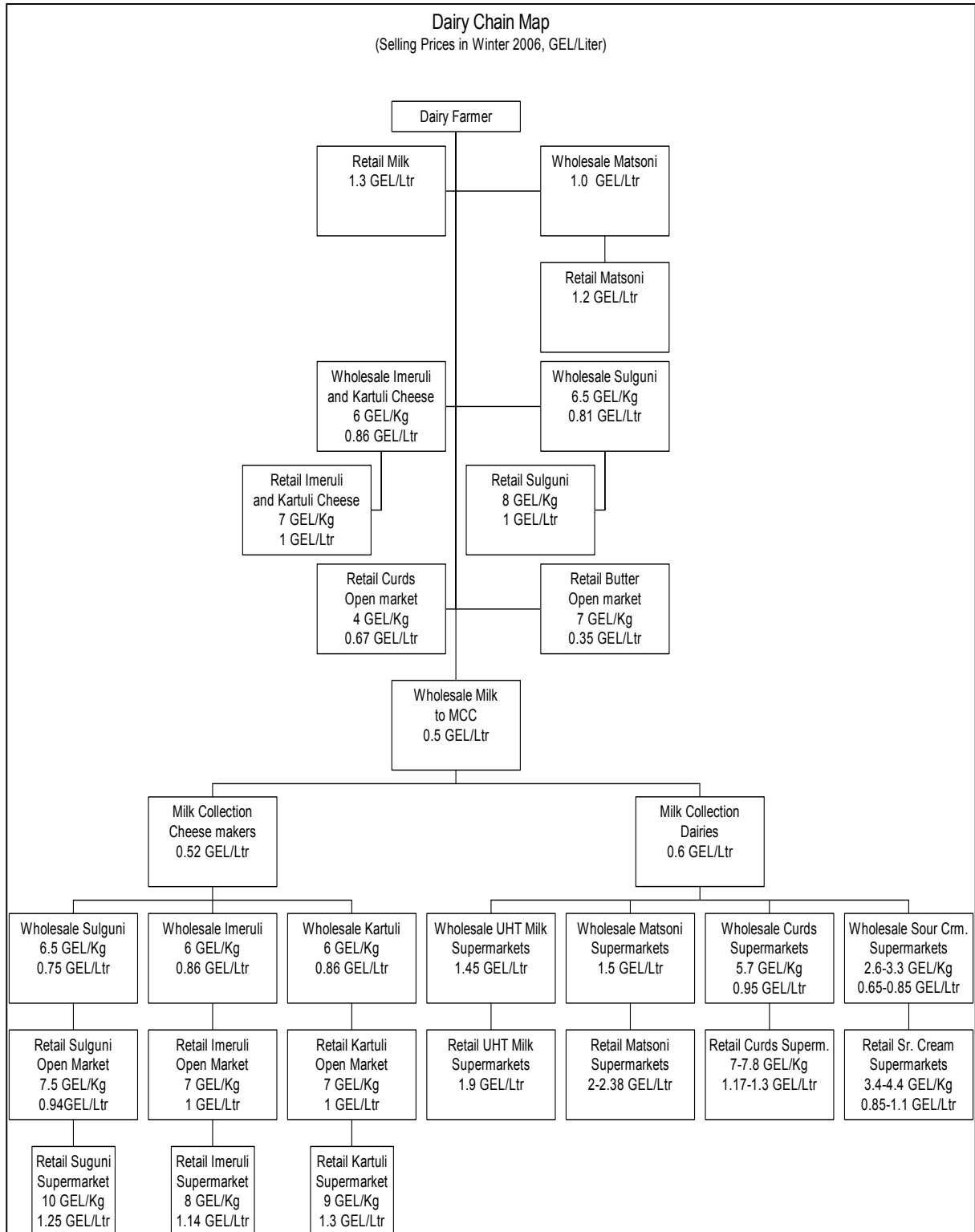
**The Sanitary Code of Georgia** contains the principles regulating the legal relationship of parties for ensuring the safety of human health, also the compliance with the sanitary-hygiene norms, and the state control mechanisms. It contains measures for revealing, preventing and eliminating the cases of non-compliance with the sanitary norms. State control is implemented by the State Sanitary Inspection of the MOH. The Inspection is entitled to suspend or stop the operations of the enterprise, also the production, import, export, sales and delivery of products in case of their failure to comply with the requirements of the sanitary norms or of the hygiene certificate. The law states that obtaining the sanitary certificate is obligatory for each facility and product (Article 19-20). Production and sales of any product without obtaining its hygiene certificate is prohibited (Article 36, par. 2). Food shall be transported only by those means of transport which have the appropriate hygiene passport issued by the State Sanitary Inspection (Article 36, par. 5). The following documents shall be submitted to the MOH for obtaining the hygiene certificate of the product:

- Application;
- Normative documents of the product (standard and technological instruction);
- Sample (Article 40, par. 2);
- Food products originated from animals shall also have a document certifying its veterinary safety (Annex).

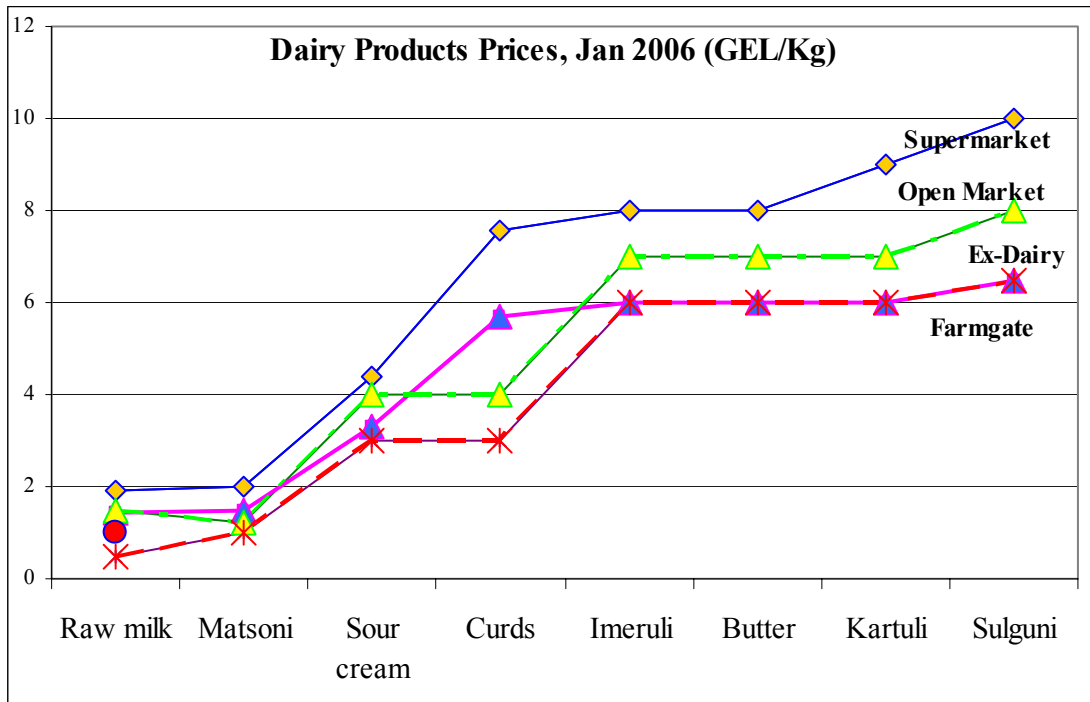
In August 2001 the Minister of Labor, Health and Social Protection issued **Order # 304/n** which specifies the sanitary norms for the dairy enterprises (along with other food and drinks production enterprises, such as wineries, water and soft drinks, meat, ice-cream, refrigerators). Annex 1 of the Order gives a comprehensive description of the sanitary requirements for the territory, premises, storages, water supply, sewage, light, heating, air ventilation and conditioning, equipment, technological processes, transporters, staff hygiene, and administration. The order contains 288 articles divided into 17 chapters, which set detailed sanitary norms for various segments of the dairy enterprise. Knowledge of and compliance with these strict requirements are beyond the capacity of almost any dairy enterprise in Georgia.

### 4. Dairy Chain Mapping

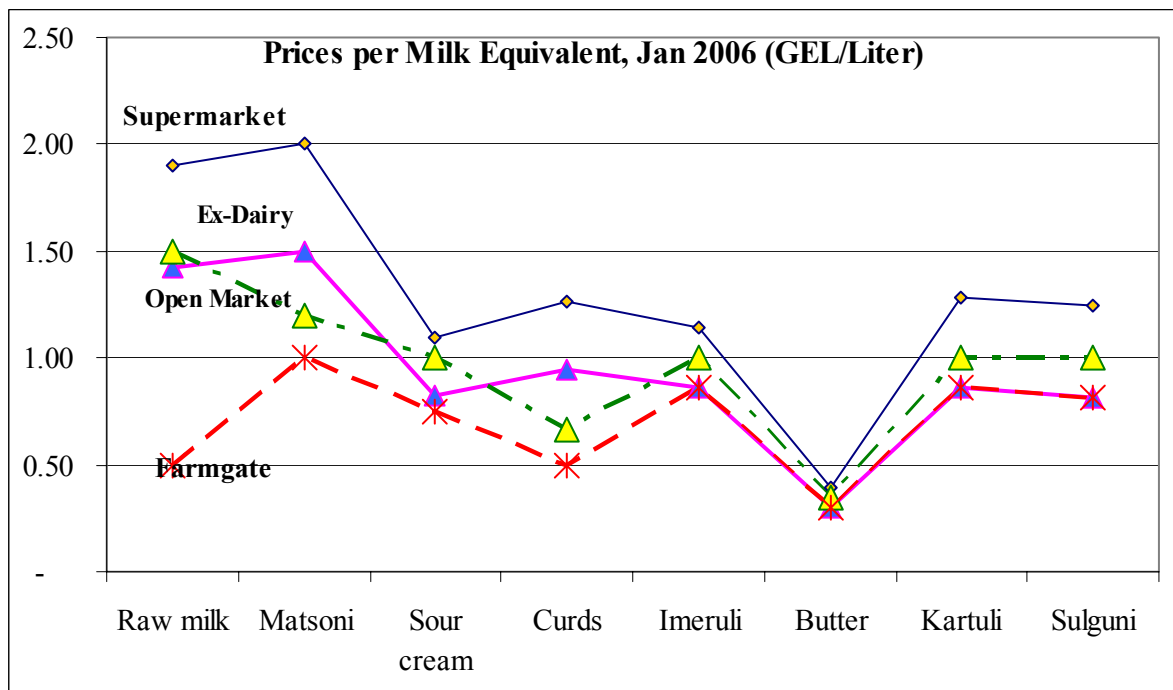
In this chapter we will undertake a dairy chain mapping exercise to visualize the range of activities required to bring the product from farm to the final consumer and delineate both vertical and horizontal linkages. The dairy chain map also contains information on the price change per liter as milk flows from cow to consumer. Milk prices, quantities and conversion rates in Georgia are subject to seasonal variation. We have captured in the given chain map the situation in the winter period of 2006.



The above chain map represents a product-based outlook of the dairy sector in Georgia, focusing on the locally produced milk value change as it flows through various channels and gets transformed into various products. The chart below indicates the price variation of basic dairy products in various marketing outlets.

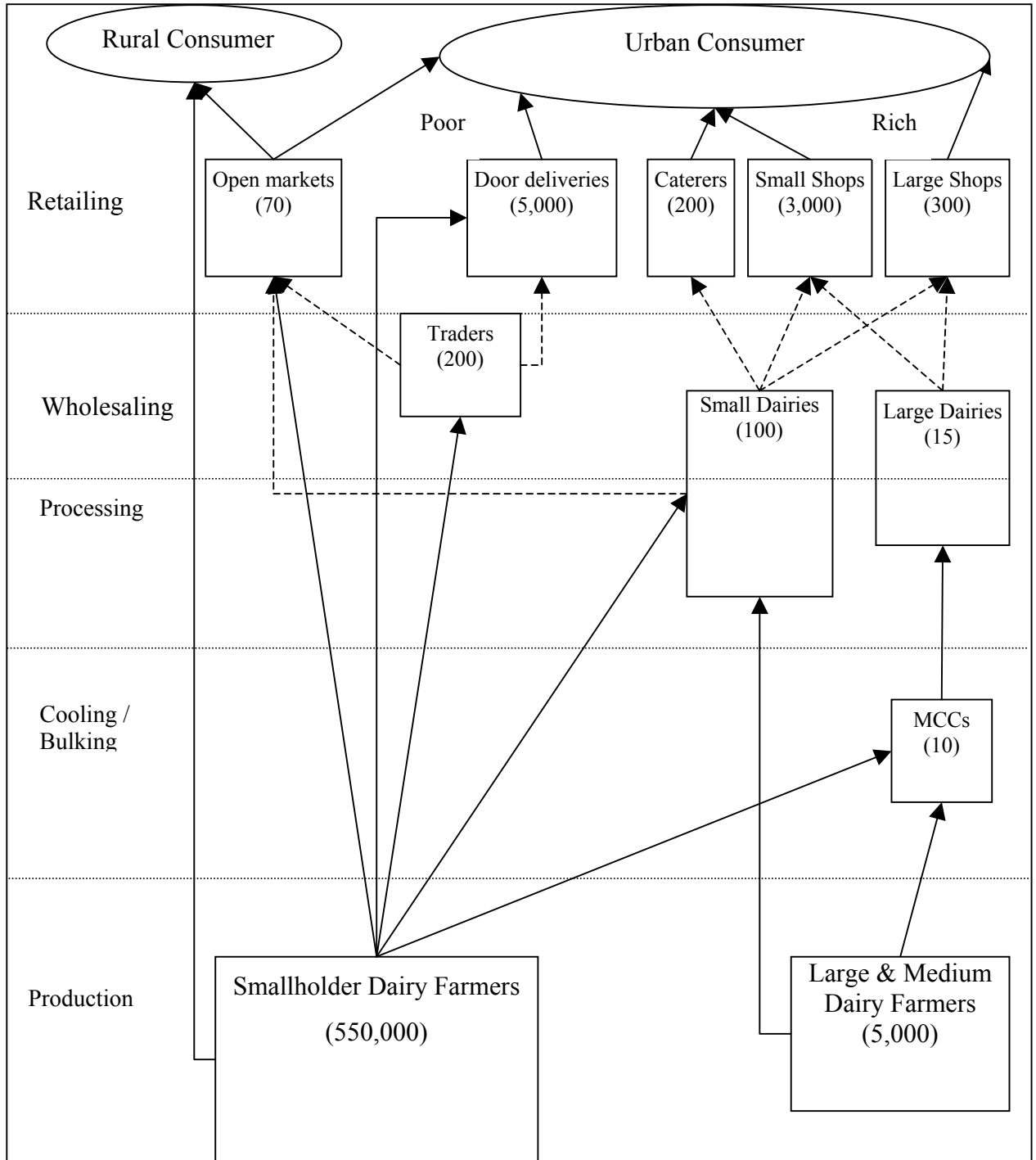


Using the standard conversion rates of milk into the indicated dairy products we can reveal those products that add the most value per liter of milk. These are not necessarily the most expensive products on the Georgian market. In fact, UHT and fermented milk (Matsoni) produced by dairies and sold through supermarket outlets turned to be those two products which provide the highest price per liter of milk used. The chart below presents these comparative data.



The dairy market can also be reviewed from the market-based outlook, showing main markets in Georgia and the corresponding suppliers of local produce. The chart below provides such an approach.

**Dairy Supply Chain in Georgia**



The above map indicates that there are very few milk collection centers in the country. It impedes milk wholesale purchase operations for large and small dairies. Development of MCC infrastructure will increase marketing opportunities for small-scale dairy farmers too, as they



will be able to sell more raw milk in shorter periods of time, which will enable them to focus on the herd management and milk yield increase issues.

## **Conclusions**

The following conclusions can be made on the basis of the given study:

1. There is a high and stable demand on dairy products in Georgia which creates good opportunities for the dairy sector development.
2. Georgia is a net importer of dairy products, which shows the opportunity for the sector development through import substitution.
3. The number of dairy livestock has significantly increased in late 1990s and has exceeded the pre-independence level. However, livestock productivity has gone down as compared to the pre-transition period due to the deterioration of feeding practices.
4. Dairy livestock is predominantly owned by small-holder farmers who are also characterized with high level of poverty. Their average herd size is 1-5 cows. Medium and large herds (50-100 cows) are rare. The developments in the dairy farming will contribute to the poverty reduction of the rural population.
5. Small-scale farmers are not aware of alternative herd management options and their economic outcomes. Therefore, they try to minimize costs by relying heavily on the available pastures and use almost no supplemental feeds except for wheat bran. Pasture management and feed crops growing is not practiced.
6. The lack of organized marketing infrastructure requires from the smallholder farmers to market their output themselves. There are no farmer cooperatives or alliances trying to increase the efficiency of the business operations through economies of scale. Dairy market in Georgia is clearly dominated by small-scale farmers who sell their uncertified products in the open markets, through traders or directly to the final consumers by home delivering products to the residents of large block houses in the cities.
7. Collecting milk from many small-scale farms is very costly and makes local milk price uncompetitive for the processors. They prefer to deal with larger farms and/or use imported milk powder. Creation of milk collection centers will benefit both, small-scale farmers and the processors.
8. Large dairy processing units exist in Tbilisi, while small processors (cheese makers) are located in the rural areas, close to the dairy farms. They compete with the large dairies for the locally produced milk.
9. Most of small farmers process milk at home and sell cheese, matsoni, curds and other products without certification and/or quality control. However, population is not aware of the food safety risks related to the home-made dairy products and buys them in much larger quantities than from the officially registered dairies.
10. The existing tax regime in Georgia creates substantial benefits for the small-scale agricultural producers (with less than GEL 100,000 annual sales), which creates tendencies towards fragmentation of successful business and impedes the enlargement of the scale of operation. The report discusses the implications of the current tax code on the dairy farming and processing sectors.
11. A new food safety law was enforced in January 2006 which requires the creation of the unified food safety controlling unit managed by the Ministry of Agriculture, also the development of the traceability and HACCP systems in Georgia. However, this law is

not covering the smallholder farmers until 2010 and thus will have a limited effect on the dairy sector which is very clearly dominated by small-scale farmers.