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Food Industry Value Chains in Leningrad Oblast and Krasnodar Krai



EXECUTIVE SUMMARY

Background: The report provides a close look at two regions of the Russian Federation, namely the Leningrad oblast and Krasnodar krai, in terms of the agribusiness value chain. The focus sectors of the research efforts were the value chains for dairy (milk), pork and poultry. The project, of which this report is the end result, took place in a six month time period from October 2005 to March 2005.

Structure: In this report we first provide an overview of the agribusiness operational environment in Russia, and specifically the target regions. By the means of SWOT analysis attention is drawn to the key issues. Second, an analysis of the regional value chains is provided. Third, we present forecasts in connection to Russian agribusiness. The findings are complemented with a comparison of the focus value chains in terms of investment attractiveness. The set-up in the assessment integrates the views of Finnish industrialists as well as the project team, with the goal of supporting the formation of comparative perception at a strategic level. In the following we summarise the main findings and conclusions.

National operational environment

The Russian agricultural industry as a whole, as well as the three focus sectors for this study: dairy, pork and poultry, are on the verge of long required (and in some cases delayed) modernisation induced by three main forces: (1) the emergence of vertically integrated agricultural conglomerates financed by the private sector, and (2) a massive extension of state financing (loan interest subsidies and loans) to agriculture-related projects, (3) the emergence of a modern food retail sector, expanding rapidly from mostly metropolitan areas to small towns and rural communities.

These forces shape the transition path of the agricultural industry from mostly fragmented business players possessing a decaying infrastructure, to modern mostly large-scale industrial facilities. However, primary producers and processors need to implement a system to coordinate production with demand signals along the supply chain and to arrange for coordination with the suppliers of raw materials (feed, vitamins, etc.).

The Russian agricultural sector enjoys an abundant level of support from the federal government in the form of subsidies, support programs aimed at the development of productivity and the implementation of new technology, as well as protective import quotas. On the other hand, the state's and especially the regional authorities' interests in developing a viable agricultural sector with efficient supply chains, able to satisfy consumer demand, are also evident.

Processing industries are forced to utilise either contractual or ownership-related methods in the process of securing an adequate supply base. The most salient phenomenon of this is the seemingly common way of vertically integrating upstream companies, i.e. suppliers under the holding company umbrella.

The driving force behind the development of these value chains is the emerging middle-class in the urban centres of Russia. With rising incomes, they are increasingly brand and quality conscious, and increasingly demand products with more value added content. In general terms, the consumption of many meat products is still below potential standards, and thus opportunities for business exist. The rise in the price of oil and the relatively high level of federal budget expenditure in the form of priority development projects and social transfers will have an effect on the Russian consumer, through indirect ripple effects in the economy.

The effect of WTO agreements are mainly considered at a political level and, in our opinion, players at regional and company levels do not consider WTO issues as a top priority in their list. There is a general belief that the Russian federal government will keep subsidies available to the agro-industrial sector. The WTO entry may have a positive effect, since the industry participants consider any new opportunities related to, but not limited to exporting opportunities in general.

Avian flu significantly affected the Krasnodar krai poultry industry at the end of 2005 – beginning of 2006 (currently, the situation is recovering) with less impact on the Leningrad oblast for several reasons: the more severe climate in the Leningrad oblast provided natural protection from the avian flu endemic; the poultry industry in the Leningrad region is more concentrated in comparison to Krasnodar krai, and possesses state-of-art technology. These facts help to implement protective measures more effectively and with lower costs. In addition, poultry meat is a more traditional nutrient for the Leningrad region, in comparison to any other regions.

Regional operational environment – the Leningrad oblast

The performance of the agricultural industry and its future development in the Leningrad oblast is affected by the close vicinity of the metropolitan area of St. Petersburg. This influence has a positive as well as a negative impact. Short-haulage to a major market and transportation hub creates cost savings for input suppliers, agricultural producers and food processors, on the one hand, and makes it costly to retain a professional workforce, on the other hand.

Based only on 0.33% of the country's arable land, the Leningrad oblast agricultural sector's production (in nominal prices) represents about 2% of the Russian agro-industrial production as a whole (about RUR 30.9 billion, or about EUR 896 million in 2005: 67% growth since 2001).

The territory of the Leningrad oblast is 83 900 sq. km, of which non-agricultural land occupies 90%, including 60% of forests. Agricultural and food processing economic activities are concentrated around the St. Petersburg area, with the main processing and supply facilities situated within a 100 – 150 km distance from St. Petersburg.

As of January 2006, there were 217 agricultural companies (about 11% of the North-Western Federal District, less than 1 % of the Russian Federation), 10 fisheries, 5 fish breeding plants, 6 314 farmers (34% of the North-Western Federal District, 2.2% of the Russian Federation), 214,000 private backyards, 20 processing plants (12 milk processing plants, 6 meat processing plants, 2 canned food plants), 39 servicing companies, 29 veterinarian firms, 18 state seed inspectorates.

The Leningrad oblast and St. Petersburg host a developed research and science base with more than 20 scientific institutions, including Vavilov's Plant Cultivation Research Institute, the State Research Institute of Plant Protection, the State Poultry Breeding Research Institute, and the State Academy of Veterinarian Sciences.

Out of three sectors which were the subject of this study, poultry has the most advanced facilities and distribution network, representing a world-class level of production and processing. The poultry sector in the Leningrad oblast recently attracted a lot of investments and will most probably follow that path under the import substitution tendency. The milk (dairy) sector has its notable champions (fluid milk suppliers and processors) but requires, in our opinion, additional investments in maintaining milk cow herds, mostly in the area of forage and feed production. The undersupply of fluid milk causes the processors (mostly in St. Petersburg) to work below capacity (at about 60%) and use dry milk as a substitute for fluid milk. The pork sector survived a dramatic decline in the number of pigs (from 650,000 to 50,000) and its further development, even if economically feasible, requires substantial investment in the infrastructure.

The food supply chain in the Leningrad oblast is at a very early stage of development; however, very notable changes in almost all directions toward a modern chain format are occurring. One could mention vertical integration and long-term direct contracting in dairy and poultry sectors, product coordination in dairy sector, and branding in poultry sector.

The retail sector in the Leningrad oblast stretches out to villages with up to 1000 inhabitants and is adding 570 new retail outlets and repairing 265 in 2005. Major grocery chains increase its presence in the Leningrad oblast (and St. Petersburg) with Pyaterochka Holdings as a regional leader with 167 of their own shops and more than 50 franchise shops. The development of the grocery retail sector led to the

creation of modern warehousing and logistics facilities to support wholesale distribution (Pyaterochka commenced on the second phase of its distribution facility, with 6 400 sq.m. of storage area).

Regional operational environment – Krasnodar krai

Abundant natural resources, fertile soil, good climatic conditions are the fundamentals which build the base for the agricultural sector and rural community in Krasnodar krai. Land ownership, a crop-sharing land rent scheme, the influence of private backyards, the seasonality of consumption due to tourists and visitors attracted by the local recreational industry and the available wholesale and retail infrastructure influence the strategies pursued by federal and local actors in respect of value chain development.

Overall, Krasnodar krai's regional territory is 83.6 thousand sq.km, with 4,515 thousand hectares assigned for arable land. With 2.3% of Russia's total amount of agricultural land, the Krasnodar region produces more than 7% of the gross agricultural production of the country: 10% of grain, 75% of rice, 40% of corn, 27% of sugar beet, 20% of sunflower seeds, more than 50% of vintage, 100% of tea leaves, subtropical and citrus cultures. In 2004, the Gross Regional Product (GRP) reached 335.1 billion rubles (a 22% increase compared with the previous year). Agricultural production constitutes 45% of GRP (compared to an average of 11% for Russia) with production value exceeding 103 billion rubles (in 2004). There are about 700 major agricultural production manufacturers, which produce 70% of the agricultural output, whilst the other 30% is provided by more than 18 thousand agricultural farms and 800 thousand private backyards. On average, an agricultural production manufacturer owns 10,000 or more hectares of land and employs from 600 to 1000 people. The territory's plant cultivation specialises in about 100 different cultivations. However, priority is given to grain production. Cereal cultures occupy more than half of the ploughed fields (more than 2 million hectares).

Krasnodar krai with RUR 74.8 billion (USD 2.6 billion) of investments in fixed assets received in 2004, representing almost 3% of the total of direct investments in Russia, is ranked 6th among federal regions and leads the group of Southern Federal District Regions. Investments in 2005 reached USD 3.2 billion with USD 292 million of foreign investments (compared with USD 230 million received in 2004). Investment into the region's economy in 2004 originated from 27 countries, mainly from Kazakhstan (41.3%), Holland (14.6%), Cyprus (12.9%), Germany (6.5%), France (5.4%), UK (3.7%) and the USA (2.7%).

The food supply chain in Krasnodar krai is progressing as positively as in the Leningrad oblast. The presence of large agro-industrial companies and a notable foreign investment cluster in agribusiness and food processing implies a rapid adoption of the management style and techniques of supply chain management, leading to better coordination between producers, processors and retail operators.

Dairy value chain – the Leningrad oblast

Overview

Dairy value chain in the Leningrad oblast consists of two main parts representing production and processing: fluid milk production geographically is concentrated in the Leningrad oblast and the main processing facilities are located in St. Petersburg. Such division is determined by convenience of production proximity to the main consumer market (St. Petersburg), which allows producers to improve their logistics effectiveness. Another specific feature of regional milk production is their specialisation in whole milk manufacturing, and the absence of value-added production (i.e. cheese, dried milk, etc.). This is determined by two major factors: historically, no enterprises conducting value-added processing were represented in the region; the local raw material base only allows the meeting of the whole milk processing industry demand, therefore no "extra" milk that could be supplied for value-added processing is produced by local dairy farms.

The Leningrad oblast hosts 25 milk processing plants and 2 milk industrial complexes. Five of these process more than 30 tons of milk daily. About 600 thousand tons of fluid milk is produced annually in the Leningrad oblast. The processor capacity is used at 45-50% and the processors generally experience a

shortage of fresh milk supply, which leads to importing fresh milk from neighbouring regions. The revenues of the milk processing enterprises were estimated at €200 million in 2004.

A high level of integration between producers and processors is observed in the dairy industry. In vertically integrated structures, processors play a key role. They firmly control milk producers (either purchasing them or signing strict supply agreements, or forcing them into financial dependence).

There are about 140 milk producing agricultural entities registered in the Leningrad oblast, about half of them being in a complicated financial state, and manufacturing little or no milk. Eighty-five percent of fluid milk is produced at agricultural farms having an average herd size of between 500 to 1000 milking cows. The decrease of the herd size is mainly due to the limited amount of forage which could be collected and stored on-site. Highly developed genetic selection work allows the region to maintain first place in Russia in annual milk yields per cow, which vary within the limits of 8-8.5 tons.

Currently, the fodder base of the Leningrad oblast is balanced between concentrated and rich fodders. Generally, farms are manufacturing (rough and rich) fodders for local consumption. Combined forage is purchased from industrial vendors located in the Leningrad oblast.

Investment opportunities

Investment in a dairy chain in the Leningrad oblast is likely to be most attractive in (i) milking farms development and (ii) high value-added processing.

While fluid milk processing facilities are abundant and experience a shortage of fluid milk, we do not see any signs of fluid milk oversupply in the next 4-5 years. With the commencement of the Valio processing plant, demand for the highest quality milk will grow. Private backyards are not competitive in securing a guaranteed supply of milk with the quality standard required. Only industrial farms will be able to meet the required quality. On the other hand, investment in milk farming will require control over feed supply to control milk production costs. Therefore, complementary investments in forage production are necessary. Whilst the infrastructure required for milking farm operations in most of the agricultural districts of the Leningrad oblast is available, the purchase of new tillage (pasture) processing machinery and investment in tillage will be necessary, as well as land improvement. Training a skilled workforce and the competitive compensation package needed to retain the younger workforce, otherwise attracted by jobs in St. Petersburg, will most likely drive labour costs up. The acquisition strategy might be either a green (brown) field investment or an investment in an existing agricultural business. The least cost approach is likely to be an investment into an existing business.

High value-added processing: deep milk processing and the production of cheeses, canned milk or technical products, such as dry milk, lactose, casein - might also be an attractive option which will be welcomed by local communities.

Pork value chain – the Leningrad oblast

Overview

The pork industry in the Leningrad oblast generally suffers from a vanished production base. Due to unfavorable terms-of-trade dominating the local marketplace over the last 15 years, the number of pigs held in herds declined below a sustainable level: from 650,000 heads in 1991 to 50,000 heads in 2005. This seizure in the fresh pork supply created a situation where local processors became almost entirely dependent on imports from Brazil, Argentina, Uruguay, Denmark, Germany, etc. The revival of the pork industry has potential because with the implementation of strict border controls and strengthening customs enforcement; pork imports became less profitable.

The value chain of pork production features a dependence between feed base availability and the quantity of livestock and the lack of cooperation between producers and processors. Due to the absence of large-

scale production in the region, the main meat consumer - processing plants are not interested in purchasing small lots from producers. This results in two basic channels of production sales: slaughter and sales of meat via owned retail shops to enterprise employees or the local population, the second is pork sales both in live weight and deadweight to small-scale wholesalers, who, in their turn will sell pork either in marketplaces or to small processors. The main share of the meat supplied to industrial processors is imported.

The combined fodder industry of the Leningrad Oblast can meet the pork industry's current demands. There are 7 combined fodder factories, producing more than one million tons of combined fodder. Production capacity allows increasing the current volume in case of adequate demand. However, there is a tendency that newly created and reconstructed pork farms develop an in-house facility for fodder production in order to reduce the costs of purchased fodder.

Investment opportunities

Investment opportunities in the pork value chain are mainly in production and, potentially in services. Subsidies within the framework of the national agricultural project may help to reduce project costs. Investment in primary production might be aligned with the investments in modern slaughtering, cold storage and primary processing. Marketing may drive project costs up since there are no strong fresh pork meat brands (there are regional and national brands in processed meat products (sausages and poultry). Since effective pig growing requires adherence to veterinarian requirements, such services as veterinarian and potentially, training, will be demanded by farm owners. Another area of interest is an ecological-friendly technological disposal of pig manure or the value-added treatment of manure because of increasing ecological awareness.

Poultry value chain – the Leningrad oblast

Overview

The poultry industry of the Leningrad oblast represents a full cycle supply chain: from fodder manufacturing and chicken incubation to retail outlets. There is a high level of integration between raw material input providers and processing enterprises, most of the poultry factories host a full production cycle, which includes combined fodder production, chicken incubation, slaughtering and processing of poultry (including culinary cutting of carcasses for sale to final consumers). Secondly, the relative proximity of producers to the consumer market, which allows poultry factories to implement their own sales strategies (i.e. some factories possess own sales/retail networks).

There are 20 poultry factories in the Leningrad oblast, 15 of which are active, 5 have suspended activities. The main holding structures are Banking House "St. Petersburg" (controlled by "Agro-Invest Brinki", Netherlands) which consolidates 3 main poultry enterprises; Holding "Aladushkin Product" which consolidates 2 main egg producing companies; "Lenoblpticeprom" a joint stock company which consolidates 6 enterprises. Poultry production is concentrated in several key companies: Severnaya (43%), Lomonosovskaya (36%), Russko-Visotskaya (10%) and Roscar (6%).

A characteristic feature of fodder supply to the poultry companies of the Leningrad oblast is the fact that in spite of the presence of a developed combined fodder industry in the region; almost all the enterprises possess their own capacities for fodder production.

Investment opportunities

The main focus of investment opportunities is in the high value-added services (including veterinary, breed selection), engineering services (equipment and machinery supplies) and value-added treatment of manure. Acquisition of a currently inactive poultry farm as an industrial complex may become capital-intensive and risky because of potential hidden financial liabilities. However, some going-concern targets could be identified.

Dairy value chain – Krasnodar krai

Overview

With one third of the total production of fresh milk by private backyards (418,000 tonnes in 2005), it might take three-four years for a dairy value chain to emerge (or to be completed). This lead time is required to make herd improvements by replacing the current milking herd with a more productive brand. The average price collected at the farm gates for a ton of fluid milk was RUR 6 120 (or €170) which grew in 2005 to RUR 7 097 (or €221), therefore total farm receipts for milk sold in 2004 can be estimated at € 227 million, and €287.5 million in 2005.

Local milk processing factories packaged and processed 767 thousand tons, or 57% of milk produced in the region in 2004. The rest of the fluid milk is estimated to be consumed unprocessed (about 25% of total output) and exported (the remaining 25%) to neighbouring regions: such as the Rostov and Volgograd Regions and the Republic of Karachaevo-Cherkessia.

The market for processed milk is dominated by national and regional agro holding companies (such as Wimm-Bill-Dann, or Agrocomplex).

Investment opportunities

The potential of the local market creates wide investment opportunities in almost all segments of the value chain – from input supplies to services. The most attractive investment targets, in our opinion, lie in cooperation with the existing farms to develop large size milking farms with about 2,000 milking cows per farm. Because of high land fertility, the pasture area required to collect forage to feed a herd is substantially less compared with other regions (especially the North-West district), therefore the costs per unit of forage will be less compared to current operations. Such farms could also produce high quality veal, which is currently undersupplied.

Pork value chain – Krasnodar krai

Overview

The pork producing industry in Krasnodar krai undergoes major modernisation in the primary production segment along with adding new capacity within the framework of the national agricultural project. Local pork production in 2005 was 30.5 thousand tons valued at €60.4 million.

Produced pork is mainly processed locally by the more than 100 meat processing factories whose nominal capacity is utilised by 50%; some of the frozen pork is delivered to neighbouring regions. The main problem for the development of the pork value chain is the necessity to modernise processing segment. The suggested strategy for the main participants of the chain is to secure its own primary input (fresh meat) supplies to compete with non-regional purchasers.

Investment opportunities

The most attractive segments for investment in the regional pork chain are in (i) primary and secondary processing and (ii) services. The support from the local administration will reduce project costs, proximity to major consumption markets will also help to reduce dependence on transportation costs; however, the development of the breed most suitable for the needs of the modern processing technology is a requirement.

Poultry value chain – Krasnodar krai

Overview

For 2005, the Krasnodar broiler industry represented by industrial factories (excluding poultry meat sold by private backyards and farmers) has sold more than 70 000 tonnes of broilers (in live weight) worth RUR 1 247 million (or €36.6 million).

Most of the broiler factories possess their own facilities for primary processing; others deliver live birds to abattoirs. The secondary processing is conducted at the meat processing plants. The biggest broiler plants have created their own distribution channels in order to optimise selling and commercial costs.

The avian flu factor significantly affected the status of the poultry industry in Krasnodar Krai at the end of 2005 and beginning of 2006. As of today, the future of the industry is unclear and depends on the readiness of the federal and local administration to cover losses and to provide the funds necessary to purchase new breeding birds.

Investment Opportunities

The most attractive segment for investment is primary production and high value-added services. Acquisition targets are available as well as opportunities to build the business on a “greenfield basis”. Technologies for manure treatment will be also attractive.

Conclusions and major trends

The strategic level assessment of investment attractiveness provided results that indicate the relatively higher attractiveness of the Leningrad poultry value chain, while the other Leningrad value chains are underperformers compared to their Krasnodar counterparts. The important conclusion at this point is that Krasnodar offers attractive opportunities across the agricultural landscape, with less variation.

We may conclude, in general terms, that there are no supply chains in the Russian agribusiness or that they are “patchy”, if we narrowly understand the supply chain term as cooperating and coordinating independent enterprises executing consecutive value-adding functions for the achievement of an agricultural consumer product. The practical strategic implication to the Finnish food industry is the required complementary investments across the value chain as operations are established.

Business opportunities do exist in both of the focus regions. Investments into modern production technology, logistics capacity, and quality maintenance, coupled with the appearance of large corporations will increase the functionality of the agribusiness sector in the medium-to-long term. The resolution of bottlenecks in distribution and in the supply of production factors is vital. Many supporting functions in agriculture are in a dilapidated state and require investment, but at the same time offer opportunities for development. In terms of supply/demand balance, it is notable that some of the sectors rely largely on imports. This creates opportunities for import substitution through local production and processing.

A significant and increasing amount of investments (greenfield, M&A, development) are being announced by the both domestic and foreign agribusiness firms operating in Russia. It seems that the favourable development in the sector will continue, as firms demonstrate a positive outlook towards business opportunities in the future, through investment announcements and the consequent expansion of production and processing capacities.

Major consumer sector trends are the increasing purchasing power of the consumer, and consequently the increasing demand for more nutritious and value-added products, and the increasing share of organised retail and the introduction of new retail formats.

TABLE OF CONTENTS

1	INTRODUCTION	10
2	OPERATIONAL ENVIRONMENT	12
2.1	CURRENT STATE AND TRENDS OF NATIONAL AND REGIONAL AGRICULTURAL SEGMENTS	12
2.1.1	<i>Federal Agricultural Policy for 2005 – 2010</i>	<i>12</i>
2.1.2	<i>Russian Milk Industry Outlook</i>	<i>13</i>
2.1.3	<i>Russian Pork Industry Outlook.....</i>	<i>19</i>
2.1.4	<i>Russian Poultry Industry Outlook.....</i>	<i>21</i>
2.2	GENERAL DESCRIPTION – LENINGRAD OBLAST	25
2.2.1	<i>General Overview on Leningrad Oblast.....</i>	<i>25</i>
2.2.2	<i>Leningrad Oblast Agricultural Complex.....</i>	<i>26</i>
2.2.2.1	Vyborg District Case Study	27
2.2.2.2	Tillage	30
2.2.2.3	Cattle Breeding and Poultry Farming	31
2.2.2.4	Milk Industry	31
2.2.2.5	Pig Breeding	32
2.2.2.6	Flour-milling and Feed-milling industry	32
2.2.2.7	Processing Industry	33
2.2.2.8	Regional Agricultural Policy.....	33
2.3	GENERAL DESCRIPTION – KRASNODAR KRAI	34
2.3.1	<i>General Overview on Krasnodar Krai</i>	<i>34</i>
2.3.2	<i>Krasnodar Krai Agro Industrial Complex.....</i>	<i>35</i>
2.3.2.1	Plant Cultivation.....	35
2.3.2.2	Cattle Breeding and Poultry Farming.....	36
2.3.2.3	Milk Production	36
2.3.2.4	Pig Breeding	37
2.3.2.5	Flour-milling and Feed-milling Industry.....	37
2.3.2.6	Processing Industry	38
2.3.2.7	Regional Agricultural Policy.....	38
2.3.3	<i>Investments into Krasnodar Krai’s Agriculture and Agricultural Industry.....</i>	<i>38</i>
2.3.3.1	Foreign Investment Promotion	39
2.3.3.2	Local Investment Legislation	39
2.3.3.3	Main Investment Projects in Agriculture	40
2.4	SUMMARY ON THE OPERATIONAL ENVIRONMENT.....	41
3	VALUE NETWORK ANALYSIS	43
3.1	LENINGRAD OBLAST	43
3.1.1	<i>Milk and Dairy Value Chain in Leningrad Oblast.....</i>	<i>43</i>
3.1.1.1	Consumption and Market Saturation	43
3.1.1.2	Supply Conditions	44
3.1.1.3	Distribution Conditions.....	45
3.1.1.4	Processing Conditions	47
3.1.1.5	Production Conditions	51
3.1.1.6	Fodder Base Conditions.....	54
3.1.1.7	Enterprise Overview.....	54
3.1.2	<i>Pork Value Chain in Leningrad Oblast.....</i>	<i>59</i>
3.1.2.1	Consumption and Market Saturation	60
3.1.2.2	Supply with Distribution Considerations	61
3.1.2.3	Production.....	63
3.1.2.4	Enterprise Overview.....	65
3.1.3	<i>Poultry Value Chain in Leningrad Oblast.....</i>	<i>66</i>
3.1.3.1	Consumption and Poultry Market Saturation	66
3.1.3.2	Supply	67
3.1.3.3	Distribution.....	68
3.1.3.4	Processing.....	71
3.1.3.5	Production.....	73
3.1.3.6	Poultry Producer Overview.....	74
3.1.4	<i>Summary on Leningrad Oblast Value Network Analysis.....</i>	<i>82</i>

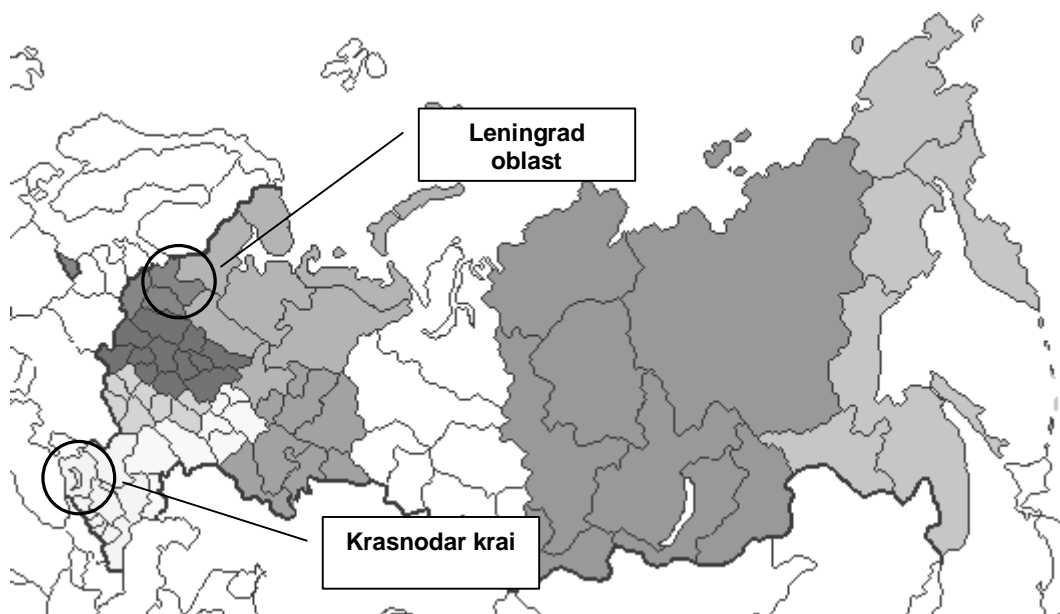
3.2	KRASNODAR KRAI	85
3.2.1	<i>Introduction</i>	85
3.2.1.1	Land Ownership.....	85
3.2.1.2	Role of the Private Backyards and Farms	85
3.2.1.3	Recreational Seasonality.....	86
3.2.1.4	Wholesale and Retail Infrastructure.....	86
3.2.2	<i>Dairy value chain</i>	87
3.2.2.1	Main Inputs.....	87
3.2.2.2	Production.....	87
3.2.2.3	Processing.....	88
3.2.2.4	Supply Chain Management.....	89
3.2.2.5	Overall Milk Value Chain.....	89
3.2.3	<i>Pork Value Chain in Krasnodar Krai</i>	90
3.2.3.1	Production.....	90
3.2.3.2	Processing.....	92
3.2.3.3	Overall Pork Value Chain.....	92
3.2.4	<i>Poultry Value Chain in Krasnodar Krai</i>	94
3.2.4.1	Production.....	94
3.2.4.2	Processing.....	97
3.2.4.3	Overall Poultry Value Chain.....	97
3.2.5	<i>Summary on the Krasnodar Krai Value Network Analysis</i>	98
4	FUTURE DEVELOPMENTS: MEDIUM-TERM (2006–2010) FORECAST	100
4.1	GENERAL ECONOMIC ASSUMPTIONS FOR RUSSIA	100
4.2	PROJECTIONS IN THE RUSSIAN PORK, POULTRY AND DAIRY SECTORS	104
4.3	RETAIL PROJECTIONS	107
5	RANKING THE SIX REGIONAL SUPPLY CHAINS IN TERMS OF INVESTMENT ATTRACTIVENESS	109
5.1	IDENTIFICATION OF PERTINENT DECISION FACTORS	109
5.2	DEVELOPMENT OF PRIORITY WEIGHTS.....	111
5.3	COLLECTION OF DATA AND RANKING OF EACH POTENTIAL FACTOR	113
5.4	ANALYSIS OF COMPARATIVE RESULTS AND THE IDENTIFICATION OF PREFERRED ALTERNATIVES.....	113
6	CONCLUSIONS	116
	APPENDICES	120
	SUPPLEMENT 1: RUSSIAN AGRICULTURAL POLICY	129
	SUPPLEMENT 2: GRAIN FLOW DYNAMICS	131
	SUPPLEMENT 3: AGRIBUSINESS INVESTMENTS	134

1 INTRODUCTION

Agriculture is one of the significant sectors of the Russian economy, especially in terms of employment. The sustained raw-material originating economic growth in Russia supports the development of the food industry and agribusiness value chains in general. With the rise of the consumer purchasing power, the sector is reacting to the salient demand induced business opportunities. With a number of federal initiatives to increase the effectiveness of the industry and agriculture, the prerequisites for success are beginning to be there. However, much needs to be done in order to reach the operational solutions used in the developing countries. As investments into modern technology and know-how are needed across the value chain, single improvements in one part seldom provide the desired upon results in terms of performance. The consequent key issues are presented in this report.

The report provides a close look at the two regions of the Russian Federation, namely the Leningrad oblast and Krasnodar krai, in terms of the agribusiness value chain. The focus sectors of the research efforts were the value chains for dairy (milk), pork and poultry. The geographical focus areas can be observed in the Exhibit 1.

Exhibit 1 Geographic focus of the report



The concept of value chains is well-known, but for the sake of providing definitions, value chain is defined here as the succession of economic functions contributing to the formation of products ready for consumption. Effectively in this case, the value chain comprises of functions that transform agricultural raw materials to packaged and distributed consumer products. The generalized agribusiness value chain is depicted in the Exhibit 2. As we are looking into three different value chains in two separate regions the final analysis concentrates on six value chains. The target chains were chosen according to the request of the client: dairy, pork, and poultry.

Exhibit 2 Generalization of the agribusiness value chain



The project, of which this report is the end result, took place in a six month time period from October 2005 to March 2005. The first three months were spent in the collection of data and the preparation of the extensive fieldwork in the Leningrad oblast and Krasnodar krai. The second half of the period was spent mainly in the collection of primary data (interviews, surveys etc.) and the analysis thereof. In cooperation with local authorities, statistics were acquired, and connections to local experts and companies were established. The obtained results are based on a number of sources for material; both secondary and primary data were utilized with a critical eye to the reality.

The report is structured as follows. First, we provide an overview on the agribusiness operational environment in Russia, and specifically in the target regions. By the means of SWOT analysis the attention is drawn to the key issues. Second, an analysis on the regional value chains is provided. Third, we present the forecasts in connection with the Russian agribusiness. The findings are complemented with a comparison of the focus value chains in terms of investment attractiveness. The set-up in the assessment integrates the views of the Finnish industrialists as well as the project team, with the goal of supporting the formation of comparative perception on the strategic level. Finally, we provide concise conclusions on the main findings. Taken as a whole, the observations in this report provide a background for understanding some of the developments that are perceived to take place in the food industry today for the selected product value chains.

The report was compiled by the Pan-European Institute of Turku School of Economics in co-operation with Economic Consulting Ltd (Moscow).

2 OPERATIONAL ENVIRONMENT

2.1 Current State and Trends of National and Regional Agricultural Segments

The agriculture sector plays an important role in the Russian economy, providing one in tenth of the jobs in Russia and accounting for 5.6% of the total Gross Domestic Product. The food supplies are relatively expensive with food accounting for 39,5% of household expenditures in 2004¹ (to compare with 10% for Canada).

2.1.1 Federal Agricultural Policy for 2005 – 2010

With overall improvement in economic situation, state agricultural policy is aimed at the development of legislative, economic and social conditions favorable for agricultural industry and rural community. The Russian Federal Government generally employs a wide variety of measures to support the agricultural sector, including interest rate subsidizing, development of the specialized financial institutions (banks, leasing companies) which finance agricultural companies and farms, restructuring of tax debts accumulated from previous years, tariff and non-tariff regulations, and market interventions. Typical arrangement is that the funds provided by the federal government are complimented by the funds from regional government.

Ministry of Agriculture of the Russian Federation under the auspices of President launched a priority national project *Agro industrial complex development programme* at the end of 2005. The project aims at increasing milk production by 4,5% and meat production by 7%, leasing more that 100 000 head of a high quality pedigree cattle, and creating more than 2500 agricultural cooperatives. The project is divided into two major components:

- 1) Accelerated cattle breeding industry development, with financing budget of 7,45 billion rubles (USD 266 million) in 2006 and 7,18 billion rubles (USD 258 million) in 2007, which will mainly be used to subsidize interest rate on loans extended for the construction and modernization of the cattle breeding facilities, including purchases of a quality breeds. Loans to be provided by a Rosselkhozbank (a Russian Agricultural Bank) will have maturity of up to 8 years and will be subsidized by the federal budget at the level of 2/3 of the Central Bank Refinancing Rate (currently 12%), and 1/3 of the rate shall be complimented by regional budgets. Russian Agricultural Bank recently announced a loan interest rate of 14 percent, therefore the cost of debt for agricultural enterprises will be about 2%.
- 2) Facilitation of small farming development with financing budget of 6,6 billion rubles (USD 237 million) in 2006 and 9,37 billion rubles (USD 337 million in 2007). Small farming component includes support for:
 - creating agricultural trade cooperatives to promote trading for private backyards
 - construction and modernization of the processing facilities
 - mortgage loans for the improvement of the social standards of living in the rural areas
 - funding 95% of the refinancing rate of the Bank of Russian Federation at the expense of the federal budget
 - funding 5% of the refinancing rate of the Bank of Russian Federation at the expense of regional budgets

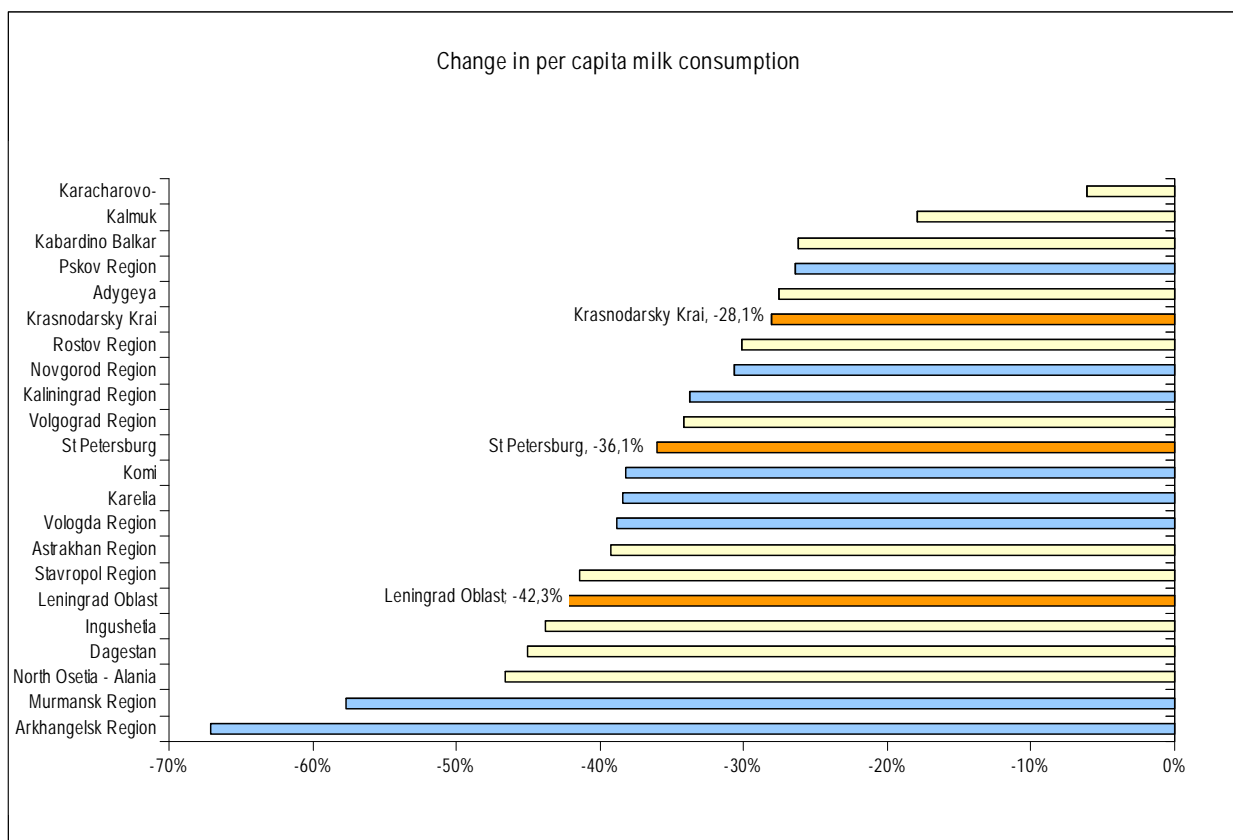
¹ Source: Intergovernmental Statistics Committee for CIS, 2005

State agricultural policy is generally protectionist in its nature: non-tariff regulations for beef, pork and poultry were implemented back in 2003. Since 2004 the practice to establish so called “country quotas” was introduced. Country quotas restrict imports from specified countries. Each year the Government sets tariffs for imported meat. The supplies exceeding the established quota are subject to higher tariffs (which are almost three times higher than quota tariffs). The poultry meat supplies exceeding the quota were banned until year of 2005 (the above-quota-supplies are allowed for imports from USA in accordance with the bilateral agreement). The trade policy is also subject to veterinarian restrictions: changes in terms of trade due to veterinarian reasons occurred in 2004 and 2005. The rules of obtaining quotas by importers changed in 2005. Quotas will now be distributed between selected importers on the basis of historical principle by Ministry of Economic Development: an importer has to be involved in meat imports for non less than three years. Previously, 15% of quotas for pork and beef were sold through auction.

2.1.2 Russian Milk Industry Outlook

The Russian dairy farms represent a significant economic activity with annual fluid milk sales of 2,4 billion USD at farm-gate prices in 2004² and provide almost 45% of total fluid milk production. 55% of total fluid milk production is provided by private farmers and backyards. As a result of a substantial decrease in the milk consumption per capita from 1985 to 2003 as presented in the Exhibit 3, there is a big potential for hidden demand which could fuel the recovery of the profitable milking industry:

Exhibit 3 Change per capita milk consumption in selected Russian regions from 1985-2003



² Source: Ministry of Agriculture, 2005

FOOD INDUSTRY VALUE CHAINS IN LENINGRAD OBLAST AND KRASNODAR KRAI	Section 2 Operational Environment
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The Russian market is primarily supplied by Russian milk production. The supply management system is almost absent and dairy farms mainly deliver fluid milk to local processors under delivery contract which could specify quality requirements and set prices depending on fat content. Local (and regional) milk processors set purchase prices which are not controlled by any governmental agency or industrial organization (like milk marketing boards, for example, in Canada).

Milk produced by private farmers and backyards is partly absorbed by industrial milk processors but the largest share with a minimum of treatment is sold as fresh milk at local cities and towns. The collection of fresh milk from many small private farms is costly and leads to decrease in the quality of purchased milk. Most of the dairy farms lack processing or storage facilities, and are effectively price takers, since they do not have any bargaining power: milk should be delivered to freezers and for further processing the same day it is collected. Farms situated nearby biggest processors enjoy more favorable conditions since processors are willing to pay more for high quality milk (standardized fat content, somatic cell count (SCC) and bacterial or standard plate count (SPC)³. Data concerning SCC and SPC is provided to farms by milk processors, since smaller farms usually lack necessary equipment to make on-site analysis.

In 2004, milk production within the Russian Federation declined by 4.2% compared with the year 2003. Volume of raw milk produced by all types of agricultural entities by federal districts is represented in Exhibit 4. The loss of livestock due to poor feeding base is cited as the main reason causing decline in milk production. The dynamics of the herd size is presented in Exhibit 5. Average milk cow productivity grew as presented in Exhibit 6 but the yield increase was not sufficient to compensate the loss of production. Yield increase was due to, not much the increase in productivity or effective herd management, but to the selection process – milking cows with lowest yield are first to be sent to slaughter house. Level of per capita milk consumption in the Russian Federation declined in average since 1985 and falls below United States, Australia and Romania (see Appendix 1).

Exhibit 4 Milk production, '000 tons, 2003-2004 and year-on-year change (%)

	2003	2004	Change from 2003 to 2004, %
Russian Federation, total	33 374.4	31 992.3	-4.2
Including			
Central District	7 310.3	6 899.7	-5.6
North-Western District	2 141.1	2 007.0	-6.3
of which Leningrad Oblast	603.0	566.2	-6.1
Southern District	4 730.5	4 599.8	-2.8
of which Krasnodar Krai	1 419.7	1 340.7	-5.8
Volga District	10 482.9	10 238.5	-2.3
Urals District	2 206.1	2 150.8	-2.5
Siberia District	5 873.8	5 488.1	-6.6
Far Eastern District	629.8	608.4	-3.4
Source: MOA, 2005			

Exhibit 5 Number of milking cows, '000 heads, 2003-2004 and year-on-year change (%)

	2003	2004	Change from 2003 to 2004, %
All types of agricultural entities:	10 987.5	10 278.3	-6.4
Including			
Agricultural farms	5 126.4	4 663.6	-9.0
Private backyards	5 511.8	5 257.2	-4.6
Farmers	349.2	358.5	2.7

³ Abnormal somatic cell count and bacterial count indicate presence of bacteria causing cow mastitis

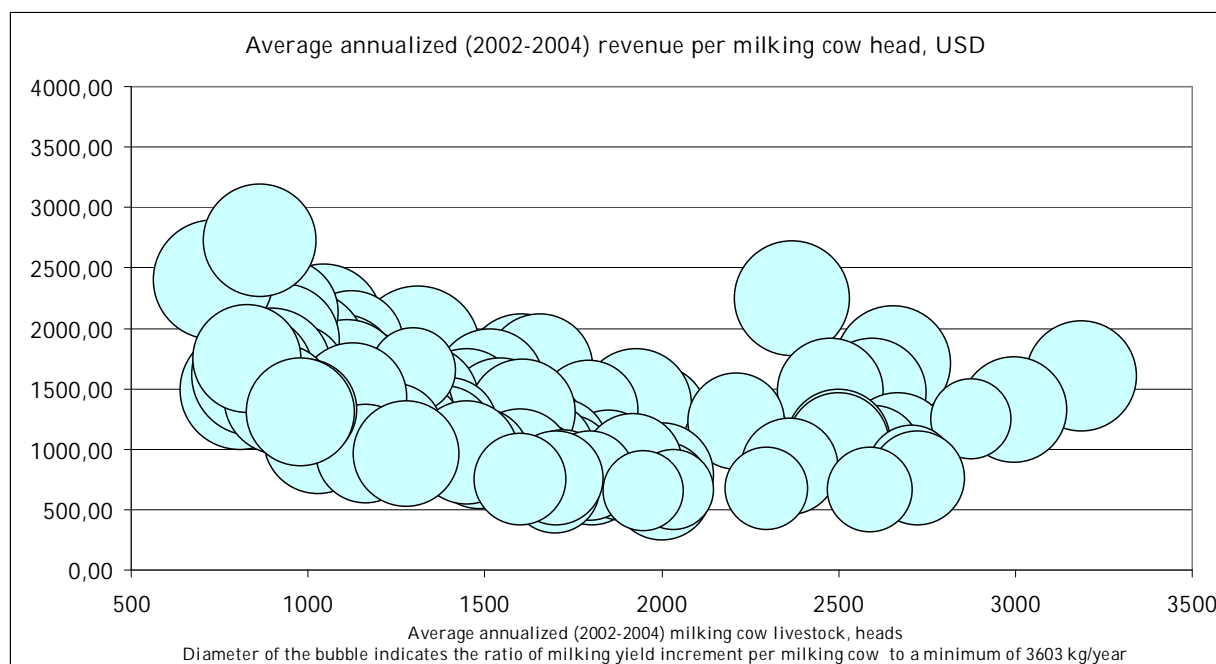
Exhibit 6 Average yield per milking cow, kg/year, and y-on-y change (%)

	2003	2004	Change from 2003 to 2004, %
Russian Federation	2 976	3 065	2.9
Central District	2 990	3 145	5.2
North-Western District	3 875	4 054	4.6
Leningrad oblast	5 750	5 916	2.9
Southern District	3 080	3 223	4.6
Krasnodar Krai	3 800	3 887	2.2
Volga District	2 925	2 987	2.1
Urals District	3 027	3 134	3.5
Siberia District	2 698	2 663	-1.3
Far Eastern District	1 963	1 975	0.6

Source: MOA, 2005

Exhibit 7 below represents the 100 biggest milking farms (the Group 100 – milk) (average data for 2002-2004) in terms of herd size and average annualized revenue per milking cow⁴. These 100 biggest milking farms represent 6.6% of gross production by industrial farms and 3.0% production by all types of agricultural units, including individual farmers and private backyards. The vertical axis presents the average annualized revenue per milking cow head in USD, whereas the horizontal axis presents the average annual milking cow herd size. Diameter of the bubble indicates the ratio of milking yield increment per milking cow to a minimum of 3603 kg/year.

Exhibit 7 Average annualized (2002-2004) revenue per milking cow head (USD) and milking cow livestock (heads) in the 100 biggest milking farms in Russia.



⁴ Source: Крестьянские ведомости, № 43 – 44, 2005

There are 17 farms in Leningrad Oblast that are included in the *Group 100 – milk*. The quantitative features of these farms as presented in *Exhibit 8* below are quite uniform with each other with average annualized revenue per milking cow falling between USD 1100 and USD 1900. From Krasnodar Krai, there are 20 farms included in the Group 100 – milk, and they are presented in Exhibit 9. The herd size of milking cows for this group of companies in Krasnodar Krai falls between 1 280 and 2 700 milking cows per farm which is almost twice bigger than in the group of farms of Leningrad Oblast. However, as the Exhibits 8 and 9 illustrate, the average revenue per milking cow for Krasnodar Krai’s farms is on average USD 1 000 less than in the farms from Leningrad Oblast. There are two main factors causing the difference. Firstly, the average annual yield per milking cow in the farms of Leningrad oblast is 7 097 kg compared with 5 417 kg for the farms of Krasnodar Krai. Secondly, farms from Leningrad oblast sold fluid milk at average price of USD 212 per ton compared with USD 157 per ton for the farms from Krasnodar Krai.

Exhibit 8 Average annualized (2002-2004) revenue per milking cow head (USD) and milking cow livestock (heads) in the 17 biggest milking farms in Leningrad oblast.

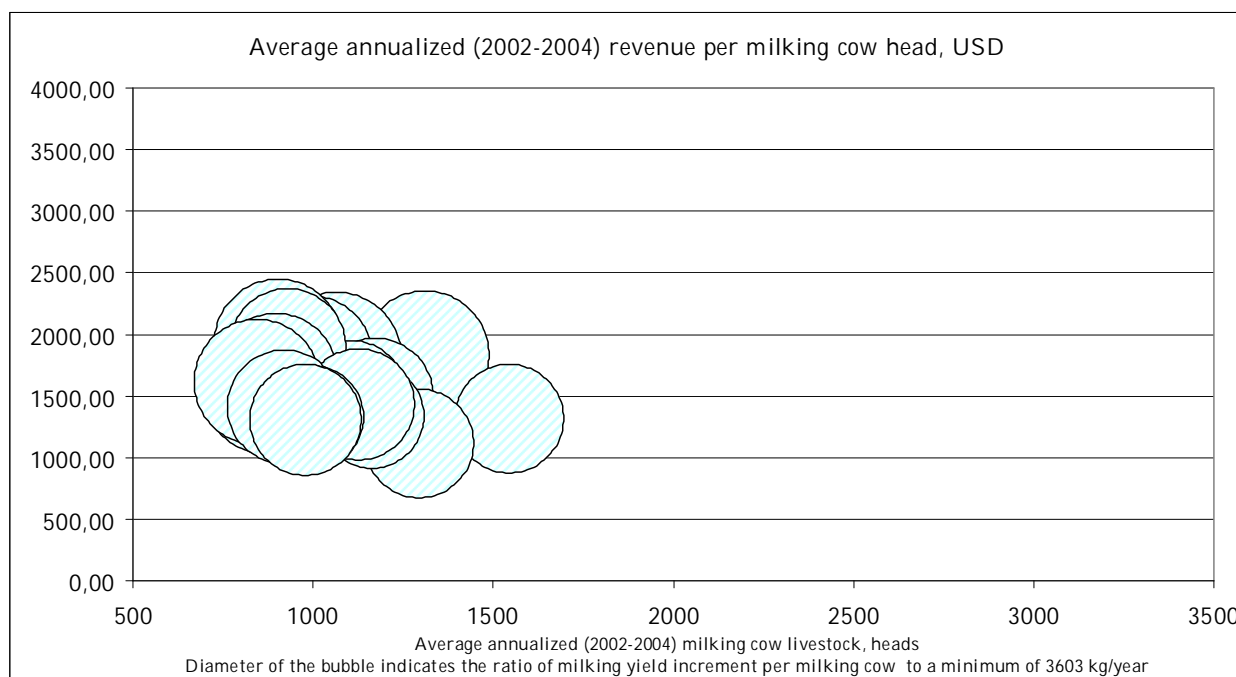
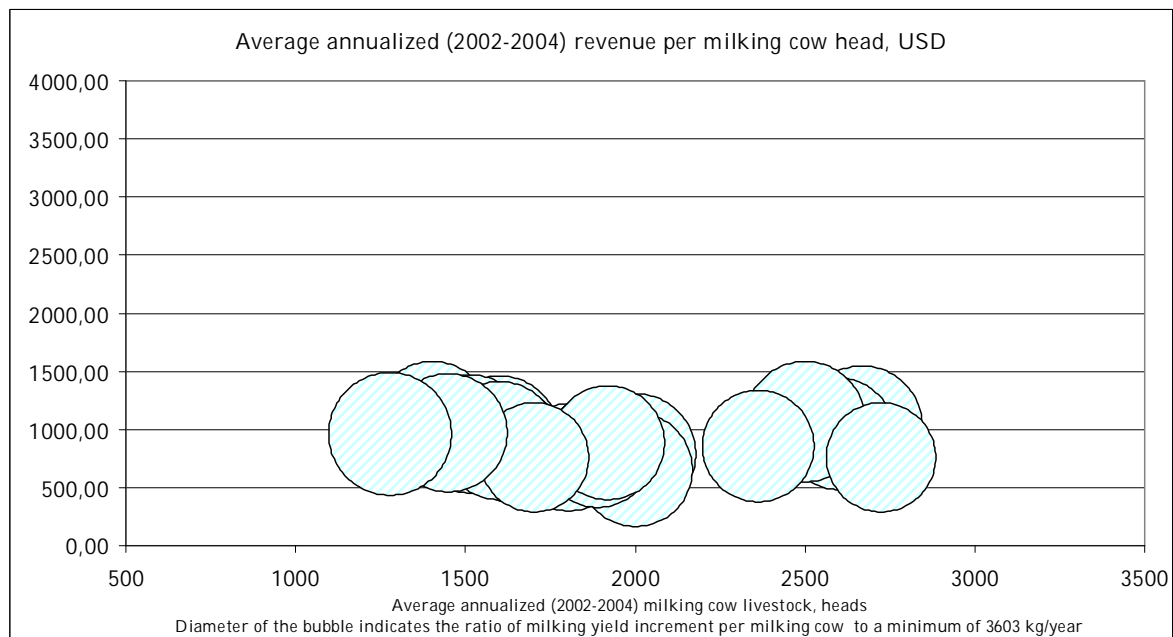


Exhibit 9 Average annualized (2002-2004) revenue per milking cow head (USD) and milking cow livestock (heads) in the 20 biggest milking farms in Krasnodar krai



Russian Milk Industry SWOT Analysis

Strengths

- Russian customers have a traditional perception of milk as a healthy food which can be consumed as a packaged fresh milk or processed in a wide variety of dairy food, agricultural and industrial products with high conversion ratio (low waste residuals).
- Milk is a nutrition ingredient recommended for everyday consumption. The share of “stable” milk consumers (who consume milk almost every day) of the total number of households may be expected to be relatively high: for example, 92,8% in Yekaterinburg and 64% in rural areas of Sverdlovsk Oblast⁵.
- No direct substitute in consumption. Shares of non-cow milk (goat milk, mare milk, camel milk) and products processed of it are low, however market penetration of non-cow milk is growing.
- The climate conditions in the Russian territory are mostly favorable for year-round dairy herd management. However, the form of herd management (grazing, confinement, or combination of the two) varies substantially depending on the specific geographical area’s vegetation period and season temperature and available pasture.
- Low fresh milk market saturation ratio. Decline in the overall volume of collected milk created shortages of fresh milk delivered to milk processors forcing them to produce certain milk products to replace fresh milk by milk powder or other ingredients inferior to fresh milk nutritional quality.
- Fresh milk and dairy products constitute a big market protected by the geographical size of the Russian Federation and a relatively low density of population. Since fresh milk and milk products have a short shelf life (up to 14 days), the transportation cost of the processed milk products creates an effective segmentation factor.
- Processed milk and dairy product distribution channels have a high market penetration (ratio of the number of point-of-sales which display a certain product or brand to the total number of point-of-sales). Even a small street food outlet may present different brands of milk, yogurts, butter or cheese.
- The absence of quota restrictions as well as any type of fresh milk market regulation ensures the development of the market and free access of producers to the fresh milk or milk processing market.

⁵ Data based of representative research *Milk and Milk Products Consumption in Yekaterinburg and Sverdlovsk Oblast*, Socium Fund, March, 2005, http://research.rbc.ru/rev_short/1151441.shtm

FOOD INDUSTRY VALUE CHAINS IN LENINGRAD OBLAST AND KRASNODAR KRAI	Section 2 Operational Environment
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- High entry barriers protect the industry. Initial capital expenditures required to commence a state-of-art milking farm with available agricultural land are relatively high; existing milk processing capacity is higher than available volume of fluid milk.

Weaknesses

- The size of the traditional milking farms, built before the 1990s, was oriented at extensive growth with no consideration of improving the efficiency of operations (better genetics selection, more milking yield). The farms allowed the increase in the size of the herd without attention to increase in milking yield. Nowadays, the proper maintenance in excessive infrastructure is a burden to a farm's economics.
- Ecological protection facilities do not satisfy current requirements and should be modernized causing additional costs to a farm's economics (for example, the farms quite often do not have any manure treatment facility).
- Low milk processing level does not allow the industry participants to capture all value added available through deep processing of fluid milk. Because of low milk processing level and shortage of storage facilities, milk processors and retail networks possess bargaining power in relation to fluid milk producers.
- Most of the milking farms are price-takers and could not pass additional costs due to raising feed and fuel prices to final customers. Low farm capital base and inability of milk producing farms to replace outdated equipment and reconstruct the farm's facilities impede farms' ability to raise finance.
- Restricted availability of trained workforce due to the low social status of rural lifestyle and general negative demographics trend.

Opportunities

- There are significant opportunities in developing new products such as chilled and convenience/ready-to-go foods.
- Overall favorable economic environment and increased purchasing power shall lead to increase in demand for fluid milk and processed milk products.

Threats

- Due to the poor herd managements practices and insufficient feed supply, there are acute animal health problems (such as mastitis, lameness).
- Persistent environmental issues associated with unsafe manure treatment.
- Since the production capacity is underutilized, underinvestment in the facilities' modernization reduces the sector's overall viability.

Milk Industry Development Outline

As stated by president of Milk Union, Mr. Labinov, the Russian Federation's entry to WTO would not in general have a significant influence on agricultural sector, and milk producing sector, in particular, since the current share of milk products' imports is relatively small, but sufficient to create a competitive pressure which facilitates investments into modern milk producing technology. Introduction of new technology allows to satisfy new demand for value-added products dictated by the consumer market. With the increase in personal income, milk consumption increases, which stimulates demand on value-added products. Availability of land and existence of the appropriate infrastructure makes Russian Federation attractive for investments into new manufacturing facilities since the main advantage of domestic milk producers before importers is processor's requirement for fresh milk. The lower the lapsing time between cow milking and processing, the better is the quality of milk and milk products.

It is necessary to point out, however, that negative consequences of WTO entrance are also likely. This is mostly due to price leveling process. Energy prices are currently lower in Russia than in the European Union, at the same time raw milk prices in Europe are only slightly higher than in the Russian Federation (considering the same raw milk quality). Prices of milk and dairy products are about the same in Russia

and in Europe. Thus, milk processors would not be able to raise raw material purchase prices. And in case of growth in expenses (energy, salaries etc.), milk production profitability would inevitably fall. In such situation, part of agricultural producers (who's profitability is low already) would either seize activities or would be taken over by more effective organizations. Those continuing milk production would have to find internal reserves for cutting production costs, first of all by lowering the quantity of man-hours on production, improving fodder quality and animal keeping conditions, curtailment of ineffective activities and lowering losses. When Russia enters WTO, the trend of bankruptcy of unprofitable milk producers could prevail, which would lead to gross milk production decline. As a result, milk imports especially from the Baltic States and Finland would become economically attractive.

2.1.3 Russian Pork Industry Outlook

Russian pork industry is currently recovering from a dramatic downsizing it has experienced since the transition shock of the 1990s. The main production asset – pork livestock – decreased almost threefold or 65% in 2004 compared to the figure from 1990 (see Exhibit 10). Such downsizing was caused initially (in the beginning of the 1990s) by inability of pork farmers to pass rising feed, electricity and fuel costs to meat processors and ultimately to final consumers. Animal feed (combined fodders) shortages caused pig breeders to reduce livestock under management through mass slaughtering during the years of 1995 – 1998. Decrease of livestock entailed dramatic production decline. The severe economic conditions caused changes in the sector's industrial organization: 81,5% of pig livestock before 1991 were confined in large industrial farms compared with 52,1% in 2005.

Exhibit 10 Pork livestock, '000 heads

	1990	2001	2002	2003	2004
Total Russian Federation	38 300	16 047.50	17 337.50	15 979.80	13 412.80
Central District	-	3 212.20	3 448.60	2 984.90	2 550.30
North-West District	-	596.70	618.10	545.50	440.70
Southern District	-	3 581.10	4 106.20	3 567.00	2 905.40
Volga District	-	4 219.60	4 468.40	4 329.10	3 903.10
Urals District	-	1 153.50	1 160.80	1 085.80	802.90
Siberia District	-	3 001.10	3 256.90	3 182.60	2 579.90
Far-eastern District	-	283.20	278.50	284.90	230.40

Source: State statistics committee; MOA, 2005

Exhibit 11 Pork production in deadweight, '000 tons

	1986- 1990	1991- 1995	1996- 2000	2001	2002	2003	2004
Pork production in deadweight	3 347	2 475	1 562	1 498	1 583	1 706	1 644
Pork production in percent of 1986 - 1990 level	100%	73.95%	46.67%	44.75%	47.2%	50.9%	49.12%

Source: State statistics committee, 2005

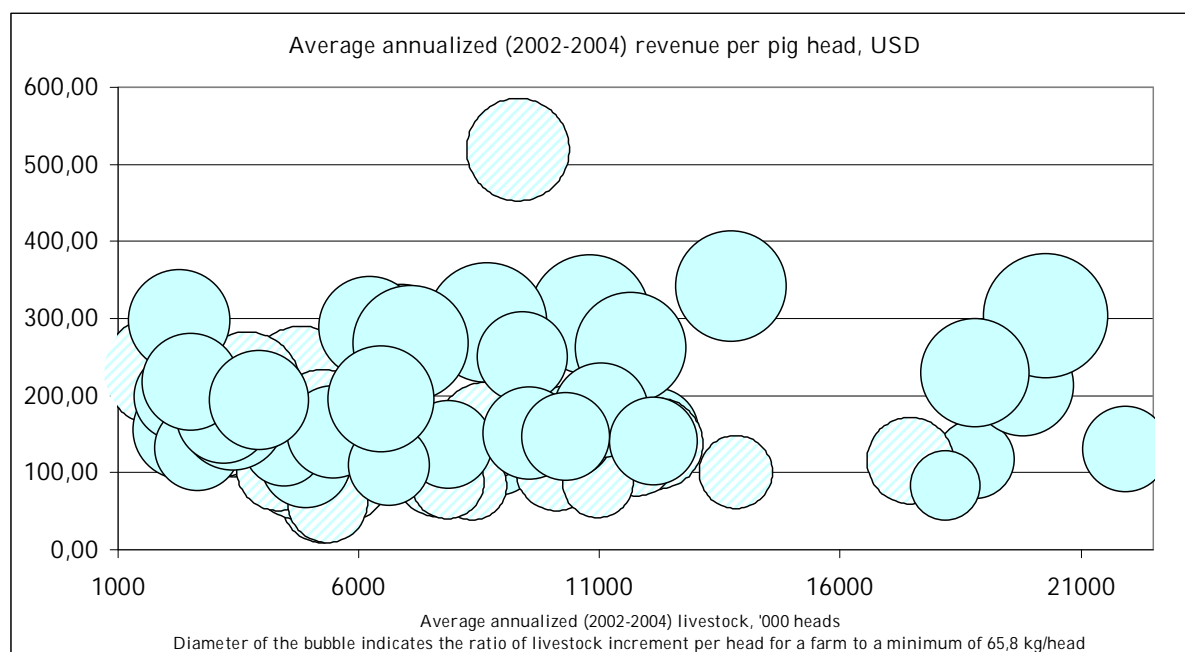
By 2001, production volume in terms of deadweight decreased by 56% compared to the level of 1990 (see Exhibit 11). The demand of meat processors was replaced by relatively cheap imports from South America (Brazil, Argentina) and China. Only in 2003, when import quotas were introduced, terms of trade became favorable for local production. Quotas limited annual imports of pork by 337,5 thousand

tons⁶. Trade restrictions resulted in price growth and import volume lowered by 16% in 2004⁷. In order to stabilize meat price, the import quotas were increased in 2004 to 450 thousand tons⁸. The quotas for pork imports will gradually be increased from 467 thousand tons in 2005 and to 502 thousand tons in 2009⁹. EC-countries are given 50% of the quotas.

To further support domestic producers, Ministry of Agriculture developed and accepted a pork industry support program "Pig breeding industry development for 2006-2015", which encouraged investments in pork industry by compensating 2/3 of interest paid on banking loans provided for industry's modernization (value of loans subsidized in 2005 was 5,5 billion rubles or about USD 200 million). State support measures and favorable terms of trade (raising fresh pork prices) encouraged major processing companies such as Cherkizovskii Holding, Mikoyan Holding, Rusagro, and others to declare investments into pig breeding facilities worth from 2 to over 100 million USD.¹⁰ Such vertical integration allows meat processors to ensure stable quality of pork and to mitigate potential changes in fresh meat pricing. However, the absence of industry coordination today may lead to overcapacity within 5 years horizon.

Exhibit 12 below represent the distribution of 100 largest (average annualized data for 2002-2004) pig farms (Group of 100 - pork) by size and efficiency¹¹. These 100 largest farms represent in average 45% of the gross production of industrial farms, and 11,4% of the gross production in all types of agricultural farms. The average herd size for the *Group of 100 – pork* is 1 700 liveheads. The average gross production of the farms included in the ranking is 2 625 tons per year compared with a mere 43 tons per year for other 6 362 farms involved in pork production registered by Federal Statistics Agency.

Exhibit 12 Average annualized (2002-2004) revenue per pig head (USD) and pig livestock (heads) in the 100 biggest pig farms in Russia



⁶ Source: <http://www.rcsme.ru/news.asp?SectionId=1&NewsId=1017>

⁷ Source: M.B. Kuzmicheva, Состояние Российского рынка свинины в 2004 году, Мясная Индустрия, №7, 2005

⁸ Source: <http://www.rg.ru/2004/03/23/myaso.html>

⁹ Source: The Government of Russian Federation Decree # 732 as of December 5th, 2005

¹⁰ Source: <http://www.apkmarket.ru/content.html?n=362>

¹¹ Source: Крестьянские ведомости, № 43 – 44, 2005

From Krasnodar Krai, 33 pig producing farms with average herd size exceeding 7 000 heads are included in the ranking, and marked with striped circles in Exhibit 12. Vasurinsky Meat Processing Plant (Ust-Labinsky Province) leads the Group of 100 – pork in terms of average revenue per head (USD 518,5). Chapaev pig breeding farm (Dinskoy Province) with more than 17 000 liveheads in the herd belongs to a group of 7 farms with the herd size more than 16 000 liveheads. The average revenue per head at Chapaev pig breeding farm was USD 115,8 which is almost 4 times less than at Vasurinsky.

Russian Pork Industry SWOT Analysis

Strengths

- Undersaturated market
- Stable demand, since pork is a major component in most popular meat products (sausages, salami, etc.)

Weakness

- Inability to pass rising costs of energy, fuel and fodders to final customers
- Inefficient breeding and feeding technologies in most pig farrowing farms
- Competition from imported pork
- Weak animal health and low share of productive breeds

Opportunities

- Import substitution opportunities
- Processing enterprises provide stable demand on pork

Threats

- Entrance to WTO lifting quota barriers and letting cheap imported meat in the market.
- Dependence on grain price dynamics

2.1.4 Russian Poultry Industry Outlook

Russian poultry industry delivers mixed signals about its economic potential and viability. On one hand, the industry managed to maintain a stable level of its main production asset – poultry livestock (see Exhibit 13) during the last 5 years, which is still 1.9 times less than the level of poultry livestock achieved in 1991, and to attract substantial private investments to replace its decaying infrastructure. On the other hand, the fate of the industry is plagued by aging fixed assets, obsolete technology and equipment, crosses which require genetic improvements, weak financial conditions of poultry farms and negative ecological impact of poultry manure on agricultural land and environment.

Exhibit 13 Poultry livestock in million heads

	1991	2001	2002	2003	2004
All types of producers	659.9	338.3	343.3	341.5	337.1
Agricultural enterprises		205.1	216.3	217.2	217.1
Private backyards		131.4	124.8	122.1	117.8
Farmers		1.80	2.20	2.30	2.20

Source: MOA, 2005

In 2004, there were 641 poultry farms in the Russian Federation, including 425 egg producing, 137 broiler factories, 50 pedigree plants, 9 duck breeding plants, 5 turkey breeding and 3 quail breeding plants. 56 of the broiler farms had their production capacity fully utilized and they produced 63% of the total poultry meat production. 26 enterprises have less than 30% of utilized capacity. Roughly the same situation was encountered in egg producing enterprises (182 enterprises were functioning with full capacity, 129 had less than 50% of utilized capacity)¹².

Exhibit 14 Average annualized (2002-2004) revenue per poultry head (USD) and poultry livestock ('000 heads) in the 55 biggest poultry farms in Russia

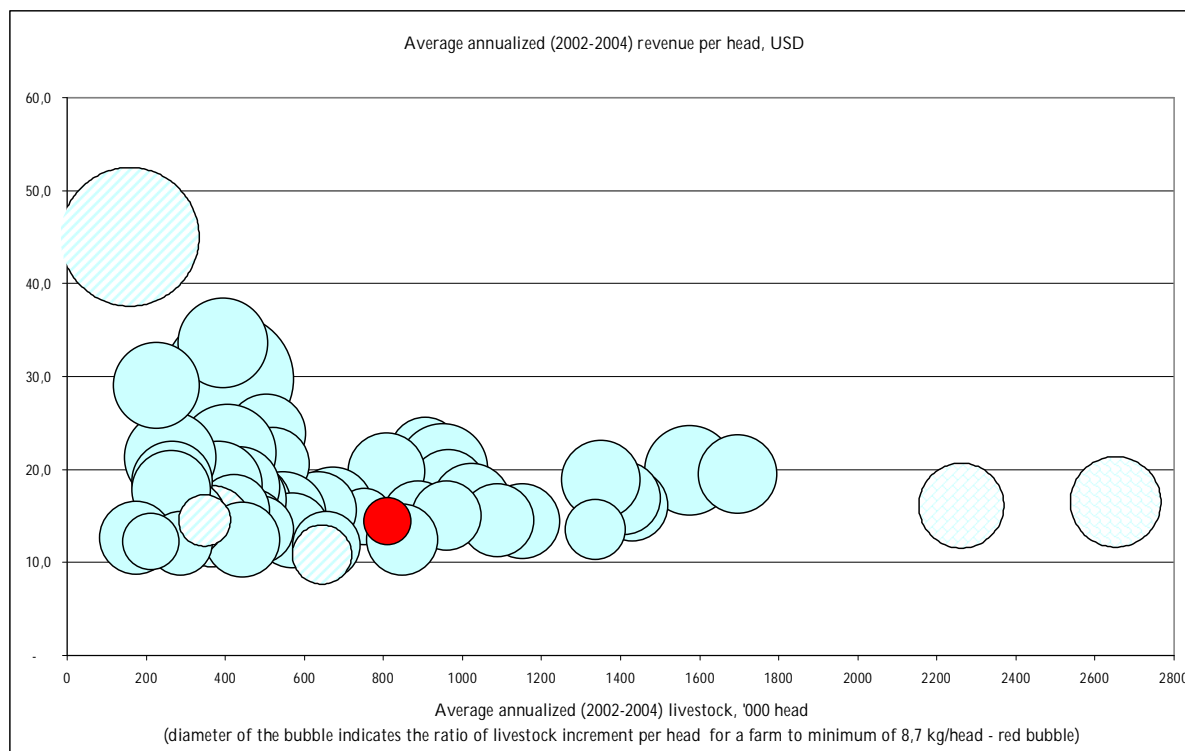


Exhibit 14 depicts the distribution of 55 largest (average annualized data for 2002-2004) poultry farms (Group of 55) by size and efficiency¹³. These 55 largest farms represent in average 52% of the capacity of industrial farms (and 36.6% of overall industry capacity) in terms of gross production. Agrocomplex, Kuban Broiler, Belorechenskaya and Starominskaya from Krasnodar Krai are included in the ranking, and marked with striped circles in Exhibit 14. Kuban Broiler, which maintained a relatively small herd size (159 000 heads), leads the group in terms of revenue per average head kept in the herd (USD 45). One of the factors in achieving such efficiency is highest average annualized liveweight increment at almost 25 kg/head which is three times bigger than the minimal liveweight increment of 8.7 kg/head achieved by a farm included in the ranking. Lomonosovskaya and Severnaya poultry farms (marked with checked circles) from Leningrad oblast with average herd size of 2 652 thousand heads and 2 263 thousand heads, respectively, lead the Group of 55 in terms of average annualized livestock.

In 2004, Russian market consumed 2.3 million tons of poultry meat of which 0.9 million tons were imported. While consumption of poultry meat increased by 27% between 2000 and 2004, the imported poultry meat share in overall consumption declined from 65% to about 40% due to a stable growth in local poultry production and import restrictions. Local poultry production (in liveweight) has grown steadily during last 6 years (see Exhibit 15). The development of the local poultry industry was fueled by private investments in 2003 supported by protective measures undertaken by the Russian Government

¹² Source: Состояние птицеводства

¹³ Source: Крестьянские ведомости, № 43 – 44, 2005

FOOD INDUSTRY VALUE CHAINS IN LENINGRAD OBLAST AND KRASNODAR KRAI	Section 2 Operational Environment
--	---

which implemented import quotas to limit poultry meat imports by 1.05 million tons per year. The Russian Government plans to gradually increase quotas during the next 4 years (from current 1.05 million tons to 1.25 million tons in 2009)¹⁴. About 74% of quotas are allocated to imports from USA, 18% are allocated to imports from EU countries. Another state support measure introduced back in 2003 was an interest rate subsidy on medium-term bank loans provided to poultry producers.

Exhibit 15 Poultry production 2000-2004, '000 tons dwt

	2000	2001	2002	2003	2004
Poultry produced in deadweight	764.12	884.0	953.24	1043.80	1187.0
Annual Growth rate, %		15.6%	7.8%	9.5%	13.7%

Source: MOA, Federal Statistics Agency

Poultry livestock reached 337.1 million heads in 2004 which is still twice lower than the 660 million heads in the year of 1991. Main poultry producing districts are Central (85.2 million heads or 25% of livestock), Volga (79.7 million heads or 23.6% of livestock) and Southern (60.7 million heads or 18% of livestock) Federal Districts. Also the level of processing of poultry products is not very high since 49.7% of poultry is sold as carcass, 30.3% as cut meat or convenience foods, and 20% to be used for further production (i.e. sausages, etc.)¹⁵ Generally, the Russian Federation hosts a developed poultry producing complex. However, Russia falls below major poultry producing countries such as USA and Brazil in terms of poultry livestock per capita: 2.36 heads to compare with 6.58 for USA and 5.20 for Brazil. With the dramatic reduction of the poultry livestock, the industry managed to increase daily weight increment (grams per day) for broiler breeds by almost 80% from 1990 to 2003, as presented in Exhibit 16.

Exhibit 16 Poultry daily weight increment for selected years

	1990	2000	2001	2002	2003
Meat breed daily increment, grams	22	33	35	37	39,5
Percentage change, from 1990 to 2003					79.5%

Source: State Statistics Committee

Forage consumption by poultry industry grows along with the growth of poultry livestock as shown in Exhibit 17. However, the consumption of the concentrated forage depends on the type of farming: over 74% of agricultural enterprises' forage consumption in 2003 was concentrated forage whereas in farms the share was less than 15% (see Exhibit 18). The level of fodder consumption per kilogram of produced meat decreased due to improvements in technology and feed efficiency (see Exhibit 19).

Exhibit 17 Forage consumption by poultry industry for selected years

	2000	2001	2002	2003
Forage consumption, millions of tons	13	13.3	13.5	13.6
Percentage change, from 2000 to 2003				4.62%
Including concentrated forage, millions of tons	12.2	12.4	12.6	12.9
Percentage change, from 2000 to 2003				5.74%

Source: State Statistics Committee

¹⁴ Source: The Government of Russian Federation Decree # 732 as of December 5th, 2005.

¹⁵ Source: Елена Тюрина. Цыпленок тоже хочет жить. Институт аграрного маркетинга, 2004: <http://www.apkmarket.ru/>

FOOD INDUSTRY VALUE CHAINS IN LENINGRAD OBLAST AND KRASNODAR KRAI	Section 2 Operational Environment
--	---

Exhibit 18 Percentage of concentrated forage in total forage consumption

	2002	2003
Agricultural enterprises	70.1%	74.1%
Private backyards	10.1%	9.9%
Farms	14.0%	14.9%

Source: State Statistics Committee

Exhibit 19 Fodder consumption per 1 kg of weight increment

	1990	2000	2001	2002	2003
Fodder consumption per 1 kg of increment (kg of forage units)	3.44	2.70	2.50	2.40	2.30

Source: State Statistics Committee

Poultry consumption reached 16 kilograms per capita in 2004. With medical consumption standard of 25 kilograms, Russia is far behind developed countries. For instance, poultry consumption in the USA is 54 kilograms per capita. Evaluations by Rosptitsoyuz (Poultry Producers Association) indicate that poultry consumption in 2005 was about 17 kilograms per capita, with domestic poultry meat production of 10 kilograms (comparative to 16 and 8.3 in 2004). The Institute of Agrarian Marketing estimates overall meat market volume of the Russian Federation in 2004 at 7.1 million tons and USD 12–15 billion, poultry's share being 34% (increased from 31% in 2003).

Russian Poultry Industry SWOT Analysis

Strengths

- Many stable, modern producing enterprises
- Stable demand on poultry
- Consumption hasn't yet reached its limits
- Domestic consumers prefer chilled (domestically produced) meat
- Modern breeding and feeding technologies in many producing enterprises
- Production is not seasonal
- Government support for the industry (loan interest subsidies)

Weaknesses

- Strong competition in the market both from imports and domestic producers
- Aging buildings will soon require reconstruction, lack of own funds to replace them
- Incomparably cheap imports
- High fuel, energy and fodder prices
- Difficulty to find qualified personnel

Opportunities

- It is planned to further on replace import with domestic production
- Entrance of the Russian Federation to WTO could open new markets for Russian poultry
- Quotas limit imports, thus rising demand on domestic production

Threats

- Avian Flu Pandemic may reduce consumption as well as lead to a sharp decrease in livestock
- Entrance of the Russian Federation to WTO would lead to rising competition due to import restriction cancellation
- Dependence on grain prices

Industry development perspectives

Introduction of quota restrictions on poultry import has slightly softened the competition level, but in Leningrad oblast it still remains quite high. In the near future, a gradual, comparatively small growth of poultry meat production is expected. The reason of such estimates is the fact that several poultry factories (both broiler and egg-producing) underwent serious reconstruction and new production facilities were built on them. Increase in broiler production is also planned within Severnaya poultry plant. Prices on grain have almost equaled those in the international market, and in spite of dependence on domestic grain harvest and outer market grain prices remains, significant price growth in this industry in long-term perspective is hardly probable. This will also benefit poultry production growth. Level of production effectiveness is also high and Leningrad oblast's poultry producers are way ahead of manufacturers from other regions, due to implied Dutch technologies (owner of three of four broiler factories is Dutch Brinki group). Thus, in spite of presence of poultry subsidies in other regions (no such support is provided in Leningrad oblast) region's poultry producers appear competitive.

The influence of Russia's entrance to WTO is one of the most complicated matters for Russian poultry producers. President of the Institute of Agrarian Politics, Aleksey Chela considers that with Russian Federation joining WTO on planned conditions, control and influence by producers and suppliers of poultry from the USA would grow. Rising poultry quotas is also considered. Foreign producers (from the US above all) have great reserves for price reduction, both due to high effectiveness of production and due to export support. The share of competitive poultry factories in Leningrad oblast' is higher than in Russia on average. The possible WTO entrance could cause a decline of poultry production in the Russian Federation, and lead to closing down of medium-sized poultry factories. The unsupplied market segment would inevitably be occupied by profitable domestic and foreign producers. Thus, Leningrad oblast producers would obtain an opportunity to increase poultry deliveries to other regions.

2.2 General Description – Leningrad Oblast

2.2.1 General Overview on Leningrad Oblast

The economic base of Leningrad Oblast due to its geographic location, strategically supports St. Petersburg metropolitan area, which is the second biggest city in the Russian Federation with population of 4.624 million¹⁶, and North-Western transportation hub with a major sea port and transportation corridor from Finland to Central and Southern Russia. The population of Leningrad Oblast is 1.660 million of which 557 000 lives in rural area. There are 29 cities, 38 urban villages and 3 167 villages in the Oblast. The territory of Leningrad oblast is 83 900 sq. km, of which non-agricultural land occupies 90%, including 60% of forests.

Agricultural and food processing economic activities are concentrated around St-Petersburg area, main processing and supply facilities are situated within 100 km distance from St-Petersburg. Among Russian regions Leningrad oblast ranked 22nd in terms of the Gross Regional Product per capita (with 79 756 rubles) in 2004. If oil-producing regions, Republic Sakha (Yakutia) (main diamond extracting area) and Magadan Oblast (gold mining) with very low population density are excluded, Leningrad Oblast would be ranked 13th. Its natural resources, industrial capital base and human capital endowments allow Leningrad oblast to promote foreign trade activity: export and import volume in 2005 amounted 9 billion USD which is 40% higher than in 2004¹⁷. Exports reached 6.8 billion USD and imports 2.2 billion USD. Leningrad Oblast successfully attracts investment in industrial and agricultural capital.

¹⁶ According to 2002 Census

¹⁷ Leningrad Oblast Administration web-site http://lenobl.ru/guide/portrait/gkh_2005

Climate of Leningrad Oblast is mildly continental and relatively damp. Average temperature in July is 22 Celsius, and in January -11 Celsius. Climate conditions are relatively unfavorable for tillage and more suitable for cattle breeding. Since the technology applied by most of the local agricultural producers is laggard compared with the most advanced cases, crop yields depend heavily on weather conditions. For example, rainy and relatively cold summer of 2004 led to overall decline in the volume of crops harvested.

2.2.2 Leningrad Oblast Agricultural Complex

Based only on 0.33% of the country's arable land, regional agricultural sector production (in nominal prices) represents about 2% of the Russian agro-industrial production. The dynamics of the sector is presented in the Exhibit 20 below:

Exhibit 20 Agricultural Sector of Leningrad Oblast Development

	2001	2002	2003	2004	2005 ¹⁸
Annual Agricultural Production Growth (y-on-y, %)	6	9	-8	-2	9.5
Production Value at nominal prices (RUR million)	18 453	22 895	23 279	25 375	30 900
As of Russian Federation agro industrial complex production, %	1.92%	2.22%	2.01%	1.86%	N/A

Source: MOA, 2005

Regional agricultural sector is recovering from a dramatic downfall, caused by changes in economic policy and economic model in the 1990s. Improved market conditions and favorable macroeconomic situation helped to attract investments to upgrade production facilities and to apply modern technology. As of January 1, 2006 there were 217 agricultural companies (about 11% of North-Western Federal District, less than 1% of the Russian Federation), 10 fisheries, 5 fish breeding plants, 6 314 farmers (34% of North-Western Federal District, 2.2% of the Russian Federation), 214 thousand private backyards, 20 processing plants (12 milk processing plants, 6 meat processing plants and 2 canned food plants), 39 servicing companies, 29 veterinarian firms and 18 state seeds inspections.

There are several scientific research and development facilities in St. Petersburg region, that host developed research and science potential with more than 20 scientific bodies. These include Vavilov's Plant Cultivation Research Institute, State Research Institute of Plant Protection, State Poultry Breeding Research Institute, and State Academy of Veterinarian Sciences. Breeding services are provided by 26 breeding farms for milk cows, biotechnological transplant center, 7 breeding pig farms, 4 breeding game plants, 1 breeding fish farm. Main milking breed used in Leningrad Oblast's farms are Holstein (Black-and-white) and Ayrshire.

Agricultural sector of Leningrad Oblast is multifunctional with tillage representing 16% of overall value of agricultural production and cattle, pork and poultry – 74%. Forage, potatoes and vegetables proved to be most profitable for cultivation in Leningrad Oblast. Cropland is mostly used to plant feed seeds, forage and potatoes. Private backyards and farmers also play a significant role in the oblast's regional agricultural activities. However, backyards and farmers mainly contribute to the horticulture and vegetables planting with substantially less impact on dairy and meat (red meat and poultry) production. Dairy and meat production on small-scale operations is generally unprofitable and cultivated only for self-support purposes. Performance of the local agricultural enterprises differs substantially even among farms situated in the same climatic zone with more or less similar agricultural conditions.

¹⁸ www.regnum.ru/news/581492.html

In 2004, private backyards and farmers supplied 12.9% of regional milk which is substantially lower than country's average of 52% (or N-W Federal District (FD) average of 32.4%), indicating that local milk production is concentrated in agricultural companies and farms. The share of private backyards in milk supply in 2005 declined to 12%. The egg production by private backyards in 2004 reported to be lower than 2% of overall regional production due to major egg plants operating in the region. In 2005, private backyards contributed about 1.5% of total egg production. About 10% of meat was produced by private backyards and farms in 2004 which is still lower than country's average of 52% (or N-W FD average of 23%). In 2005 backyards and farms contributed 8% of the total meat production. Backyards and farmers contributed 84% of potatoes and 44% of horticulture collected in 2005. The reliance on the data regarding private backyards production deserves some comments. There is a practice that a local agricultural firm enters into agreement with a private backyard owner under which the private backyard undertakes to maintain certain agricultural activities and to deliver the product back to agricultural company or to sell the product at farm gate (or fleet market). Accuracy in taking into consideration such practices may be questioned.

In Leningrad Oblast, 8 225 sq. km (or 10%) of land is used in agricultural activities, including 6 617 sq. km of arable lands, of which 4 024 sq. km is cropland and 2 189 sq. km pasture. Drainage land constitutes about 3 500 sq. km. Most of the arable land is rainfed, share of irrigated land is low and does not exceed 2% of the total arable land. About 50%¹⁹ of drainage arable land was heavily degraded during last decade and require immediate improvements. Coordinated drainage improvements in Leningrad Oblast were basically cancelled after the collapse of the Soviet Union because of lack of state financing and inability of local agricultural firms to finance drainage at their costs.

Agricultural land sales and zoning changes are regulated by federal and regional legislation. Re-zoning is approved at the federal level. The regional law contains a restrictive covenant which does not allow for any person or legal entity to hold more than 10% of agricultural land within a municipality (it is not clear whether this covenant will survive through courts). However, it is speculated that within Leningrad oblast about 20% of agricultural land is owned by private investors. The legal aspect of ownership is complicated since the transition of agricultural land title during privatization in the 1990s entitled workers of former state agricultural cooperatives with a certain acreage which was not specified physically. With changing legislation, it was not always clear which rules to follow in order create a legitimate set of documents or land title proof.

2.2.2.1 Vyborg District Case Study

Vyborg District was selected for a more detailed case analysis. The district is the closest district of Leningrad Oblast to Finland and it is situated along the border with Finland and the Republic of Karelia on the territory of 735 sq. km. The distance between town of Vyborg, the district capital, and St.Petersburg is 141 km. Out of 194 400 of total population, 66 400 people are living in rural areas. Since rural villages and towns are close to two main industrial districts (St. Peterburg and Vyborg), the young rural population is inclined to find work in the urban area even if they are required to commute 4 hours per day from home to work and back. Such vicinity from megapolis creates pressure in respect of finding and retaining qualified rural workers and personnel by middle and small sized agricultural firms.

There are 458,16 sq. km of arable land in the district of which 241.34 sq. km is used for tillage, and 194.28 sq. km for pasture. 330.24 sq. km of arable land (72%) are improved (drainage) lands. As of beginning of 2005's sowing season, there were 213 tractors in the district compared with 978 tractors in 1991, but because most of them are 10 years and more old, only 150 were operational; out of 32 ploughs available, only 14 were operational. There were only 50% positions of tractor drivers occupied at the

¹⁹ Regional Priority Program on soil fertility improvement for 2002 – 2005, adopted by Leningrad Oblast Administration Law # 5-oz as of February 6th, 2003

beginning of the season with average driver's age of 56 years. Almost all repair workers positions were open; therefore any repair has to be made by the driver which decreases the spare planting time.

There is compiled selected data about the performance of 12 biggest local agricultural firms which are primarily involved in milking and crop production in Exhibit 22. Data relates to the year 2005 or its parts. Most of the farms are involved in food seed and forage cropping, as well as in horticulture but on insignificant level. Total herd of milking cows managed by agricultural firms as of January 1, 2005 was 5 557 heads, which represent 86% of total milking herd in the district. Five farms out of the 12 mentioned manage about 4 000 milking cow heads, which is about 70 percent of total. Milking cows are kept in stales for almost an eight-month period from October until May. Locations of the 12 biggest farms are illustrated on the map below (Exhibit 21).

Exhibit 21 Locations of the 12 biggest agricultural companies in Vyborg district

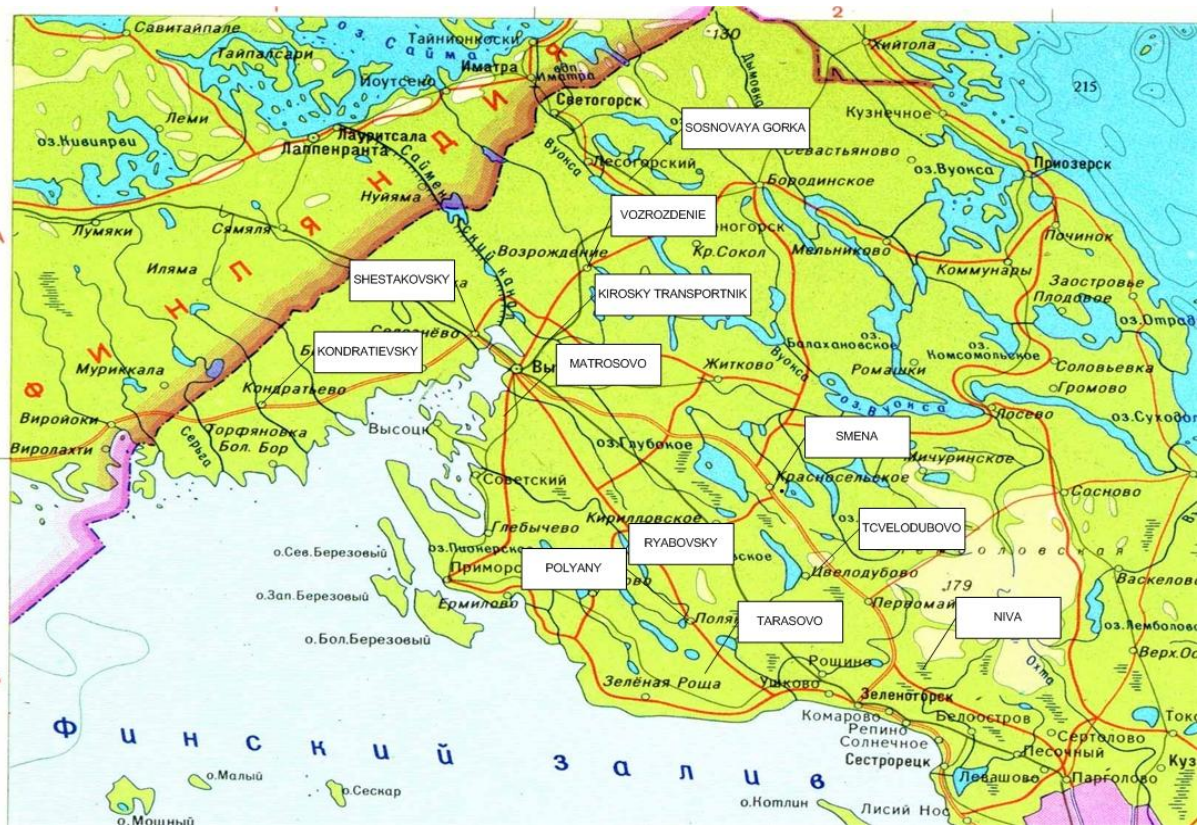


Exhibit 22 Milk production in the 12 biggest agricultural companies in Vyborg district

TABLE 1		HOW VYBORG FARMS COMPETE...			
Farm name	Per Cow Milk Yield kg/day *)	Per Cow Milk yield kg/ 10 mos**)	Per Cow Milk yield kg/ 11 mos***)	Herd size, milking cows heads	Total milk sold, tones ****)
Vozrozdienie	3,8	2 114			
Ryabovskiy	13,6		4 669		
Niva	19,2	5 971		755	4 344
Smena	17,5	5 332		809	4 161
Polyany	14,9	4 396	4 785	752	3 108
Tarasovo	14,4	5 434			
Kirovskiy transportnik		3 208			
Sosnovaya Gorka		4 173	4 589	667	2 617
Shestakovskiy		1 890			
Tscvelodubovo		2 736			
Kondratievskiy					
Matrosovo			4 222	820	2 970
Subtotal for 12 farms				3 803	17 200
Total milk sold (January - October, 2005), tones					22 373
%% of 12 farms					76,9%
District Herd size				5 557	
%% of 12 farms				68,4%	
*) As of November, 2005		***) January-November, 2005			
) January-October, 2005		*) January-October, 2005			

As shown in the Exhibit 22, there are clear laggards and winners among the firms. **Niva Farm** which is closest to St-Petersburg leads the group with 5 970 kg per milking cow per 10 months of 2005 (more than 7 000 kg annualized milk yield) and **Vozrozdienie Farm** is last with only 2 114 kg per milking cow per 10 month (2 540 kg annualized milk yield). Vozrozdienie Farm's prospects with a daily milking yield of 3.8 kg are quite gloomy, since the farm milk yield has continued to decline, the farm has no cow feed stored, and no funds available to purchase feed from third party suppliers. Bad nutrition leads to further decrease in milking yield, and the farm will be forced at some point to seek for local veterinarian permission to send cows to slaughterhouse. This misfortune is more painful since the farm has abundant arable land, and actually was not able to process 950 ha of feed crop tillage. Such situation is not unique in the district. Last year **Triumf farm** was also closed in a wake of bankruptcy. Local administration monitors the dynamics of the herd management and financial conditions of local farms, and usually opposes to slaughtering milking cows, even though the available financial support is quite limited. Thus, despite of support efforts, some farms are forced for closure.

Crop husbandry represents an insignificant activity of the local agricultural firms. During the 2005 season, cereals and pulses were cropped on 139 ha with average yield of 1 090 kg per ha (compared with 1 400 kg per ha in 2004), twice less than the average of Leningradskay oblast. Crops collected by **Matrosovo Farm** on 29 ha were used as animal feed since its poor conditions. The highest yield of 1 600 kg per ha on 30 ha of cropped land was achieved by **Smena Farm**. Therefore, average yield, excluding **Smena Farm** data, can be calculated as 950 kg per ha.

Potatoes were planted on 192 ha with average yield of 11 300 kg per ha. The highest yield was 13 700 kg per ha (Smena Farm on 50 ha) and 12 900 kg per ha (**Niva Farm** on 40 ha). Therefore, laggards were collecting a mere 685 kg per ha on the area of about 100 ha: under local conditions 4 000 kg per ha of seed potato is required and was consumed for planting potato in the beginning of 2005. 40 ha of land was used by agricultural firms to grow vegetables. **Niva farm** collected in average 36 000 kg per ha of white cabbage. 10 ha were planted by that farm. This is the second year when Niva farm grows cabbage, even when there is difficulties in its marketing. Last year, the chief agronomist was planning to sell the cabbage at 4500 rubles per tone (128.5 euro/tone) to middleman at fleet markets. However, the traders were willing to pay only 2000 rubles per tone (57 euro/tone)²⁰, since the abundant supply of cabbage from local private farms. This is the typical example of how the lack of marketing coordination leads to inefficient decisions by agricultural producers and subsequent disorientation in respect of what they should plant and grow in order to secure profitable sales.

Most of the cropping activities in 2005 were devoted to forage husbandry. Forage was planted on more than 13 000 ha (55% of arable land) which allowed to achieve forage stock in equivalent of 1 600 kg of feeding units (as of late October). With average district milking daily yield per cow of 14 kg, it can be assumed that the normal consumption of feed is 0.92 kg of feeding units per 1 kg of produced milk. Therefore, the amount of feed stored should be equivalent of 124 feeding days, or 58% of staling period. It means that either the farms starting March 2006 will be entirely dependent of third party feed supplies, or they have to purchase almost 40% of feed consumed to match their own forage stock during staling period.

The area of land ploughed for 2006's spring sowing is insignificant (217 ha) compared with previous years (1500 ha). In 2005 2.8 tones of organic manure per 1 ha of tillage land were used, fertilizer consumption was 13 kg of active substance per ha. Local farms plan to increase organic manure consumption to 3.8 tones and fertilizer consumption to 43 kg of active substance. However, the ability of local farms to increase manure and fertilizer consumption will heavily depend on available capital.

2.2.2.2 Tillage

Crop husbandry in Leningrad Oblast by arable land used and by value of production is substantially smaller than horticulture, cattle or poultry breeding. Land area harvested by cereals and pulses does not exceed 22 000 ha, or about 5% of total croplands available. Value of cereals' and pulses' production does not exceed 2% of total value of agricultural products. Cereals and pulses collection during last 5 years remained almost at the same level (see Exhibit 23) with average harvest yield of 2 570 kg per hectare which is 540 kg per hectare less than in Finland²¹, and 2 550 kg per ha less than in EU-15²².

Exhibit 23 Cereals and pulses collection in Leningrad Oblast, 2001-2005

	2001	2002	2003	2004	2005
Collection in all types of farming, ' 000 tons	55.80	60.35	37.03	55.19	58.50
Change from 2001 to 2005, %					4.8%

Source: Ministry of Agriculture, 2005

²⁰ Source: Vyborg, # 148 (15236), October 5th, 2004

²¹Source: Earth Trends 2003.

²²Source: http://www.fas.usda.gov/pecad2/highlights/2004/02/europe_0402/index.htm

2.2.2.3 Cattle Breeding and Poultry Farming

Cattle livestock in Leningrad Oblast continues to decline as shown in Exhibit 24. In 2004, the amount of cattle livestock was 17.5% less than in 2001. However, the weight of cattle and poultry delivered for slaughter increased by more than 30% during the last 4 years due to reduction of low productive milk herd and increase in poultry production (see Exhibit 25). Poultry production in Leningrad Oblast is one of the most developed agriculture sectors (see Exhibit 26). Poultry livestock reached 17 174 thousand heads in 2004. Since 1998 the industry shows yearly growth of production of about 30 percent. Private investment in the sector, including investment by Dutch Agro-invest Brinki created the best poultry breeding complex in the Russian Federation. With present market consumption of 76 000 tons, 91% of poultry meat is produced by local enterprises. There are 19 poultry and battery farms in the region. 15 of them are active, one is on reconstruction, and three are currently stopped. Largest broiler producing factories are Lomonosovskaya, Russko-Visotskaya, Roscar, Severnaya, and Voiskovitsi. The largest egg producing factories are Roscar and Sinyavinskaya.

Exhibit 24 Cattle livestock in Leningrad Oblast, 2001-2004

	2001	2002	2003	2004
Cattle livestock, '000 heads	234.2	227.3	208.4	193
Change from 2001 to 2004, %				-17.52%

Source: Ministry of Agriculture, 2005

Exhibit 25 Weight of slaughtered cattle and poultry in Leningrad Oblast, 2001-2004

	2001	2002	2003	2004
Cattle and poultry delivered to slaughterhouse, '000 tons	75.7	8.,7	97.1	98.8
Change from 2001 to 2004, %				30.8%

Source: Ministry of Agriculture, 2005

Exhibit 26 Poultry production in Leningrad Oblast

	1991-1995	1995	2003	2004
Poultry in liveweight delivered for slaughter, '000 tons	57.2	29.6	100.9	116.8

Source: Ministry of Agriculture, 2005

2.2.2.4 Milk Industry

Difficulty in securing feed supply led to decrease in the milking cows heads and subsequent decrease in the gross milk production observed since 2003 (see Exhibit 27). In order to increase efficiency of the herd management, local government supports activities which lead to the improvements in breeding and replacing low productive herd. State financial support to cattle breeding in 2004 was RUR 28 million. The preferences are given to support the introduction of new herd of mainly Holstein (Black-and-white) and Ayrshire breeds. Among other factors influencing effectiveness of milk cattle-breeding is a reduction of a conversion ratio which is the ratio of forage consumption units required to produce 1 unit of fresh milk. Conversion ratio declined by 11% for the period from 2001 to 2004, as shown in *Exhibit 28*.

FOOD INDUSTRY VALUE CHAINS IN LENINGRAD OBLAST AND KRASNODAR KRAI	Section 2 Operational Environment
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Exhibit 27 General milk industry indicators of Leningrad Oblast, 2001-2004.

	2001	2002	2003	2004
Annual yield per milking cow, kg	5207	5482	5750	5916
Change from 2001 to 2004, %				14%
Gross milk production volume in all types of farming, '000 tons	620.2	620.5	603	566.2
Change from 2001 to 2004, %				-9%
Milking cow livestock, '000 heads	112.8	107.2	97.8	91.1
Change from 2001 to 2004, %				-19.37%

Source: Ministry of Agriculture, 2005

Exhibit 28 Milk production conversion ratio in Leningrad Oblast, 2001-2004

	2001	2002	2003	2004
1 quintile of forage per 1 quintile of milk	1.00	0.94	0.87	0.89
Change from 2001 to 2004, %				-11%

Source: Ministry of Agriculture, 2005

Milk producing farms of the region are mostly small to medium-sized, milk cattle livestock ranging from 500 to 2000 heads. There are about 140 milk farms in the region, but half of them experience financial problems, and their production volume is marginal. The largest milk manufacturers of the region are pedigree breeding plant AgroBalt, Rabititsi milk farm, Detskoselskoye milk farm, Rapti milk farm, Opol'ie milk farm.

2.2.2.5 Pig Breeding

Despite the efforts of the state and local government, industrial pig breeding industry in Leningrad oblast almost ceased to exist by losing more than 90% of the herd under management by the year of 2005. Pig breeding remains mostly in private backyards and milking farms which have cheap fodder for hog feeding. The overall market saturation in the region of locally produced pork does not exceed 10 percent; the rest of pork is imported. Raising market pork pricing and government national project to support pork production led to announcement of the several ambitious investment projects.

The largest and most effective pig breeding farms in Leningrad Oblast are Pulkovskii agroholding, Plamyia breeding plant, Gatchninskoye breeding farm (combined with milk farm), Detskoselskoye breeding farm (combined with milk farm), Rapti breeding farm (combined with milk farm), Bor breeding farm, and Ruch'i breeding farm (combined with milk farm).

Exhibit 29 Pork production indicators in Leningrad Oblast, 2001-2004

	2001	2002	2003	2004
Pig livestock, '000 heads	118.9	137.6	94.3	50.2
Pig livestock change from 2001 to 2004, %				-58.2%
Pig average weight increment, grams per day	179	249	260	280
Change from 2001 to 2004, %				56.42%

Source: Ministry of Agriculture, 2005

2.2.2.6 Flour-milling and Feed-milling industry

The production by the 7 major mixed fodder producers in Leningrad oblast are presented in Exhibit 30. The biggest poultry factories have created their own facilities for fodder preparation in order to reduce costs. With overall decrease of pig herd, forage production has also declined, as can be seen in Exhibit 31.

FOOD INDUSTRY VALUE CHAINS IN LENINGRAD OBLAST AND KRASNODAR KRAI	Section 2 Operational Environment
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Exhibit 30 Production of major mixed fodder producers in Leningrad Oblast

Company Name	1999		2003		2004	
	'000 tons	%	'000 tons	%	'000 tons	%
Volosovskii	103.4	19	69.3	10	82.0	12
Volkhovskii	16.2	3	43.2	6	824	12
Viborgskii	20.6	4	25.3	4	31.7	4
Gatchinskii	107.8	20	164.4	24	166.1	24
Luzhskii	37.6	7	86.3	13	77.4	11
Tosnenskii	99.5	18	97.1	14	81.9	12
Kirov plant	167.5	30	200.3	29	183	26
Total fodder plants	553	100	686	100	704.5	100
Roscar broiler and battery factory	47.8		91.6		104.3	
Severnaya broiler factory	66.3		167.5		197.1	
Total	667.1		945.1		1005.9	

Exhibit 31 Forage production in Leningrad Oblast, 2001-2004

	2001	2002	2003	2004
Forage roots production, '000 tons	5	14.2	0.4	0.3
Change from 2001 to 2004, %				-94%
Haylage production, '000 tons	285.2	159.9	176.1	89.1
Change from 2001 to 2004, %				-68.8%
Hay production, '000 tons	178.8	140.3	111.2	105.5
Change from 2001 to 2004, %				-40.9%

Source: Ministry of Agriculture, 2005

2.2.2.7 Processing Industry

There are 120 major processing plants and more than 1000 minor foodstuff processors in the region. Production worth of 107.9 billion rubles was produced by food and processing industry in 2004. In order to facilitate coordination within processing industry, 10 biggest milk processing plants initiated a creation of the Association of Milk Processing Companies in 2005. Milk processing plants are also a driving force behind integration and renovation of local milk farms into modern agricultural companies in order to secure fluid milk supply.

The largest processing plants in the Leningrad region are Gatchinski milk processing plant (NIVA GMZ), Luzhski milk processing plant (part of Lactis group), Petmol milk processing plant in St. Petersburg, Slancevski milk processing plant (part of Alcor group), and Econord meat processing plant.

2.2.2.8 Regional Agricultural Policy

Regional Agricultural Policy is aimed to support the development of the effective and competitive agricultural industry. Governmental support in Leningrad Oblast includes:

- Direct financing of the infrastructure development from federal and regional funds
- Leasing activity subsidizing
- Providing state guarantees to investors

There are several other main programs which are funded by federal and regional budgets and aimed at supporting economic development in general as well as the agricultural (rural) sector. Such programs include **Scientific and innovational development of Leningrad oblast in 2004-2006** (RUR 61.8 million) aimed at creating a system to promote innovative technologies, including technologies in agriculture and food processing sectors; **Rural Social Development program for 2003 – 2010** (RUR 2 325.1 million) to provide financial support to rural infrastructure development to in order to increase the standard of living and to mitigate migration of the rural population to urbanized areas; **Agricultural Land Fertility Improvement for 2003 – 2005** (RUR 811 million) was aimed to provide support for the reconstruction of the irrigation system and to improve fertility of the arable land soils in general.

2.3 General Description – Krasnodar Krai

2.3.1 General Overview on Krasnodar Krai

Krasnodar Krai was granted a name *Granary of Russia* already a long time ago. The region hosts one of Russia's most developed agricultural complexes, processing and manufacturing industries and significant natural resources, including oil and gas. Krasnodar Krai is also the best known resort area of the country. As of year 2005, the population of Krasnodar Krai is 5.106 million, including 2.376 million people leaving in rural areas.

The region is situated in the south-western part of North Caucasus, the 45th parallel divides it into two approximately even parts. In the north east Krasnodar Krai borders Rostov territory, to the east Stavropolsky territory, to the south it borders Georgia. To the north west and south west Krasnodar is washed by Azov and Black seas. Overall length of the region's borders is 1540 kilometers, 800 out of them are land borders, and 740 km sea borders. Krasnodarski Krai spreads 327 kilometers from north to the south and 360 kilometers from west to east.

Krasnodar Krai is situated in the northern plains zone and divided by Kuban' river (length 906km) into two parts: to northern plains that cover 2/3 of the territory, and to the southern mountain and foothill part. The climate on most of the territory is mildly continental, and on the Black Sea coastal area subtropical. Average January temperature in the plains is -3.5 C, in July 22-24 C. Yearly amount of precipitation is 400-600 mm in the plains and up to 3250 mm in the mountains. The forest types include both broadleaf (oak , beech, Tuapse-Sochi district mixed Colchidean), and conifer (fur tree, silver fur). Higher in the mountains alpine and subalpine meadows occupy most of the territory.

The territory is characterized by a great variety of soil types. From south to north, the types of soils are: meadow black, mountain forest podzol, pre-caucasian forest-steppe, and black earth. In Kuban' river fluxes and delta, the soils are of the following types: meadow, swamp-meadow, and swamp. The most fertile soils are situated in the plains – the so called west pre-caucasian black earth. The plains zone is plown up in 80% of its territory. Overall, the territory of the Krasnodar region is 83.6 thousand sq.km (or 8.360 thousand hectares), with 4.515 thousand hectares assigned for arable lands.

Exhibit 32 Agricultural land distribution in Krasnodar Krai (in '000 hectares)

	2004
Ploughed fields	3982.0
Longstanding plantations	132.7
Feeding grounds	395.6

Source: Ministry of Agriculture, 2005

FOOD INDUSTRY VALUE CHAINS IN LENINGRAD OBLAST AND KRASNODAR KRAI	Section 2 Operational Environment
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2.3.2 Krasnodar Krai Agro Industrial Complex

With the overall Russian Gross Domestic Product of 11.582 billion rubles in 2004, Krasnodar Krai was included in the 10 regions with the largest gross regional product (GRP). In 2004, its GRP reached 335.1 billion rubles, which was 22% more than in the previous year. Agricultural production constitutes 45% of the region's GRP (compared with the average 11% for Russia). The value of Krasnodar Krai's agricultural production is presented in the Exhibit 33.

Exhibit 33 Value of agricultural production in Krasnodar Krai, 2001-2004.

	2001	2002	2003	2004
Value of production, million rubles	62 197	66 199	71 449	103 142
Percent of the overall production of the Russian Federation's agro industrial complex	6.47%	6.43%	6.18%	7.54%

Source: Ministry of Agriculture, 2005

By its geographical, climatic and economic conditions, the territory is divided into several agricultural zones. Northern and central zones' farming specializes in grain production (mostly wheat), sugar beet, sunflower seeds and soy beans. Rice prevails in the western zone, viticulture and winemaking in Anapa-Taman' district, vegetable growing, potatoes growing, fruit growing in southern foothill part, tea and citrus growing in Black sea coastal areas. With 2.3% of Russia's agricultural lands, Krasnodar region produces more than 7% of gross agricultural production of the country: 10% of grain, 75% of rice, 40% of corn, 27% of sugar beet, 20% of sunflower seeds, more than 50% of vintage, 100% of tea leaves, subtropical and citrus cultures.

There are about 700 major agricultural production manufacturers which produce 70% of the agricultural output, with the other 30% provided by more than 18 000 agricultural farms and 800 000 private backyards. In average, an agricultural production manufacturer owns 10 000 or more hectares of land, and employs from 600 to 1000 people. Territory's plant cultivation specializes in about 100 cultivars. However, priority is given to grain production. Cereal cultures occupy more than half of ploughed fields (more than 2 million hectares).

2.3.2.1 Plant Cultivation

Plant cultivation industry, after a slight slowdown in 2003, continues the trend of the past 4 years, and shows constant growth. Continuous growth in this sector is determined by high profitability, favorable conditions for plant growing, administrative and legislative support and little competition from imports (see Exhibit 34).

Exhibit 34 Plants cultivation collection by all types of farming in Krasnodar Krai, 2001-2004

(<i>'000 tons</i>)	2001	2002	2003	2004
Cereals and pulses	7981.46	8481.16	5221.13	8165.78
Change from 2001 to 2004, %				2.31%
Potato	729.13	701.99	606.33	811.01
Change from 2001 to 2004, %				11.23%
Horticulture	453.73	444.76	413.14	493.45
Change from 2001 to 2004, %				8.76%
Sunflower seeds	468.66	732.44	798.01	822.48
Change from 2001 to 2004, %				75.6%
Sugar Beets	3047.73	4202.29	3380.07	5445.35
Change from 2001 to 2004, %				55.97%

Source: Ministry of Agriculture, 2005

2.3.2.2 Cattle Breeding and Poultry Farming.

Krasnodar Krai hosts one of the most developed cattle breeding complexes in the country with more than 700 000 cattle heads. However, overall herd size declined by more than 20% over the last 5 years (see *Exhibit 35*) mainly due to the unfavorable economic conditions. Improving pricing, terms-of-trade, and protectionist measures undertaken by federal government in the end of 2005 and in beginning of 2006 led to positive changes, and now there is an overall belief that the negative trend has ended.

Exhibit 35 Cattle breeding and poultry farming in Krasnodar Krai, 2001-2004

	2001	2002	2003	2004
Cattle livestock, '000 heads	930.1	921.5	848.7	736.3
Change from 2001 to 2004, %				-20.83%
Cattle and poultry delivered to slaughterhouse, '000 tons dwt	260.3	286.9	304.8	300.9
Change from 2001 to 2004, %				15.61%

Source: Ministry of Agriculture, 2005

Poultry livestock in Krasnodar Krai reached 9 017 thousand heads and continues to grow. Volume of poultry delivered for slaughter rises every year. Poultry farming produced more than 70 000 tons of poultry meat and 850 million eggs worth of RUR 3.2 billion (USD 114 million) in 2005. The largest share of poultry meat and eggs produced in the region are manufactured within large vertically integrated agricultural holdings combining plant and grain production, preparation of mixed fodders and final processing into feed. Bank capital is available to the integrated poultry producers (more than RUR 500 million of loans were extended to poultry producers for modernization in 2004). Krasnodar Krai also hosts several large pedigree breeding poultry farms that provide local producers with domestically grown crossbreeds with high production potential. Major broiler plants in the region include Belorechenskaya, Kubanski' broiler, Starominskaya, and Kuban of Agrocomplex holding.

2.3.2.3 Milk Production

Krasnodar Krai once hosted a well-developed milking industry. However, relatively low milking yields led to unaffordable economic conditions and managing milking cows became unprofitable. Large milk producing farms seized to exist and milking cow herd decrease to 190 000 in 2005. The few surviving milk producing farms are forced to work in disadvantageous conditions – prices are dictated by traders and processors, giving very little opportunities for milk producers.

Processing capacity utilization by local milk supplies does not exceed 45%. Milk processors are forced to buy milk from private backyards, or use imported dry milk. Because of the forces selection process and implemented efforts to increase farm productivity, fluid milk production has been stable for the last 4 years as shown in *Exhibit 36*. Milk conversion ratio increased more that 30% in the last 4 years due to the lack of concentrated forage in daily consumption (see *Exhibit 37*). The largest milk manufacturers of the region are Agrocomplex, Pobeda, Chapaev pedigree breeding complex, and Colos breeding farm.

Exhibit 36 Milk production by all types of farming in Krasnodar Krai, 2001-2004

	2001	2002	2003	2004
Annual milking yield, kg	3518	3765	3800	3887
Change from 2001 to 2004, %				10.48%
Fluid milk production, '000 tons	1361.7	1417.4	141.,7	1340.7
Change from 2001 to 2004, %				-1.54%

Source: Ministry of Agriculture, 2005

FOOD INDUSTRY VALUE CHAINS IN LENINGRAD OBLAST AND KRASNODAR KRAI	Section 2 Operational Environment
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Exhibit 37 Milk conversion ratio in Krasnodar Krai, 2001-2004

	2001	2002	2003	2004
1 quintile of forage per 1 quintile of milk	1	1.35	1.33	1.3
Change from 2001 to 2004, %				30%

Source: Ministry of Agriculture, 2005

2.3.2.4 Pig Breeding

Krasnodar Krai has a traditionally strong pig breeding complex compared with the other regions of the Southern Federal District. However, during the last 6 years, the local pig breeding sector has experienced a negative trend of losing livestock because of obsolete production and feeding technologies, low profitability, slaughter of pedigree herd, high fuel and fodder prices and lack of available combined fodders. In order to overcome the negative trend, local producers have started to implement new technologies in pig management and feeding since 2003. The new technologies are mainly related to “Danish”. The promotion of the cooperation between local and Danish producers is supported by Regional Administration. Initial results proved to be promising: for example, whereas the average daily pig weight increment in Krasnodar Krai is about 290 grams, the most advanced farms achieve 600 grams weight increment per day.

General changes in pricing, import restrictions, favorable terms of trade support the development of the industry in general, and the available financing subsidized by the Russian and Regional Governments support active investments in the sector announced by integrated agricultural holdings. Major pig producing enterprises with more than 10 000 heads under management are Vasyurinski Company, Chapaev pedigree breeding farm, Pobeda pig breeding farm, Agrocomplex pig breeding farm, Znamya Lenina

Exhibit 38 Pork production indicators in Krasnodar Krai, 2001-2004

	2001	2002	2003	2004
Pig livestock, '000 heads	1633.2	1785.5	1504.7	1149.1
Change from 2001 to 2004, %				-29.64%
Pig average weight increment, grams per day	261	282	258	297
Change from 2001 to 2004, %				13.79%

Source: Ministry of Agriculture, 2005

2.3.2.5 Flour-milling and Feed-milling Industry

In 2004, there were 20 major and medium-sized companies operated in flour-milling and feed-milling in Krasnodar Krai. The operating flour-milling and feed-mill companies have decreased from 24 in 2002. Currently, the local cattle, poultry and pig agricultural firms are experiencing a lack of concentrated forage. Although silage storage level shows increase, it is still lower than the 2002 level. In all other types of fodder, all indicators show decrease in comparison with the year of 2001, and stay at the lowest level during the past 4 years.

Exhibit 39 Fodder production in '000 tons in Krasnodar Krai, 2001-2004

	2001	2002	2003	2004
Forage roots production	233	296.6	202.4	194.5
Change from 2001 to 2004, %				-16.52%
Haylage production	1118.7	1060.6	598.7	823.9
Change from 2001 to 2004, %				-26.36%
Hay production	503.6	515.6	396.4	446
Change from 2001 to 2004, %				-11.45%
Silage production	2496.2	3110.9	2450.2	2791.2
Change from 2001 to 2004, %				11.81%
Roughage and rich fodders production	1267.4	1387.9	1021.7	1180.1
Change from 2001 to 2004, %				-6.83%

Source: Ministry of Agriculture, 2005

2.3.2.6 Processing Industry

At present there are 250 large and medium sized agricultural product processing plants operating in Krasnodar Krai. In 2003, food product production reached 44 billion rubles (€1.2 billion), which is 22% more than in 2002. The most impressive growth in 2003 was observed in fat-and-oil industry (34%), brewing (19%), and meat industry (11%). Dairy, sugar, and vegetable processing industries developed at increased rates. Canned dairy (33.9%), canned meat (9.2%), canned vegetable (5%) and vegetable oil (42%) production all grew significantly. Major food processing plants in the region include Kubarus milk processing plant, Kropotkinski milk processing plant, and Tihoretski meat processing plant. The installed capacity exceeds available local supplies, and processing enterprises are forced to rely on imports.

2.3.2.7 Regional Agricultural Policy

Regional Agricultural Policy of the Krasnodar Krai is aimed to support the development of the effective and competitive agricultural industry. Governmental support in Krasnodar Krai includes:

- Direct financing of the investment projects (mainly infrastructure development and facility modernization) from federal and regional budgets
- Providing subsidies for cattle breeding, tillage
- Leasing activity subsidizing
- Providing state guarantees to investors

2.3.3 Investments into Krasnodar Krai's Agriculture and Agricultural Industry

Krasnodar Krai received investments into fixed assets worth RUR 74.8 billion (USD 2.6 billion) in 2004. This represent almost 3% of a total direct investments in Russia. Krasnodar Krai is ranked 6th among the Russian regions and is number one among regions of the Southern Federal District. Investments in 2005 reached USD 3.2 billion with USD 292 million of foreign investments²³. In 2004, foreign investment totaled USD 230 and originated from 27 countries, mainly from Kazakhstan (41.3%), Holland (14.6%), Cyprus (12.9%), Germany (6.5%), France (5.4%), UK (3.7%) and USA (2.7%).

²³ Source: http://www.interfax.ru/r/B/povoljie/224.html?menu=35&id_issue=11438957

2.3.3.1 Foreign Investment Promotion

Krasnodar Krai Administration actively promotes Kuban's investment potential via international expositions and business forums. The region participates in main international exhibitions, including International Green Week and MIRIM, and it hosts annual Kuban Economic Forum. Krasnodar Krai also cooperates with trade missions in European (Germany, Italy, France, Austria) and Far Eastern (China, Korea) countries. Such forums have proved to be an effective investment marketing tool.

The value of investment projects presented via such international venues exceeded USD 2 billion. For example, during Kuban's 2005 Economic Forum, Krasnodar Krai Administration signed 5 investment agreements with Dresdner Kulanlagenbau GmbH that were worth USD 72 million, including USD 12 million for revitalizing the region's horticulture. During the same forum, Krasnodar Krai Administration also signed an investment agreement with Ust'-Labinsky Agricultural Corporation worth USD 25 million. The investment agreement is aimed at production of effective agricultural machinery, investments into pedigree breeding plant "Kuban", modernization of Ust'-Labinsky wheat processing plant and Korensvskii grain-elevator.

2.3.3.2 Local Investment Legislation

Krasnodar Krai Administration specified investments in agriculture and agricultural industry as a top priority for providing state support and benefits²⁴. Regional authorities had adopted a legislative basis which promotes investments into regional economy: **Tax Credit Law**²⁵ allows an investor to postpone regional profit tax payments for 1 to 5 years under a special agreement with the local authorities. **Resolution of the Head of the Krasnodar Krai Administration on elimination of administrative barriers for investment activities**²⁶ introduced "one window" approach for obtaining necessary permissions and approvals for site selection and acquisition. The Resolution also limits approval time by 5 days for local authorities, and recommends regional representatives of federal authorities to limit approval time by 15 days.

On State Promotion of Investments Law²⁷ specifies measures to support investments into the regional economy and development. These measures include certain tax benefits extended to investors, leasing state property on favorable terms to investor, investment project guarantees, budget loans, and partial interest payment reimbursement. **State Guarantees and State Budget Funds Appropriation for Investment Project Financing Law**²⁸ allows the Krasnodar Krai Administration and Assembly to guarantee the principal amount of a loan extended by a creditor to an owner of an investment project realized within Krasnodar Krai. The owner of an investment project should be registered in Krasnodar Krai. Since the amount of guarantees allowed to be issued by the region's authorities is limited by Federal Budget Code, the guarantees are provided via a tender. The same law allows the Krasnodar Krai Administration either to loan state funds to a project, or to take equity position in the project.

²⁴ Krasnodar Krai social and economic development program for 2003-2008

²⁵ Law of Krasnodar Krai on Tax Credit, # 280-KZ as of July 4th, 2000

²⁶ Resolution of the Head of the Krasnodar Krai Administration on elimination of administrative barriers for investment activities, # 715 as of July 28th, 2003

²⁷ Law of Krasnodar Krai on State Promotion of Investments, # 731-KZ as of July 2nd, 2004

²⁸ Law of Krasnodar Krai on Krasnodarsky Krai State guarantees and appropriation of state budget funds for investment project financing, # 844-KZ as of March 29, 2005.

2.3.3.3 Main Investment Projects in Agriculture

Some of the most important investment projects in the Krasnodar Krai's agribusiness are briefly presented below:

- **Bonduelle SCA** commenced operations of a new vegetable processing and canning plant nearby Krasnodar at September 15th, 2004, with first phase capacity of 25.000 t/yr and full capacity to be utilized by 2008 of 60.000 t/yr. Bonduelle packages sweet corn and garden peas. The project consists of a vegetable processing and canning plant owned and operated by Bonduelle, and an adjacent state-of-the-art can production facility in the town of Timoshevsk, 70 km from Krasnodar, that is owned and operated by Crown Food France. Bonduelle company started to build a new food processing plant in 2003. The overall project cost was about €41 million, and the new can production plant costs €20 million. In addition, Bonduelle is investing an additional €10 million in its raw materials base, which now occupies 515 ha. The rest of the required supplies are coming from local contract growers working for Bonduelle. The European Bank for Reconstruction and Development (EBRD) provided €15 million of investment for the new processing facility (for which it will take a 35% stake in the project) with Bonduelle SCA providing the remainder (giving it a 65% stake).
- **Wimm-Bill'-Dann (WBD)**, one of the major milk and juice processing companies in Russia, has owned Timashevsk milk processing plant since 2000. Investments in the plant and suppliers totaled USD 58 millions²⁹. WBD leases 23.000 ha of agricultural land in Pavlovsk and Leningradsky provinces and manages 3.000 milking cow herd with total daily yield of 30 t. The leasing of land and milking herd was necessary to secure quality milk supply: Timashevsk milk processing plant processes 500 t of milk per day and 6% of that is supplied by farms owned by WBD.
- **Bazovii Element**, owned by a well-known tycoon Oleg Deripaska, who is a native of Krasnodar Krai, controls 49% share of Ust' Labinskii grain elevator, Ust' Labinskii wheat processing and bakery plant (investments in 2005 totaled 2.1 million USD), and 6 plant growing enterprises with tillage area of 38 000 hectares.
- **Ochakovo brewery** signed an agreement with Krasnodar Krai Administration in 1998, to build a new brewery in Krasnodar and to invest in local agribusiness: Ochakovo brewery purchased *Pobeda* viticulture company. Investments in reconstruction of Pobeda distillery and its vineyards exceeded 600 million rubles (approx USD 20 million).
- **Cherkizovskii meat processing company** acquired Labinski meat processing plant in 2000. Investments total USD 10 million.
- **Baltimore food processing company** acquired Kalininsky canned food factory in Kalininsky province in 2000 with current monthly capacity of 5.000 t. Its investments in Krasnodar Krai totaled USD 15 million. The company plans to invest further USD 7 million in a new seed oil extracting plant to reduce costs of making mayonnaise³⁰. In order to secure supplies, Baltimore develops special programs with local farmers, for instance such that provide vegetable seeds, and technology.
- **CECAB**, French canned food producer, initially intended to purchase Krymsky canned food plant that used to be the biggest canning factory in Europe. However, uncertainties about the financial position of Krymsky canned factory and the depletion of the agricultural land used for growing vegetables to secure supply to Krymsky, led CECAB to cancel the deal and agree to build a new plant for €35 million. The operations are planned to begin in 2007 as the firm is currently completing a land acquisition.
- **CLAAS**, a German agricultural machinery company, opened a factory to assemble harvesters in Krasnodar in May 2005. The plant capacity is 1.000 harvesters per year. Initial investments totaled €20 million.
- **Russkoe Pole** (Russian Field) has been involved in importing vegetables since the beginning of 1990s. The company is the owner of "Dyadya Vanya"(Uncle Vanya) brand. Russkoe Pole acquired assets of Albash canning factory (Kanevsky province of Krasnodar Krai) for RUR 6 million (about €170.000) in 2004. Investments into reconstruction totaled €4 million, and further €6 million are

²⁹ Source: Финансовый директор, № 3 (2006)

³⁰ Source: <http://www.agro-business.ru/archive/2005/11/1314.html>

FOOD INDUSTRY VALUE CHAINS IN LENINGRAD OBLAST AND KRASNODAR KRAI	Section 2 Operational Environment
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scheduled for investments in 2006-2007. In 2004, the company leased 400 ha of crop land to grow vegetables for its canning operations.

- **Solnesnye Producty** (Sun Products), an investment group from Saratov, acquired Armavir seed oil processing plant in 2003. The company purchases sunflower seeds from local producers and plans to develop a contracting system to grow sunflower in the future.
- **Sucden** from France has invested up to USD 5 million in Tbiliski sugar-been factory in Tbiliski province, and in Uspensky agro-industrial complex in Beloglinsky province during 2001-2002.

One of the main factors which impede investments into Krasnodar Krai agriculture related businesses is the fact that most of the agricultural farms, agricultural product processing plants and factories have decaying infrastructure, obsolete equipment and technology, and are plagued by enormous debts. Therefore, the investors often consider less risky to conduct greenfield projects rather than to acquire existing facilities.

2.4 Summary on the Operational Environment

The Russian Federal Government employs a wide variety of measures to support the agricultural sector, with special aims on the development of legislative, economic and social conditions. The priority national project “Agro industrial complex development” has two major components: (1) accelerated cattle breeding industry development through subsidized loans for reconstruction and development, (2) facilitation of small farming development through subsidies. The state agricultural policy is generally protectionist in nature, with the aim of fostering local value chain development.

The Russian **dairy** market is primarily supplied by Russian milk production, while the general supply is and can be ineffectively managed. The major share of milk is sold fresh and unprocessed in the urban centers. The collection of fresh milk from small private farms is costly and leads to the decrease in the quality of milk as a raw material for processing. Dairy farms lack adequate storage facilities, have no bargaining power. Thus the farms in close proximity with the processing facilities have improved bargaining conditions as they are able to get a better price for the higher quality milk. Milk production declined from year 2003 to 2004 due to the poor feeding base. Average milk cow productivity grew, but mainly due to the process of slaughtering the low productivity cows. The 100 largest dairy farms in Russia represent 6.6% of gross production by industrial farms. 17 and 20 of these farms are located in the Leningrad oblast and Krasnodar krai respectively. Farms in Leningrad oblast are smaller in herd size, while the average revenue per milking cow head is USD 1000 higher in comparison to Krasnodar krai.

The major **strengths** for the Russian milk industry are as follows: strong position in the consumer market, logistics costs for milk segment the huge market and protect from competition, processed milk and dairy product distribution channels have a high market penetration, high entry barriers protect the industry (required capital investments high, excess capacity) The major **weaknesses** are as follows: focus on herd size not productivity, lack of ecological protection facilities, low value-added level in products, inability to pass increasing costs to prices, low availability of skilled labour. The major **opportunities** include the following: demand for new value-added products, general demand increase due to economic growth. The **threats** include: animal disease problems, deteriorating production technology

The major **future issues** for Russian dairy, includes the WTO membership. The consequent competitive pressures may facilitate investment into modern milk production and warehousing technology, which allows the satisfaction of demands for value-added products, and improves the quality of milk in general. This trend is further strengthened by the growing purchasing power of the consumer. On the negative side, the likely price convergence process in for example the energy sector will raise the costs of production in Russia, while the producer prices can hardly be increased. As a consequence the production profitability may fall. Productivity and efficiency must be increased in all areas of activity.

The Russian **pork** industry is currently just recovering from the dramatic transition shock of the early 1990s. Protective quotas have contributed to the growth of the domestic production, with large investments initiated lately. Vertical upstream integration is a major trend that enables the processors to maintain quality and reduce the effects of raising producer prices. The investments may however lead to overcapacity in the next 5 years. The top 100 pork farms in Russia represent 45% of the gross production of industrial farms. 33 of these are in Krasnodar krai with an average herd size of 7000 heads and wide range of revenue per head (USD 518.5 – 115.8). Leningrad pork industry is relatively underdeveloped.

The **strengths** of the Russian pork industry include: under saturated market, stable demand; while **weaknesses** encompass the following: inability to pass the rising costs to final customers, inefficient breeding and feeding technologies, inability to compete with imports, weak animal health and low share of productive breeds. **Opportunities** include the import substitution, and increase in greater value-added products; while **threats** the entrance to WTO as quota lifting cause and the increasing dependence from grain price dynamics.

The Russian **poultry** industry has been able to maintain the stable level of livestock during the past 5 years. On the other hand the industry is plagued by aging fixed assets, obsolete technology and equipment, crosses which require genetic improvements, weak financial conditions of poultry farms and negative ecological impact of poultry manure on agricultural land and environment. 55 largest poultry farms represent in average 52% of the capacity of industrial farms in terms of gross production. 4 farms from Krasnodar krai are included in the ranking. Kuban Broiler which maintained a relatively small herd size (159 000 heads) leads the group in terms of revenue per average head kept in the herd (USD 45). 2 farms from Leningrad oblast with average herd size of some 2458 heads lead the top 55 farms in terms of average annualized livestock. Major trends include stable growth of local production and protective import restrictions. Generally it can be concluded that Russia maintains a developed poultry producing complex; productivity achievements have been reached through improvements in technology and feed efficiency.

The **strengths** of the Russian poultry industry include the following: stable and modern producing enterprises, stable demand on poultry, further consumption potential, domestic consumers prefer chilled (domestically produced) meat, modern breeding and feeding technologies in many producing enterprises, government support of the industry. **Weaknesses** encompass the following: competition in the market both from imports and domestic producers, aging production infrastructure, incomparably cheap imports, high costs, difficulty to find qualified personnel. **Opportunities** include the further plan to replace import with domestic production, entrance of the Russian Federation to WTO could open new markets for Russian poultry, and quotas limit imports, thus rising demand on domestic production. **Threats** on the other hand comprise of the following issues: avian flu pandemic may reduce consumption as well as lead to a sharp decrease in livestock, entrance of the Russian Federation to WTO would lead to rising competition due to import restriction cancellation, dependence on grain prices.

Major **future trends** include the gradual strengthening of poultry production in the Leningrad oblast especially, due to investments into new production technology and infrastructure. In terms of efficiency the Leningrad area is ahead of the other Russian producers. Although the grain prices have been on the rise, the significant price growth in the poultry industry in long-term is low in probability. With the WTO membership the domestic producers would be subject to increasing influence from the major imports from USA. Consequently exits from the industry by domestic producers would become a reality.

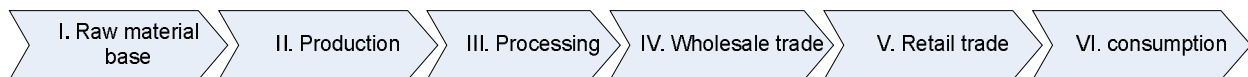
3 VALUE NETWORK ANALYSIS

3.1 Leningrad Oblast

3.1.1 Milk and Dairy Value Chain in Leningrad Oblast

Currently, fluid milk has the biggest share in dairy consumption in the Russian Federation, with annual consumption of 23 kg per capita. Second position is occupied by fermented milk products (8.6 kg), third by cheese (3.3 kg), fourth by butter (2.4). Kefir (a traditional Russian fermented milk product) is the most traded product (by volume). Demand on yoghurts and milk-juice cocktails have grown by 40-50%, a trend that follows European ones in dairy consumption. Among traditional milk product categories double-digits growth rate is experienced in cheese and cheese spread categories (15%) and cottage cheese (10-12% annually)³¹. By a way of example, the milk and dairy production in Leningrad region is represented by full production and logistics cycle (Exhibit 40).

Exhibit 40 Genralised Agribusiness Value Chain



A specific feature of the milk network chain is a distinct separation of technological processes between production and processing. Milk production is concentrated in Leningrad oblast, while main processing capacities are located in St. Petersburg. Such division is determined by convenience of production proximity to the main consumer market (St. Petersburg), which allows producers to improve logistics effectiveness. Yet another specific feature of regional milk production is the specialization on whole milk product manufacturing, and the absence of value-added processing facilities (e.g. cheese, dried milk). This is determined by two major factors: historically no enterprises conducting value-added processing were represented in the region, local raw material base allows to meet only whole milk processing industry demand, and no “extra” milk that could be supplied for value-added processing is produced by local dairy farms.

3.1.1.1 Consumption and Market Saturation

Final consumers of milk and dairy production are HoReCa enterprises, schools, hospitals, and the population of St. Petersburg in general. The commodity distribution network (intermediary buyers) includes wholesale, small-scale wholesale and retail trade organizations. Milk and dairy product consumption in Leningrad oblast’ is growing faster than production. Production volume per capita is getting close to standard of consumption. Milk consumption makes up 70% of standard. A historical fact is that in 1990, the population of Leningrad oblast’ consumed 440 kilograms per capita of milk and dairy products. This level of consumption compared with the current one reflects milk and dairy market development potential. Such high consumption volume can be partially explained by the following reason: in the beginning of the 90s milk was one of the few inexpensive and available food product as source of nutrition effectively substituting expensive and scarce meat and butter (products with restricted supply). Currently milk consumption growth is restrained by high prices on milk and dairy products and the improved availability of other types of food. Milk consumption in St. Petersburg made up 240 kg per

³¹ Source: www.mcx.ru

capita in 2002³². By some estimates, milk consumption reached 280 kg in 2003 and 295 kg in 2004 (in terms of whole milk equivalent).

Thus, the market volume can be evaluated at 1 867 thousand tons in whole milk taking into consideration the region's constant population (4.661 million people in St. Petersburg and 1.669 million people in Leningrad Oblast, not including non-registered migrants and visitors) and consumption volume per capita (295 litres). Major share of consumption (1350 thousand tons) is represented by dairy products (*Exhibit 41*). Evaluating market capacity via medicinal consumption standards indicates that the market can consume 2 500 thousand tons of milk and dairy products in whole milk equivalent. Market capacity in 1990 made up 2 860 thousand tons.

Exhibit 41 Break-up of Leningrad Oblast milk and dairy consumption

Milk and dairy consumption, in milk equivalent 1 867 Thousand tons	Milk production 517 Thousand tons
	Dairy production, milk equivalent 1 350 Thousand tons

3.1.1.2 Supply Conditions

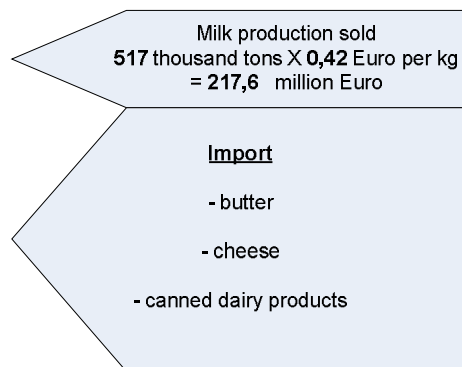
Milk and dairy market of the region is quite saturated. At the moment, distribution network allows to fully meet market demand. A specific feature of milk and dairy product supply is that whole milk production is manufactured by local producers and value-added milk processed products are imported from other regions or countries (see Exhibit 42). In 2004, all whole milk production was supplied by local producers. In the same time, a wide assortment of imported production, both from other regions of Russia and abroad is represented in the market of St. Petersburg. For example, the Lenta retail chain cooperates exclusively with a Voronezh milk processing plant, which promotes milk and milk products under the brand of Vkustoneevo (a Tasty Village). Overall, for the past five years domestic production of milk and dairy products exceeded actual consumption³³.

Milk industry development is not limited by regional market capacity, but by lack of investment into dairy farming and a long investment repayment period (5-7 years). In terms of this study, only local milk value chain production will be examined. Geographical borders of milk and dairy market are determined considering the fact that majority of suppliers (wholesale traders and producers) and consumers are concentrated on the territory of St. Petersburg. Thus, this market can be considered St. Petersburg's regional market.

³² Source: Регионы России. Основные характеристики субъектов РФ. 2002. Стат. сб./Госкомстат России. – М., 2002.-620 с.

³³ Source: www.mcx.ru

Exhibit 42 Supply of dairy products to Leningrad oblast



3.1.1.3 Distribution Conditions

Milk and dairy market is open for international trade (degree of openness, evaluated as share of import in total market volume, exceeds 20% of the market). In contrary, the market is not free for inter-regional trade (degree of openness, evaluated as share of import from other regions of Russia in total market volume, is less than 20%). The retail trade industry has experienced significant changes for the past five years. Thus, in 2001 a major role in retail trade structure was played by marketplaces, but lately the growth of medium class consumer segment created serious opportunities for supermarket and hypermarket format development. Favorable market conditions made retail trade attractive for investment. Chain formation became one of most active development trends. Its growth made up 38% in 2004. The highest development rates are encountered in specialized foodstuff retail chains, producing enterprises' own retail outlet networks, and mini-market outlets. Today retail chain turnover makes up a little less than 12% of total retail turnover (for instance in the European countries and USA this index makes up 90%), but by the Department of State Trade Inspection evaluation, in 5 years this index will grow to 16-20%. So far, main share of products is sold via small retail shops (50%), including approximately 1/3 sold at marketplaces.

Total income of milk industry of Leningrad region, taking into consideration only domestic production exceeded 217 million Euro in 2004 (Exhibit 44). One of significant factors of final retail price formation is seasonality in raw milk production in Russia. Generally the largest volumes of milk are manufactured by agricultural enterprises in summertime, while production volume falls significantly in winter. This results in very low prices on raw milk at farm gates in summer and higher prices in winter. In Leningrad oblast, however, volumes of raw milk produced by agricultural enterprises per season are about the same, thus prices stay approximately at the same level. Nevertheless, judging by price dynamics, price growth is experienced in Leningrad oblast during New Year holidays and in summer. This summer-increase in average market prices is evoked by change in milk and dairy product consumption structure. During New Year holidays consumption growth is experienced in more expensive dairy products segment, such as butter, cheese. Furthermore, average prices on these products trend to grow, as consumption of more expensive sorts of these products is experienced. In summer time growth of expensive milk products consumption is evoked by increase of ceremonies and increase of spendings on food during recreational trips.

In general, it is necessary to point out the stability of prices on milk and dairy production, in spite of the constant raw material price growth. Main reason for the stability is the growth of competition. Mainly competition is experienced between producers of Leningrad oblast and Moskov oblast.

Exhibit 43 Retail price change dynamics on packaged milk with fat content of 2.5-3.2%

	1.1.2004	1.3.2004	1.6.2004	1.9.2004	1.12.2004
Average retail price (litre/RUR)	16.7	13.6	16.5	14.1	13.58
%-change to the preceding period		81%	121%	85%	96%
%-change to the initial period		81%	99%	84%	81%

Source: research and information bulletin of Leningrad oblast' Agro Industrial Complex Committee "АгроПилот"

Share of imports in the market of St. Petersburg made up 78% in cheese market and 93% in butter market in 2003. Largest cheese and butter imports were conducted by Valio St. Petersburg joint stock company (more than 40% of both market segments). Main cheese producer on the territory of St. Petersburg is Petmol joint stock company. In the butter market, main producers are Baltiskoye moloko joint stock company and agricultural enterprises located within St.Petersburg's administrative borders.

Inter-regional whole milk production trade is conducted via direct supply by producers from other regions of the Russian Federation into Leningrad oblast retail trade network. In the structure of milk foodstuff turnover, major share is contributed by whole milk and dietetic products such us kefir, yoghurt, and others. A significantly smaller share falls to deep processed products: cottage cheese, sour cream. It is necessary to point out that in the value chain structure these products are given converted into whole milk for the reasons of measurement unification (Exhibit 44).

Exhibit 44 Structure of sold milk products

Milk production sold 517 thousand tons X 0,42 Euro per kg = 217,6 million Euro	Milk and dietetic products 398 thousand tons X 0,36 Euro per kg = 143,4 million Euro
	Dairy 119 thousand tons X 0,55 Euro per kg. = 65,4 million Euro
	Other

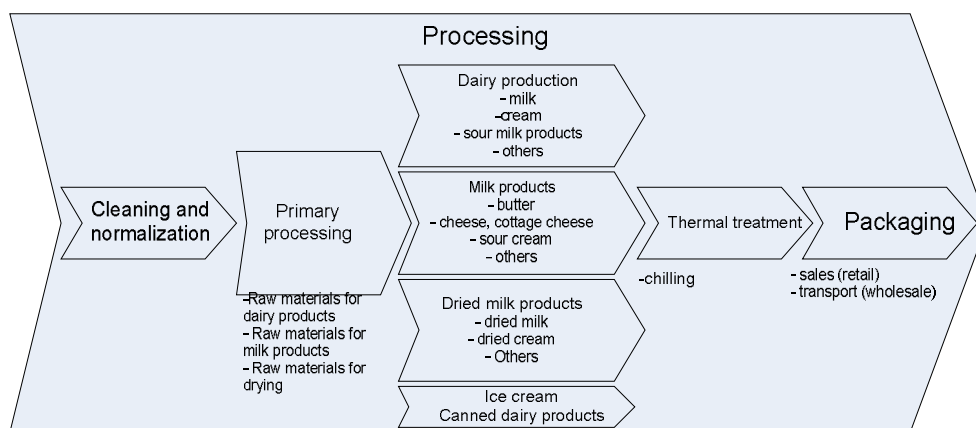
Consumers' preferences are changing from traditional dairy products towards dairy production with additional added value. Markets of enriched dairy production (such as yoghurts, milk mixes, cottage cheese desserts) are considered the most promising. Substitution of old packaging by more comfortable, modern and attractive for the consumer types is underway. A customers trend of choosing milk production not by the producer, but by brand notoriety is being experienced. Role of advertising and marketing activities performed by the companies grows in order to achieve competitive advantages in the market of North-Western region. Active growth of retail chains for the past two years influences significantly the structure of sales³⁴.

³⁴ Source: Annual Report Petmol 2004

3.1.1.4 Processing Conditions

The general processes evident in the processing industry is depicted in Exhibit 45. At present, Leningrad oblast' hosts 25 milk processing plants and 2 milk industrial complexes. 5 of these process more than 30 tons of milk daily. All in all, 26 enterprises are registered in Leningrad oblast committee on agricultural complex list, out of which 6 have suspended activities. Average amount of industry's employees make up about 1.7 thousand people. Average monthly wages is in the level of 6 062 rubles. Domestic milk and dairy production growth rate continues to decline which indicates market is saturated and average profitability rate is going down. Milk market of St.Petersburg is declining in terms of physical volumes, but shows growth in monetary terms. Raw material basis is not developed enough. Currently a shortage of raw milk for manufacturing of high quality production is experienced.

Exhibit 45 General processes in dairy industry



About 600 thousand tons of milk is produced in Leningrad oblast. Increase of processing is restrained by lack of quality raw materials. In 2004, 97% of milk was processed into whole milk production and only 3% into dried milk and cheeses. Revenues of processing enterprises are estimated at €200 million in 2004. The number of main milk and dairy producers stays constant since 1998. Main suppliers of dairy products are Petmol JSC, milk processing plant Piskarevskii JSC, milk processing company Baltiskoye Moloko JSC. Milk and dairy products are also supplied by agricultural companies situated within the limits of St.Petersburg's administrative borders (Detskosl'skoye, Shushari, Prigorodnii). The structure of St. Petersburg's milk market as shared by major milk processing companies is presented below (Exhibit 46):

Exhibit 46 The structure of St. Petersburg's milk market 2004

Petmol	35%
Piskarevsky	22%
Wimm-Bill-Dann	8%
Danone	4%
Ernann, Voronezhski and others	16%
Local Regional Plants (Leningrad Oblast and North-Western Federal District)	15%

Source: Petmol Annual Report, 2004

Main competitors of St. Petersburg's milk processing companies are milk manufacturing plants from Leningrad oblast (Gatchinskii, Lughskii, Priozerskii, Vsevologhskii) and milk manufactures from Vologod, Moskov, Pskov, and Novgorod regions, which possess a relatively high share of St. Petersburg dairy market. Main milk processors of St.Petersburg have underutilized capacity. Capacity utilization varies from 10 to 80%. From the analysis of the above listed market players' economic activities, it

becomes clear that judging by whole milk production, the highest profitability rate (13%) with the lowest sales price (11.99 RUR per liter) was achieved by “Piskarevskii” joint stock company. In the same time “Baltiskoye moloko” joint stock company shows negative profitability level (-9.8%) with sales price set at 15.47 rubles per liter. “Petmol” joint stock company showed 7% of profitability with sales price set at 12.49 rubles per liter. The producer prices for 2004 are depicted in the Exhibit 47.

Exhibit 47 Producers’ prices set on packaged milk, fat content 2.5-3.2% in 2004

	1.1.2004	1.3.2004	1.6.2004	1.9.2004	1.12.2004
Packaged milk	14.9	13	13.5	11.2	11.46
%-change to the preceding period		87%	104%	83%	102%
%-change to the initial period		87%	91%	75%	77%

Source: research and information bulletin of Leningrad oblast’ Agro Industrial Complex Committee "АгроПилот"

The region experiences a severe lack of raw milk, which obliges processors to conduct a serious competition for milk producers. In terms of such competition, both contractual (purchasing of producing enterprises, buying out a share in producing enterprise, supply agreement signing), and financial measures (control of purchasing prices, lease of equipment) are undertaken. Technological performance indicators with individual milk producers are quite high against a background of average Russian agro-companies, and can be compared to Western producers, unlike in the pork and beef industries. Technical renovation of the industry is underway, and the amount of enterprises not only producing, but also processing milk is growing. The last fact allows producers to receive more profit via sales of production with greater added value. For instance, general director of “Prinevskoye” joint stock company’ considers that milk production profitability can be raised by 50% via sales of production processed within the producing enterprise. Another good example is project carried out by “PZ Lesnoye” joint stock company (processing 30 tons of milk daily). At this moment this enterprise processes about 10 to 20 tons per day, under own trademark “Molochnoye ozero”.

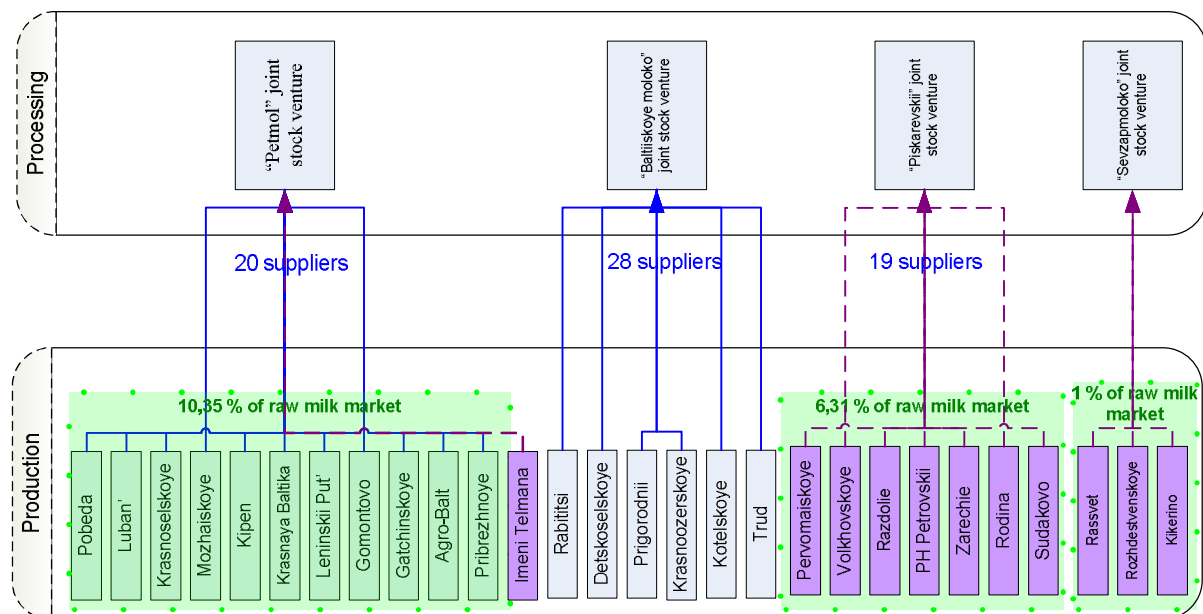
The majority of enterprises producing raw milk are situated in Gatchinskii, Lughskii, and Volosovskii districts of Leningrad oblast. Shares of some of enterprises in milk supply of the region (not taking import) make up from 0.1% to 2.2%. In dairy and milk product production industry a high level of integration between producers and processors is encountered. The following features are characteristic of such integration: formation of large “milk” holdings, consolidating producing and processing capacities. The largest “milk holdings” are registered in the city of St. Petersburg, so research of the industry can be conducted only by taking into consideration both the city of St. Petersburg and Leningrad oblast. In vertically integrated structures, processors play the key role. They last firmly control milk producers (either purchase them or sign strict supply agreements, or put them into financial dependence). It is obvious that the practice of purchasing raw material producers is economically sound and allows to lower production costs, thus increasing profitability. In the market of St.Petersburg all signs of vertical integration are present. Purchasing shares of producing enterprises, allows the processing enterprises to acquire a constant source of raw materials.

The share of milk produced by agricultural enterprises affiliated with processors (according to paragraph 4 of the law “On competition”) grows. Nevertheless, this share does not exceed 30% of market volume so far (in 2003 this share did not exceed 20%). The following integration examples are available (see also Exhibit 48):

- Interprom Limited possessing: “Pobeda” joint stock company, “Krasnoselskoye” joint stock company, “Luban” joint stock company, “Moghaiskoye” joint stock company, “Kipen” joint stock company, “Krasnaya Baltika pedigree breeding plant” joint stock company, “Leninskii put’ pedigree breeding plant” joint stock company, “Gomontovo” joint stock company, “Gatchinskoye” joint stock company, “Agro-balt” joint stock company, and “Pribrezhnoye” joint stock company. This vertically integrated enterprise controls 10.35% of the whole milk market.

- “Piskarevskii” joint stock company possessing: “Opolie” joint stock company, “PH Pervomaiskoye” joint stock company, “Volkhovskoye” joint stock company, “Razdolie” joint stock company, “PH Petrovskii” joint stock company, “Zarechie” joint stock company, “Rodina” joint stock company, “Sudakovo” joint stock company. Controls 6.31 % of whole milk market.
- “Petmol” joint stock company possessing: “Plemhoz imeni Telmana” joint stock company. Controls 3% of whole milk market.
- "Sevzapoloko" joint stock company forms an affiliated group with “Rozhdestvenskoye” joint stock company, “Kikerino” joint stock company, “PZ Rassvet” joint stock company. Controls about 1% of whole milk market.
- "Petroholod" joint stock company, possessing controlling stock of “Ushaki” joint stock company and “Mar’ino” joint stock company. Controls 0.94% of whole milk market.

Exhibit 48 Vertically integrated milk holdings in Leningrad oblast



Brief descriptions of the major holding companies are provided below. The holding **“Petmol” joint stock company** (St. Petersburg, Moskovskii proyezd, 65, www.petmol.ru) possesses two milk processing plants: Krasnoselskii milk processing plant and Lomonosovskii milk processing plant. Production profitability makes up 7% with sales price set at 12.49 rubles per liter. Volume of production by this enterprise by the end of 2004 made up 147 thousand tons of milk. For comparison, in 2003 “Petmol” joint stock company manufactured 145 thousand tons of milk. Production capacities of the enterprise allow processing of 550 tons of raw milk during each shift, but currently only 400 tons are processed. Average volumes of raw material supply to the enterprise make up 350-400 tons of milk daily. Out of this volume 85% is high quality raw materials. 86% of production is sold within St.Petersburg and Leningrad oblast. Besides milk processing industrial complex in St.Petersburg, “Petmol” joint stock company possesses a producing department in “Parnas” industrial zone; Kronshtadtskii, Lomonosovskii and Krasnoselskii milk processing plants. Assortment of the enterprise includes 130 positions. Main trademarks are: “Petmol”, “Prostokvashino”, “Doctor Petmol”, “Tema” and “Petmolino”. 92% of company’s stocks belong to Unimilk Ltd., 1.2% to the administration of St.Petersburg, and rest of the stocks are shared by 650 stockholders. Established in 1992, the enterprise is subject to equipment modernization and renovation; so far 55 million USD has been spent for the purpose. Raw material purchasing is conducted in 20 agricultural enterprises. “Petmol” joint stock company possesses direct control of only one agricultural

enterprise: “Plemhoz imeni Telmana” joint stock company. Major raw material supplier is a volunteer association of milk producers including the following enterprises:

- joint stock company “Pobeda”
- joint stock company “Kipen”
- joint stock company “Mozhaiskoye”
- joint stock company “Krasnoselskoye”
- joint stock company “Luban”
- joint stock company “Leninskii put”

The holding **“Baltiiskoye moloko” joint stock company**, a part of Wimm-Bill-Dann holding (St. Petersburg, Parnas Industrial Zone, 6th Verhnii Pereulok, 1), has production profitability -9.8% with sales price set at 15.47 rubles per liter. Raw material supply of the enterprise was conducted by 28 agricultural producers, including producers from Carelia region and Pskov oblast. “Baltiiskoye moloko” joint stock company conducts raw material purchasing within independent organizations including the following producers in Leningrad oblast:

- “Rabititsi”
- “Detskoselskoye”
- “Prigorodnii”
- “Krasnozerno”
- “Kotelskoye”
- “Trud”

“Piskarevskii” joint stock company (St.Petersburg, Lapinskii proyezd, 3) judging by whole milk production, experiences the highest profitability rate (13%) with the lowest sales price (11.99 rubles per liter). Raw material supply of the enterprise was conducted by 19 agricultural producers. “Piskarevskii” joint stock company purchases raw materials within controlled Leningrad oblast’ agricultural producers, possessing stocks shares within 8 milk producing enterprises. Main milk suppliers are the following:

- Pervomaiskoye
- Opolie
- Krasnoarmeiskoye
- Petrovskii

Joint stock company «Sevzapmoloko» (St.Petersburg, Viborgskaya naberezhnaya,43). Processing is performed by 2 milk processing plants: Volosovskii and Sosnovskii. Most of the milk supply is conducted by owned enterprises, stock shares of which were bought in 2001.

- Pedigree breeding plant “Rascvet” joint stock company
- Pedigree breeding plant “Rozhdestveno” joint stock company
- Pedigree breeding plant “Kikerino” joint stock company

The shares of the major processors of the total production volume are estimated in Exhibit 49. Petmol and Piskarevskii hold major shares, with the well-known domestic Wimm-Bill-Dann and foreign Danone left with lesser one-digit shares.

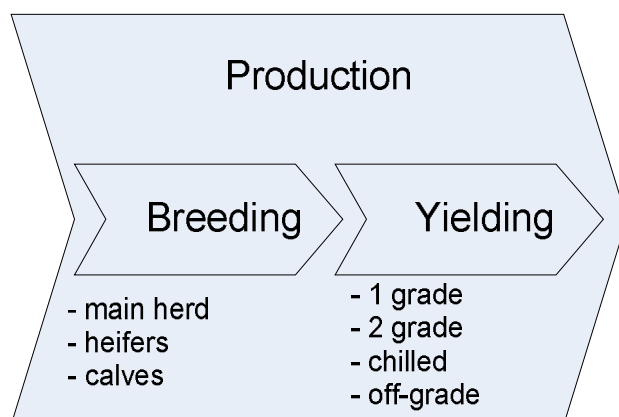
Exhibit 49 %-shares of processors in total milk and dairy production volume

	2000	2001	2002	2003	3Q2004
Petmol JSC	45%	43%	40%	40%	40%
Piskarevskii JSC	30%	30%	30%	28%	28%
Wimm-Bill-Dann	4%	5%	6%	8%	9%
Danone	1%	3%	4%	5%	5%
Plants of Leningradskaya oblast (Tikhvin, Gatchina, Sosnovo, Volosovo, Yanino, Kingissepp, Priozersk, Luga)	14%	13%	10%	7%	6%
Enterprises of the North-West (Novgorod, Petrozavodsk, Velikie Luki)	5%	5%	7%	7%	7%
Others	1%	1%	3%	5%	5%

3.1.1.5 Production Conditions

The two basic processes of milk production are the process of growing main milk herd and the process of keeping, feeding and milking (Exhibit 50). Historically, these two processes are done within the same enterprises.

Exhibit 50 Basic processes of milk production



The base of Leningrad oblast milk production are agricultural enterprises, accounting for more than 85% of total milk manufacturing. It is necessary to mention that no large-scale producing enterprises are left in the region. Most of producers possess a milking herd of no more than 500-1000 heads. Produced milk is purchased by processing plants located at reasonable distance. Raw milk transportation distance does not exceed 100-150 kilometers. 17 agricultural companies of Leningrad oblast are included in a ranking of 100 biggest milking farms in Russia (based on average data for 2002-2004 years) (see

Exhibit 51). These farms manage about 18 000 heads of milking cows which represent more than 30% of milking cow herds in Leningrad oblast, and more than 50% cows milked in regional industrial agricultural farms.

FOOD INDUSTRY VALUE CHAINS IN LENINGRAD OBLAST AND KRASNODAR KRAI	Section 3 Value Network Analysis
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Exhibit 51 Largest milk producing farms from Leningrad oblast included in Russian top 100

<i>District</i>	<i>Company</i>	<i>Annual average herd size (heads)</i>
Kingisepsky	Breeding Plant AgroBalt	1311
Kingisepsky	Closed Joint Stock Company Opolie	1546
Priozersk	Closed Joint Stock Company Breeding Plant Grazdansk	1064
Priozersk	Closed Joint Stock Company Breeding Plant Petrovsky	992
Volosovsky	Closed Joint Stock Company Gomontovo	1173
Volosovsky	Closed Joint Stock Company Breeding Plant Rabititsy	904
Slancevsky	Closed Joint Stock Company Rodina	1107
Kingisepsky	Closed Joint Stock Company Kotelskoe	1296
Gatchinsky	Agricultural cooperative Breeding Plant Plamya	931
Volhovskiy	Closed Joint Stock Company Zarechie	1165
Gatchinsky	Closed Joint Stock Company Niva-1	872
Vsevolgskiy	Closed Joint Stock Company Breeding Plant Prinevskoe	898
Volosovsky	Closed Joint Stock Company Breeding Plant Leninsky Put'	846
Priozersky	Closed Joint Stock Company Breeding Plant Pervomayskoe	1129
Volkhovskiy	Breeding Plant Novoladozskiy	922
Volkovskiy	Closed Joint Stock Company Volkhovskoe	996
Volosovsky	Closed Joint Stock Company Trud	981

Source: "100 largest and most effective milking farms" rating

Biggest milking farms of Leningrad oblast operate in average with smaller herd size (1067 heads) to compare with other farms included into the ranking (1761 heads). This tendency can probably be explained by limited amount of forage which could be collected and stored on-site. Annual yield per milking cow is however higher, 7 097 kg per year, than average of other farms, 5 612 kg per year. Highly developed genetic selection work allows the region to maintain the first place in annual milk yields per cow, which vary within the limits of 8-8.5 tons. (See Appendix 2) Main milk producers of Leningrad oblast' are agricultural enterprises. During the period of economic crisis in early 90s, the increase in production volume within private farms was encountered, caused by dramatic decline of production in agricultural enterprises (almost threefold from 952 thousand tons to 354.3 thousand tons). Milk gross production volume started to grow after the economic crisis in August 1998. This increase of production was tied to growth in milking cow productivity: for the past 15 years it grew by 2.3 times. Such qualitative achievements are not met within other industries of the region's agriculture and the Russian Federation. (See Appendix 3) Parallel to growth of milk cow productivity, total cow livestock is decreasing. By experts' evaluations, the main cause of milk cow livestock decrease is active genetic improvement work in Leningrad region, which implies low the rejection of animals with low productivity, and eventually slaughter. (See Appendix 4) But, despite of increase in milk livestock productivity, and growth of yields per cow, decrease in livestock in 2003-2004 went ahead of productivity growth, which led to decrease in gross production volume (Exhibit 52).

Exhibit 52 General milk production indicators (%-change in period)

	<i>1990-2001</i>	<i>2001-2002</i>	<i>2002-2003</i>	<i>2003-2004</i>
Gross yield	-49%	2%	-1%	-4%
Livestock	-56%	19%	-35%	-56%
Productivity	19%	5%	6%	3%

Source: Petrostat state statistics committee report "Производство животноводческой продукции в хозяйствах Ленинградской области в 2004 году, статистический сборник"

Main achievement in milking herd quality improvement was appearance of highly productive “Leningrad” Black Pied breed, risen by region’s selectioners. At this moment this breed meets great demand, as Leningrad oblast’ and other region’s farms undergo renovation processes and breed substitution. To make such investments repay, highly productive cattle is needed with annual production volume not less than 7500 kilograms per cow. Some investors consider everything should be imported, from technologies to cattle. Currently, pedigree heifers (foreign economic activity code 0102101000) are imported to Russia free of charge. VAT is privileged and set at 10%. Prices in domestic and foreign markets are about the same. For example, a pedigree heifer from Holland costs 1 260 Euro in St.Petersburg, and “Leningrad” breed heifer about 1 500 dollars. After entrance to WTO, Russian Federation’s import fee on livestock will be set at 12%, with gradual decrease of this fee afterwards. It is most likely, that soon potential purchasers will be confident in quality of “Leningrad” breed, and by the time when import fees will be minimized or cancelled, “Leningrad” will become popular among domestic producers.

Creation of vertically integrated structures allows to introduce common pricing policies in favor of a particular milk processing plant, i.e. set dumping purchase prices on milk, which is very beneficial for this particular milk processing plant and disadvantageous for other milk producers. In spite of permanent activities by milk processors aimed at gaining control over milk producers, the market still remains competitive. Milk producers, due to high level of competition for raw materials between milk processors, still have an opportunity to choose from different clients. Main criteria of choosing a milk purchaser, is price factor. Such situation favors price growth. It is necessary to mention, that despite stable growth, a disparity exists in terms of pricing on raw milk. Price growth goes in accordance with inflation level. The 1st sort milk purchasing dynamics is presented in Exhibit 53.

Exhibit 53 1st sort milk purchasing prices dynamics

	1.1.2004	1.3.2004	1.6.2004	1.9.2004	1.12.2004
1 st sort milk (RUR/litre)	5.99	6.16	6.52	6.56	6.69
%-change to preceding period		103%	106%	101%	102%
%-change to initial period		103%	109%	110%	112%

Source: research and information bulletin of Leningrad oblast’ Agro Industrial Complex Committee "АгроПилот"

Main share of milk produced in agricultural enterprises of Leningrad oblast is sent for processing to milk processing factories, and only a small part is left for consumption by producers. Agricultural producers’ gross income from milk sales made up 88 million Euro, by the end of 2004. Total produced milk cost, including producers’ own consumption made up more than €100 million (Exhibit 54).

Exhibit 54 Division of primary production output of milk yielded in Leningrad oblast

<p>Delivered for processing</p> <p>488 Thousand tons X 0,18 Euro per kg = 87,8 Million Euro</p>	<p>Yielded in all types of agricultural producers</p> <p>603 Thousand tons X 0,17 Euro per kg = 102,0 Million Euro</p>
Local consumption	

FOOD INDUSTRY VALUE CHAINS IN LENINGRAD OBLAST AND KRASNODAR KRAI	Section 3 Value Network Analysis
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3.1.1.6 Fodder Base Conditions

Fodder base in terms of value chain formation is one of key sections. Agricultural producers conduct activities in the conditions of risky farming, and fodder provision is one of factors straining milk cattle breeding development. Short summer and lack of adequate grazing grounds result in prevailing of stall-housing of cattle. Land resource limitations encourage agricultural producers to manufacture more nutritious concentrated forage. Currently, fodder base of Leningrad region is balanced between concentrated and rich fodders. (See Appendix 5) In most cases main share of fodders is manufactured within agricultural producers themselves. This is mostly true for rough and rich fodders. Combined forage production is conducted mostly within combined fodder factories of the region. Ready for consumption combined fodder price varies about EUR 110 per ton. Prices for combined fodders are presented in Exhibit 55.

Exhibit 55 Prices on combined fodders, in Leningrad oblast and St. Petersburg (Dec 2004)

<i>Combined fodder producers</i>	<i>Minimal price (RUR/ton)</i>	<i>Maximum price (RUR/ton)</i>
Kirov	3324	6283
Lughskii	2800	5400
Gatchinskii	3640	4400
Volosovskii	3463	6589
Tosnenskii	3500	6500
Volkhovskii	3700	4000
Viborgskii	4204	5100

Source: Petrostat State Statistics Committee Report "Производство животноводческой продукции в хозяйствах Ленинградской области в 2004 году"

3.1.1.7 Enterprise Overview

There are 140 milk producing enterprises registered in Leningrad oblast, about half of them being in complicated financial state, and manufacturing little or no milk. The largest producers, with larger milk yields and gross production are the following:

- **"Rabititsi"** joint stock company, Rabititsi village, 188413, Volosovskii district.
- **"Detskoselskoye"** joint stock company, St. Petersburg, Pushkin, Kolpinskoye shosse, 2
- **"Rapti"** joint stock company, Lughskii district, Imeni Dzerzhinskogo village, Centralnaya ulitsa, 5
- **"Niva-GMZ"** joint stock company, Leningrad oblast, city of Gatchina
- **"Opolie"**, pedigree breeding plant, Leningrad oblast, Kingisseppski district, Opolie village.
- **"Agro-Balt"** pedigree breeding plant" joint stock company, Leningrad oblast, Kingisseppski district, Bolshaya Pustomerzha village.
- **"Grazhdanskii"** pedigree breeding plant", Priozerskii district, Zaporozhskoye village, Sovetskaya street, 14
- **"PZ "Razdolie"** joint stock company, Leningrad oblast', Priozerskii district, Razdolie village.
- **"Petrovskii"** pedigree breeding plant, Leningrad oblast', Priozerskii district, Petrovskoye village
- **"PH Krasnoarmeiskoye"** joint stock company, Priozerskii district, city of Priozersk, Gromovo village

In the following chapters, overviews are provided on the major enterprises.

Case: Agro-Balt

Agro-Balt pedigree breeding plant joint stock company was established in 1950, when out of 11 small farms collective farm Imeni Lenina was formed, which in its turn was reorganized into Kolos collective farm in 1976. In 1988 administration of the enterprise decided to consolidate with supervising organization Baltic Naval steamship line. Thus Kolos collective farm was reorganized into consolidated agricultural enterprise Agro-Balt. In 1992, Agro-Balt was converted into a joint stock company. In June 2002, the enterprise was renamed into Agro-Balt pedigree breeding plant. Agro-Balt received the status of a pedigree breeding enterprise for successes in modern breeding technology introduction and in breeding of Black Pied Leningrad breed. In 1997 the enterprise became winner of all-Russia competition for the best indicators in pedigree breeding development, and received pedigree breeding plant status in 2001. (See Appendix 6) Agro-Balt pedigree breeding plant JSC is a modern industrial type enterprise applying modern technologies, labor management, administration, high production standards. Main lines of activity are cattle breeding and plant growing. The general information on the company is provided in the Exhibit 56.

Exhibit 56 Agro-Balt general information

<i>Indicator</i>	<i>2004</i>	<i>1Q2005</i>
Production volume, tons	11177	2889
Average annual production cost, rubles per kilogram	7.36	8.57
Value of revenue from production sales, thousand rubles	75710	20717
Share in percent of total revenues	66.4	62.2
Gross profit, thousand rubles	14613	7956
Average number of employees	443	415

Source: Agro-Balt JSC annual issuer's report

The enterprise is aimed at selling its production in the territory of St. Petersburg and Leningrad oblast on a contractual basis with its customers. The leader of St. Petersburg milk processing industry is Petmol milk processing plant, accounting for about 60% of milk market (industrial production) and most of the milk produced by Agro-Balt pedigree breeding plant (62%) is supplied to this processing giant. The company operates employing western-European milk production technologies. This has made significant yield growth possible. In 2003 each of the 1311 milk cows produced 8630 kilograms of milk. This comparatively high level of production was achieved via silage-concentrated type of feeding implementation and increase of high quality forage produced by own capacities. In 2000, the enterprise started feeding cattle with fodder mixes via fodder distribution machinery. And in 2002 one of the farms introduced automatic fodder distributors, allowing to lower volume of spent hand-labor, and provide each milk cow with individual amount of expensive fodder, considering the animal's productivity. Exhibit 57 presents the crude break-down of costs in Agro-Balt.

Exhibit 57 Structure of Agro-Balt milk production costs (%-share)

<i>Type of expenses</i>	<i>2004</i>	<i>1Q 2005</i>
Raw materials, %	75.3	60.8
Salaries, %	15.7	12.3
Fixed asset depreciation, %	9	10

Source: Agro-Balt JSC annual issuer's report

Second important direction of the enterprise's activities is plant growing, main goal of which is to provide cattle with high-quality fodder, first of all with dried grass (with preservative usage). In 2003, 22 425 tons of such fodder was stocked, 55% of it was first class quality. Hay stockpiling, as hay considered a less nutritious forage, was reduced to 1.5 thousand tons. Main raw material supply, in particular combined fodder, was done by Agro Soyuz Regioni ltd., with a share of 21%. Plant growing division does not only solve fodder supply problem, but manufactures potatoes for sale. In 1989, in times of partnership with Baltic naval steamship line, Agro-balt introduced Dutch technology of growing, harvesting, and storage of potatoes with usage of German Grimme machinery, allowing not to employ hand-labor. Technology of potato growing implies potatoes being yielded by harvesters, storage technology must be strictly followed. Due to selection works, in some years potato yields make up 250 quintals per ha. Another one of stable directions of activity is grain production. Tillage area for grain production is constantly increased. Grain harvest in granary weight makes up 41,2 quintals per ha. Processing of it includes special grain crusher usage. Enterprise's own fodders are prepared substituting expensive concentrates. Agro-balt grows not only feed grain and potatoes but also elite seed material. Seed potatoes are stored within a warehouse with total capacity of 2200 tons; all parameters (such as temperature and humidity) are controlled by computer which allows to preserve until spring high quality seed material. For the past two years two more potato storages were equipped with automatic control system.

Agro-Balt specialists constantly renovate sorts, each year offering new ones. Currently the sorts are "Latona", "Sante", "Ostara", "Snegir", "Elizaveta", "Nevskii", "Nayada", "Charodei". Determined work in plant growing segment in 1997 allowed the enterprise to become an elite seed producer. In 2001 for the first time a Finnish technology was introduced in super early potato growing. This allowed to gather potato harvest 2 to 3 weeks earlier. In 2003, the enterprise organized presales preparation of potatoes. They are washed, packaged, and only then sent for consumption. This allows to improve production appearance and stimulate demand on it.

Agro-Balt offers the following types of production: milk, 98% of which is of highest quality; pedigree cattle-heifers, calves of Black Pied Leningrad breed; potatoes, including packaged and washed; potato seeds, elite class, first reproduction, sorts "Elizaveta", "Nevskii", "Snegir"; high reproduction grain seeds, super elite class, elite class, first reproduction, barley "Suzdalets", "Crinichnii", oats "Borris", wheat "Irgina", longstanding grass seeds, cock's foot, meadow fescue. The outcome of this diversified activity is presented in Exhibit 58.

Exhibit 58 Main indicators of Agro-Balt performance

<i>Name of index</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>1Q 2005</i>
Revenues, rubles	82872	99957	96749	101471	114389	33300
Gross profit, rubles	17773	22967	18654	14613	7956	7010
Net profit, rubles	18645	21555	15282	9297	9856	2507
Labor productivity, rubles per capita.	146.42	186.84	190.45	229.05	275.64	90.24
Yield of capital investments, %	1,61	1.69	1.47	1.19	119.20	34.83
Profitability of assets, %	0.19	0.19	0.11	0.06	5.41	1.37
Profitability of own capital, %	0.26	0.24	0.13	0.07	7.22	1.84
Sales profitability, %	0.21	0.22	0.18	0.14	6.96	13.11

Source: Agro-Balt JSC annual issuer's report

Case: Gomontovo

In September of 2004, Gomontovo joint stock company finished reconstruction of a cattle breeding complex for 1000 heads of neat. Thus, one of mutual Gomontovo joint stock company and Transfer company project landmarks was reached. The project implies introduction of new technologies and modern milk production equipment. (See Appendix 7) Currently, three stages of the project have been finished. In November 2002, a new complex entered service, consisting of a reconstructed livestock shed, SAC machinery equipped yielding premises, Serap chilling system, and Jeantil fodder mixing and distribution equipment. In 2003, a second cow livestock shed was reconstructed, in 2004 third livestock shed and second yielding premises (also with chilling system) entered service. Yielding premises were equipped with waiting chambers. Currently the whole process of yielding 1000 heads of cattle can be conducted by 4 operators. An ordinary yielding line would take not less than 30 people. Besides, Gomontovo specialists introduced practice of French company «HyPred» cleaning and disinfection liquids usage, which positively influences animal health and milk quality. Exhibit 59 presents main production indicators of the company.

Exhibit 59 Gomontovo general production indicators

<i>Indicators</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>
Milk					
Volume of production, tons	6836	7674	8291	8039	8589
Average sales price, rubles per ton	4,28	5,38	5,59	6,36	7,10
Sales, thousand rubles	27436	39047	44267	49058	59306
Share of revenue received from production sales in total receipts, in percent	63.7	64.9	67.8	68.9	73.3
Potatoes					
Volume of production, tons	3762	4475	4780	4296	4240
Average sales price, rubles per ton	3.50	3.22	4.57	4.38	3.47
Sales, thousand rubles	5693	8334	8852	10606	8929
Share of revenue received from production sales in total receipts, in percent	13.2	13.8	13.6	14.9	11.0
Gross profit, thousand rubles	10401	13527	16219	10012	10241
Uncovered losses, as of the end of the year, '000 rubles					
Average number of employees	524	456	427	340	274

Source: Gomontovo JSC annual issuer's report

Complex reconstruction gave an opportunity to utilize newest technology and equipment which enhanced production processes and reduced costs. For instance, in 1999 average milk yield per cow made up 3000 kilograms of milk annually. After the first stage of reconstruction in 2002 this indicator grew to 6800 kilograms. Currently, after the end of reconstruction the level has reached 7600 kilograms. Quality of milk was improved also: butter-fat volume grew from 3.5% to 3.75%, protein from 2.97% to 3.2%, density from 1028 grams per liter to 1030 grams. Modern technology usage allowed to hire qualified personnel which reduced labor man-hours spent, from 2 in 2001 to 1.2 in 2004. Fodder expenditure reduced from 0.93 to 0.73 of forage units per liter of milk. Currently, after analyzing reconstruction and modernization results, "Gomontovo" specialists intend to reconstruct another livestock shed and transfer calves to loose housing with montage of automatic watertroughs. The above elaborated on activity allowed to cut milk production costs (Exhibit 60), and produced the performance indicators presented in Exhibit 61.

FOOD INDUSTRY VALUE CHAINS IN LENINGRAD OBLAST AND KRASNODAR KRAI	Section 3 Value Network Analysis
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Exhibit 60 Structure of Gomontovo's milk production costs

<i>Name of expenses</i>	<i>2004</i>	<i>1Q 2005</i>
Raw materials, %	72.2	67.0
Works and services in terms of production undertaken by other organizations, %	4.7	1.5
Electric energy, %	1.2	3.0
Salaries, %	9.8	7.5
Social payments, %	2.8	1.7
Fixed asset depreciation, %	2.3	4.1

Source: Gomontovo JSC annual issuer's report

Exhibit 61 Main indicators of Gomontovo performance

	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>1Q2005</i>
Revenue, thousand rubles	43049	60131	65301	71220	80925	23336
Gross profit, thousand rubles	10401	13527	16219	10012	10241	4588
Net profit, thousand rubles	10305	12111	15337	5427	5564	4132
Labor productivity, rubles per capita	82155	131866	152930	209470	295350	99300
Yield of capital investments, %	40.8	53.6	50.3	55.3	87.95	25.00
Profitability of assets, %	11.6	11.7	11.9	4.3	3.90	2.80
Profitability of own capital, %	15.0	14.5	15.2	5.6	5.81	3.85
Sales profitability, %	31.8	29.0	33.0	16.4	12.23	19.30

Source: Gomontovo JSC annual issuer's report

Case: Kotelskoye

Among modern enterprises of Leningrad oblast is Kotelskoye joint stock company, located in Kingisseppski district. It is one of the largest agricultural enterprises, and enters the first five agricultural producers of the region judging by volume of production, and first ten judging by economic performance. (See Appendix 8) As all of Russian agricultural producers, the enterprise experiences many difficulties such as: growing energy-, fuel-, and combined fodder prices; lack of personnel; low purchasing prices on manufactured production, etc. But due to development strategies and orientation on innovative technologies in agriculture this enterprise gradually improved the situation. Today, "Kotelskoye" is a top of the line pedigree breeding, and seed growing enterprise. The enterprise consists of several large cattle farms. All cattle is kept in newly constructed premises, all basic processes such as feeding, water supply, yielding, and litter removal are automated. In 2000, 6 milk tanks were imported, in order to store and chill milk. Livestock is kept within 3 milk and 2 saplings farms. Annual milk yields made up more than 6000 liters of milk. Daily this enterprise supplies 23 tons of fresh milk to "Piskarevskii" milk processing plant. Selection works are conducted.

Exhibit 62 below shows manufacturing volumes of main production types for the 2nd quarter of 2004.

Exhibit 62 Kotelskoye production, sales and profit volume, by production types

	<i>Main types of production</i>			
	Milk	Meat	Potatoes	Grain
Volume of production, tons	6560	249	593	na
Volume of sales, tons	5510	249	593	na
Revenue, thousand rubles	37152	7202	2216	na
Sales price per kilogram	6.74	28.92	3.73	na

Besides listed types of production, the enterprise keeps Swiss Zaanen goats. In near future it has planned to organize a development of 100 head goat herd into a full time goat milk production and organizing a bottling line. Among others, “Kotelskoye” joint stock company, grows and sells different types of elite grain cultures and grass seeds (clover, fescue, herd grass).

3.1.2 Pork Value Chain in Leningrad Oblast

During the soviet period, Leningrad oblast was a leading region in terms of pork production. In early 90s enterprises produced 600 to 800 thousand of fattening livestock annually, or 45-50 thousand tons of pork. At present, livestock is reduced to 30 thousand heads (more than tenfold reduction)³⁵. Main cause of industry collapse became the processes experienced in agriculture since the beginning of the 1990s: disparity between agricultural and industrial production prices, lack of necessary government support of the industry in terms of development and new technology purchasing, and significant grain appreciation. Rising grain prices effected negatively affordability of combined fodder for most agricultural enterprises. Impossibility to provide proper feeding urged producers to abandon pork production. Overview of the list of 100 largest and most profitable pork producing enterprises of Russia (2001-2003 average data) would show that largest share of this list (47 out of 100) is represented by small enterprises with average livestock within the limits of 3 to 5 thousand heads. Enterprises with livestock from 5 to 10 thousand are less widespread and occupy 24 positions in this list. There are 15 larger enterprises with livestock from 10 to 20 thousand heads, and only 14 with livestock over 20 thousand. Basing on this a conclusion can be made small-time pork production prevails. And small time production is inferior to industrial in terms of cost reduction, production quality and profitability.

Value chain of pork production has several specific features. First of all, close coordination between feed base availability and quantity of livestock is commonplace. Often, pork production is preserved within enterprises because it is not the main activity. And the main activity in pork producing enterprises is often milk production, providing collateral pig production with necessary fodder. Only in this way the industry could be preserved in “Plamya” enterprise of Gatchinskii district, “Ruch’I” of Vsevologhskii district, “Rapti” of Lughskii district, which managed to maintain remainders of livestock, no matter that in 2003-2004 pork production was loss-inflicting (purchasing price of one kg of pork was 32-33 rubles, production cost 35 rubles). Second, lack of cooperation between producers and processors is salient feature in the industry. Due to the absence of large-scale production in the region, main meat consumers-processing plants are not interested in purchasing small lots from producers. This results in two basic channels of production sales: (1) slaughter and sales of meat via owned retail shops to enterprise employees or local population, (2) pork sales both in liveweight and deadweight to small-time wholesalers, who in their turn will sell pork either in marketplaces or to small processors. In the same time, main volume of industrial processor supply by meat is imported. Main volume of meat is consumed in form of deep processing production of sausages, canned food, and frozen pre-fabricates. Share of pork consumption in form of cooked meat is insignificant.

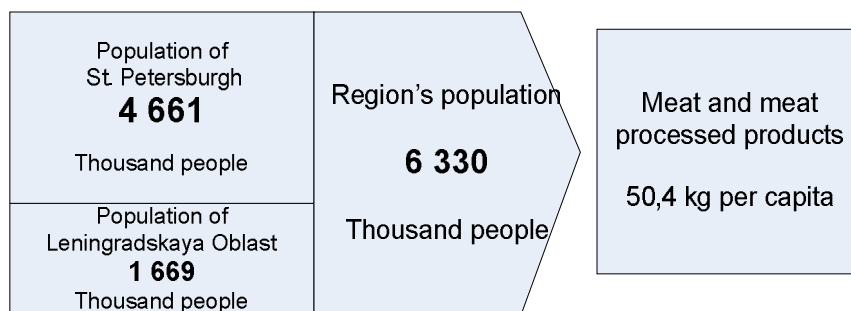
³⁵ <http://www.gostat.spb.ru/>

Volumes of inter-regional meat production turnover, which can hardly be controlled or accounted exceed 50% from total regional consumption volume. This why it is possible to estimate that the share of locally produced meat consumption approaches zero, due to lack of production-consumption co-relation. Thus it is possible to say that a common supply chain is absent in Leningrad oblast, as each element of logistics network is independent and not co-related to neighboring upstream or downstream components of the chain.

3.1.2.1 Consumption and Market Saturation.

In 2004 market growth rate slowed down to 12% from 20%, and in several years to come it is estimated to cease stop growth entirely. Producers and importers consider market saturation and price growth on import (90% of the Russian market) the cause of such a market condition. Beef price growth reached 40% in 2004, pork 70%. This trend may lead to disappearance of small meat processors, which will be driven out by large importers, who have declared plans to organize own processing capacities. After the dramatic fall of demand on meat products in the first half of 1990s, consumer demand began to grow only in the end of the decade due to population's improvement in terms of financial soundness. Meat consumption grew actively till first half of 2003. But in April of 2003, quotas were introduced in order to aid local meat producers and increase domestic meat production profitability. This brought raw material deficit and meat production price growth. By economic development, industrial policy and trade committee of St.Petersburg evaluations, meat consumption of the city made up 140 grams per day, or 50.4 kilograms annually (Exhibit 63). Medicinal consumption standard is 50 kilograms of meat annually, thus market capacity is fully loaded.

Exhibit 63 Origins of demand for meat products in Leningrad oblast and St. Petersburg



It is necessary to mention that meat consumption per capita is accounted as correlation of sold meat to constant population. Due to this fact market consumption capacity being fully loaded is under question, as St.Petersburg is a major cultural and tourist center. By foreign relations and tourism committee of St. Petersburg, 3 million people visited St.Petersburg in 2005, which makes up 65% of constant population. Tourist agencies evaluate that a week trip to St.Petersburg costs 600-700 Euro, not including visa and airplane ticket costs, and a large part of this sum is spent on food. By statistics committee data, city of St.Petersburg consumes 350 tons of meat production daily, which is equivalent to 1.2 million USD or more than 127 thousand tons annually³⁶. With market capacity of 235 000 tons of meat and meat products (2004), about 50% of the market is shared by sausage foodstuff consumption (117.5 thousand tons annually)³⁷. Considering that consumption in Leningrad oblast differs insignificantly, it is possible evaluate common consumption volume in 2004 at 319 thousand tons (Exhibit 64).

³⁶ Source: <http://cri.mcx.ru/ru/155/20517/www.agrosystem.ru>

³⁷ Source: Источник: "Деловой Петербург", 28.01 2004 г, 11.02.2005 г., Комитет экономического развития, промышленной политики и торговли СПб

FOOD INDUSTRY VALUE CHAINS IN LENINGRAD OBLAST AND KRASNODAR KRAI	Section 3 Value Network Analysis
--	--

Exhibit 64 The structure of meat consumption in Leningrad oblast and St. Petersburg

Meat and meat processed products consumption 319 000 tons	Meat processed products consumption 172 000 tons	Sausage goods 160 000 tons
		Other meat processed products 13 000 tons
	Meat consumption 147 000 tons	Poultry 76 000 tons
		Other meat 71 000 tons

3.1.2.2 Supply with Distribution Considerations

Considering ability of particular products to substitute each other, by consumer qualities, method and period of consumption it is possible to subdivide meat market into the following segments: first category meat and subproducts, sausage goods, semi-finished foodstuffs and canned meat. By statistics data, production of meat and 1st category subproducts made up 526 tons in 2004. The market is formed by imports from abroad and other regions of Russia. Main meat and subproduct producer in St. Petersburg is “Samson” joint stock company. It was the only enterprise in the city with slaughter house. Meat and subproducts are also produced by “Pit-product” ltd. However, in both enterprises production volumes are insignificant. The sausage good market in St. Petersburg is made up by supply volumes from the large St. Petersburg and Leningrad oblast producers, import from other regions and abroad and small enterprises in the proportions listed in Exhibit 65 below.

Exhibit 65 Leningrad oblast sausage good market players' market share (%)

<i>Enterprise name</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>
Parnas M JSC	28.9	18.9	34.3	37.9
Pit product ltd.	5.6	6.2	7.6	11.4
Everest ltd	11.5	12.5	14.7	17.2
Strelets JSC	-	-	1.3	3.3
Samson K ltd.	-	0.4	0.4	0.9
Small enterprises of St.Peterburgh	18.9	19.4	15.3	7.3
Cherkizovskii ltd. (representative of Cherkizovskii holding)	6.2	5.9	7.3	8.5
Import/export from other regions balance	27.4	34.7	18.2	13.2
Import/export balance	2.3	0.5	0.4	0.3

Source: Petrostat state statistics committee report “Производство животноводческой продукции в хозяйствах Ленинградской области в 2004 году, статистический сборник”

A number of players in the sausage market decreased from 80 to 70 enterprises in 2003-2004. It is obvious from this data that sausage product supply from other regions decreased. Share of “Parnas M” joint stock company increased in comparison to 2003 due to smaller volume of company’s production delivered to other regions of Russia. It is necessary to mention that “Everest” ltd, “Strelets” joint stock company, and “Samson K” joint stock company increased import of sausage goods to other regions of Russia by 25-50%, which means St. Petersburg’s meat producers broaden their sales area in terms geographical borders. In the semi-finished foodstuffs segment, about 60 enterprises operate currently.

“Talosto” joint stock company sold all of its semi-finished foodstuff production within St. Petersburg. In contrary, “Ravioli” ltd. sold about 30% of its semi-finished production beyond St. Petersburg. The same situation is experienced in other producing enterprises. “Daria” ltd sells almost 70 percent of its production beyond St.Petersburg also. Shares of semi-finished foodstuff producers in the market are presented in Exhibit 66 below:

Exhibit 66 Semi-finished foodstuff market. Participating enterprises' market shares (%)

<i>Enterprise name</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>
“Daria” ltd	-	3.8	3.8	7.4
«Parnas M” joint stock company	4.1	3.6	2.2	7.2
“Ravioli” ltd	20.0	24.6	18.4	20.7
“Talosto” joint stock company	16.8	20.5	36.9	14.1
“Kolpinski” foodstuff plant	6.6	3.2	13.7	-
"Fabrika Zamorozhenikh Polufabricatov" ltd.	-	-	0.6	1.8
“Samson K” ltd	-	-	0.05	0.4
Small enterprises of St.Petersburg	52.5	44.3	24.3	48.5

Source: Petrostat state statistics committee report “Производство животноводческой продукции в хозяйствах Ленинградской области в 2004 году, статистический сборник”

Canned meat market is also formed from local production and import, both from Russia and other regions. Shares of major production suppliers are listed in Exhibit 67. In total imported canned meat (from Russia and abroad) sales is conducted by 50 enterprises in St.Petersburg.

Exhibit 67 Canned meat market. Participating enterprises' market shares (%)

<i>Enterprise name</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>
«Parnas M” joint stock company	10.2	4.9	9.4	6.1
“Rybcombinat” pishevik” joint stock company	-	1.3	-	-
“Samson K” ltd	-	-	1.2	4.2
“Cherkizovskii” ltd. (representative of Cherkizovskii holding)	6.1	0.6	0.3	0.4
Small enterprises of St.Petersburg	24.4	5.6	17.6	19.6
Import/export from other regions balance	55.0	76.0	61.9	59.1
Import/export balance	4.1	11.6	9.6	10.6

Source: Petrostat state statistics committee report “Производство животноводческой продукции в хозяйствах Ленинградской области в 2004 году, статистический сборник”

Average sausage good sales prices in producing enterprises in 2004 grew by 10.8% in comparison to 2003, on semi-finished products price growth varied from 2.8% to 9.6%, in the canned meat sector price growth made up 3 to 4 percent. Developing competitive environment restrains price growth. Average meat production enterprise profitability stayed approximately at the same level and made up 6.03% (in different enterprises this index varies from 6 to 15%). Growing competition in the meat market and the exhaustion of opportunities for price competition, obliges producers to broaden assortment lines by manufacturing new types of production. Two controversial processes are underway in the industry. First is the development of production capacities via either opening new modern manufacturing facilities in suburban areas (often by structures from St.Petersburg such as “Vellis”, “Pit-Product”) or modernization of existing production capacities in Leningrad oblast’. Volume of meat production manufactured in Leningrad oblast grew by 2 times: from 8,1 thousand tons in 2000 to 16,7 thousand tons in 2004. Another characteristic process is curtailing of activities by small enterprises with traditional production technologies.

3.1.2.3 Production

Pork production in Leningrad oblast experiences the same difficulties as pork industry of Russia in general. Currently only small-time producers have survived. Situation changed for the producer's favor, when beef and pork import quotas were introduced in 2004. Demand on domestically produced pork appeared, and prices on pork started to grow. But condition of the industry was by the time so grave, that quick restoration of the industry was impossible. Experts evaluate that full industry restoration would take a lot of time and serious volumes of investment, to introduce modern foreign technologies. Situation is complicated by absence of domestically produced equipment for pork production. Imported equipment is affordable to very few of producing enterprises. This is one of the straining factors of pork industry development.

By 2004 condition, volumes pork production in agricultural enterprises decreased almost to private household level. Production decrease made up 25% in agricultural enterprises and 20% in private households. (See Appendix 9) One of advantages of pork production is the high deadweight production output coefficient. For sapling with liveweight of 80-100 kg this output makes up 70%-75%. For neat and poultry, losses make up more than 40%. (See Appendix 10) Pork livestock decreases at very high rate in Leningrad oblast, by 47% in 2004. Major cause of livestock decline in continuing slaughter of animals in agricultural enterprises, where decrease of livestock made up 56% to beginning of the year. Livestock reduction in private households is 18% and in private farms 11%. Thus, by the end of 2004 share of pig livestock kept in private farms grew from 24% in the beginning of the year to 37%. (See Appendix 11)

Besides production volumes, very important indicators of pork enterprise competitive ability is forage expenditure, daily increment, quantity of farrows and average quantity of piglets per sow. Alas, average performance indicators of Leningrad oblast enterprises are significantly lower to the indicators of producers from countries with developed pork industry, for instance, Holland (Exhibit 68).

Exhibit 68 Comparison of performance indicators

<i>Indicators</i>	<i>Leningrad oblast</i>		<i>Russia³⁸</i>	<i>Holland</i>
	<i>Average</i>	<i>Pit-Product</i>		
Daily weight increment (g)	280	750-850	256	763
Forage expenditure per kg of increment (kg)	6.83	3.5	7.89	2.61

Source: Petrostat state statistics committee report "Производство животноводческой продукции в хозяйствах Ленинградской области в 2004 году, статистический сборник"

One should note that the feeding period in Pit-Product (Irinovka farm) lasts 90 days, from 48 kilograms to slaughter weight of 110-120 kilograms (from 25 kilograms to 114 kilograms in Holland). Disregarding the fact that pork production effectiveness indicators are slightly better in Leningrad oblast than in Russia in general, pork production effectiveness is still quite low. (See Appendix 12) High average regional index is obtained due to the fact that most of the pig livestock is kept within effective producers. Unfortunately there are only few such enterprises. The majority of enterprises and private households have very low indicators of daily increment and accordingly high forage expenditure. (See Appendix 13) With the production performance listed above, pork producers have a hard time competing in terms of prices with import: production costs are too high. But most effective enterprises deal with this challenge by lowering fuel and energy consumption, labor and fodder costs, and thus obtain competitive advantage reserves.

³⁸ Показатели по России за 2003 г., в Ленинградской области среднесуточный привес за 2003 год был 253 гр.: ниже, чем в среднем в России

Combined fodder industry of Leningrad oblast can meet pork industry's demand in full volume. Currently there are 7 combined fodder factories, producing more than one million tons of combined fodder. Productive capacities allow to increase this production volume in case of adequate demand. In spite of this, newly created and reconstructed pork farms develop own capacities for fodder production. The reason is simple: prices on combined fodder are high (average price exceeds 110 EUR per ton) (Exhibit Exhibit 69). Currently, pork industry is set to become profitable in case all production chain segments are within an integrated structure, consolidating effectively pedigree piglet production, feeding, fodder production, pork processing and production sales. Another advantage of integrated structures is that companies within a holding do not pay VAT for transactions between each other. The main factor improving competitive ability of domestic producers is still the fast pork price growth in the domestic market (Exhibit 70).

Exhibit 69 Prices on pork combined fodders, Dec. 2004, Leningrad Oblast

<i>Combined fodder producers</i>	<i>Minimal price (RUR/ton)</i>	<i>Maximum price (RUR/ton)</i>
Kirov	3200	10364
Lughskii	4600	5000
Gatchinskii	4125	4125
Volosovskii	4398	5498
Tosnenskii	4600	5050
Volkhovskii	3700	4000
Viborgskii	4250	4250

Source: Petrostat state statistics committee report "Производство животноводческой продукции в хозяйствах Ленинградской области в 2004 году, статистический сборник"

Exhibit 70 Price dynamics on pork (dw) in Leningrad oblast (RUR/kg)

	<i>1.6.2003</i>	<i>1.1.2004</i>	<i>1.6.2004</i>	<i>15.12.2004</i>
Purchasing price	56.64	55.89	60.59	75.54
Retail price	86.1	91.5	96	109.28

NOTE: PURCHASE PRICES ARE ON 2ND CATEGORY PORK, DEADWEIGHT; RETAIL PRICES ARE ON 2ND CATEGORY PORK

Source: Ministry of Agriculture, 2005

Pork prices in Russia, including in Leningrad oblast grew due to several key factors. First, pork production decreased in Russia (pork production volume in Leningrad oblast is negligible and its change would not influence average retail prices). Decrease in production was caused by mass slaughtering of animals, the last due to unaffordable grain prices in 2002/2003. Quotas were introduced and as a result, decrease of pork import also influenced prices greatly. Besides, prices grow due to inflation. Growth of pork prices in Europe was due to high distemper rate in 2004 (caused by very hot summer) and reduction of subsidy grants to European farmers. Pork side from Brazil also rose in price (from second half of 2002 to second half of 2004 by two times). According to the largest importing company information in St.Petersburg, level of prices in Brazilian pork (pork sides) were 66 RUR/kg or 2.3 USD ("Vellis") to 2.9 USD per kilogram ("Olkhon"). This makes up about 70 to 80 RUR/kg. Large processors importing large pork volumes, purchase pork carcasses with a lower price at about 1.7 USD/kg (on CIP conditions). For the past two years price growth on imported pork (frozen pork sides) made up 70 to 80 percent. The prices on imported pork sides are presented in Exhibit 71.

FOOD INDUSTRY VALUE CHAINS IN LENINGRAD OBLAST AND KRASNODAR KRAI	Section 3 Value Network Analysis
--	--

Exhibit 71 Prices on frozen imported pork sides as of 6.6.2005

<i>Exporter</i>	<i>Pork side weight (kg)</i>	<i>Price RUR/kg</i>
France	40	80.0
Germany	40	71.9
Finland	40	82.0
Holland	40	74.0
Poland	40	73.8
Denmark	40	74.0
Brazil	40	75.0
Finland	70	66.0
In average		74.6

Source: Ministry of Agriculture, 2005

The purchasing price on pork in Finland in 2003 was 1.15 EUR/kg, or about 40 rubles, which is 1.5 times cheaper than in Leningrad oblast. In Denmark, the prices are even lower compared to the prices in Finland. Purchasing prices on pork in Holland in 2004 were 1.3 EUR/kg in deadweight (€1.19 in 2002).

3.1.2.4 Enterprise Overview

Pork production can be subdivided into three segments: large production complexes, medium-sized production in agricultural enterprises and farms, and small-time production by farmers and private households. Three large pig breeding complexes conducted activities in Leningrad oblast before 1991 (production capacity of more than 50 000 heads per year) “Vostochnii”, “Sputnik”, and “Novii Svet”. By 2004 only “Vostochnii” was still operational. After slaughtering of remaining livestock on this complex, quantity of pig livestock in Leningrad oblast fell to 28 thousand heads. Currently, an investment project is undertaken by “Rusbelgo” company implying reconstructing “Novii Svet” pork farm (current livestock 1000 heads). Project planned production capacity is 56 000 tons, but this far development is quite slow.

“Sputnik” pork producing complex (joint stock company company “Sputnik”) was bought out by poultry factory “Primorskaya”. New owner plans to reconstruct the enterprise’s facilities into an egg processing factory with capacity of 10.5 million eggs annually (at the moment only “Roscar” poultry factory is present in the market; a beef-cattle breeding farm, creating a egg producing poultry factory with the capacity of 1.5 million heads (this would make up 17% of total egg production in the region); a pig breeding complex with production capacity of 100 000 heads (annual 11 thousand tons of meat liveweight, which is only slightly less than total production in Leningrad oblast in 2004).

Unlike Europe and other regions of the Russian Federation, industrial enterprises similar to the above elaborated on firms played the main role in Leningrad oblast pork industry and its development. But at this moment none of them yet exists. It is worth mentioning, that several unsuccessful trials to restore production have taken place. In 2001-2004, 4 projects were declared in pig breeding segment (construction of new breeding complexes). The largest failure was the bankruptcy of “Vostochnii” farm, which launched a breeding complex with the capacity of 51 thousand heads and a reproduction farm, but filed for bankruptcy 2 years later. All pork production is concentrated in medium-sized enterprises, largest of which are presented in the following Exhibit 72.

FOOD INDUSTRY VALUE CHAINS IN LENINGRAD OBLAST AND KRASNODAR KRAI	Section 3 Value Network Analysis
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Exhibit 72 Pork livestock in the largest agricultural enterprises of Leningrad oblast³⁹

<i>Enterprise</i>	<i>Livestock 08/2005⁴⁰</i>
Plemhoz Plamya	5000 heads
Gatchinskoye	3000 heads
GK Bor	3500 heads
Rapti	2000 heads
Ruch'i	2000 heads

Source: Source: Petrostat state statistics committee report "Производство животноводческой продукции в хозяйствах Ленинградской области в 2004 году, статистический сборник"

It is possible to say that pork industry revival process has begun in Leningrad oblast. In September 2004 "Rusbelgo" joint stock company was formed, with mixed Russian and Belgian capital. Largest in Russia "Rosagroregion" company bought out 93% of stocks of "Novii Svet" joint stock company, attracted investment from Belgian company "Bioagroinvest", and joint stock company "Rusbelgo" was formed with 50/50 stock share.

3.1.3 Poultry Value Chain in Leningrad Oblast

Enterprises of Leningrad oblast and the city of St.Petersburg conduct a full poultry production and supply cycle, which includes all stages of value chain formation, from fodder manufacturing and chicken incubation to supply to the final consumer. Among the characteristic features of this value chain, two main issues should be especially pointed out. First, it is necessary to mention the high level of integration between raw material base and processing enterprises; almost all poultry factories of the region host a full production cycle, which includes combined fodder production, chicken incubation, slaughtering and processing of poultry (including culinary cutting of carcasses for sale to consumers). Second, the relative proximity of producers to the consumer market, which allows poultry factories to imply own sales strategies (i.e. some factories possess own sales outlet networks), coupled with very little imported poultry, the wholesale trade is almost excluded from the chain.

3.1.3.1 Consumption and Poultry Market Saturation.

Domestically produced poultry consumption is forecast to grow twice by 2010 comparatively to year 2004. Such growth is planned via implementation of the Russian poultry industry development program scheduled for years 2005-2007 and further till 2010. Implementation of this development program will allow to rise locally produced poultry consumption from 8.3 kilograms per capita in 2004 to 15.6 kilograms in 2010. The program evaluates overall poultry market volume of the Russian Federation in 2004 to make up at 2250 thousand tons, consisting of 1.2 million tons of domestic production (53%) and 1.05 million tons of imported poultry (47%). Growth of domestic production is scheduled to reach 156 thousand tons, or additional 1.1 kg per capita in comparison to 2003. Program developers estimate domestic poultry consumption would reach 1.8 million tons by 2007 (exceeding 2004 level by 50%), to 2250 thousand tons by 2010 (87.5% growth). The cause of such confidence in poultry market development, are government measures aimed at supporting domestic producers and limit imports⁴¹.

³⁹ В "Детскосельском" – 4400 голов, но это хозяйство относится к предприятиям Санкт-Петербурга, а не области

⁴⁰ Source: Опрос ЗАО "Агриконсалт" 15-25.08.2005

⁴¹ http://www.mosprod.ru/ru/press/news_agencies/smi/200412171247-1315.htm

In the summer of 2005, upon order by “Obiedinenii Torgovii Dom” trade company, the first complex research of poultry market was undertaken in order to determine consumer demands and sales channels. The research was carried out by Comcon-Spb42 joint stock company. The research indicated that poultry meat is one of key foodstuff supply components of St. Petersburg’s market. With average standard of poultry consumption making up approximately 12 kilograms of meat per capita annually, consumption of poultry in Leningrad oblast differs from other areas of North-West Federal District insignificantly. Average regional standard makes up at 12.01 kilograms per capita. Poultry market volume of Leningrad oblast and St.Petersburg, evaluated by taking into consideration consumption per capita and population in 2004, makes up 76 thousand tons of poultry meat annually (Exhibit 73).

Exhibit 73 The origins and structure of poultry consumption in Leningrad oblast and St. Petersburg

Poultry consumption 76 Thousand tons	Poultry carcass 41 Thousand tons
	Cut poultry 35 Thousand tons

Demand on poultry continues to grow. Among major reasons of such growth are fresh poultry availability, relative low price of poultry, easiness of poultry dish preparation. Medicinal standard of meat consumption is 75 kg per capita annually, of which 1/3 is taken by poultry, thus the potential capacity of poultry market can be evaluated at 160 thousand tons annually. One of main trends of poultry consumption is that consumers’ preferences switch to chilled production. Second important factor is growth of poultry cutting consumption share and decrease of demand on uncut carcasses. Volume of chilled poultry carcass consumption reaches 787 000 kilograms per week, of cut poultry 1 054 000 kilograms⁴³. By preferences in types of cut poultry, consumers are subdivided into 50 percent consuming legs, about 1/3 breast filets. More than 60% of consumers purchased these poultry cutting parts. About 25% of consumers purchased chicken breast with bones, about 20% preferred legs, leg filets and wings, 16% purchased chicken shins. Among all types of poultry cutting, filets are considered the favorite, dietetic type of meat.

3.1.3.2 Supply

Domestic production supply to the market of the Russian Federation shares a little more than 50% of total poultry market. Situation in Leningrad oblast from consumers’ point of view differs favorably from situation in Russia in general. Judging by situation in 2004, production and consumption of poultry in St. Petersburg and Leningrad oblast was balanced. Consumption was shared in proportion of 85% demand met by local and domestic production (68.9 thousand tons) and 15% (7.2 thousand tons) by import. Import consists mostly from frozen chicken legs, which are cheaper than local production and are bought mostly by poorer population. An insignificant part of import is shared by poultry turnover with neighboring regions and Moskov oblast enterprises.

⁴² <http://www.advis.ru/cgi-bin/new.pl?D5F314F3-6F84-0B41-8C10-13945B7A182D>

⁴³ <http://www.advis.ru/cgi-bin/new.pl?D5F314F3-6F84-0B41-8C10-13945B7A182D>

3.1.3.3 Distribution

Chilled poultry products' retail distribution is done traditionally via shops, retail chains, department stores and supermarkets. Factors influencing consumers' preferences are packaging, price, brand and producer's reputation. Leningrad oblast poultry market is moving towards production branding, thus repeating bread and dairy production development trends. Consumers prefer familiar bands, produced by local enterprises. Limitation of poultry import in 2002 resulted in price growth, with Exhibit 76 demonstrating price dynamics on different types of meat (RUR/kg)⁴⁴. Disregarding fast poultry price growth it remains the cheapest and most affordable type of meat. The Exhibit 74 shows average poultry prices in Russian regions, 2004⁴⁵. Considering consumption and average market prices on poultry, market volume in monetary terms is evaluated 130 million Euro in 2004. It is necessary to point out such evaluation would not include personal farm consumption and consumption of other than chicken poultry.

Exhibit 74 Price dynamics in Leningrad oblast and St. Petersburg on different types of meat (RUR/kg)

2003	Beef	Pork	Poultry
Jan	51	49.5	40.5
Feb	50	51.5	39
March	47	54	35
April	46	47	39
May	50.7	54.7	45.3
June	50	53.6	46
July	54	53	49
Aug	54	54	57
Sept	55.8	55.1	59.9
Oct	56.4	63	59.3
Nov	57	64	59.8
Dec	57.7	64.8	60.1

Source: research and information bulletin of Leningrad oblast' Agro Industrial Complex Committee "АгроПилот"

Exhibit 75 Average poultry prices in Russian regions, 2004

	Domestically produced first category poultry meat, including broilers		Poultry legs (domestic production)	
	Min. price	Max. price	Min. price	Max. price
Russian Federation	45.00	150.00	44.00	96.00
North western Federal District	45.00	87.00	50.00	96.00
Leningrad oblast	45.00	82.00	-	-

Source: research and information bulletin of Leningrad oblast' Agro Industrial Complex Committee "АгроПилот"

The total value of poultry meat sold in Leningrad oblast and St. Petersburg market combined reaches 134 million EUR (76 thousand tons tiems 1.76 EUR/kg). Personal farm consumption is not accounted due to very small volume of such consumption which does not influence the situation of the market. Besides that, accounting personal farm consumption is complicated, and does not leave opportunity for proper research. When poultry consumption in Leningrad oblast is considered, evaluations are done only for chicken meat. Goose, duck, turkey and other types of poultry consumed are not considered. These types of poultry share very small volume of consumption and do not play any significant role in the market.

⁴⁴ <http://www.apkmarket.ru/>

⁴⁵ Source: <http://www.mcx.ru/>

With market volume of 76 thousand tons deadweight, the region produces 81 thousand tons deadweight of poultry meat. Poultry production exceeds poultry consumption by 6.6%. Nevertheless, poultry brands produced in other regions (such as “Zolotoy Petushok”, Producti Pitania Company, Moscow) and imported poultry which is distributed in foodstuff stores of the region at a lower price than local production, are represented in the market.. Thus, overproduction of poultry meat in the region is more than 5 thousand tons, and makes up at about 20% of production volume. Excessive produced poultry is exported to other regions of Russia. Export to other countries is not conducted this far.

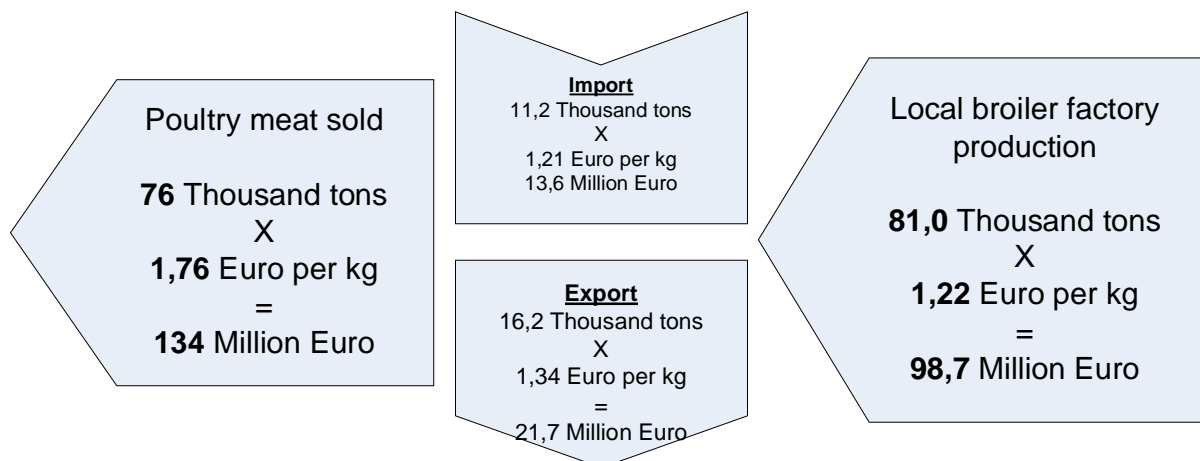
Prices on poultry differ due to criteria for poultry price formation: it matters if the poultry is chilled or frozen, cut or uncut, imported or domestically produced. The highest price is on domestically produced chilled poultry cutting (1.85 EUR/kg). The lowest price is on frozen imported chicken legs (1.44 EUR/kg). Exhibit 76 summarizes the structure of poultry production in Leningrad oblast.

Exhibit 76 Structure of poultry production in Leningrad oblast and St. Petersburg

Poultry meat sold 76 Thousand tons X 1,76 Euro per kg = 134 Million Euro	Local production 64,89 Thousand tons X 1,80 Euro per kg = 116,3 Million Euro	Carcass, local production 38,9 Thousand tons X 1,76 Euro per kg = 68,4 Million Euro
	<u>Import</u> 11,2 Thousand tons X 1,47 Euro per kg. = 16,5 Million Euro	Cut carcasses, local production 25,9 Thousand tons X 1,85 Euro per kg = 47,9 Million Euro
		<u>Carcass:</u> 2,9 thousand tons x 1,55 €/kg. = 4,5 million.€ <u>Cut:</u> 8,3 thousand tons x 1,44 €/kg. = 11,9 million.€

Main good turnover in the region is shared by retail trade enterprises and poultry producers’ own sales divisions. Although large wholesale trade companies are present in the market, and large volumes of imported poultry are transferred via ports of St.Petersburg, nevertheless, the share of wholesale intermediaries is minimal. Being a major importing region, Leningrad oblast and St. Petersburg consume very small volume of imported poultry, not more than 10% of poultry market volume. Major part of import is directed to other regions of Russia. Minced poultry meat is an exception, as it finds stable demand by processing industry. The role of import and export is depicted in Exhibit 77. The main functions of retail trade is logistic, i.e. providing convenience in purchasing for the consumers. Second main function is good storage, but with logistics processes improvement, this function loses importance. Other functions are insignificant due to high level of pre-sale preparation done by producers.

Exhibit 77 The role of export and import in the Leningrad oblast and St. Petersburg



Trend to sales chain globalization and development is as characteristic for Leningrad oblast as for other large cities of Russia. As a result of such an active trade network development, share of organized market reached 85%, with unorganized market share declining from 31% in 1999 to 15% in 2003. In January 2003 St.Petersburg hosted 10.1 thousand retail trade enterprises, out of which 4.2 thousand specialized on foodstuffs. At this moment retail trade chains in St.Petersburg are represented by 1.3 thousand enterprises (160 chains)⁴⁶. Main retail chains are listed in the Exhibit 78.

Exhibit 78 Retail chains in St. Petersburg: general information

<i>Retail chain</i>	<i>Number of outlets</i>	<i>e-mail/www</i>	<i>Assortment positions</i>
Pyaterochka (discounter)	160 (St.Petersburg)	kachestvo@tdl.spb.ru www.e5.ru	3 500-4 000
Magnit (discounter)	24 (St.Petersburg and Leningrad oblast)		3 000
Kvartal (discounter)	15 (St.Petersburg and Leningrad oblast)		5 000
Lenta (supermarket)	10 (St. Petersburg)	info@lenta.com www.lenta.com	7 000
O'key (hypermarket)	4 (St. Petersburg)	ok@okmarket.ru www.okmarket.ru	20 000
Perekriostok (hypermarket)	6 (St .Petersburg)	secretariat@perekriostok.ru www.perekrestok.ru	20 000
Metro Cash&Carry	3 (St. Petersburg)	www.metro-cc.ru	17 000
Megamart(super andhypermarket)	5 (St. Petersburg)		20 000
Ramstor (supermarket)	3 (St. Petersburg)	Info.308@ramenka.ru	
Carusel (hypermarket)	6 (St. Petersburg)	http//ka5.ru	8 000-12 000
Dixi (discounter)	60 (St. Petersburg)		4 500
Paterson (supermarket)	10 (St. Petersburg)	www.paterson.ru	20 000

Source: Source: research and information bulletin of Leningrad oblast' Agro Industrial Complex Committee "АгроПилот"

Overall trade enterprise income in 2004, originating from poultry sales exceeded 35 million EUR. Trade income is shared unevenly by different market players. Larger volume of income is shared by retail trade companies, next in the line are own poultry producers' trade chains and the minor part is shared by wholesale traders. Average trade extra charge makes up at about 35%, and varies from trader to trader. Thus the charge may vary from 10-50% depending on the enterprise. The smallest extra charge is set by small-scale wholesale distributors, which deal in locally produced poultry. The largest is set by large retail trade supermarkets, orientated at serving the wealthy buyers. Main volume of wholesale good turnover is shared by distributing companies. These enterprises do not have particular specialization and conduct trade by all types of meat, in accordance to existing sanitary legislation. Wholesalers do not limit sales by Leningrad oblast and St.Petersburg, and conduct activities in other regions of Russia. Further distribution of production is done into all consumer segments of the market. Main consumers of wholesale lots of meat are industrial enterprises, small-time wholesale traders, retail chains and HoReCa enterprises.

⁴⁶ Source: <http://www.spbgid.ru/index.php?news=27903>

One of the key players in meat wholesale trade of the region is "MeatLand Logistics&Distribution", with good turnover exceeding 75 thousand tons in 2005. This company cooperates with foreign (Europe, South America, USA, Australia and New Zealand, Ukraine, Belorussia) and domestic suppliers. "MeatLand L&D" supplies meat to "Europe" and "Astoria" hotels, "Podvorie" restaurant, retail chains "O'key", "Perekriostok", "Pyatiorochka" and "Ramstor", Pulkovo airport and others. MeatLand L&D also shares 18% of imported meat distribution. Dieta-18 joint stock company is second largest import distributor with 12% of import volume. Among other major players are: "Rustorg", "Sputnik", "Rubezh" and "Parnas-M". One of most successful trade chain development projects was performed by "Russko-Visotskaya" poultry producing plant, which sell 50% of its production via an affiliated sales division.

"Obiedinenii Torgovii Dom" trade company had been working in foodstuff market of St.Petersburg region for more than 5 years. This enterprise was established in 2000 as official sales division of Russko-Visotskaya poultry plant. Main aims of the company's activities were: sales of poultry plant production, development and implementation of marketing policies, advertising, merchandising, competitive price formation. Today assortment of the company includes 3 main trademarks: "Russko-Visotskaya poultry plant", "Sinyavinskie produkti", "Tsar-ptitsa".

3.1.3.4 Processing

Poultry processing in terms of this project can be divided into two stages- primary processing and deep processing. Primary processing includes semi-finished poultry production and cutting, deep processing implies production of semis consisting either entirely of poultry or including poultry meat. Primary processing includes the following procedures: slaughtering, blood draining, feather removal, assortment on categories, cutting, thermal treatment and packaging. Full cycle of primary processing is done on poultry producing (breeding) enterprises.

By Institute of Agrarian Marketing specialists' evaluation, assuming quota limits and existing cutting, carcass and minced meat import proportions, officially imported volumes of cutting and carcasses will decline by 31% in 2006⁴⁷. In 2006, domestic production of carcasses will be equal to cutting production and make up 545-550 thousand tons annually. Volume of deep processing production will rise to 130 thousand tons and poultry production in the private sector will rise to 400 thousand tons. Increase in production of poultry in all segments of the market will cause significant changes of poultry market structure. Furthermore, specialists estimate that share of domestically produced cutting will reach 20% in 2006 contrary to 15% in 2003, share of domestically produced carcasses reach 20% in comparison to 19%, deep processed products 5% comparatively to 3% and minced meat 4% to 2%. Share of poultry meat produced in the private sector will stay at the same level and make up at about 15%. Share of imported cutting and carcasses will decrease to 22% and 5% correspondingly, in comparison to 34% and 8% in 2003. Share of imported minced meat will fall from 9% to 5%. Poultry resource analysis taking into consideration both import and domestic production shows that in 2006 there will be decrease in cutting resource by 11% (due to chicken leg import decrease). Carcass resources will increase by 14% and minced meat resources by 100%.

During the period of 2000-2003 development of different poultry market segments varied their pace in development. Thus, production of carcasses grew by 43%, production of cutting by 60.5%, production of minced meat by 270%, deep processing production by 240%. Situation in Leningrad oblast in general is identical to the situation in the Russian Federation. Poultry farms of the region actively increase cut poultry production and reduce whole carcass production. Major share of cutting operations is done by poultry farm cutting sections. Mostly, culinary cutting of poultry is executed, while minced meat production is practically non-existent. A small deal of poultry cutting is executed in trade enterprises.

Major process of thermal treatment is production chilling. Only a small share of production destined for import to other regions is exposed to deep freezing. Prevalence of chilled production is conditioned by 2

⁴⁷ Source: <http://www.apkmarket.ru/>

FOOD INDUSTRY VALUE CHAINS IN LENINGRAD OBLAST AND KRASNODAR KRAI	Section 3 Value Network Analysis
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factors: proximity of sales sites to production (not more than 300 kilometers) as chilled meat sales is considered effective at distances not exceeding 500-700 kilometers; consumers' preferences in St.Petersburg (main sales market) are generally oriented on chilled meat. Deep processing is executed in enterprises which can hardly be included into poultry value chain- meat processing plants, canned food plants, HoReCa enterprises. Thus this segment of poultry processing was not included in this research.

Poultry meat processing is concentrated in poultry farms of Leningrad oblast', which process 98% of poultry produced in the region⁴⁸. Share of poultry meat processed by farmers and private yards is minor and decreased for the last 10 years from 7% to 1% (Exhibit 79). Insignificant share of farmers and private yards in processing is explained by growth of production and processing in agricultural enterprises. Second factor is decrease of poultry production on farms and in private backyards. In mid 1990s, when major decrease in industrial production was experienced, rural population kept poultry for sale, at the current moment poultry keeping is limited to personal consumption needs. The production indicators for poultry production are presented in the Exhibit 80.

Exhibit 79 Structure of poultry production in deadweight by type of producers

	1991-1995	1995	2003	2004
Agricultural enterprises	92.62%	92.06%	99.07%	98.73%
Private backyards	7.38%	7.94%	0.93%	1.27%
Farmers	0.04%	0.06%	0.04%	0.01%

Source: Petrostat state statistics committee report "Производство животноводческой продукции в хозяйствах Ленинградской области в 2004 году, статистический сборник"

Exhibit 80 Poultry production indicators, by types of producers

	1991-1995	1995	2003	2004
All types of poultry producers				
Poultry for slaughter, liveweight, '000 tons	57.2	29.6	100.9	116.8
Poultry for slaughter, deadweight, '000 tons	39.3	18.9	64.7	70.8
Processing losses	31%	36%	36%	39%
Agricultural enterprises				
Poultry for slaughter, liveweight, '000 tons	53	27.2	100	115.3
Poultry for slaughter, deadweight, '000 tons	36.4	17.4	64.1	69.9
Processing losses	31%	36%	36%	39%
Private backyards				
Poultry for slaughter, liveweight, '000 tons	3.7	2.4	0.9	1.5
Poultry for slaughter, deadweight, '000 tons	2.9	1.5	0.6	0.9
Processing losses	22%	38%	33%	40%
Farmers				
Poultry for slaughter, liveweight, '000 tons	0.019	0.019	0.04	0.012
Poultry for slaughter, deadweight, '000 tons	0.014	0.012	0.026	0.007
Processing losses	26%	37%	35%	42%

Source: Petrostat state statistics committee report "Производство животноводческой продукции в хозяйствах Ленинградской области в 2004 году, статистический сборник"

⁴⁸ Source: Петростат. «Производство продукции животноводства в Ленинградской области в 2004 году. Статистический сборник»»

3.1.3.5 Production

Production capacities are distributed unevenly on the territory of Leningrad oblast. About 98.4% of production is concentrated on the territory of 4 districts. It is necessary to point out that main producers are situated within 300 kilometers range from main market (St. Petersburg). (See Appendix 14) After the economic crisis of 1998, poultry production began to revive from production decrease, and since 1998 poultry production grows annually by 30% by average. Poultry production reached the level of the year 1990 in 2003. Poultry production grew 4 times during 1998-2004, from 29 thousand tons to 116 thousand tons (liveweight). Main volume of poultry meat is produced within broiler factories and egg producing enterprises. In 1998 share of poultry produced within broiler factories made up 67%, but by 2004 this share grew to 91% (Exhibit 81). In spite of high growth rate, poultry production increase in Leningrad oblast slowed down for the past few years. Causes of such slowdown are: dramatic combined fodder price growth in 2002-2003 evoked by bad weather and small harvest of grain.

Full production capacity load against a background of shut down or production minimization is evident in several poultry factories (“Baltiiskaya”, “Bolshevik”, “Krasnie Zory”). The last didn’t specialize in broiler production but manufactured poultry meat. At this moment the only perspective of poultry production increase, is the development of existing leading enterprises’ production capacity. St. Petersburg and Leningrad oblast poultry market is characterized by saturation with added complexity of poultry export to other regions organizations. In the 1990s, competition was encountered between domestic producers and import, but at the current moment producers have to compete also with local producers, which are often supported by local budget subsidies. Strengthening of distributors’ positions in the market, which leads to toughening of delivery conditions, dictated by retail trade chains.

Supply of poultry industry by feed base is based on combined foddors, which share about 100% of feed supply to the industry.(See Appendix 15) A characteristic feature of fodder supply to poultry enterprises of Leningrad region is the fact that in spite of presence of a developed combined fodder industry in the region, practically all enterprises possess own capacities for fodder production. Especially this is true for broiler breeding enterprises. Such situation can be explained by willingness of producers to create full production cycle, which evokes from implementation of modern technologies. Nevertheless, combined fodder enterprises of the region conduct production and sales of combined foddors for poultry. Prices on this production vary from 100 to 270 EUR/ton (Exhibit 82). Such price dispersal is due to variety of foddors offered, which differ by bird age and for what kind of poultry it is bought- broiler or egg producing.

Exhibit 81 Poultry farm production dynamics in Leningrad oblast poultry farms (liveweight) in 1998-2004

	1998	1999	2000	2001	2002	2003	2004
Egg production, ‘000 000 units	9.6	10.6	13.7	9.5	11	10.7	9.9
Broiler production, ‘000 tons	19.4	26.3	33	54	67.6	99.5	106.9

Source: Petrostat state statistics committee report “Производство животноводческой продукции в хозяйствах Ленинградской области в 2004 году, статистический сборник”

Exhibit 82 Prices on combined fodders for poultry, in Leningrad oblast and St. Petersburg in December 2004, RUR/ton

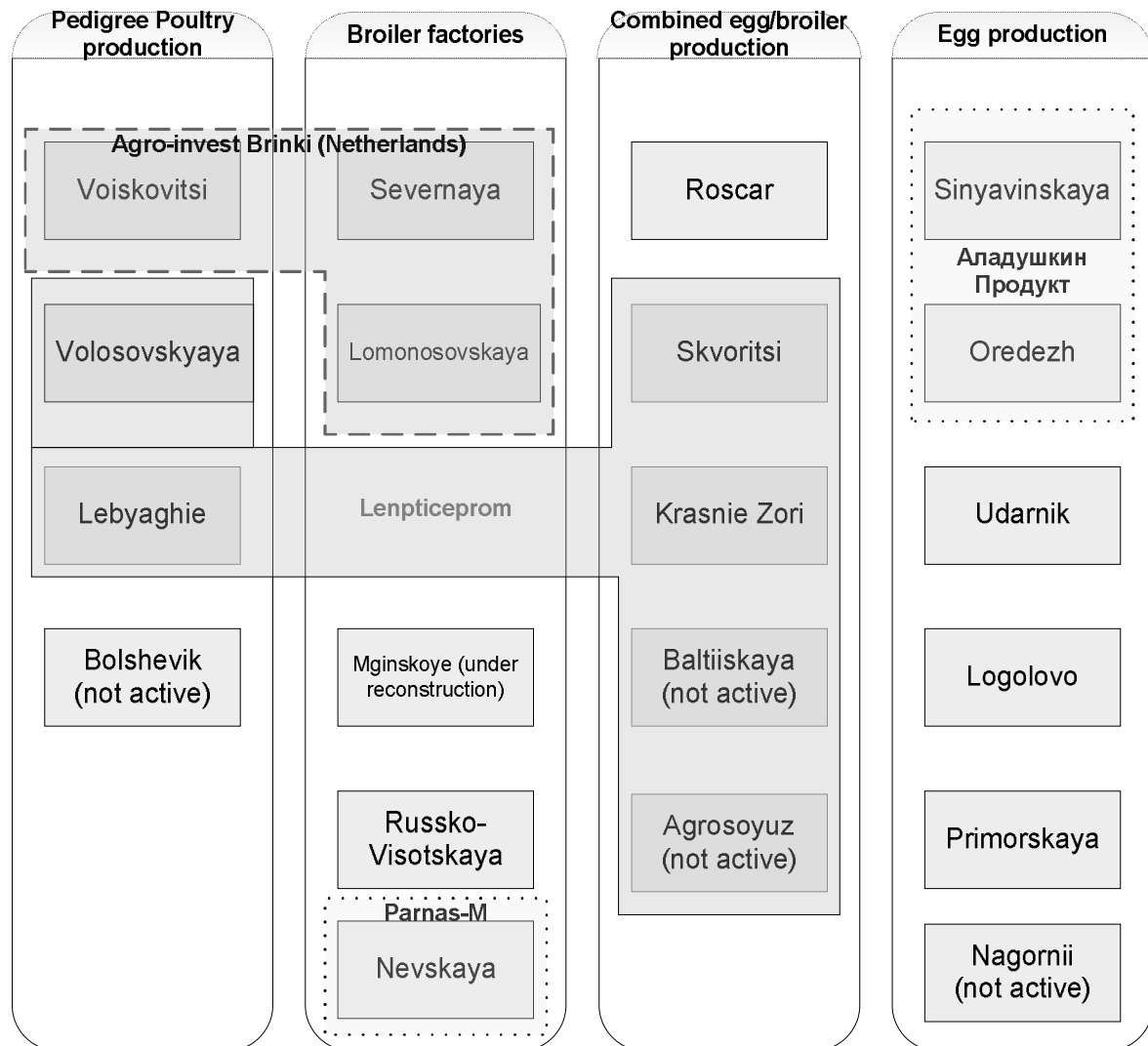
<i>Combined fodder producers</i>	<i>Min. price</i>	<i>Max. price</i>
Kirov	3258	6972
Lughskii	5000	9700
Gatchinskii	4530	9670
Volosovskii	3732	9988
Tosnenskii	-	-
Volkhovskii	4326	6490
Viborgskii	5200	5825

Source: Petrostat state statistics committee report "Производство животноводческой продукции в хозяйствах Ленинградской области в 2004 году, статистический сборник"

3.1.3.6 Poultry Producer Overview

Poultry production is divided into two basic types: industrial production poultry factories specializing in eggs or broilers, and individual production by farmers and private backyards. In its own turn, industrial production is subdivided into three basic types: main- broiler factories specializing in chicken breeding, auxiliary- poultry factories specializing in other types of poultry production, but possessing divisions for broiler breeding, collateral poultry factories specializing in other types of poultry production and manufacturing meat as a collateral from main production. Production capacity of Leningrad oblast poultry industry is represented by four principal types of producing enterprises: pedigree breeding factories producing pedigree chicken eggs and incubating chickens, meat producing factories breeding broilers, egg producing factories manufacturing eggs for consumption and egg products, combined factories, producing eggs and poultry meat (Exhibit 83).

Exhibit 83 *Involvement in poultry sector activities by Leningrad oblast enterprises*



There are 20 poultry factories in Leningrad oblast, 15 out of which are active, 5 have suspended activities due to different reasons. The most effective scheme of poultry production is formation of manufacturing holding companies. Next to purchasing a combined fodder enterprise, closely located poultry producers are acquired. Revenue is received via final production sales. Production costs with this scheme of production are significantly diminished. Such network has been developed by Alexander Aladushkin's holding "Lenstroyateriali". In 2001 the firm purchased 30% of largest European poultry factory "Sinyavinskaya". With its main assets evaluated at 700 million RUR its market value was estimated about 1.5 billion RUR. Concentration of stocks in the hands of few owners would allow effective coordination of development plans and simplify accounting. "The fact that such powerful financial and manufacturing structures became main stockholders opens wide perspective not only for production integration, but for conducting other large-scale projects of regional level"- thus evaluated this deal general director of "Sinyavinskaya" poultry factory Victor Gridushko. Besides that, the holding company includes "Peterburgskii milling industrial complex" joint stock company, "Pskovskii bread producing industrial complex" joint stock company, "Viborgskii bread product plant" joint stock company, "Ohotinskoye" joint stock company, "Roszernoproduct" joint stock company, "Skvoritsi" and "Oredezh" agrocomplexes, "Peterburgskaya macaroni factory (lately its stocks were traded for Kirov bread product plant stocks). In fact Volkhovskii combined fodder plant also enters this holding. Thus a production structure was formed which includes all stages of manufacturing and processing of agricultural production.

Another serious investor banking house “St.Petersburg” headed by Vladimir Cogan took under control the “Severnaya” poultry factory, “Lomonosovskaya” poultry factory and “Voiskovitsi” poultry factory. First steps in coordinated activities were agreements in mutual policies in sales, raw material purchasing and fodder supply. Nevertheless full merging of the enterprises was not intended. Major cause of their cooperation is the ability to cooperate with “PSB” joint stock company (part of “St Petersburg” banking house). Results of such cooperation are obvious. “Severnaya” poultry plant purchased bankrupt “Mginskoye” agricultural enterprise in order to utilize its territory for poultry production development. Currently a factory is constructed on the territory of 200 hectares, production capacity of which will reach an annual 50 thousand tons of poultry. Investment volume is evaluated at 10 to 30 million dollars. “If this construction will be finished, this factory will possess the biggest poultry production capacity in the region, and with its help demand of St.Petersburg and Leningrad oblast’ in poultry meat will be fully met” declares the director of “Lenoblpticeprom” poultry producers’ association Ararat Gishyan. The association includes the following entities:

- “Lenoblpticeprom” joint stock company is the assignee of Leningrad trust “Pticeprom” which was formed in December of 1965 and conducted poultry factory administration until 1992. As a result of privatization “Lenoblpticeprom” was converted into a joint stock company. Currently 5 enterprises are under the company’s control.
- “Lebyazhie” pedigree breeding plant entered service in 1985. Main assignment is pedigree livestock production. Conducts sales of 1-day chickens of highly productive broiler breeds and of pedigree breed eggs for incubation. Produces small volumes of broiler meat.
- “Baltiiskaya” poultry plant. Entered service in 1959. Produces eggs for sale.
- “Krasnie zory” poultry plant is the eldest poultry factory in Leningrad oblast. It was established in 1944, just after the city’s blockade ending. Initially was called “Leningrad”, and conducted egg and meat supply to military hospitals of the city. This poultry factory can supply up to 200 million eggs annually. Besides eggs, it produces egg powder and poultry meat. Since second quarter of 1999 the factory started to conduct quail egg production.
- Volosovskaya IPS entered service in 1958. Main assignment- production of 1-day pedigree chickens. Conducts sales of chickens to the population and farmers (including broilers, egg-producing breeds, ducks, geese and others). Since 1998 breeds quails and sells quail eggs and live birds.
- Also the association includes “Lenpticeprom” trade company. Main assignment of the structure is sales of production of the other four affiliates.

There are some other successful examples of producer-investor cooperation. “Nevskaya-Agrosoyuz” joint stock company cooperated with major meat trader “Parnas-M” and the joint stock company “Primorie” with joint stock company “VAZ-Business”. In the same time, several poultry factories declare themselves to be “people’s” enterprises, whose stocks are divided between employees. One of such factories is the largest egg-producer “Roscar”, who did not utilize outer investor assistance. During the crisis period own modern combined fodder division helped it to preserve financial independence. Main volume of poultry meat production is concentrated in several key producing enterprises. The Exhibit 84 shows production volumes shared by these key players.

Exhibit 84 Production volumes shared by the largest poultry factories (%)

Severnaya	43
Lomonosovskaya	36
Russko-Visotskaya	10
Roscar	6
Voiskovitsi	2
Other	4

Source: Petrostat state statistics committee report “Производство животноводческой продукции в хозяйствах Ленинградской области в 2004 году, статистический сборник”

Exhibit 85 Summary of major Leningrad oblast poultry farms

	2000	2001	2002	2003	2004	IQ 2005
Roscar						
Production volume, tons, deadweight	3 093.50	3 821.90	3 883.20	4 951.30	5 031.80	1 313.50
Average annual price on kilogram of production	28.44	36.82	37.02	39.18	45.34	44.02
Voiskovitsi						
Production volume, tons, deadweight	361.67	340.16	916.25	1 114.53	1 286.62	267.38
Average annual price on kilogram of production	27.29	29.29	32.16	31.25	35.07	28.54
Lomonosovskaya						
Production volume, tons, deadweight	5 133.00	7 632.00	15 674.00	21 608.00	30 185.00	7 816.00
Average annual price on kilogram of production.	31.73	38.54	40.01	44.84	46.86	47.43
Severnaya						
Production volume, tons, deadweight	15 173.50	19 228.60	22 488.80	23 627.00	36 081.40	9 804.90
Average annual price on kilogram of production	28.28	33.20	40.50	44.44	42.01	27.39
Total						
Production volume, tons, deadweight	23 761.67	31 022.66	42 962.25	51 300.83	72 584.82	19 201.78
Volume of production in monetary terms	689.78	1 083.27	1 711.22	2 247.79	3 203.42	704.78
Average annual price on kilogram of production	29.03	34.92	39.83	43.82	44.13	36.70

Source: Petrostat state statistics committee report "Производство животноводческой продукции в хозяйствах Ленинградской области в 2004 году, статистический сборник"

It is important to point out that broiler meat production increase in key poultry producing factories is well ahead of general regional broiler production growth. The reason is active investment policy performed by these key enterprises, which are aimed at modernization and production capacity development.

Case: Severnaya

"Severnaya" poultry factory has been in operation for the last 11 years. The enterprise was established via converting state factory "Severnaya" into a joint stock company, thus making this entity an assignee of the state farm. Joint stock company was established according to government regulation "On order of agricultural enterprises' reorganization and privatization". After the privatization, technical reequipment of the enterprise was conducted, modern production technologies introduced. Currently, "Severnaya" poultry plant is one of the most effective, technologically developed broiler producing factories. (See Appendix 16) "Severnaya" poultry factory, in spite of its leadership in the industry, continues active development. Construction of a new production line of broiler chickens is planned, in order to increase poultry production. Besides this, it is planned to develop own combined fodder production via purchasing and assembling a new automated combined fodder production line. Judging by financial and economic activities, the enterprise is quite effective, introduces modern technologies of breeding, slaughter waste processing and bone powder production (utilization of sub products), possesses own combined fodder plant, cargo terminal (for combined fodder components) (Exhibit 86 and Exhibit 87). All these factors are evidence of the enterprise's movement towards cost reduction and profitability increase.

FOOD INDUSTRY VALUE CHAINS IN LENINGRAD OBLAST AND KRASNODAR KRAI	Section 3 Value Network Analysis
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Exhibit 86 General production indicators of Severnaya

<i>Indicators</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>
Production volume, tons	15 173,5	19 228,6	22 488,8	23 627,0	36 081,4
Average sales price, rubles per ton	28 276.91	33 202.84	40 503.85	44 444.40	42 011.55
Sales, '000 rubles	658 605.00	1 066 846.00	1 020 733.00	1 281 668.00	1 974 601.00
Share of revenue received from product sales in total revenue, %	73	95	90	93	89
Gross profit, thousand rubles	75 940	157 168	44 971	48 948	256 529
Uncovered losses, as of end of the year	1447	3 619	0	0	0
Average number of employees	830	830	1 385	940	976

Source: Annual Severnaya JSC issuer's report

Exhibit 87 Structure of broiler chicken breeding and sales costs at Severnaya

<i>Type of costs</i>	<i>2Q 2005</i>
Raw materials, %	18.52
Purchased components and semi-manufactured goods, %	50.72
Works and services in terms of production undertaken by own organizations, %	11.10
Fuel, %	1.68
Electric energy, %	1.78
Salaries, %	9.77
Interest payments, %	
Rental payments, %	0.08
Fixed asset depreciation, %	4.16
Social payments, %	2.04
Taxes included in production costs, %	0.12

Source: Annual Severnaya JSC issuer's report

As "Severnaya" poultry factory is a raw material intensive production establishment (combined fodders make up more than 60% of production costs), thus special attention is paid to supply of grain and grain components. "Severnaya" joint stock company signed long-term contracts on grain deliveries with largest grain elevators of St.Peterburg, Novgorod oblast, Rostov oblast and Volgograd oblast: "Rezervchleb" joint stock company, "Novgorodskii KKZ" joint stock company, "Podberezskii KKZ" joint stock company, "Abganerovskii KHP" joint stock company, "Balashovskaya Chlebnaya Baza" joint stock company, "Gmelinskii grain elevator" joint stock company, "Kantmirovskii grain elevator" joint stock company.

Main sales markets for the enterprise's production are the city of St.Petersburg, Leningrad oblast, Moscow and Moskov oblast. It is necessary to mention high level of client base dispersion: none of the clients buys out more than 10% of production. Severnaya factory sells 100% of its products through a direct sales to its customers. Gross revenue of the enterprise in the first 6 months of 2005 grew by 175 762 thousand rubles in comparison to the same period of 2004, mostly due production volume growth. Increase in revenue was conditioned both by increase in production sales and reduction of production costs. As a result of profit growth, all other indicators increased also. Reduction of production costs and increase of production sales led to profitability threefold growth, in comparison to the same period of preceding year (Exhibit 88).

Exhibit 88 Financial performance indicators of Severnaya (June 2005)

Revenue, thousand rubles	1 096 553
Gross profit thousand rubles	342 382
Net profit, thousand rubles	317 531
Profitability of own capital, %	33,24
Profitability of assets, %	28,96
Coefficient of pure profitability, %	28.96
Sales profitability, %	31.22
Capital turnover, times	1.15
Uncovered losses, as of the end of the year, '000 rubles	0

Source: Annual Severnaya JSC issuer's report

Case: Lomonosovskaya

“Lomonosovskaya” Poultry farm was established more than 30 years ago, and currently appears to be one of Russia’s largest poultry complexes. The enterprise specializes mostly in high quality, dietetic, and ecologically pure broiler meat. Main production types are: fully eviscerated broiler carcasses, broiler carcass cutting (breasts, legs, wings), minced chicken meat, and sub products. (See Appendix 17) In terms of production process, “Lomonosovskaya” poultry utilizes only natural fodders, which guarantees improved quality and taste in products. Production is mostly delivered chilled (0...+4 degrees Celsius), which further enhances its taste and preserves dietetic qualities. Main sales markets for the enterprise’s production are the city of St.Petersburg, Leningrad oblast, Moscow and Moskov oblast. None of the enterprise’s clients buys out more than 10% of production. “Lomonosovskaya” poultry factory does not possess own retail chain, and hosts only one warehouse for slaughtered poultry. In general, this company is aimed at wholesale trade (sales on commission) which allows to cut costs on retail chain maintenance and increase sales turnover of manufactured production. The general production indicators for Lomonosovskaya are presented in Exhibit 89.

As poultry production is a very capital-intensive industry, main obstacle to its development is lack of Russian investment sources for organizing a new production. In the same time competition ability depends on usage of modern equipment, technologies, imported crosses. Breeding the last requires import of vaccines and vitamins. The costs of production for Lomonosovskaya are presented in Exhibit 90. “Lomonosovskaya” poultry factory conducts production technology and raw material supply system improvement. Thus, this enterprise is interested in developing a stable relationship with large chicken combined fodder producers, feed grain (first of all wheat and corn) and feed additive traders. Combined fodder demand makes up 2000 tons each month. Some of the main suppliers of raw-materials can be observed in Exhibit 91. Results of financial activities indicate this company occupies a stable position in the market, and constantly improves production and economic activities. Thus, profitability rate made up 14% comparative to 6% in 2003 (Exhibit 92).

Exhibit 89 General production indicators of Lomonosovskaya

<i>Indicators</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>
Volume of production, tons	5 133	7 632	15 674	21608	30185
Average sales price, rubles per ton	31730	38540	40 010	44 839	46855
Sales, '000 rubles	162 924	294 114	619 766	1 037 060	1 406 354
Share of revenue received from production sales in total receipts, %	75	96	90	93	93
Gross profit, '000 rubles	-26 977	-1 071	77 034	71 164	214 355
Uncovered losses, as of the end of the year, '000 rubles	33 522	40 637	40 637	0	0
Average number of employees	665	574	552	581	534

FOOD INDUSTRY VALUE CHAINS IN LENINGRAD OBLAST AND KRASNODAR KRAI	Section 3 Value Network Analysis
--	--

Exhibit 90 Structure of broiler chicken breeding and sales costs for Lomonosovskaya

Type of costs	2004	1Q 2005
Raw materials, %	69	67
Works and services in terms of production undertaken by own organizations, %	17	19
Fuel, %	1.1	1.1
Electric energy, %	1.1	1.1
Salaries, %	6	8
Rental payments, %	0.2	0.1
Fixed asset depreciation, %	0.2	0.3
Social payments, %	2	2
Taxes included in production costs, %	0.1	0.1

Source: Annual Severnaya JSC issuer's report

Exhibit 91 Main raw material suppliers for Lomonosovskaya (1Q2005)

Supplier name	Type of raw material	Share in total delivery volume, %
"Veles" ltd	Combined fodder raw materials (corn, fish flour extraction cakes)	12.6
"Venta" ltd	Combined fodder raw materials (corn, fish flour extraction cakes, oil)	14.6
"Severnaya" poultry plant JSC	Combined fodder raw materials (extraction cakes, corn)	16.6
"Voiskovitsi" pedigree breeding plant JSC	Incubation eggs	11.6
"Loren-com" ltd.	Combined fodder raw materials (oil, wheat)	11.9

Source: Annual Severnaya JSC issuer's report

Exhibit 92 Financial performance indicators for Lomonosovskaya

	2002	2003	2004	1Q2005
Revenue, rubles	690 861 207	1 037 060 311	1 511 232 269	393 084 544
Gross profit, rubles	77 034 227	71 164 101	214 355 945	134 039 516
Net profit, rubles	65 070 066	66 134 381	191 259 050	133 140 452
Labor productivity, rubles per capita	1 251 560	1 784 958	2 830 023	753 035
Yield of capital investments, %	1158.889%	1902.982%	2963.305%	784%
Profitability of assets, %	27.502%	18.976%	40.878%	20.999%
Profitability of own capital, %	67.543%	40.696%	43.031%	23.050%
Sales profitability, %	11.00%	6.86%	14.184%	34.099

Source: Annual Severnaya JSC issuer's report

Case: Voiskovitsi

Joint stock company "Voiskovitsi" pedigree poultry breeding factory, *earlier* state enterprise "Voiskovitsi" entered service in 1967. Currently it is holding compiled of three poultry factories, producing pedigree eggs and broiler meat. (See Appendix 18) The enterprise produces broiler incubation eggs, and poultry meat. Share of sales of eggs makes up 87.2% in total sales volume. Share of meat sale makes up 10.9%. In 1998, "Voiskovitsi" poultry factory consolidated with "Severnaya" poultry factory and concentrated on incubation egg production, used for broiler chicken production on broiler factories. Before this consolidation, each poultry factory conducted full production cycle, from keeping pedigree herd to finished commodity production. Currently the two poultry factories can divide duties in order to

FOOD INDUSTRY VALUE CHAINS IN LENINGRAD OBLAST AND KRASNODAR KRAI	Section 3 Value Network Analysis
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increase production and reduce expenses. The enterprise plans to expand production via the construction of new thermo-insulating blocks (poultry blocks), equipped by ventilation, feeding, and water supply systems, and forming a full technological poultry breeding complex. Materials for 2 poultry blocks are being delivered. After finishing these two blocks enter service, construction of four other is planned. Main sales market of “Voiskovitsi” pedigree poultry breeding factory are broiler factories of the North-West Federal District. Main consumers of eggs are “Severnaya” poultry factory and “Lomonosovskaya” poultry factory. The following *Exhibit 93*, *Exhibit 94*, *Exhibit 95* and *Exhibit 96* elaborate on the production structure, general production indicators, costs, and customers respectively.

Exhibit 93 Volumes shared by different produce types in Voiskovitsi

Type of activity	2000	2001	2002	2003	2004	1Q 2005
Pedigree egg production	81.8	93.4	88.15	82.2	80.6	87.2
Broiler meat production	17.3	6.3	11.7	13.7	15.2	10.9

Source: Annual Voiskovitsi JSC issuer's report

Exhibit 94 General production indicators for Voiskovitsi

Index	2000	2001	2002	2003	2004
Poultry meat production					
Volume of production, tons	361 673	340 163	916 248	1 114527	1 286622
Average sales price, rubles per kilogram	27.29	29.29	32.16	31.25	35.07
Sales	9 870	9 965	29 469	34 829	45 133
Share of revenue received from production sales in gross revenue s, in percent	17.3	6.3	11.7	13.7	15.2
Egg production					
Volume of production, units	17203777	27422039	43149120	54851686	59638832
Average sales price, rubles per unit	2.71	5.39	5.17	3.81	4.0
Sales	46 686	147 713	222 975	208 792	238 677
Share of revenue received from production sales in gross revenue, in percent	81.8	93.4	88.15	82.2	84
Total					
Gross profit, thousand rubles	4339	67 838	84 934	38 806	18 514
Average number of employees	202	227	248	223	242

Source: Annual Voiskovitsi JSC issuer's report

Exhibit 95 Structure of broiler and egg chicken breeding and sales costs at Voiskovitsi

	2004		1Q005	
	egg	poultry meat	egg	poultry meat
Raw materials, %	81.3	94.7	79.4	91.9
Works and services in terms of production undertaken by own organizations, %	2.7		1.9	3.2
Fuel, %	0.6		0.8	
Electric energy, %	1.5		2.0	
Salaries, %	8.2	2.4	9.2	4.0
Interest payments, %				
Rental payments, %	1.6		1.8	
Fixed asset depreciation, %	1.6	0.1	2.7	0.1
Social payments, %	2.1	0.6	1.9	0.8

Source: Annual Voiskovitsi JSC issuer's report

FOOD INDUSTRY VALUE CHAINS IN LENINGRAD OBLAST AND KRASNODAR KRAI	Section 3 Value Network Analysis
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Exhibit 96 Main consumers of Voiskovitsi produce, in %-share of total sales

	2000	2001	2002	2003	2004	1Q 2005
“Severnaya” poultry factory joint stock company	99	77	68	53	68.6	67.8
“Lomonosovskaya” poultry factory joint stock company	1	23	32	46	30.8	31.0

Source: Annual Voiskovitsi JSC issuer’s report

3.1.4 Summary on Leningrad Oblast Value Network Analysis

Milk and dairy production in the Leningrad region is represented by full production and logistics cycle all the way from the raw material base to the distribution. Milk production is concentrated in Leningrad oblast, while main processing capacities are located in St. Petersburg. Such division is determined by convenience of production proximity to main consumer market (St. Petersburg), which allows producers to improve logistics effectiveness. Another specific feature of regional milk production is specialization on whole milk product manufacturing, and absence of value-added processing facilities (i.e. cheese, dried milk, etc.). This is determined by two major factors: historically, no enterprises conducting value-added processing were represented in the region; local raw material base allows the meeting of only whole milk processing industry demand, no “extra” milk that could be supplied for value-added processing is produced by local dairy farms. This leads to the supply driven value chain and vertical integration. Purchasing of producing enterprises stocks (shares) by processing enterprises allows them to acquire a constant source of raw materials.

Milk and dairy product consumption in Leningrad oblast’ is growing faster than production. Currently milk consumption makes up 70% of (potential). The market volume can be evaluated at 1 867 thousand tons (in whole milk). Milk and dairy market of the region is quite saturated. Distribution network allows to fully meet market demand, as for example the modern retail chain formation in the area is exceptionally strong.

A specific feature of milk and dairy product supply is that whole milk production is manufactured by local producers and value-added milk processed products are imported from other regions or countries. Milk industry development is not limited by regional market capacity, but by lack of investment into dairy farming and a long investment repayment period (5-7 years). At present, Leningrad oblast hosts 25 milk processing plants and 2 milk industrial complexes. Raw material basis is not developed enough. Currently a shortage of raw milk for manufacturing of high quality production is experienced. Main suppliers of dairy products in St. Petersburg are Petmol JSC, milk processing plant Piskarevskii JSC, and the milk processing company Baltiskoye Moloko JSC, who at the moment have underutilized capacity. Main competitors of St. Petersburg’s milk processing companies are milk manufacturing plants from Leningrad oblast (Gatchinskii, Lughskii, Priozerskii, Vsevologhsckii) and milk manufactures from Vologodskaya, Moskovskaya, Pskovskaya, and Novgorodskaya regions, who at the moment possess a relatively high share of St. Petersburg dairy market. Technological performance indicators in individual milk producers are quite high against a background of average Russian agro companies.

Main cause of the **pork** industry collapse in Leningrad oblast became processes experienced in agriculture since the beginning of 90s: disparity between agricultural and industrial production prices, lack of necessary government support of the industry in terms of development and new technology purchasing, and significant grain prices appreciation. The Leningrad region pork industry has not been able to grow into industrial proportions and remains in the hands of small farms.

The Leningrad region value chain of pork production has several specific features: close coordination between feed base availability and quantity of livestock (main activity in pork producing enterprises is often milk production, providing collateral pig production with necessary fodder) and lack of cooperation

between producers and processors (due to the absence of large-scale production in the region, main meat consumers, i.e. processing plants are not interested in purchasing small lots from producers; main volume of industrial processor supply of pork meat is imported). Thus the general supply chain is absent in Leningrad oblast, as each element of logistics network is independent and not co-related with upstream or downstream phases.

Experts evaluate that full industry restoration would take a lot of time and serious volumes of investment, to introduce modern foreign technologies. Situation is complicated by the absence of domestically produced equipment for pork production. Imported equipment is affordable to very few of producing enterprises. This is a straining factor of Pork industry development. Disregarding the fact that pork production effectiveness indicators are slightly better in Leningrad oblast than in Russia in general, pork production effectiveness is still quite low. Thus pork producers have a hard time competing in terms of prices with import, due to high costs. The most effective enterprises compete by lowering fuel and energy, labor and fodder costs, in order to obtain competitive ability reserves.

Combined fodder industry of Leningrad oblast can meet pork industry's demand in full volume. Currently there are 7 combined fodder factories, producing more than one million tons of combined fodder. Productive capacities allow the increase of this production volume should adequate demand rise due to domestic or foreign investment. In spite of this, newly created and reconstructed pork farms develop own capacities for fodder production due to high prices.

The Leningrad oblast **poultry** sector with enterprises of Leningrad oblast and the city of St. Petersburg, conduct a full poultry production and supply cycle, which includes all stages of value chain formation, from fodder manufacturing and chicken incubation to the distribution to the final consumer. High level of vertical integration between raw material base and the processing enterprises can be detected, as almost all poultry factories of the region host a full production cycle, which includes combined fodder production, chicken incubation, slaughtering and processing of poultry (including culinary cutting of carcasses for sale to consumers). Second, relative proximity of producers to the consumer market allows poultry factories to implement own sales strategies (i.e. some factories possess own sales outlet networks), and with very little imported poultry consumption this almost excludes wholesale trade from the chain.

Poultry meat is one of key foodstuff supply components of St. Petersburg's market. With average standard of poultry consumption making up approximately 12 kg of meat per capita annually, consumption of poultry in Leningrad oblast differs from other areas of North-West Federal District insignificantly. Poultry market volume of Leningrad oblast and St. Petersburg, evaluated by taking into consideration consumption per capita and population in 2004 makes up 76 thousand tons of poultry meat annually. One of main trends of poultry consumption is that consumers' preferences switch to chilled production. Judging by situation in 2004, production and consumption of poultry in St. Petersburg and Leningrad oblast was balanced. Consumption was shared in proportion of 85% demand met by local and domestic production and 15% by import. Leningrad oblast' poultry market is moving towards production branding, thus repeating bread and dairy production development trends. Consumers prefer familiar brands produced by the local enterprises.

Trade and distribution enterprise income in 2004, originating from poultry sales, exceeded 35 million EUR. Trade income is shared unevenly by different market players; larger volumes of income is shared by retail trade companies, next in the line are own poultry producers' trade chains and the minor part is shared by wholesale traders. In terms of processing, the situation in Leningrad oblast in general is identical to the situation in the Russian Federation. Poultry farms of the region actively increase cut poultry production and reduce whole carcass production. Poultry meat processing is concentrated in poultry farms of Leningrad oblast, which process 98% of poultry produced in the region. The share of poultry meat processed by farmers and private yards is minor. The primary production capacities are distributed unevenly on the territory of Leningrad oblast. About 98.4% of production is concentrated on

the territory of 4 districts. The main producers are situated within 300 kilometers range from the main market of St. Petersburg.

A characteristic feature of fodder supply to poultry enterprises of Leningrad region is the fact that in spite of presence of a developed combined fodder industry in the region, practically all enterprises possess own capacities for fodder production. Especially this is true for broiler breeding enterprises. Such situation can be explained by willingness of producers to create full production cycles, which evokes from implementation of modern technologies.

3.2 Krasnodar Krai

3.2.1 Introduction

The analysis of the agricultural value chains in Krasnodar krai needs to incorporate certain factors which are not relevant, for example, in the analysis of the Leningrad oblast value chains, such factors are (i) land ownership structure; (ii) role of private backyards and social aspects of rural community; (iii) seasonal (during summer and beginning of autumn) increase in population due to tourists and visitors attracted by local recreational industry; (iv) available wholesale and retail infrastructure. We start with these important considerations and move on to describe the major features of the extensive regional value networks in dairy, pork and poultry.

3.2.1.1 Land Ownership

Agricultural land in Krasnodar krai was distributed to the members of the collective agricultural farms, when such farms were transformed into joint stock companies, and additionally to the members of state agricultural farms in the process of their privatization. Unlike in other regions of the Russian Federation, most of the rural population retained the rights of land ownership and leased land to agricultural producers mainly on a crop-sharing basis. The value of land lease contract constitutes a substantial share of rural citizens' income. However, since the lease payment is usually received by October (when main part of the harvest is collected), there is a clear seasonality in private spending. Most of the rural citizens are living on the persistence level with most of the foods supplied from private backyards (real monthly wages and salaries during off-harvest period do not exceed 4 000 rubles). Such seasonality in income influences the seasonality in spending: agricultural workers are willing to spend during the period from October to May.

3.2.1.2 Role of the Private Backyards and Farms

Out of the 5.1 million permanent citizens of Krasnodar krai, 2.4 million live in the rural area. Typical household lives in a large villages (stanitsa) possessing a sizable plot of land nearby a house. Such private backyards traditionally play an important role in the agricultural sector of the Krasnodar krai: there are more than 800 thousand private backyards and 18 000 farmers which produce about 30% of total agricultural product, 70% of the agricultural production is produced by 688 industrial agricultural companies. These numbers imply that almost each citizen of a city either directly owns a private backyard, or has relatives who make a living out of such. A substantial share of urban population was born in neighboring rural areas and migrated to the towns in order to receive education, or because of relatively low social image of rural employment.

Private backyards in many cases provide the only source of living. For example, there are more than 5 000 citizens of Lvovskoe village (Seversky District), including 3.2 thousand in working age people, of which more than 1 thousand do not have a permanent job and the private backyards play a significant subsistence role⁴⁹. There are more than 2 300 private backyards which use 726 ha of arable land. 404 private backyards are mainly involved in cattle breeding, 15 produce honey, others are involved in combined agricultural activities. The community maintains 540 heads of cattle, 656 pig heads, 408 heads of muttons, 18 000 poultry heads and produce 1 059 tones of milk, 301 tones of meat, 2 million eggs and 461 tones of vegetables. The value of agricultural produce could be estimated at more than EUR 1 million. Based on the assessment of the social and demographic factors, private backyards will continue to play a significant role.

“Urbanized migrants” maintain family ties as well as a certain social pattern of behavior adopted while living in rural area. Such behavior relates also to eating habits: some Krasnodar citizens receive handmade foodstuffs from relatives in rural villages, such foodstuffs may constitute a sizeable share of

⁴⁹ <http://www.rambler.ru/db/news/msg.html?mid=7596140>

food consumption; others purchase fluid raw milk for consumption in a local fleet markets since they generally do not trust milk producers in respect of transparency of ingredients used to produce milk. The buyers and sellers in the fleet markets have generally established long and lasting relationships based on quality of milk and milk products. Such buying pattern is not typical in other metropolitan areas, and we think that the share of unorganized fleet market trading of milk and meat will eventually decline. We estimate that about 25% (or approximately 500 000) of urban population are demonstrating such pattern of consumption.

3.2.1.3 Recreational Seasonality

Visitors to recreational facilities allocated along the Azov and Black Sea and tourists in general are estimated in 2005 by official sources as about 10 million visitors, unofficial estimates are as high as 12 million visitors per year (the difference is due to the fact that not all of the visitors are registered in the local departments of the Ministry of Interior). The number of visitors to local recreational facilities is expected to grow because of improvement in services and creation of new attractions in the regional recreational centers. The main recreational season starts in the middle of May and lasts 4 months to the middle of September. Average number of days spent at the recreational facilities is 14 days. Therefore, it could be estimated that additional 1.4 million people are present everyday during a summer tourist period. During the summer period, most of the local food processing companies experience a seasonal sales increase and redirect sales to coastal towns and villages (from Anapa to Sochi).

3.2.1.4 Wholesale and Retail Infrastructure

Krasnodar krai experiences a substantial lack of a modern logistics facilities with refrigerating capacity and distribution centers. The presence of such chains as Metro Cash and Carry does not fill the gap. The absence of warehousing infrastructure (the available one is obsolete and do not provide state-of-art warehousing technology which allows for smaller pick-up and load-off times) stimulates direct contacts between food processing and retail industry. Since the volume and value of retail trade in Krasnodar krai has grown every year by 20% (it was RUR 110 billion in 2002 and had reached RUR 208 billion in 2005, of which value of foodstuffs amounted for RUR 91 billion), experts project that during next two years several modern warehousing/logistics facilities will be launched. For example, the city of Krasnodar is actively seeking investors to develop refrigerating warehouses to collect, process and store agricultural produce of different type (meat, vegetables, grains).

Retail trade format also experiences substantial changes, especially in the urban area, due to increasing purchasing power, increased spending and entry of a major national chains into the local retail markets. Only in 2005, 50 new retail outlets were opened with 33 000 sq. m. trading area. The biggest chains such as Magnit (Tander), Pyatorochka, Vysshaya Liga and Perekrestok add 15, 21 and 5 outlets respectively. Paterson is represented in the local retail market by three outlets (Adler, Krasnodar and Sochi). Mosmart opened a retail outlet in “maks”50 format in the Red Square Trading Center in Krasnodar (investments in the new outlet were amounted to USD 5 million)⁵¹. The structuring of the local retail market via an introduction of retail outlets with different formats is quite important to a value chain formation. Fleet (or peasants) markets, even though they play a significant role in retail trade (up to 20% of food products in 2005 was sold at fleet markets), are not capable due to their very nature to initiate a coordination between different parts of the value chain. Regional purchasing managers of the biggest retail chains claim that they are willing to arrange for purchasing of produce under the promoted brands from the local suppliers.

⁵⁰ “Maksi” corresponds the retail shop format with 5 500 of trading area and 20 000 trading items

⁵¹ RBC, 23 March, 2006

3.2.2 Dairy value chain

3.2.2.1 Main Inputs

Feed constitutes the major input which determines the productivity of the milking industry. Most of the industry specialists in the Krasnodarky Krai share the opinion that the dairy farm, in order to be effective and independent shall conduct its own crop management. Current trend in the milking industry development in Krasnodar krai follows that pattern. The Exhibit 97 below presents an average data on the costs of tillage production per 1 hectare.

Exhibit 97 Average costs of cultivation by type of crop

Type of crop	Costs of cropping 1 hectare (RUR '000)						Total direct costs
	Seeds	Fertilizers	Plant Protection.	Services	Fuel	Other costs	
Grain and cereals	1.180	0.781	1.027	0.930	1.381	1.221	6.519
Corn	2.600	1.675	0.875	0.588	0.988	0.530	7.255
Sunflower	0.616	0.338	0.408	1.581	1.690	0.507	5.139
Soybean	0.346	0.168	0.283	1.136	0.649	1.025	3.606
Sugarbeats	2.180	3.320	2.478	3.053	4.856	2.815	18.702
Green forage	0.569	0.296	0.546	0.660	2.481	1.422	5.974
Total	7.491	6.578	5.616	7.946	12.044	7.520	47.196

The consumption of the concentrated feed and the demand for concentrated feed differs depending on the type of the agricultural enterprise. The share of fluid milk produced by private backyards and farmers in total fluid milk production was 35%. A nutrition pattern for a milking cow provided by a typical private backyard generally has a lower share of a concentrated feed to compare with a nutrition composition provided in industrial agricultural farms. Such difference occurs since private backyards consider concentrated feed as an expensive item and either replace concentrated feeds with other alternatives, or secure supply on non-economic basis. Based on the Ministry of Agriculture statistics, average for Krasnodar krai industrial agricultural farms conversion ratio of concentrated feeds was 34 kg of concentrated feed per 100 kg of yielded milk. Taking in consideration that industrial agricultural farms produced 875 thousand tons, the calculated amount of consumed concentrated feeds was about 300 thousand tons.

3.2.2.2 Production

By the end of 2005, agricultural industrial farms in Krasnodar krai managed about 503 thousand cattle heads of which milking cows were 181 thousand. Overall milk production in Krasnodar krai in 2005 was 1 301 thousand tons to compare with 1 340 thousand tons of milk collected in 2004. Industrial agricultural farms in 2005 collected 883 thousand tons of milk, or 68% (875 thousand tons, or 65% in 2004). The largest industrial agricultural farms in operation in Krasnodar krai included in the ranking of the top 100, the 20 most effective farms are listed below (Exhibit 98). Of these, 20 companies accounted for more than 20% of all milk collected by industrial farms.

FOOD INDUSTRY VALUE CHAINS IN LENINGRAD OBLAST AND KRASNODAR KRAI	Section 3 Value Network Analysis
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Exhibit 98 The 20 most effective companies in dairy production in Krasnodar Krai

<i>District</i>	<i>Company</i>	<i>Average annual milking herd size</i>	<i>Total average milk yield, tons</i>
Vyselkovsky	ZAO Agrokompleks	5644	26267
Brukhovetsky	AOZT Pobeda	2670	16503
Diskoy	OAO Plemzavod imeni V.I. Tshapaeva	2600	13707
Kanevsky	AAF Plemzavod Pobeda	2500	15192
Kanevsky	ZAO Plemzavod Kolos	2000	12013
Kalininsky	PK Oktjabr	2723	13682
Novokubansky	PK Kolkhoz Podina	2363	12519
Krasnoarmeysky	GP Imeni Maistrenko Krasnoarmeiskii	1600	9669
Sherbinosky	Kolkhoz Znamja Lenina	1405	8330
Novopokrovsky	SPK Kolkhoz Leninskii put	1805	8863
Kanevsky	ZAO Plemzavod Urazhai	2000	10738
Kanevsky	ZAO Druzhba	1900	9469
Kanevsky	ZAO AFP Niva	1514	8788
Gulkevitsky	GUP Plemzavod Kuban	1890	9856
Gulkevitsky	Plemennoi Zavod – Nasha Rodina	1650	8285
Brukhovetsky	SPK Niva Kuban	1919	10313
Novokubanskly	ZAO Khutorok	1600	9479
Leningradsky	ZAO Kuban	1703	8582
Timashevsky	ZAO AF Rys	1450	8472
Kanevsky	3AO Plemzavod Volya	1280	7970

The biggest milk producing factory (3AO «Агрокомплекс», Agrocomplex JSC) is one of the biggest agricultural companies in the Southern Federal District which produce milk, meat and crop. The company besides milking farms has a meat processing plant, a flour mill, 2 milk processing plants, 2 elevators, a forage/feed plant, 2 seed oil processing plants, soybean processing plant and 9 broiler factories.

Average price collected at farm gates for a ton of fluid milk was in 2004 RUR 6 120 (or EUR 170)⁵² and grew in 2005 to RUR 7 097 (or EUR 221). Therefore, the total farm receipts for milk sold can be estimated at EUR 227.0 million in 2004, and EUR 287.5 million in 2005.

Several investment projects are included in the list of a priority projects, coordinated and/or financially supported by the Regional Administration. Such projects include, for example, Meat Processing Company Tikhorezky plan to complete the reconstruction of the canned meat factory to produced baby meat foods.

3.2.2.3 Processing

Local milk processing factories in the year of 2004 packaged and processed 767 thousand tons, or 57% of milk produced in the region. The rest of the fluid milk is estimated to be consumed unprocessed (about 25% of a total output) and exported (the remaining 25%) to the neighboring regions: Rostov and Volgograd Regions, Republic of Karachaevo-Cherkessia.

The decision of the farm to sell fluid milk to the buyers from the neighboring region is dictated not by a limited market demand from local milk processors but by a clear economic reasons, because the rivals are suggesting better contract terms and could pay cash in advance.

The factor which limits the volume of raw milk sold to the customers outside of Krasnodar Krai is the absence of the milk cooling facilities and inability to maintain the quality of milk during a long-haul

⁵² At the exchange rates of EUR 1 = RUR 36 and EUR 1 = RUR 32 for the years 2004 and 2005, respectively

transportation. The milk without a proper treatment immediately loses its quality and could be sold as the second grade raw milk. Second grade milk is prohibited for manufacturing dairy products and it is usually used to produce dry milk.

Even if some experts estimate that farmers and private backyards could supply as much raw milk as 215 000 tons⁵³, this level could not be achieved immediately since most of the individual farmers (and private backyards) do not have any facilities to provide initial treatment for collected milk as well as they lack storage capacity.

In order to expand raw milk supply to local producers and to provide support to individual farmers, the Regional Administration adopted a decree which pronounce certain measures to support private backyards and farmers development. This made possible to create 185 mobile and stationary milk collection units which helped to collect 47 000 tones of raw milk during the 9 month period of 2005 (8 000 tons more to compare for the same period in 2004). In order to secure milk supply, Timasevsk milk processing plant (a member of Wimm-Bill-Dann Group) provides cooling and storage equipment to farmers which produce milk on a long contractual basis.

3.2.2.4 Supply Chain Management

The readiness of the local market players for the introduction of the Supply Chain Management Practice could be estimated based on the assessment of the contractual arrangements, industry coordination, and information sharing.

Due to insufficient fluid milk supplies from the industrial milking farms, the milk processing companies (dairy, butter and cheese producers) rely on the private backyards supplies and are not generally able to secure a long-term contractual relationship since unstable nature of production on so called subsistence farms. However, since the local government promotes the financing by milk processing factories of the improvements in raw milk production, the share of the milk supplied under the long-term contracts will grow.

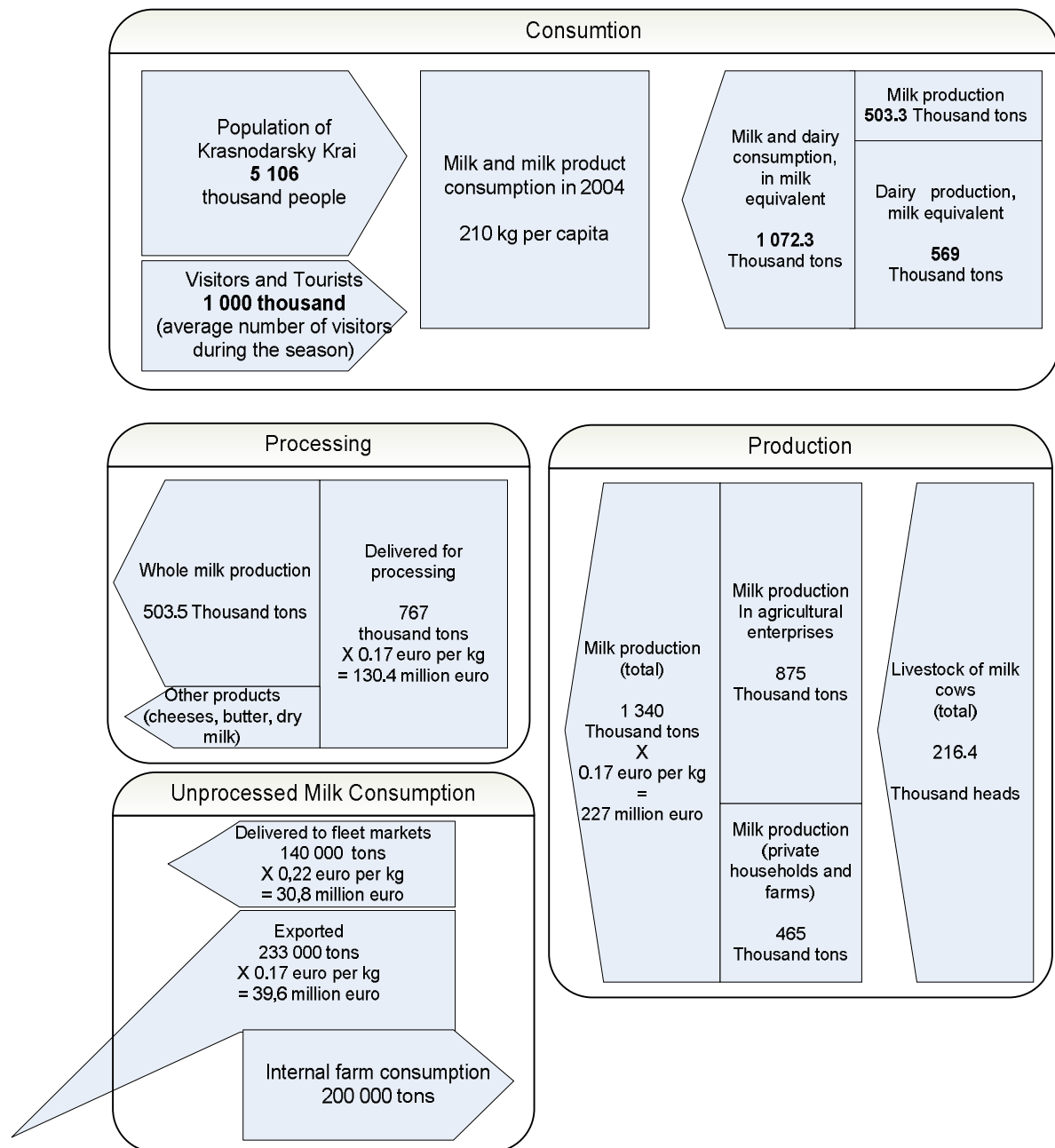
Coordination of the industry is conducted via Kybanmoloko (Association of the local milk industry). The Association has more than 40 members and includes milk processors, cheese and butter producers, and milking farms. However, there is a substantial room for coordination between processors and distributors (wholesale and retail).

3.2.2.5 Overall Milk Value Chain

The following *Exhibit 99* gives overview on the overall milk and dairy value chain. In 2004 the milk and dairy consumption in milk equivalent in Krasnodar Krai totaled 1072,3 thousand tons, making per capita consumption to 210 kg. (Here the large number of annual visitors in the region should be taken into account). Of the 1 340 thousand tons of milk produced in the region, 767 thousand were delivered for processing, 140 thousand tons sold unprocessed in flee markets, and 233 thousand tons were exported. The rest 200 thousand tons were consumed internally in the farms.

⁵³ Bondarenko V.V. Attracting investments in Krasnodar Krai milk processing industry, Research Center “Moloko”

Exhibit 99 Consumption, processing and production of milk in Krasnodar Krai



3.2.3 Pork Value Chain in Krasnodar Krai

3.2.3.1 Production

The total pork livestock in the region was 1 149,1 thousand heads in 2004. The

Exhibit 100 presents the biggest pig breeding farms of Krasnodarsky Krai, included in the ranking of the top 100 pig breeding farms based on the average annualized data for 2002-2004. The costs to grow pig (per 1 quintal of weight increment) in Krasnodar Krai are more than 85% built up by the feeding costs (see Exhibit 101).

FOOD INDUSTRY VALUE CHAINS IN LENINGRAD OBLAST AND KRASNODAR KRAI	Section 3 Value Network Analysis
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Exhibit 100 The biggest pig breeding farms in Krasnodar Krai

<i>District</i>	<i>Company</i>	<i>Average number of pigs</i>	<i>Liveweight increment, tones</i>	<i>Revenues, '000 RUR</i>
Ust-Labinsky	OOO Vasyurinskii MPK	9300	1395	139839
Dinskoy	OAO Plemzavod imeni V.I. Tshapaeva	17462	1838	58641
Vyselkovsky	ZAO Agrokompleks	22928	2569	92264
Brukhovetsky	AOZT Pobeda	12194	1450	48526
Gulkevichsky	ZAO Plemzavod Gulkevitskii	10970	1252	46962
Sherbinovskiy	Kolkhoz Znamja Lenina	8643	1171	38377
Novopokrovskiy	SPK Kolkhoz Leninskii Put	11764	1114	41995
Kanevskiy	AAF Plemzavod Pobeda	13822	1072	40293
Ust-Labinsky	GUP Ladozhkoe	6099	925	32512
Gulkevichsky	Plemennoi Zavod – Kolkhoz Nasha Rodina	5958	856	29820
Timashevskiy	ZAO AF Niva	4806	803	30638
Leningradskiy	ZAO Imeni Ilitsha	5263	769	25719
Novokubanskiy	GUP Plemzavod Leninskii Put	3670	611	22706
Kanevskiy	ZAO Plemzavod Volya	7602	667	20657
Kurganinskiy	ZAO Novoalekseevskoe	10122	961	30265
Starominskiy	SPK Kavkaz	8359	550	20023
Novopokrovskiy	SPK Rossiya	5996	553	20653
Kushevskiy	ZAO Plemzavod Kubanskoye	10961	795	27746
Brukhovetsky	SPK Niva Kubani	6164	605	23561
Ust-Labinsky	OAO Plemzavod Kuban	3321	533	15905
Kanevskiy	ZAO AFP Niva	7837	583	19698
Timashevskiy	ZAO AF Rus	4313	452	17245
Sherbinovskiy	Sherbinovskoye	5000	443	15902
Novokubanskiy	Kolkhoz Imeni Lenina	5767	550	15195
Kavkaskiy	AOZT Vostok	4373	413	15451
Kanevskiy	ZAO Druzhba	3065	446	15912
Kalininskiy	SKHK Druzhba	1872	339	12633
Pavlovskiy	Kolkhoz Rossiya	4386	387	13206
Gulkevichsky	GUP Plemzavod Kuban	5259	557	19760
Pavlovskiy	SKHK Za Mir I Trud	5228	471	9165
Primorsko-Akhtarskiy	ZAO Plemzavod Beisug	4679	407	12273
Krasnoarmeyskiy	GP Imeni Maistrenko Krasnoarmeiskii	4345	436	13176
Novokubanskiy	ZAO KSP Kuban	5351	481	9313

Exhibit 101 Cost per 1 quintal of weight increment (in liveweight) to grow pig

<i>Feed</i>	<i>Electricity</i>	<i>Veterinarian services and medicine.</i>	<i>Transportation services</i>	<i>Total direct costs</i>
1,61	0.19	0,48	0.930	1.88

The availability of the forage is limited to ability of the local farmers to harvest and process a green mass. Currently, the harvester Don 1500 B of Rostselmash is the most popular type of harvesters (68% of the total number of 6600 harvesters), other popular type of harvesters are SK-5 Niva (26%), Claas (2%, or 132 units), John Deer (less than 1%, or 50 units), Sampo (less than 1%, or 52 units)

3.2.3.2 Processing

Local meat processing is represented by more than 100 factories employing more than 8 000 people. Processing capacity allows to process more than 350 thousand tons of meat, produce 150 thousand tons of sausages and a like meat products, and to produce more than 90 million cans of meat.

Among biggest meat processing factories are:

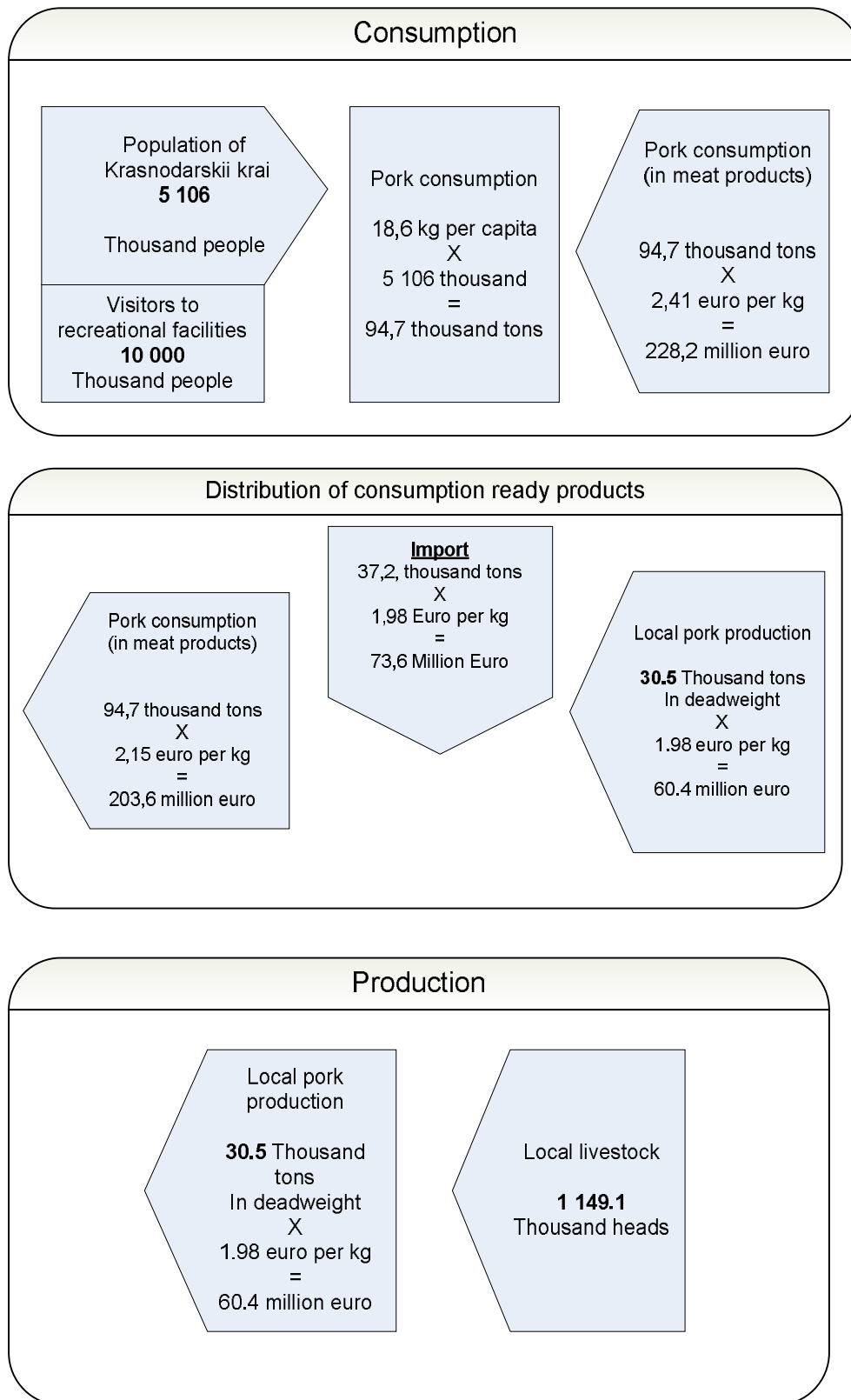
- Tikhoresky Meat Processing Plant,
- Armavirsky Meat Processing Plant,
- Starominsky Meat Processing Plant.
- Sochinsky Meat Processing Plant

Most of the local processing facilities recently underwent modernization initiated by a new owners: in most of the cases the owners represent vertically-integrated holdings. For example, agro-industrial holding Cherkizovsky which acquired Labinsky meat processing plant (renamed as Babaevsky meat plant), as of middle of 2004 completed a USD 10 million reconstruction of the meat processing facilities. The daily processing capacity of Babaevsky meat plant is 50 tons of boned meat with slaughterhouse daily capacity of 300 cattle heads or 800 pig heads. The plant will produce more 60 tons of processed meat (sausages, hams, etc.). Babaevsky will also supply up to 7 000 tons of quality beef and pork to Moscow.

3.2.3.3 Overall Pork Value Chain

As the following Exhibit 102 on the overall value chain of pork shows, Krasnodar krai relies heavily on imported pork. In 2004, the total pork consumption in the region was 94,7 thousand tons (worth €28,2 million). Krasnodar Krai's own pork production was 30,5 thousand tons in deadweight, whereas 37,2 thousand tons pork (worth €73,6 million) was imported to the region.

Exhibit 102 Production, distribution and consumption of pork in Krasnodar Krai



3.2.4 Poultry Value Chain in Krasnodar Krai

3.2.4.1 Production

For the year 2005, the Krasnodar broiler industry represented by industrial factories (excluding poultry meat sold by private backyards and farmers) has sold more than 70 000 tones of broilers (in liveweight) (Exhibit 103) worth of **RUR 1 247 million** (or EUR **36.6 million**).

Exhibit 103 Poultry production, in tons of liveweight

	2005	2004
Total for Krasnodar Krai,	70 050,00	61 145,00
including		
Vityazevsky	2 111,60	1 792,10
Agrogard Holding		
Lebyazya	304,70	268,60
Tikhoreckaya	304,90	237,40
Agrokomplex Holding	12 607,00	7 661,00
Kolesnikov	513,00	457,60
Pavlovskaya	420,60	480,00
Korenovskaya	366,70	288,40
Kuban	5 528,60	6 206,60
Vyselkovsky Broiler	1 653,40	
Krasnodar Broiler	2 178,00	
Krymskaya	1 946,60	
Slavyanskaya		
Tbilisskaya	2 473,10	2 413,00
Kubansky Broiler	7 849,30	8 379,60
Primorskaya	3 034,30	2 442,60
Belorechenskaya	13 977,20	9 465,50
Starominskaya	5 576,80	5 478,70

Five biggest broiler factories contribute almost 50% of the regional output: Belorechenskaya (Agroholding Resurs), Starominskaya poultry plant (Kubanptitseprom), poultry factory Kuban (Agrokomplex), Agrogard, and Kubansky Broiler. Belorechenskaya Broiler Plant is a member of Kuban Poultry Holding, which includes Ptitsevod Poultry Company, wholesale trading company Resurs-Geo, processing facilities. AgroGard Company was created in 2003. Currently, AgroGard manages 6 farms and two poultry plants.

During the last two years, the broiler industry added additional capacity. In 2004, more than 50 broiler houses were build and put into operation, as well as previously idle barns of a several poultry factories (Adlerskaya in Sochi, Raevsкая in Novorossiisk, Kubanskaya, Gulkevskaya, Molodeznaya, Krasnoarmeyskaya). The size of the broiler herd increased during the year of 2005 by almost 700 thousand heads, with Agrocomlex Holding accounting for more than 50% of this addition.

Exhibit 104 Number of broilers heads, as of the end of the year, in '000

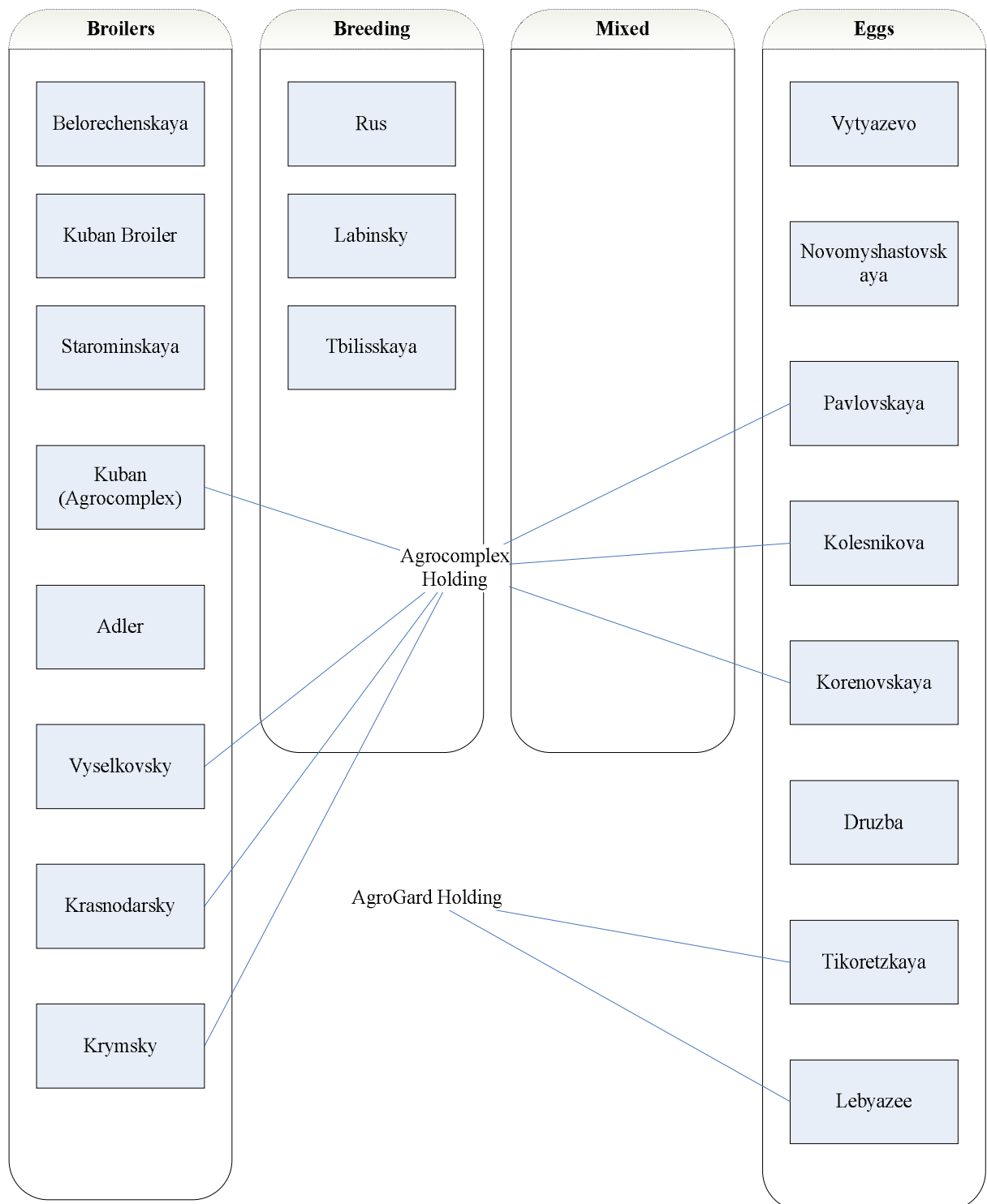
	2005	2004
Total for Krasnodar Krai	4 278,20	3 589,80
Including		
Agrogard Holding	196,30	199,00
Agrocomplex Holding	931,90	549,90
Tbilisskaya	282,80	313,30
Kubansky Broiler	612,20	496,30
Primorskaya	261,90	196,20
Belorechenskaya	394,60	888,00
Starominskaya	153,80	358,40

Average daily weight increment for broilers was 42.3 grams in 2005 to compare with 41.5 grams in 2004. Conversion ratio (a ratio of quintals of feed units required to achieve a 1 quintal of weight increment) also improved: it was 2.05 in 2005 versus 2.10 in the preceding year. The average cost of 1 kg of broiler's feed in 2004 was RUR 7.47. The total cost of 1 kg of a broiler's weight increment in 2004 was RUR 23.78. The cost structure (average for the Krasnodar Krai industry) by the type of expense is presented below (Exhibit 105). The structure of poultry industry is presented below in the Exhibit 106.

Exhibit 105 The cost structure of 1 kg of a broiler's weight increment, in RUR

	2004
Feed	15,35
Wages and Salaries	1,1
Depreciation	0,22
Repairs	0,39
Others	3,88
Selling, general and administrative	2,16
Poultry loss	0,68
Total	23,78

Exhibit 106 The structure of poultry industry in Krasnodar Krai



The biggest suppliers of broiler chickens are the breeding factories Labinsky and Rus. Breeding Factory Rus locating in the Korenosky District was created in 1975 and currently supplies local broiler breeds to Krasnodar factories as well as to the most of factories in the Southern Federal District.

3.2.4.2 Processing

Most of the broiler factories possess their own facilities for primary processing, other deliver live birds to abattoirs. The secondary processing is conducted on the meat processing plants. The biggest secondary processors are:

- Tikhoreski Plant with an annual broiler processing capacity of 5 000 tones and meat processing capacity of 75 000 tones.
- Starominsky Plant processes 50% of poultry meat produced by Kubanptitceprom. The capacity of the plant allows to process daily 40 tones of poultry (in deadweight) and 10 tones of meat. Daily poultry deliveries are amounted to 60 tons in liveweight

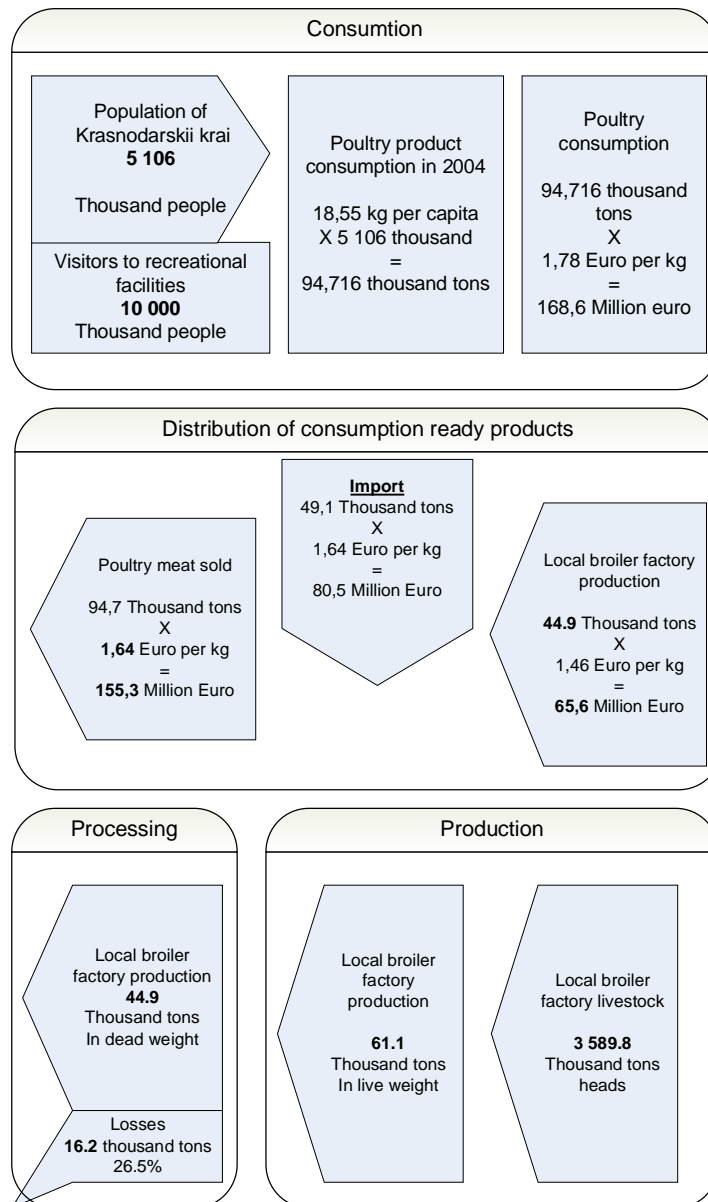
The biggest broiler plants has created their own distribution channels in order to optimize selling and commercial costs. The production of the Kuban Poultry Holding is sold in the Central, Volgo-Vyatsk, Urals and Far East Federal Districts. Tikhoreski Plant distributes its products through 52 branded retail outlets in Krasnodar Krai and has dealer network in Moscow and St.Petersburg.

3.2.4.3 Overall Poultry Value Chain

The avian flu factor will significantly affect the status of the poultry industry in Krasnodar Krai. As of today, the future of the industry is quite unclear. It is estimated that poultry consumption dropped more than 40%. The deliveries of the breed chicken by Labinskoe Breeding Plant were almost halted since most of the customers from outside Krasnodar Krai canceled orders. New deliveries to retail market also stopped since the excessive inventories. The poultry producers are forced to implement a fancy promotion and advertising programs in order to overcome the fear on avian flu influence.

The overall poultry value chain in Krasnodar Krai is presented in the Exhibit 107. In 2004, the total poultry consumption in the region was 94.716 thousand tons, which is worth €68.6 million. Local poultry production was 61.1 thousand tons in live weight and 44.9 thousand tons in deadweight indicating 26,5% losses. Poultry imports to the region were 49.1 thousand tons or €80.5 million in value.

Exhibit 107 Production, processing, distribution and consumption of poultry in Krasnodar Krai



3.2.5 Summary on the Krasnodar Krai Value Network Analysis

The Krasnodar krai diverges from the Leningrad oblast in certain dimensions: (1) land ownership structure; (2) role of private backyards and social aspects of rural community; (3) seasonal (during summer and beginning of autumn) increase in population due to tourists and visitors attracted by local recreational industry; (4) available distribution, i.e. wholesale and retail infrastructure.

Unlike in other regions of the Russian Federation, most of the rural population retained the rights of **land ownership** and leased land to agricultural producers mainly on a crop-sharing basis. The value of land lease contract constitutes a substantial share of rural citizens' income. Consequently, since the lease payment is usually received by October (when main part of the harvest is collected), there is a clear seasonality in private spending. **Private backyards** traditionally play an important role in the agricultural sector of the Krasnodar krai: there are more than 800 thousand private backyards and 18 000 farmers which produce about 30% of total agricultural product, 70% of the agricultural production is produced by 688 industrial agricultural companies. It could be estimated that additional 1.4 million people are present everyday during a summer tourist period. During the summer period, most of the local food processing companies experience a **seasonal** sales increase and redirect sales to coastal towns and villages Krasnodar

krai experiences a substantial lack of a modern logistics facilities with refrigerating capacity and **distribution** centers. However, experts project that during next two years several modern warehousing/logistics facilities will be launched. Retail trade format also experiences substantial changes, especially in the urban area, due to increasing purchasing power, increased spending and entry of major national chains into the local retail markets.

Based on the Ministry of Agriculture statistics, average for Krasnodar krai industrial agricultural farms conversion ratio of concentrated feeds was 34 kg of concentrated feed per 100 kg of yielded **milk**. The 20 largest industrial agricultural farms in operation in Krasnodar krai accounted for more than 20% of all milk collected by industrial farms. Vertical integration and horizontal diversification into other agricultural products is typical in the sector. 25% of the regionally processed milk is exported to other neighboring regions. The factor which limits the volume of raw milk sold to customers outside of Krasnodar krai is the absence of the milk cooling facilities and inability to maintain the quality of milk during long-haul transportation. The storage problem is widespread in the region, and the regional administration seeks to support the resolution. Currently due to insufficient fluid milk supplies from the industrial milking farms, the milk processing companies rely on the private backyard supplies and are not generally able to secure a long-term contractual relationship since unstable nature of the production in the so called subsistence farms.

Krasnodar krai hosts 33 large scale **pork** farms in Russian standards. Local meat processing is represented by more than 100 factories employing more than 8 000 people. The current level of capacity allows the processing of more than 350 thousand tons of meat annually. Large holdings and vertical integration characterize the industry. Major investments and reconstruction projects are planned.

Five **poultry** factories contribute almost 50% of the regional output, thus the level of consolidation is quite high in comparison to the other sectors. Again large holdings and vertical integration characterize the industry. During the last two years, the broiler industry added additional capacity. In 2004, more than 50 broiler houses were built and put into operation, with major increases in the herd sizes. The major broiler plants have created their own distribution channels in order to optimize selling and commercial costs. The avian flu factor will significantly affect the status of the poultry industry in Krasnodar Krai. As of today, the future of the industry is quite unclear.

4 FUTURE DEVELOPMENTS: MEDIUM-TERM (2006–2010) FORECAST

The following chapter presents medium-term (2006-2010) forecasts for Russia as a whole, and for the two specific regions, namely Leningrad oblast and Krasnodar krai, with special emphasis on pork, poultry and dairy sector indicators. The presented forecasts are based on data from leading research institutions and companies (OECD, FAO, EIU, World Bank, Troika Dialog, Business Monitor International) and statistics sources (Rosstat), as well as on on-site expert judgment, and can thus be considered reasonable for the assessment of the future prospects in the research context. However, the true accuracy of the forecasts can only be determined as the time passes and the real numbers emerge. The forecast report proceeds as follows: (1) general economic assumptions in Russia, (2) projections in the Russian pork, poultry and dairy sectors, (3) retail projections, and (4) projections in the Leningrad oblast and Krasnodar krai.

4.1 General Economic Assumptions for Russia

It is fair to state that the political developments and the consequent economic policy in Russia are challenging issues to forecast. Therefore, in the area of economic policy we will concentrate on the short-to-medium term of 2006-2008, and provide brief outlook as a way of introduction to the specific indicators.

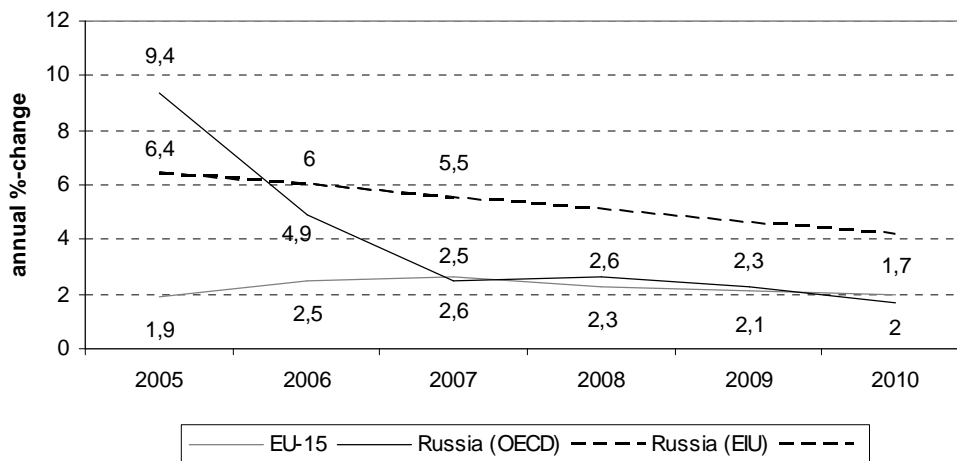
Economic policy in 2006-07 will be dominated by the "national priority projects", designed to raise standards of living through increased public spending on health, education and housing. Few major steps on structural reform are therefore likely over the remainder of the forecast period, as political will falters ahead of the 2007-08 elections. The government's new emphasis on the development of special economic zones (SEZ) "under the aegis of the national priority projects" illustrates the duality in current policy. While the state-owned "natural monopolies" "key among them Gazprom" are strengthened, the state hopes to fence off small clusters of foreign investment, concentrated in technological and industrial business parks. Foreign investors have been promised five-year tax breaks and other privileges, through which Russia hopes to attract large multinational corporations into these zones. Russia missed an earlier target of concluding talks on membership of the WTO by the end of 2005, and its WTO accession has been pushed back to mid-2006 at the earliest" and might even be delayed until 2007. The problem areas in ongoing talks with the US and a few other countries include copyright protection, access to Russia's financial markets, tariffs on aircraft imports and agricultural subsidy levels⁵⁴.

International oil prices will continue to be the main driver of Russian economic performance during the forecast period. The outlook for Russia in this respect is highly favourable in the short-to-medium term, with average oil prices in 2006 expected to equal the high average price in 2005, before declining moderately in 2007. The decline in oil prices will continue towards ~ \$40 in 2010, with a moderate effect on the economic growth in Russia⁵⁵. The following graph depicts the OECD forecast for economic growth in Russia and in EU-15, as well as the EIU short-to-medium term forecast for Russia with trend. (Exhibit 108).

⁵⁴ Source: EIU 2006

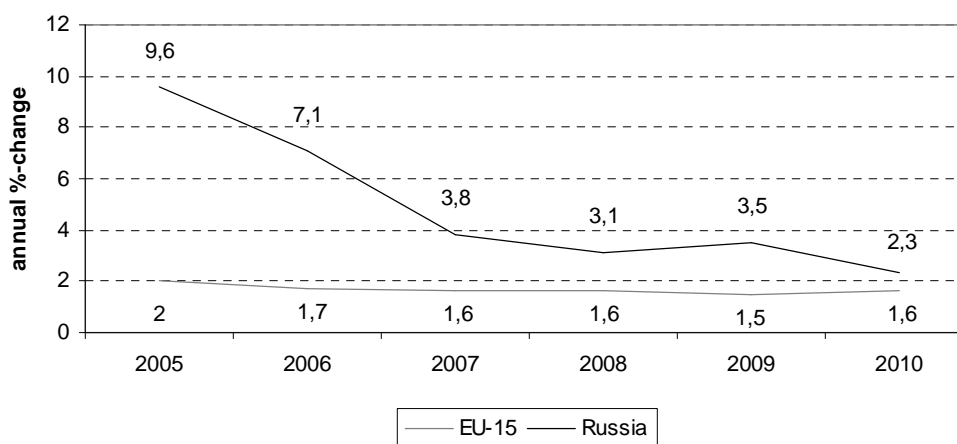
⁵⁵ Source: World Bank 2006

Exhibit 108 Real GDP growth in Russia and EU-15 (OECD 2005; EIU 2006)



The phenomenal economic growth rate is estimated to decline during the next five years. Positions on the rate of decline in growth of the real GDP seem to differ between OECD and the EIU, with the latter opting for sustained 4-5% real GDP growth through out the forecast period. OECD's projections suggest convergence with EU-15 growth rates. The OECD projections for inflation (consumer price index) are depicted in Exhibit 109, with an indication for moderate convergence with the EU-15 levels. The EIU however warns on the Russian Central Bank's (RCB) inability to struggle with inflation, and simultaneously seek to prevent excessively rapid real rouble appreciation. A move towards a monetary regime that relies on inflation-targeting and a floating exchange rate is some years away.

Exhibit 109 CPI in Russia and EU-15 (OECD 2005)

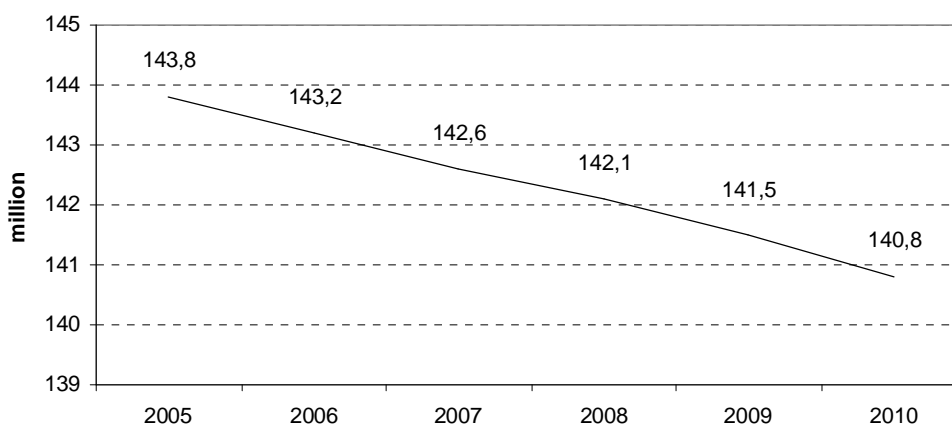


The relevant issue in the research context is the development of consumer demand and the population's ability to purchase goods. In general, the demand changes are a key driver behind the growing importance of developing countries in shaping world agricultural markets. Population and income growth, coupled with urbanisation, and dietary diversification, are expected to generate additional demand and to lead to

changes in the composition of food consumption, with a fast growing share of animal products with better protein content⁵⁶.

In Russia the population growth is negative during the forecast period, reducing the population by 1 million from 143.8 million to 140.8 million (Exhibit 110). While reduction in population is not significant, it to some degree relays the consumer sentiment in economy. More important in the Russian case however are the increasing personal incomes and the changing consumer preferences. Rising incomes drives people prefer food with improved quality, convenience and nutritional value. The consequent consumption growth of final meat and dairy products leads to projected growth in indirect demand for products used in livestock feeding, such as coarse grains and especially oilseed meals⁵⁷.

Exhibit 110 Forecasted population trend in Russia (OECD, 2005)



The development of personal income in Russia has been strong during the last ten years, increasing the official figure for per capita real personal income by 50% (Exhibit 111). The monthly development of the average real income shows seasonal fluctuation and a steady upward trend. With *ceteris paribus* assumption based trend extrapolation we may expect the real incomes rise significantly during the next five years. However, as was elaborated on earlier, the forecasted decline in the rate of economic growth due to for example the projected decline in commodity prices (e.g. crude oil export price, see Exhibit 111), the growth rate in personal income levels may ease and level out gradually during the forecasting period. With 21% of Russia's working population employed in the oil and gas industry and earning 109% to 197% above the average in wages, the correlation of commodity prices and personal incomes becomes even more relevant⁵⁸. Regional industry structures must be analyzed in order to make assumptions on the general effect of decline in commodity prices to the incomes of the regional consuming population.

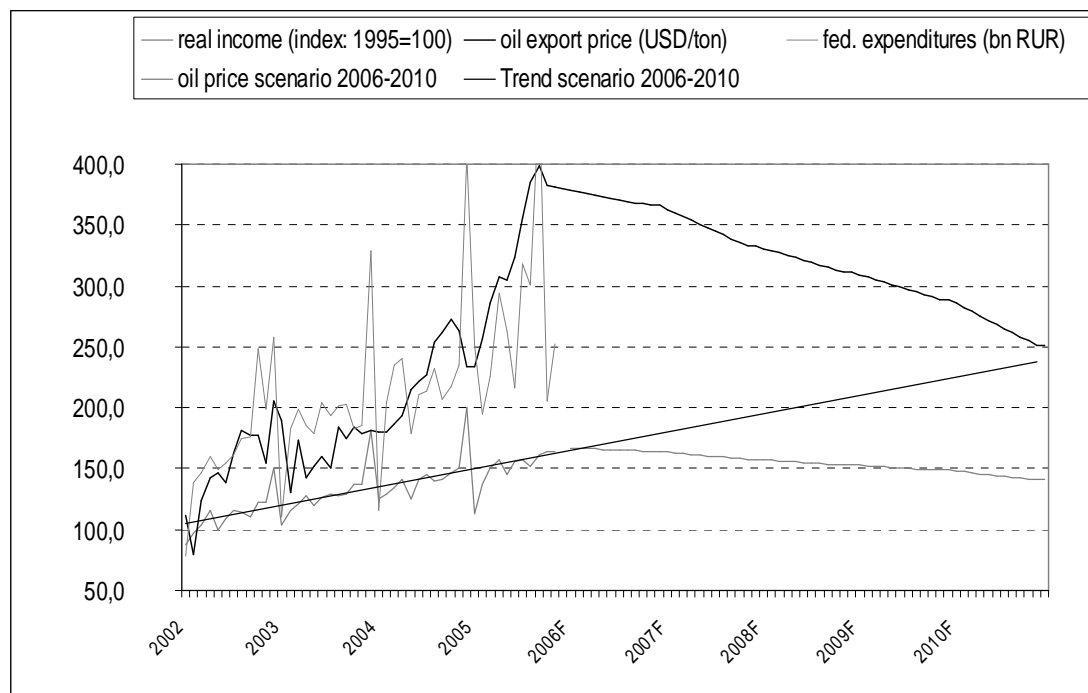
Furthermore, the government's ability to tax the inflated oil income makes it a key party in the allocation of oil revenues. With the recent growth in federal budget expenditures (Exhibit 111), and the projected budget surplus of 4.2% for 2006 and the expenditure growth by 15% due to increases in military and security sectors as well as the priority projects in infrastructure, the consuming population will benefit through indirect effects of high oil export prices. The favourable budgetary position is likely to continue with forecasted surplus of 3.2% for 2007.

56 Source: OECD 2005

57 Source: OECD 2005

58 Source: Troika Dialog 2005

Exhibit 111 Per capita real personal income; monthly export price for crude oil; federal budget expenditures (Rosstat, 2006; World Bank, 2005)



The impact of oil prices and federal budget expenditure on real personal income was investigated through multiple regression analysis, with the purpose of increasing understanding on the likely future development of personal incomes in Russia. For the above mentioned reasons of relevance, two independent variables (oil export prices = oil, federal budget expenditures = fed) were chosen to explain the variation in the real personal income (dependent variable = income). The following model⁵⁹ explains 69% (R^2 adjusted) of variation in real personal income:

$$\text{income} = 72.457 + 0.084\text{oil} + 0.2\text{fed}$$

The model-based forecast is well in line with the trend extrapolation presented in the Exhibit 111. However, as oil revenues decline due to decreasing prices, and possibly consequent cuts in federal expenditures become reality, the favourable development of personal incomes may decrease.

The following Exhibit 112 compares the extrapolated trend forecast and the oil price based multiple regression forecasts. The former can be considered an optimistic scenario, while the latter a rather pessimistic one, where the federal budget expenditures are expected to correlate with the oil price development as during January 2002 through January 2005, and thus decline during 2006-2010. The real future development is bound to be somewhere in between.

⁵⁹ model significant at 0.01 level (F=51.087); “oil” significant at 0.05 level, constant and “fed” significant at 0.01 level; VIFs at 1.72

FOOD INDUSTRY VALUE CHAINS IN LENINGRAD OBLAST AND KRASNODAR KRAI	Section 4 Future Developments: Medium-Term (2006–2010) Forecast
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Exhibit 112 Comparison of the two personal income scenarios (index: 1995 = 100)

<i>Year</i>	<i>Trend scenario:</i> <i>income = 1.2631t + 103.18</i>	<i>Oil price scenario:</i> <i>income = 72.457 + 0.084oil + 0.2fed</i>	<i>Difference:</i> <i>trend – oil price</i>
2006	172	165	7
2007	187	160	27
2008	202	155	47
2009	217	151	66
2010	233	144	89

For example the EIU's forecast for federal budget expenditures for year 2006 was 4300 billion RUR; a figure that produces the earlier presented forecast of 174.9 for income index (exceeds the trend forecast). To summarize the future development of real income, much depends on the initiated priority development projects of the federal government and their continuation in the sustained level of expenditures during 2006-2010.

In the long-term (up to 2020) the prosperity of the Russian consumer and the consequent purchasing power depends on two dimensions of uncertainty, namely the level of economic liberalism (planned economy – market economy), and the level of differentiation in the economic structures (raw material based economy – differentiated production and service economy)⁶⁰. Particularly important to the favourable outcome (i.e. a prosperous middle-class) is the development towards diversified industries and a significant service sector, with a functioning national system of innovation. Dependence on raw materials production and export, will subject the Russian economy to the fluctuations of commodity prices, causing the purchasing power of Russian consumers to rise and fall almost synchronously with global raw material prices. As a consequence the Russian consumer society is geographically unevenly distributed, with only a few prosperous regions in the European part of Russia, and additionally migration to urban areas will steadily continue. Major unemployment is experienced outside the raw materials industries⁶¹. Thus it can be concluded that whether Russia succeeds in creating dynamic knowledge-based and more value-added industries with increasing share of services, will determine the prosperity of the Russian consumer in the long-term.

4.2 Projections in the Russian Pork, Poultry and Dairy Sectors

The following section presents forecasts on the main indicators of the pork, poultry and dairy sectors in Russia. The main source of data is OECD and FAO. The presented OECD projections are the result of a process that brings together information from a large number of sources. The starting point of the OECD forecasting process is the reply by OECD member countries (and some non-member economies) to an annual questionnaire circulated at mid-year. Through these questionnaires, the OECD Secretariat obtains information from these countries on future commodity market developments and on the evolution of their agricultural policies. This information is supplemented by the FAO Secretariat for its members which are not part of the OECD. External sources, such as the World Bank and the IMF, are also used to complete the view of the main economic forces determining market developments.

As a next step, the modelling framework jointly developed by the OECD and FAO Secretariats is used to facilitate a consistent integration of this information and to derive an initial set of global market projections (baseline). In addition to quantities produced, consumed and traded, the baseline also includes projections for nominal prices (in local currency units) for the commodities concerned. Unless otherwise stated, prices referred to are also in nominal terms. The data series for the projections is drawn from

⁶⁰ Source: CIFS 2005

⁶¹ Source: CIFS 2005

FOOD INDUSTRY VALUE CHAINS IN LENINGRAD OBLAST AND KRASNODAR KRAI	Section 4 Future Developments: Medium-Term (2006–2010) Forecast
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OECD and FAO databases. For the most part information in these databases has been taken from national statistical sources.

The policy assumptions are based on the continuation of the Russian Tariff Rate Quotas (TRQs) for meat and dairy until the year 2010, thus the sustained levels in rates. Other assumptions behind the forecasts are the relatively stable macroeconomic environment, an unchanging policy setting, average weather conditions that result in improved pasture and relatively low feed prices. The increasing consumer incomes and the consequent preference for meat and dairy products drives up the end-consumption of the same (Exhibit 113).

Exhibit 113 Consumption of meat and dairy products in Russia and EU-15 (OECD, 2005)

<i>Meat consumption (kg/person)</i>						
	2005	2006	2007	2008	2009	2010
Russia						
total meat	33.7	34.2	34.9	35.8	36.9	38.3
beef and veal	11.5	11.5	11.4	11.7	12	12.5
pork	10.7	11	11.3	11.5	11.8	12
poultry	10.8	11.1	11.5	11.9	12.5	13.2
EU-15						
total meat	71.6	71.8	72	72.2	72.5	72.5
beef and veal	13.9	14	13.9	13.8	13.7	13.6
pork	34.2	34	34.1	34.5	34.8	34.8
poultry	20.5	20.8	20.9	20.9	21	21.1
<i>Dairy consumption (kg/person)</i>						
	2005	2006	2007	2008	2009	2010
Russia						
butter	2.9	3	3	3.1	3.2	3.3
cheese	3.6	3.6	3.7	3.9	4.1	4.2
SMP	1.3	1.3	1.3	1.4	1.4	1.5
WMP	0.8	0.9	0.9	0.9	1	1
EU-15						
butter	4.3	4.3	4.1	4.1	4	4
cheese	18.9	19.2	19.4	19.3	19.4	19.5
SMP ⁶²	2.3	2.2	2.1	2	2	1.9
WMP ⁶³	0.9	0.9	0.9	0.9	0.9	0.9

The Russian consumption levels are clearly below the EU-15 levels, a difference most saliently visible in the consumption of total meats and cheese. The consumption gap is an indicator of potential demand for specific meat and dairy products, given the purchasing ability with increasing incomes. The global convergence of eating habits further supports the disappearance of the gap⁶⁴. Forecasts on policy assumptions as well as production, consumption and price levels are presented in the following (Exhibit 114, Exhibit 115, Exhibit 116, Exhibit 117, Exhibit 118 and Exhibit 119) for pork, poultry and dairy sectors in Russia.

⁶² SMP = skimmed milk powder

⁶³ WMP = whole milk powder

⁶⁴ Source: OECD 2005

FOOD INDUSTRY VALUE CHAINS IN LENINGRAD OBLAST AND KRASNODAR KRAI	Section 4 Future Developments: Medium-Term (2006–2010) Forecast
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Exhibit 114 Policy assumptions for pork

	2005	2006	2007	2008	2009	2010
Tariff-quota (kt pw)	450	450	450	450	450	450
In-quota tariff (%)	15	15	15	15	15	15
Ou-of-quota tariff (%)	80	80	80	80	80	80

Exhibit 115 Production, consumption and price for pork

	2005	2006	2007	2008	2009	2010
production	1788	1837	1887	1913	1947	1973 kt cwe
consumption	1975	2024	2073	2100	2134	2163 kt cwe
imports	467	467	467	467	467	470 kt cwe
reference price	508	557	599	639	683	733 RUR/100kg

Exhibit 116 Policy assumptions for poultry

	2005	2006	2007	2008	2009	2010
Tariff-quota (kt pw)	1050	1050	1050	1050	1050	1050
In-quota tariff (%)	25	25	25	25	25	25

Exhibit 117 Production, consumption and price for poultry

	2005	2006	2007	2008	2009	2010
production	763	798	822	872	954	1011 kt rtc
consumption	1767	1806	1871	1921	2004	2111 kt rtc
imports	1004	1010	1050	1050	1050	1100 kt rtc
producer price	602	627	652	671	683	694 RUR/ 100kg rtc

Exhibit 118 Policy assumptions for dairy

	2005	2006	2007	2008	2009	2010
Butter tariff	20	20	20	20	20	20
Cheese tariff	15	15	15	15	15	15

Exhibit 119 Production, consumption and price for dairy products

	2005	2006	2007	2008	2009	2010
Milk						
production	31,8	32	32,1	32,4	32,7	32,9 mt pw
price	741.1	758.1	769.4	800.6	828.9	870.9 RUR/100kg
Butter						
production	281	282	279	282	283	283 kt pw
consumption	415	424	435	445	457	469 kt pw
Cheese						
production	324	327	338	343	345	346 kt pw
consumption	510	511	529	553	573	595 kt pw
SMP						
production	141	142	141	142	143	144 kt pw
consumption	184	188	191	196	200	205 kt pw
WMP						
production	103	103	101	103	104	105 kt pw
consumption	122	125	128	132	135	139 kt pw

4.3 Retail Projections

We will start with descriptions of the regional/district indicators of retailing activity, as we feel that this is of vital importance to the manufacturers of food products in Russia. The present and future levels of retail volume, gives us indicators of both consumer purchasing power and the distribution capacity of the area. A wider district level view is taken as the distribution radius for most manufacturers covers at least a district in the European part of Russia.

Exhibit 120 District level development of the Russian retail market (Troika Dialog, 2005)

<i>Russian retail market, \$ bln</i>	2005E	2006F	2007F	2008F	2009F	2010F	CAGR ⁶⁵
Moscow	57.0	66.4	75.7	85.8	96.8	109.3	14 %
St. Petersburg (Spb)	8.7	10.8	13.0	15.6	18.6	22.2	21 %
Central district (excluding Moscow)	37.3	48.9	62.0	77.0	93.7	112.3	25 %
North-West district (excluding Spb)	13.1	15.9	18.9	22.4	26.3	30.9	19 %
Southern district	27.9	35.3	43.9	54.1	66.5	81.7	24 %
Volga district	41.5	51.6	62.7	75.8	91.2	109.8	21 %
Siberia	28.6	35.2	42.5	50.9	60.8	72.6	20 %
Far East	10.0	12.0	14.2	16.7	19.6	22.9	18 %
Urals Region	22.1	28.0	34.8	42.7	52.2	63.7	24 %
Total retail market	246.2	304.1	367.6	441.0	525.7	625.4	20 %

The forecast is optimistic and projects an average of 20% growth across the market, a rate that is possible under continuing economic conditions. During the forecast period the volume will more than double in all districts of the Russian Federation (except Moscow). However, regional variations exist. Strongest average annual growth is expected to take place in the Central district surrounding Moscow. This would be the result of spillovers from the dynamic and expanding capital. Interestingly, we may observe strong growth also in the Southern district (CAGR rank: 2) that includes Krasnodar krai. The city of St. Petersburg ranks 4th in the CAGR figures, and North-West district 7th. In terms of distribution and consumer demand it is useful to consider these together: the combined CAGR is 19%.

The development of modern retail formats is also of importance to the food and agribusiness operators in Russia. A more developed retail sector means increased efficiency in the distribution side as potentially some of the middlemen can be bypassed, and direct relationships with the stores established. Specifically we can expect improved demand visibility and reduced volatility in orders, a phenomenon that aids in production and operations planning. The forecasts for the mass grocery retail (MGR) sector look as follows (Exhibit 121).

Exhibit 121 Retail format projections: value of sales (BMI, 2005)

	2005	2006F	2007F	2008F	2009F	CAGR
Supermarkets (\$ bln)	2.56	3.08	3.72	4.50	5.46	21%
Hypermarkets (\$ bln)	0.98	1.23	1.54	1.93	2.43	25%
Convenience stores (\$ bln)	2.92	3.53	4.26	5.16	6.27	21%
Total MGR sector (\$ bln)	6.49	7.88	9.56	11.63	14.21	22%

The Russian MGR market is developing rapidly, with several new international players scheduled for market entry in 2006, following a year of heightened retail activity, despite the maturity of the market in comparison to some other countries within the CEE region. Discount stores and supermarkets will be the major retail format by 2009 in urban Russia, meeting consumer demands by opening in more locations. As the population falls, the catchment area of discount stores and supermarkets will diminish - with fewer

⁶⁵ CAGR = compound average growth rate: $(i_{2005}/i_{2010})^{(1/5)} - 1$

people per store - however, growth will come from the sale of more non-food items and premium, branded and international products⁶⁶.

Total sales in Russia's MGR sector are expected to reach over billion \$14.2 by 2009, a huge increase of 171.1% from the 2004 figure of billion \$5.24. Traditional stores and open markets will suffer from this development, and their sales are expected to decrease significantly over the coming years, particularly given that growth within the MGR sector will not remain limited to the Moscow and St. Petersburg regions for much longer. By 2009, discount stores will represent the largest section (44.1%) of the total MGR market followed by supermarkets (38.4%). Hypermarkets will witness growth of 216.4% between 2004 and 2009, compared to 79.7% for convenience stores⁶⁷. The CAGRs average on over 20% level in every format, promising healthy growth in the modern retail sector.

⁶⁶ Source: BMI 2005

⁶⁷ Source: BMI 2005

5 RANKING THE SIX REGIONAL SUPPLY CHAINS IN TERMS OF INVESTMENT ATTRACTIVENESS

In order to support the conclusions of the given report and provide structured results, a strategic level assessment of the target value chains in terms of investment attractiveness was conducted. The starting point for the analysis is the regional and sector-wise categorization; the analysis concerns the pork, poultry and dairy value chains in both the Leningrad region and Krasnodarsk krai, six value chains in total. The analysis of all these six value chains in terms of investment opportunity is seen as a way to enable reasonably objective comparison and to some degree benchmarking, and thus provide improved insight to the opportunities even without the preference to proximity, in which the Leningrad region clearly is superior from the Finnish investors' point of view. The process is seen as a quantitative method to integrate the views of the customer (Finnish companies) and the researchers who conducted the field-research.

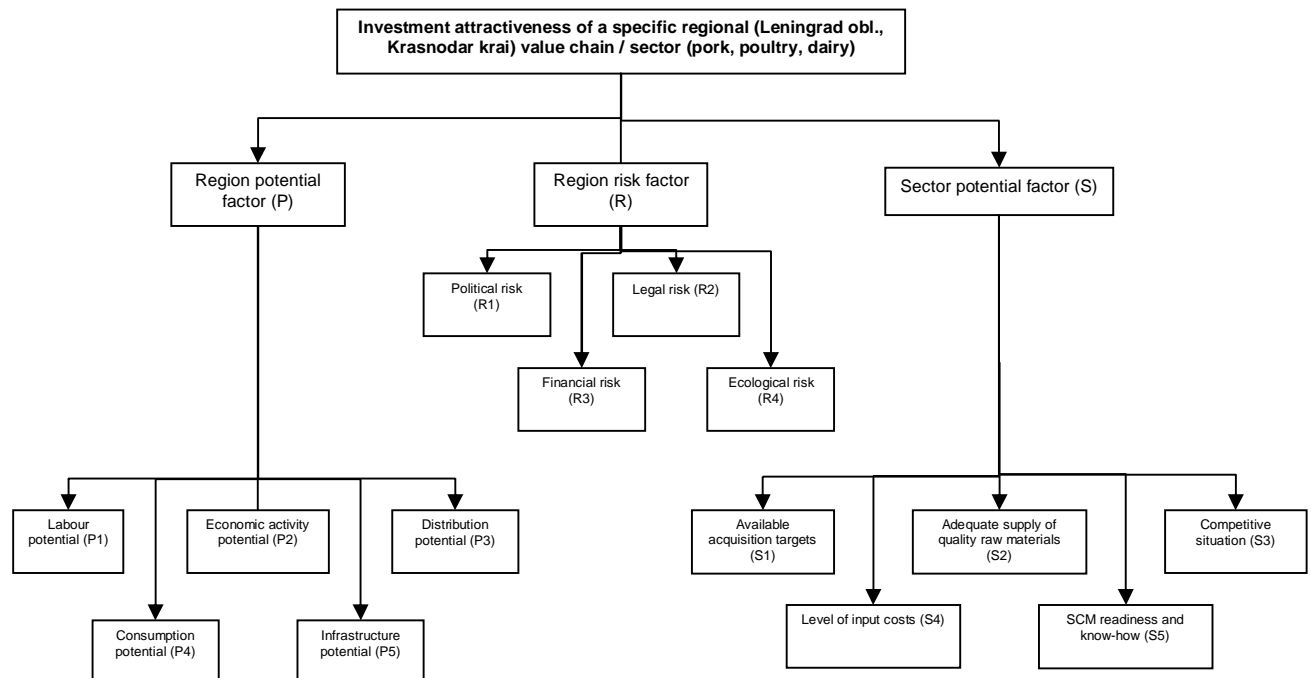
The method in use is the analytical hierarchy process (AHP), which provides tools to cope with complex decision problems so pertinent in modern business and in decision making in general (Saaty 1980, 1994). The method has been proposed in recent academic literature as an emerging solution approach to large, dynamic, and complex real world multi-criteria decision making problems, with applications in strategic planning of organizational resources, the evaluation of strategic alternatives for example in the location of facilities, or the justification of new manufacturing technology implementation, to mention just a few. The area of application in our study is the location of facilities with the wide consideration of food industry value chain related factors.

AHP allows the inclusion of both quantitative and qualitative factors into the model and provides criteria weighting through pair-wise comparisons. In creating the hierarchically structured decision model, the AHP methodology requires the following solution process (Yang & Lee, 1997): (0) need identification and justification, (1) identification of pertinent decision factors, (2) development of priority weights, (3) collection of data and ranking of each potential factor, (4) analysis of comparative results, and (5) identification of preferred alternatives. The process has been followed closely in the analysis described in this section. Without elaborating on the identification and justification of needs, which are clearly evident and justified in the initiation of the current project, we proceed to describe the solution process.

5.1 Identification of Pertinent Decision Factors

Important phase in the AHP is the initial decomposition of the problem into a hierarchically structured model. The research team reviewed the prominent academic literature in terms of locating facilities internationally and the factors of international market attractiveness. The review served the purpose of creating an outline for the expert interviews (8 in total) conducted in January 2006 with several prominent industrialists in the Finnish food industry and researchers focused on the sector. The aim of the interviews was to identify the pertinent decision factors in making food industry investments in Russia. Based on the interviews the following hierarchical model was constructed (Exhibit 122).

Exhibit 122 Hierarchical model of decision factors



The first hierarchy level consists of three factors, namely region potential factor, region risk factor and the sector potential factor. While an attempt was made to include many of the factors mentioned in the interviews, an important consideration affecting variable inclusion was the availability of data for the model application. The model variables are defined and operationalized in the following Exhibit 123.

Exhibit 123 Definition and operationalization of decision factors

Variable	Description	Operationalization	Quantifiable
Region potential factor (P)	Embodies the regional potential for investments and economic activity in general.	Based on a number of statistical regional indicators, weighted according to Russian and international expert opinion (Expert RA, 2005)	-
Labour potential (P1)	Availability of employees for economic activity.	Based on number of indicators, e.g. amount of active people in the labour market, level of education (Expert RA, 2005)	Yes
Economic activity potential (P2)	Conditions for economic activity such as processing, manufacturing, trade, services.	Measured as the total result of economic activity in the region (Expert RA, 2005)	Yes
Distribution potential (P3)	Potential for distribution through modern retail chains / availability of rail and road transport services	Number of modern retail chains identified in the district's major cities / number of rail and road transport service providers identified in the region (PEI)	Yes
Consumption potential (P4)	Potential for consumer demand for products	Total ability of the population to purchase goods and services (Expert RA 2005)	Yes
Infrastructure potential (P5)	Conditions arising from the existing infrastructure and their effect on business	Based on the considerations on economic-geographical attributes, as well as the density and condition of basic infrastructure (Expert RA, 2005)	Yes
Region risk factor (R)	Investment risk factor embodies the probability of various risks in activities	Values and weights based on Russian and international expert opinion (Expert RA, 2005)	-
Political risk (R1)	Risk associated with potential changes in political parties and/or governmental policies that may negatively effect an investment position	Measures the strength and stability of regional authority and the political polarisation of the population (Expert RA, 2005)	Yes
Legal risk (R2)	The risk of loss from a contract that	The general situation in legal norms that	Yes

	cannot be legally enforced. It arises through uncertainty in laws, regulations, and legal actions.	regulate economic exchange in the region: local taxes, tariffs, and restrictions (Expert RA, 2005)	
Financial risk (R3)	Uncertainty in financial transactions / The risk that a firm may not be able to meet its financial obligations to its exchange partners	Describes the strain in regional budget as well as the financial results and situation in the companies (Expert RA, 2005)	Yes
Ecological risk (R4)	Uncertainty arising from the pollution levels in the environment	Measured as the combination of factors embodying the pollution level in the environment (Expert RA, 2005)	Yes
Sector potential factor (S)	Embodies the agrifood sector and supply chain specific attributes in the region	Based on the expert opinion of the subcontracting party (EconCo)	-
Available acquisition targets (S1)	The number of domestic firms with established operations and strong brands.	Based on the expert opinion of the subcontracting party (EconCo)	Yes/No
Adequate supply of quality raw materials (S2)	The number of suppliers able to provide raw material meeting the customized specifications of the customer.	Based on the expert opinion of the subcontracting party (EconCo)	Yes/No
Competitive situation (S3)	The amount of strong domestic firms and foreign firms in the sector / market.	Based on the expert opinion of the subcontracting party (EconCo)	Yes / No
Favourable level of input costs (S4)	The relative cost of inputs (e.g. raw-materials, energy, land, services) for processing activity.	Based on the expert opinion of the subcontracting party (EconCo)	Yes / No
SCM readiness and know-how (S5)	Willingness to share information and collaborate in the supply chain. The level of employment of ICT (hardware/software) in incumbent companies.	Based on the expert opinion of the subcontracting party (EconCo)	No

Each category of factors is divided into sub factors with definition and operationalisation and our ability to quantify the values from existing data source. Mostly the sub factors in the sector potential category were in need of subjective expert assessment from the expert panel in Russia.

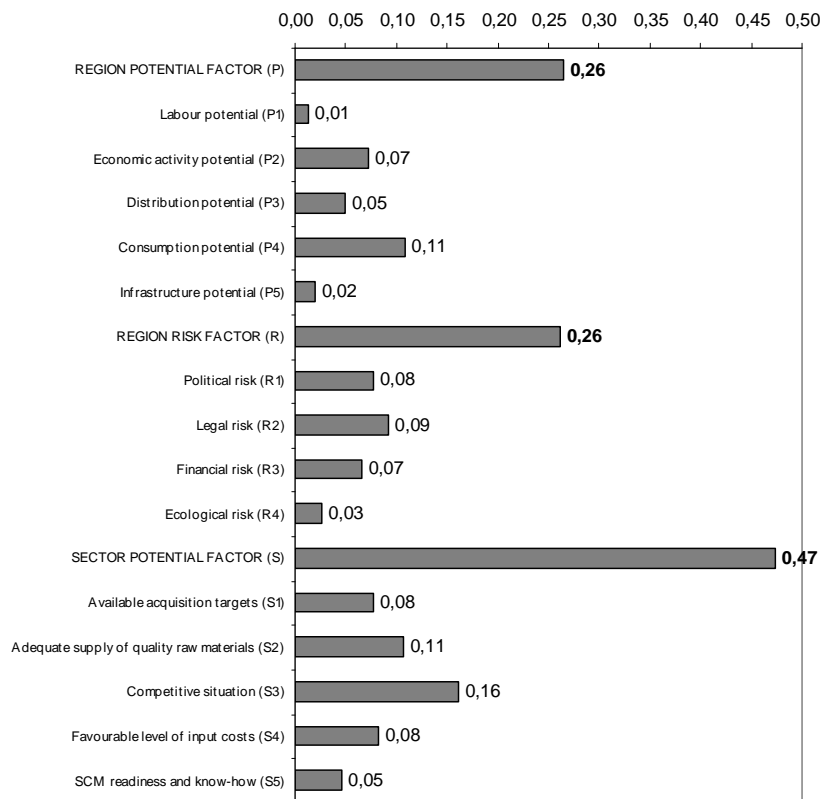
5.2 Development of Priority Weights

In order to determine the value for each alternative for the purposes of ranking and comparison, weights for each decision criterion as well as the region/sector specific values pertaining to each criterion must be determined.

The development of priority weights was conducted by the means of a web-based survey that targeted 26 prominent industrialists in the Finnish food sector. Invitations to take part in the survey were sent via e-mail on 20 February 2006, with reminders in one-week intervals. Deadline for participation was set to 7 March 2006. The invitation and the questionnaire included background on the project and they were tested for coherence in PEI. By the closing of the deadline, 6 answers were received making the response rate 23%, low but adequate for the task in hand. It must be remembered that the AHP application in real world context seldom utilizes input from large samples, as it is a tool for quantifying and structuring expert panel opinion in organizations in need for a decision aid and analysis. Therefore the presented AHP application must be regarded as a case study in strategic investment opportunity assessment.

Exhibit 124 depicts the criteria composite priority weights in terms of percentage share of the total decision consideration. Criteria in both hierarchy levels add up to 100%.

Exhibit 124 Criteria composite priority weights



Analysing first the hierarchy level (P, R, S), we may conclude the following. The region risk and potential factors both take a 26% share of the decision, while the sector potential factors take a majority share with 47%. While together the regional factors weigh 52% in the decision, the sector and value chain specific issues are quite significant in the strategic level decision making.

The composite priority weights in the second level of the hierarchy (Pn, Rn, Sn) vary significantly providing interesting opportunity for analysis. Seven factors reach above average (7%) values, namely consumption potential (11%), political risk (8%), legal risk (9%), available acquisition targets (8%), adequate supply of raw materials (11%), competitive situation (16%), and favourable level of input costs (8%). The diverse collection of factors and issues in the investment assessment underline the complexity involved; issues such as demand, competition, risks, costs and the secure supply base are quite important for the establishment of operations in a foreign market expansion in the food industry. The top three factors underline the total value-chain wide thinking: Are we able to secure the supply of raw materials?; Can we attain significant enough a market share in order to compete in our stage of the value chain?; Is there demand for our product?

The factors with less significance convey the firms' abilities to make an impact with the investment. Labour can be educated and trained to support the activities of the company, infrastructure can be developed in cooperation with regional authorities, ecological risks can be managed with adequate quality inspection regime in place, and supply chain management (SCM) oriented collaboration can be developed in cooperation with suppliers and distributors. While the SCM know-how with technological and institutional readiness can be considered as one the core competencies of the Finnish food industry, the ability to implement similar collaboration in the supply chain in Russia is not considered a factor with significant weight and importance in the investment decision making. Obviously such sophisticated

management systems are in the stage of infancy in Russia, a factor that is not in a way of establishing successful operations in the country.

The hierarchical model was tested for consistency (consistency ratio: CR), with the first level CR value of 0.44 (not statistically significant), and second level values staying below 0.1, implying statistical significance (P: 0.06; R: 0.02; S: 0.06). The results certainly suffer from the low response rate, but can still be regarded as indicative of the true state of mind-set among the targeted managers and industrialists.

5.3 Collection of Data and Ranking of Each Potential Factor

In the next phase, the region/sector specific values pertaining to each criterion were determined. Most of the region potential and risk factors were based on the ExpertRA region ranking data, which is considered best available such synthesis of a collection of quantitative and quantitative data, drawn statistical data sources and subjective foreign and domestic expert panel judgment. The distribution potential is based on calculations on modern retail activity levels and transportation services availability in the regions. Finally, as some of the factors were not easily quantifiable, as most S-factors truly are, the essential feature of AHP of managing the incorporation of qualitative factors into the model through expert judgment was readily used.

The experts in the Russian subcontracting party (Economic Consulting Ltd.) were surveyed in order to acquire values for qualitative factors. Thus the values reflect both the larger expert sample of opinion in the regional level and the more of a limited expert sample of opinion in the sector level. The limitation originates from the rarity of having expertise in both the focus regions and all the three sectors embodied in one person. This project offered such rare expertise, with three respondents contributing to the consensus on sector values. Again we must underline the case-study nature of the process

5.4 Analysis of Comparative Results and the Identification of Preferred Alternatives

The Exhibit 125 provides the AHP results with calculated composite priority weights and factor values for each region / value chain. In terms of comparison of regions the Leningrad oblast and Krasnodar krai are on a similar level of attractiveness. The average scores were 0.343 and 0.341 respectively. However, as we apply a sector / value chain comparison, the differences are more pronounced. The poultry sector in the Leningrad oblast is the most attractive one with a score of 0.434. The runner-ups are the three Krasnodar sectors, in the order of poultry (0.351), dairy (0.339) and pork (0.333). Trailing behind comes the dairy sector in Leningrad (0.310) and with a more pronounced negative difference to the rest, the pork sector in Leningrad (0.285). While the differences are not great, they still indicate significant variation in investment attractiveness.

The reasons behind the attractiveness on the Leningrad oblast poultry sector seem to be the following:

- strong supply base of raw material
- competitive situation allows profit making
- input costs are on a moderate level in comparison to dairy and pork
- and the level of SCM readiness and know-how is significantly higher in comparison to others

The main strength of Krasnodar krai seems to be the availability of acquisition targets, as significant investments have taken place for improvement of production technology. The Krasnodar krai poultry sector is the number two in investment ranking attractiveness due to some of the same regions as in Leningrad oblast: the favourable level of input costs in comparison to the other sectors. The rating for

acquisition target availability is markedly better in Krasnodar poultry sector in comparison to the same indicator in Leningrad oblast.

On the general regional level the considerations include the following:

- Leningrad region suffers from shortage of labour force as it is the supplier of dynamic economic centre of the city of St. Petersburg
- Krasnodar enjoys plenty of rural workforce
- distribution is pronouncedly effective in Leningrad oblast due to geographic compactness
- Krasnodar in total offers a better consumption base with the proximity of large regional capitals
- the level of infrastructure development in general is higher in Leningrad oblast
- risk levels are somewhat more favourable in Krasnodar krai

As a final comment, investment into any section or echelon of the Leningrad oblast chain requires complementary investments into other sections (raw materials, feed supplies, warehousing, and distribution centers). Due to overall land deterioration, land management is required in order to ensure feed supply, since a company considering investing for example in pork production needs either to increase investment outlay (which may be limited due to risk assessment or overall financial ability of the company) or to find a company which will be willing to invest in complementary businesses.

FOOD INDUSTRY VALUE CHAINS
IN LENINGRAD OBLAST AND KRASNODAR KRAI

Section 5
Ranking the Six Regional
Supply Chains in Terms of
Investment Attractiveness

Exhibit 125 Summary of AHP results

	Composite priority weights	Leningrad / pork	Leningrad / poultry	Leningrad / dairy	Krasnodar / pork	Krasnodar / poultry	Krasnodar / dairy
<u>REGION POTENTIAL FACTOR (P)</u>							
Labour potential (P1)	0.014	0.248	0.248	0.248	0.752	0.752	0.752
Economic activity potential (P2)	0.073	0.391	0.391	0.391	0.609	0.609	0.609
Distribution potential (P3)	0.049	0.743	0.743	0.743	0.257	0.257	0.257
Consumption potential (P4)	0.109	0.449	0.449	0.449	0.551	0.551	0.551
Infrastructure potential (P5)	0.020	0.531	0.531	0.531	0.469	0.469	0.469
<u>REGION RISK FACTOR (R)</u>							
Political risk (R1)	0.077	0.457	0.457	0.457	0.543	0.543	0.543
Legal risk (R2)	0.093	0.490	0.490	0.490	0.510	0.510	0.510
Financial risk (R3)	0.066	0.569	0.569	0.569	0.431	0.431	0.431
Ecological risk (R4)	0.026	0.455	0.455	0.455	0.545	0.545	0.545
<u>SECTOR POTENTIAL FACTOR (S)</u>							
Available acquisition targets (S1)	0.077	0.031	0.041	0.191	0.218	0.174	0.346
Adequate supply of quality raw materials (S2)	0.106	0.111	0.345	0.071	0.109	0.204	0.160
Competitive situation (S3)	0.161	0.029	0.545	0.074	0.129	0.141	0.081
Favourable level of input costs (S4)	0.083	0.038	0.350	0.146	0.140	0.235	0.093
SCM readiness and know-how (S5)	0.047	0.107	0.409	0.137	0.093	0.128	0.128
	SCORE:	0.285	0.434	0.310	0.333	0.351	0.339
	RANK:	6	1	5	4	2	3

6 CONCLUSIONS

The project results, presented in the previous sections, have offered a view on the agribusiness value chains in two quite different regions of Russia. Diverging recent history, resources and environmental endowments coupled with the great geographical distance from each other, serve as separating factors of the regions. On the outset the choice of including Leningrad oblast to the focus regions of the study was taken as given due to proximity oriented natural interest from the Finnish food industry. It is common knowledge that the Finnish food manufacturers regard the region as “home market” as it is an integral part of the Baltic Sea economic region.

Krasnodar on the other hand lies on the Black Sea coast with such countries as Turkey and Iran in closer proximity than Finland. However, as the report clearly indicates, significant business potential exists in the Krasnodar agribusiness value-chains as well. It is intriguing to see whether Finnish agri-food companies will follow the example of the ICT and forest industry, and establish operations in more distant markets, or will they follow the generic academic internationalization models that point out the significance of geographic closeness. Undoubtedly, the attractiveness of St. Petersburg and Moscow markets cause them to be at the forefront of the strategic internationalization considerations. Either way, agribusiness related opportunities do exist both in close and in distant regions of Russia.

With the mapping of relevant decision criteria in the foreign, and specifically Russian, investment decision of the Finnish food industrialists, some factors are salient in their weight: **(1) competitive situation, (2) adequate raw material supply base, and (3) consumption potential.** It is evident from these results that the value chain wide considerations start to appear with interests on suppliers, competitors, pricing, bargaining power, distribution, retail development etc. These factors validate the approach taken in this project and the consequent reporting of results. In the following conclusions the focus is on the previously listed factors, but specifically on the actors and the supply base of the value chain.

The Russian agricultural sector enjoys a great level of support from the federal government in the form of subsidies, support programmes aimed at the development of productivity and implementation of new technology, as well as protective import quotas. On the other hand, the state’s and especially regional authorities’ interests in developing a viable agricultural sector with efficient supply chains able to satisfy the consumer demand, are also evident in the form of investment legislature development for example in the Krasnodar krai, where the resolution to eliminate administrative barriers to foreign investment take the form of time limits in the approval times of certain permissions. Although issues remain open in some areas, the general atmosphere towards foreign role in the development of the agricultural sector is positive. **It can be concluded that the state as an actor in both the federal as well as regional level play a significant role in setting the market conditions for competition and the development of the food value-chain.**

Due to the nature (e.g. perishability, seasonality or supply variability) of the agricultural product and foodstuffs in general and especially in the current Russian market, the functioning value chain is vital for profitable operations. Shortages of raw-material result in supply-driven, instead of demand-driven supply chains. The theoretical implications are fluctuating prices with purchasing gaming, causing inefficiencies in the supply chain. **In practical terms processing industries are forced to utilize either contractual or ownership related methods in the securing process of the adequate supply base.** The most salient phenomenon of this, is the seemingly common way of vertically integrating upstream companies, i.e. suppliers under the holding company umbrella. Good example of this development is the Leningrad oblast dairy industry where the major industry players include Petmol, Baltiiskoye and Piskarevskii processing holdings. Interestingly this vertical integration is not limited to the upstream functions but, while on decline, to the downstream distribution functions as well. The development of the distribution function and the retail function in particular, contributes to the increased specialization of the value chain players: no factory owned retail outlet networks are required and their usage is on the decline. **We may conclude in general terms that there are no supply chains in the Russian agribusiness, if we narrowly understand the supply chains as cooperating and coordinating independent enterprises**

executing consecutive value adding functions for the achievement of agricultural consumer product.

In other words, the total network of companies and functions is patchy, i.e. specialized firms undertaking supportive roles as suppliers of adequate raw materials, or warehousing and logistics functions are in some cases missing. **The practical strategic implication to the Finnish food industry is the required complementary investments across the value chain as operations are established.** This may be in the form of vertical integration, technology transfer, joint-ventures, training and providing know-how etc. In many cases the origins of missing link in the chain is the inability to develop the respective business with the existing resources and endowments, and to pass the rising costs of production to the consumers.

One of the salient development trends is the consolidation of the industry after the disastrous decline in industrial level production in many agricultural sectors in the beginning of the 1990s. The deterioration of the production capacity created the demand for small-scale production from back-yards and small farms. The same fragmentation has been evident in the retail sector until the recent years with appearance of the retail networks even in the form of global giants. One of the down stream originating implications is the rising level of quality, as it is easier to maintain proper supply standards with a small number of industrial level suppliers. As the industry consolidates, especially in some of the upstream echelons, the collusionary tendencies may become evident.

A word on the driving force of the agricultural value chain: the demand. **The driving force is the emerging middle-class in the urban centers of Russia.** With rising incomes, they are increasingly brand and quality conscious, and demand in increasing level products with more value added content. Patterns famous from the St. Petersburg bread market are experiencing cross sector / value chain imitation, as due to the spill-over effects of foreign (Finnish) investments, the employed packaging and logistics standards have been spread throughout the industry as best-practice and standard. The spill-over effects and their inducement thereof, are some of the ways the Finnish industry can contribute to the industry development with minimum capital outlays.

In general terms, the consumption of many meat products is still below potential standards, and thus opportunities for business exist. A key question in terms of future attractiveness of the Russian consumer market is whether the trend of steadily increasing consumer purchasing power will continue in the mid to long term. In this report, the relationship of oil prices and federal expenditures to the personal real income development was established. It seems that as a significant part of the Russian workforce is employed in the oil and gas industry with significantly higher than average wages; the impact of oil workers prosperity to the general economic prosperity is amplified. Furthermore, the position of the federal government as the oil wind-fall profit receiver in the form of taxes makes it a significant oil wealth allocator as well. **Key issues arise from these considerations: the oil price development and the high level of federal budget expenditure in the form of priority development projects and social transfers will have an effect on the Russian consumer on the street through indirect ripple effects in the economy.** In the more distant future, the exposition of the Russian consumer to the fluctuating world commodity prices would decrease through diversification of the Russian industry and the development of the service sector. The food industry value chains would certainly benefit from more stable conditions, even though the price elasticity of demand on food products is generally low.

Some outside forces are currently very much worthy of attention. The effect of WTO agreements are mainly considered on the political level and, in our opinion, players on the regional and company levels do not consider WTO issues as a top priority in their list. **There is a general belief that the Russian federal government will keep subsidies available to the agro-industrial sector.** The WTO entry may have positive effect since the industry participants consider new opportunities related, but not limited to (1) the exporting value-added products to customers who require ecologically clean, organic and natural foodstuff; exporting products (for example Roscar supplies eggs to Switzerland and egg powder to European customers); the development of the so called “agricultural tourism” since Krasnodar krai has a lot of unutilized capacity in this respect.

Avian flu significantly affected Krasnodar krai poultry industry with less impact on Leningrad oblast for several reasons: more severe climate in Leningrad oblast provided natural protection to the avian flu endemic; poultry industry in Leningrad region is more concentrated in comparison to Krasnodar krai, and has a state-of-art technology. These facts help to implement protective measures more effectively and with less cost. In addition, poultry meat is more traditional nutrient for Leningrad region in comparison to the other regions.

In order to provide comprehensible and concise summary on the report, we have listed some of **the most significant issues and trends in the Russian (Leningrad oblast, Krasnodar Krai) dairy, pork and poultry sectors:**

1. General

- a. Improving economic conditions and dollar depreciation against rubble are the main factors behind real gross in personal income. Gross in personal income leads to the changes in the food consumption patterns. Changes in the food consumption pattern lead to the increase in consumption of milk/dairy products and meat products. Since current consumption of dairy products and meat products are less than in the beginning of 1990s, there is a substantial potential in market growth in terms of volume and in terms of value, since consumer trends towards more expensive products and ready-to-eat meals (with higher value-added)
- b. Future development and modernization of the recreational industry in Krasnodar krai will bring more visitors and tourists (Krasnodar krai will compete with Turkey, Spain and Greece during the summer months for tourists) who generally spend more on food than the permanent citizens. However, increase in demand should be matched by additional investments into HoReCa industry and investments in food processing industry.
- c. The development of the modern agricultural companies is limited by the absence of the trained personnel in the rural area (such issues like marketing, packaging and distribution require a lot of investment in human capital as well as equipment).
- d. Rural population and local political forces generally consider as a threat the outside investors willing to buy land. The investors are expected to prove themselves as “good and socially responsible corporate citizens”. Large scale investments are expected to be added with the contribution to local community development.
- e. Politically, the government will support rural population by helping to maintain obsolete technology and financially weak agricultural firms.
- f. Increasing ecological “awareness” leads to requirements to invest additional funds into environmental protection systems.
- g. Fuel and electricity costs increases are a general threat to all chains, both in Leningrad oblast and Krasnodar krai. High energy costs directly eat into the farmers profits and require additional investment into working capital.

2. Dairy

- a. Federal National Project – plenty of available cheap long-term capital.
- b. Dairy industry development is only profitable if the investor secures the supply of forage (animal feed). This requires additional investment into tillage industry (land management, machinery, seeds availability).
- c. Increased competition from the national brands, leave no place for local (regional) brands. Pricing war should be expected as the retail networks are entering the regional retail markets.
- d. Combination of tillage and dairy activities help to overcome seasonality problem and reduce feeding costs by more that 30%.
- e. Logistics facilities are required to improve the performance of Krasnodar krai (due to its geographical expanse) in order to compare with Leningrad region distribution effectiveness.
- f. Development of new capacity in the dairy chain in Krasnodar krai will require additional investment into the improvement of a herd breeds to compare with the dairy chain in

Leningrad oblast. On the other hand, development of a new dairy capacity in Leningrad oblast will require additional investment into land management and improvement of tillage activities.

3. Pork

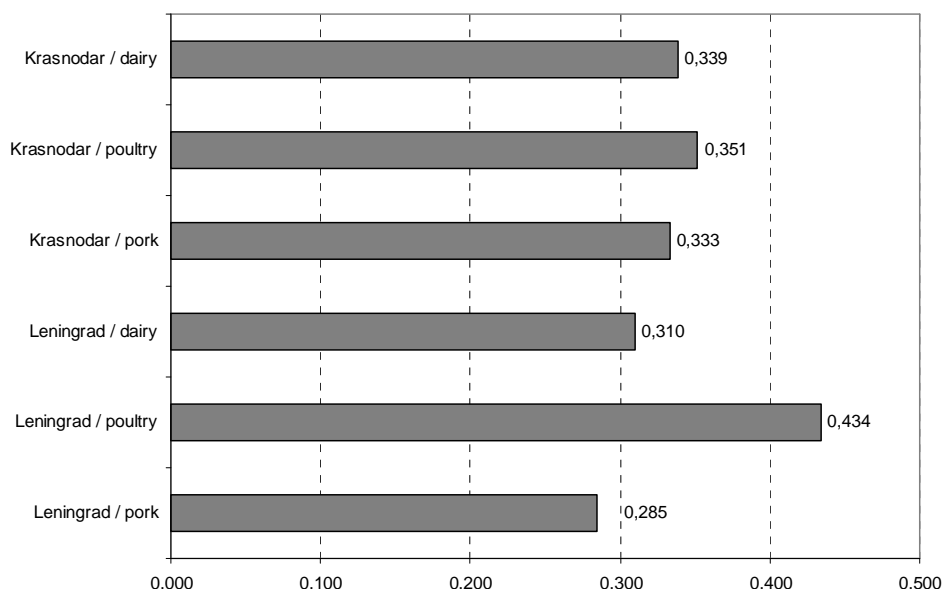
- a. The Federal National Project (husbandry development) means plenty of available capital. The general assessment is that such funds should be considered as “gifts”; the government could be soft if the repayment of the loans will not meet the schedule.
- b. Substantial potential in import substitution will be mitigated by political reasons. Pork industry is a substantial sector in Europe.
- c. The development of new capacity in Leningrad Region will require an additional investment into feeding capacity and manure treatment to compare with Krasnodar krai situation where the availability of land may accommodate bigger manure volume

4. Poultry

- a. Avian flu as a consumption factor mainly affected the metropolitan (urban) areas, where the consumers can differentiate and have a better variety. Rural population which maintains small herds in the private backyards continues to consume poultry (however, such consumption does not appear in the value chain).
- b. Substantial potential in import substitution (policy issue in relationship with USA) will be mitigated by political reasons (poultry exports to Russia, is a substantial source of income for Delaware and Pennsylvania in the USA).

Finally, the report conducted a quantitative analysis of value chain comparison in the two focus regions. The AHP-process was initiated with a goal of providing more or less unbiased view on the attractiveness of the focus regions and their value chains. The process integrated the views of industrialists in the Finnish food industry and the project team in Russia, and offers strategic level insight on the comparison. It is only one view, with certain limitations, but offers for example an opportunity to ignore the proximity factor from the consideration. The scores of the six value chains is depicted in the Exhibit 126.

Exhibit 126 Regional value chain scores



The results indicate the highest attractiveness of the Leningrad poultry value chain, while the other Leningrad value chains are underperformers to the Krasnodar counterparts. **The important conclusion at this point is that Krasnodar offers attractive opportunities across the agricultural landscape, with less variation.** The underlying dynamics can be detected in this report.

APPENDICES

Appendix 1. Comparative milk consumption

<i>Country</i>	<i>Fluid Milk (Litres)</i>	<i>Cheeses (kg)</i>	<i>Butter (kg)</i>
Romania	163.0	1.1	0.5
Australia	98.2	11.9	2.7
United States	89.1	14.3	2.0
Russia	87.5	3.5	3.0
New Zealand	87.3	7.0	6.5
Canada	85.6	12.0	3.5
European Union (25 countries)	72.2	12.8	4.6
Ukraine	69.6	2.5	3.0
Brazil	65.9	2.6	0.4
Argentina	53.2	7.9	N/A
Mexico	40.1	2.0	1.1
Japan	37.8	2.0	0.7
India	32.3	N/A	2.5
South Korea	29.8	N/A	N/A
Chile	27.5	N/A	N/A
Egypt	20.8	6.0	0.8
China	7.7	N/A	N/A

Appendix 2. Average annual yield (kg) per milking cow in Leningrad oblast

	<i>Agricultural Enterprises</i>	<i>Private farms</i>
Total in Leningrad oblast	5 953	5 418
<i>By districts:</i>		
Boxitogorskii	3 631	4 969
Volosovskii	6 987	6 384
Volkhovskii	5 439	5 211
Vsevologhskii	6 163	5 598
Viborgskii	5 073	4 750
Gatchinskii	6 432	6 276
Kingissepsski	5 902	5 721
Kirishskii	5 248	4 392
Kirovskii	3 790	3 615
Lodeinopolskii	3 622	3 833
Lomonosovskii	6 200	5 817
Lughskii	5 580	5 049
Podporozhskii	3 128	3 666
Priozerskii	7 434	6 746
Slantsevskii	5 653	4 332
Tikhvinskii	3 937	4 284
Tosnenskii	5 919	5 824
St.Petersburg	—	4 819
City of Sosnovii Bor	—	5 000
City of Schlisselburg	—	4 000
City of St.Petersburg	6 286	—

Source: Petrostat state statistics committee report "Производство животноводческой продукции в хозяйствах Ленинградской области в 2004 году, статистический сборник"

Appendix 3 Milk production in 2004 in Leningrad oblast (tons)

	<i>By all types of producers</i>		<i>Including: Agricultural enterprises</i>		<i>Including In private backyards</i>		<i>In private farms</i>	
	2003	2004	2003	2004	2003	2004	2003	2004
Total in Leningrad oblast	603 044	566 235	505 304	486 915	91489	73120	6521	6200
<i>By districts:</i>								
Boxitogorskii	6535	5032	1784	1244	4515	3569	236	219
Volosovskii	81876	79968	71551	71170	9968	8436	357	362
Volkhovskii	41528	40600	34151	35102	6610	4863	767	635
Vsevologhsckii	45068	43684	39774	39188	4620	3569	674	927
Viborgskii	38686	35164	31621	29588	6227	4752	838	824
Gatchinskii	74929	72814	60969	61049	13630	11490	330	275
Kingissepskii	47754	41139	42233	36623	4710	3763	811	753
Kirishskii	14414	14930	12993	13922	1115	800	306	208
Kirovskii	9659	7059	7467	5408	2031	1547	161	104
Lodeinopolskii	5395	5305	3390	3812	1627	1145	378	348
Lomonosovskii	36213	35476	29523	30140	6404	5116	286	220
Lughskii	52845	46379	45979	40833	6335	5113	531	433
Podporozhskii	4450	3671	1409	1318	2974	2314	67	39
Priozerskii	61244	58345	54759	53013	6402	5260	83	72
Slantsevskii	14690	14127	12042	12097	2579	1911	69	119
Tikhvinskii	15085	14183	11866	11760	3156	2389	63	34
Tosnenskii	49118	45665	41849	39402	6705	5635	564	628
City of Sosnovii Bor	87	66			87	66		
City of Schlisselburgh	73	54			73	54		
City of St.Petersburg			31624	32781	1721	1328		

Source: Petrostat state statistics committee report "Производство животноводческой продукции в хозяйствах Ленинградской области в 2004 году, статистический сборник"

Appendix 4 Milk herd livestock by farming types in Leningrad oblast (heads)

	<i>In all types of producers</i>		<i>Agricultural enterprises</i>		<i>In private backyards</i>		<i>In private farms</i>	
	2004	2005	2004	2005	2004	2005	2004	2005
Total	97826	91135	83815	79334	12854	10657	1157	1144
<i>By districts</i>								
Boxitogorskii	1221	887	475	296	695	549	51	42
Volosovskii	11380	11237	10154	9899	1161	1285	65	53
Volkhovskii	7475	7005	6471	6231	870	668	134	106
Vsevologhsckii	7109	7012	6408	6360	594	433	107	219
Viborgskii	7190	6479	5987	5557	1013	779	190	143
Gatchinskii	11383	11157	9586	9563	1743	1559	54	35
Kingissepskii	7320	6266	6544	5650	643	493	133	123
Kirishskii	2918	2753	2699	2597	166	117	53	39
Kirovskii	2352	1348	1872	1080	451	249	29	19
Lodeinopolskii	1348	1359	992	1046	278	218	78	95
Lomonosovskii	5844	5489	4946	4751	858	708	40	30
Lughskii	8610	7773	7580	6985	945	725	85	63
Podporozhskii	1003	901	397	423	596	470	10	8
Priozerskii	7940	7732	7170	7043	763	681	7	8
Slantsevskii	2575	2522	2118	2140	444	345	13	37
Tikhvinskii	3469	3256	2995	2894	466	360	8	2
Tosnenskii	8000	7344	6978	6403	922	819	100	122
City of Sosnovii Bor	14	11			14	11		
City of Schlisselburg	9	7			9	7		
City of St.Petersburg			5218	5229	223	181		

Source: Petrostat state statistics committee report "Производство животноводческой продукции в хозяйствах Ленинградской области в 2004 году, статистический сборник"

FOOD INDUSTRY VALUE CHAINS IN LENINGRAD OBLAST AND KRASNODAR KRAI	Appendices
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Appendix 5 . Fodder expenditure on main milk herd in Leningrad oblast (1000 quintals of fodder units)

	<i>All types of fodders</i>	<i>Including</i>				
		concentrated	out of which combined fodders	rough	rich	others
Total	4731	2018	1637	424	1518	771
<i>By districts:</i>						
Boxitogorskii	12	4	4	1	4	3
Volosovskii	619	263	215	31	215	110
Volkhovskii	402	153	135	23	172	54
Vsevologhskii	375	148	133	81	107	39
Viborgskii	306	110	102	35	77	84
Gatchinskii	586	276	218	54	184	72
Kingisspeskii	330	150	110	20	126	34
Kirishskii	143	53	50	6	50	34
Kirovskii	61	11	10	5	23	22
Lodeinopolskii	44	16	15	7	11	10
Lomonosovskii	290	131	98	19	86	54
Lughskii	399	163	124	44	115	77
Podporoghskii	13	4	3	2	4	3
Priozerskii	481	259	208	44	119	59
Slantsevskii	127	45	34	9	35	38
Tikhvinskii	141	45	36	16	55	25
Tosnenskii	402	187	147	27	135	53
Enterprises on administrative territory of St.Petersburg	319	150	115	47	84	38

Source: Petrostat state statistics committee report "Производство животноводческой продукции в хозяйствах Ленинградской области в 2004 году, статистический сборник"

Appendix 6 Agro-Balt JSC general information

<i>Full name</i>	<i>Agro-Balt pedigree breeding plant joint stock company</i>
Short name	JSC Agro-Balt pedigree breeding plant"
Legal address	Leningrad oblast, Kingissepski district, Bolshaya Pustomerzha village
Factual address	Leningrad oblast, Kingissepski district, Bolshaya Pustomerzha village
Contact telephones	(81375) 64-347
E-mail	agrobalt@rambler.ru
Main stockholders	Interprom joint stock company

Source: Agro-Balt JSC annual issuer's report

FOOD INDUSTRY VALUE CHAINS IN LENINGRAD OBLAST AND KRASNODAR KRAI	Appendices
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Appendix 7 Gomontovo JSC general information

<i>Full name</i>	<i>Gomontovo joint stock company</i>
Short name	JSC Gomontovo
Legal address	Leningrad oblast, Volosovskii district, Begunitsi village
Factual address	Leningrad oblast, Volosovskii district, Begunitsi village
Contact telephones	(81373)51-170
E-mail	gomontovo@bk.vu
Main stockholders	Interprom joint stock company

Source: Gomontovo JSC annual issuer's report

Appendix 8 Kotelskoye JSC general information

<i>Full name</i>	<i>Kotelskoye joint stock company</i>
Short name	JSC Kotelskoye
Legal address	Leningrad oblast, Kingisseppski district, Kotelskoye village
Factual address	Leningrad oblast, Kingisseppski district, Kotelskoye village
Contact telephones	8 (81375) 63-652 telephone 8 (81375) 2-55-50 fax
E-mail	gomontovo@bk.vu

Source: Kotelskoye JSC annual issuer's report

Appendix 9 Pork production in liveweight (tons), in Leningrad oblast

	<i>All producers</i>		<i>Agricultural enterprises</i>		<i>Private households</i>		<i>Farmers</i>	
	2003	2004	2003	2004	2003	2004	2003	2004
Total	18690	13911	10486	7291	7650	6186	554	434
<i>By districts:</i>								
Boksitogorskii	294	254	25	41	259	207	10	6
Volosovskii	1060	873	34	26	1011	809	15	38
Volkhovskii	373	319	27	22	328	281	18	16
Vsevologhskaa	1132	839	497	367	604	464	31	8
Viborgskii	668	582	97	100	469	379	102	103
Gatchinskii	2529	2138	868	692	1459	1311	202	135
Kingisseppski	490	325	52	29	410	273	28	23
Kirishskii	35	27			27	21	8	6
Kirovskii	155	134	—	—	146	125	9	9
Lodeinopolskii	146	104	12	10	117	82	17	12
Lomonosovskii	837	747	422	404	406	336	9	7
Lughskii	1312	984	628	404	633	544	51	36
Podporoghskaa	72	61	7	6	49	43	16	12
Priozerskii	408	498	159	281	242	215	7	2
Slantsevskii	521	403	93	95	425	304	3	4
Tikhvinskii	373	287	—	2	364	278	9	7
Tosnenskii	7516	4493	7216	4270	281	213	19	10
City of Sosnovii Bor	2	1			2	1		
St.Petersburg	808	828	390	528	418	300		

Source: Petrostat state statistics committee report "Производство животноводческой продукции в хозяйствах Ленинградской области в 2004 году, статистический сборник"

**FOOD INDUSTRY VALUE CHAINS
IN LENINGRAD OBLAST AND KRASNODAR KRAI**

Appendices

Appendix 10 Pork production in deadweight tons

	<i>All producers</i>		<i>Agricultural enterprises</i>		<i>Private households</i>		<i>Farmers</i>	
	2003	2004	2003	2004	2003	2004	2003	2004
Total	13653	10038	7660	5261	5588	4464	405	313
<i>By districts:</i>								
Boksitogorskii	214	183	18	30	189	149	7	4
Volosovskii	774	630	25	19	738	584	11	27
Volkhovskii	273	231	20	16	240	203	13	12
Vsevologhskii	827	606	363	265	441	335	23	6
Viborgskii	488	420	71	72	343	274	74	74
Gatchinskii	1848	1542	634	499	1066	946	148	97
Kingisseppski	358	235	38	21	300	197	20	17
Kirishskii	26	19	—	—	20	15	6	4
Kirovskii	114	97	—	—	107	90	7	7
Lodeinopolskii	106	75	9	7	85	59	12	9
Lomonosovskii	612	538	—	—	297	242	7	5
Lughskii	958	711	459	292	462	393	37	26
Podporoghskii	53	44	5	4	36	31	12	9
Priozerskii	298	359	116	203	177	155	5	1
Slantsevskii	380	291	68	69	310	219	2	3
Tikhvinskii	273	207	—	1	266	201	7	5
Tosnenskii	5490	3242	5271	3081	205	154	14	7
City of Sosnovii Bor	1	1	—	—	1	1	—	—
City of Schlisselburg	—	—	—	—	—	—	—	—
St.Petersburg	—	—	285	381	305	216	—	—

Source: Petrostat state statistics committee report "Производство животноводческой продукции в хозяйствах Ленинградской области в 2004 году, статистический сборник"

Appendix 11 Pig livestock in Leningrad oblast (heads)

	<i>All producers</i>		<i>Agricultural enterprises</i>		<i>Private households</i>		<i>Farmers</i>	
	2004	2005	2004	2005	2004	2005	2004	2005
Total	94266	50173	71802	31403	18341	15103	4123	3667
Boksitogorskii	1248	660	529	150	631	487	88	23
Volosovskii	3641	3537	1133	994	2413	1958	95	585
Volkhovskii	1297	1068	331	223	823	696	143	149
Vsevologhskii	5772	4181	4157	3143	1506	1003	109	35
Viborgskii	3466	2845	1330	1089	1167	882	969	874
Gatchinskii	13445	12864	8313	8497	3632	3455	1500	912
Kingisseppski	1910	903	852	64	830	647	228	192
Kirishskii	130	84	—	—	64	50	66	34
Kirovskii	430	404	—	—	345	330	85	74
Lodeinopolskii	639	517	292	201	276	166	71	150
Lomonosovskii	6193	1601	5185	670	940	878	68	53
Lughskii	6163	4847	4238	3184	1519	1420	406	243
Podporoghskii	325	247	112	5	94	141	119	101
Priozerskii	3747	4160	3142	3567	589	573	16	20
Slantsevskii	2715	2349	1648	1696	1048	597	19	56
Tikhvinskii	982	689	21	27	864	639	97	23
Tosnenskii	38533	6027	37894	5329	595	555	44	143
City of Sosnovii Bor	3	3	—	—	4	3	—	—
St.Petersburg	—	—	5445	5295	1001	623	—	—

Source: Petrostat state statistics committee report "Производство животноводческой продукции в хозяйствах Ленинградской области в 2004 году, статистический сборник"

Appendix 12 Pig daily weight increment in Leningrad oblast (grams)

<i>Total in Leningrad oblast'</i>	280
<i>By districts:</i>	
Boksitogorskii	144
Volosovskii	245
Volkhovskii	249
Vsevologhskii	280
Vyborgskii	210
Gatchinskii	212
Kingisseppski	167
Kirishskii	—
Kirovskii	—
Lodeinopolskii	163
Lomonosovskii	242
Lughskii	307
Podporozhskii	393
Priozerskii	286
Slantsevskii	189
Tikhvinskii	—
Tosnenskii	317
St.Petersburg	217

Source: Petrostat state statistics committee report "Производство животноводческой продукции в хозяйствах Ленинградской области в 2004 году, статистический сборник"

Appendix 13 Forage expenditure on pigs in Leningrad oblast (1000 quintals of fodder units)

	<i>All fodder types including</i>				
		concentrated	combined fodder	rich fodders	other types
Total	326	287	242	18	21
<i>By districts:</i>					
Boksitogorskii	1	1	1	—	—
Volosovskii	5	5	3	—	—
Volkhovskii	1	1	1	—	—
Vsevologhskii	26	24	18	—	2
Viborgskii	8	7	5	—	1
Gatchinskii	49	32	18	11	6
Kingisseppskii	2	1	1	1	—
Krishskii	—	—	—	—	—
Kirovskii	—	—	—	—	—
Lodeinopolskii	1	1	1	—	—
Lomonosovskii	24	18	12	2	4
Lughskii	29	22	21	3	4
Podporoghskii	—	—	—	—	—
Priozerskii	21	20	12	—	1
Slantsevskii	10	9	4	—	1
Tikhvinskii	—	—	—	—	—
Tosnenskii	149	146	145	1	2
St.Petersburg	41	38	37	1	2

Source: Petrostat state statistics committee report "Производство животноводческой продукции в хозяйствах Ленинградской области в 2004 году, статистический сборник"

FOOD INDUSTRY VALUE CHAINS IN LENINGRAD OBLAST AND KRASNODAR KRAI	Appendices
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Appendix 14 Poultry for slaughter in liveweight, in Leningrad oblast (tons)

	2003	2004	%-change
Total production	100 898	116 730	16
<i>Including production in districts:</i>			
Boksitogorskii	27	48	78
Volosovskii	55	86	56
Volkhovskii	49	81	65
Vsevolghskii	985	1 016	3
Viborgskii	9 166	8 640	-6
Gatchinskii	3 295	3 430	4
Kingissepskii	35	54	54
Kirishskii	16	24	50
Kirovskii	39 513	41 393	5
Lodeinopolskii	18	30	67
Lomonosovskii	47 506	61 446	29
Luzhskii	67	113	69
Podporoghskii	13	23	77
Priozerskii	36	44	22
Slantsevskii	18	34	-11
Tikhvinskii	27	48	78
Tosnenskii	55	98	78

Source: Petrostat state statistics committee report "Производство животноводческой продукции в хозяйствах Ленинградской области в 2004 году, статистический сборник"

Appendix 15 Consumption of fodders by poultry industry in Leningrad oblast (1000 quintals of feed units)

	<i>All types of fodders</i>	<i>including</i>		
		Concentrated	Out of which combined fodder	Other types of fodder
Total	6179	6164	6147	15
<i>By districts</i>				
Vsevolghskii	338	338	338	—
Viborgskii	1480	1477	1477	3
Gatchinskii	766	765	765	1
Kirovskii	1948	1939	1939	9
Lomonosovskii	1641	1639	1622	2
Organization on the territory St.Petersburg	117	117	117	

Source: Petrostat state statistics committee report "Производство животноводческой продукции в хозяйствах Ленинградской области в 2004 году, статистический сборник"

Appendix 16 Severnaya JSC general information

<i>Full name</i>	<i>Joint stock company Severnaya poultry factory</i>
Short name	JSC Severnaya poultry factory
Legal address	Russian Federation, 187322, Leningrad oblast', Kirovskii district, Sinyavino-1 village.
Factual address	Russian Federation, 187322, Leningrad oblast', Kirovskii district, Sinyavino-1 village.
Contact telephones	(81362) 64 352, 275 45 53
E-mail	accountancy@severnaya.ru
Main stockholders	95,24% of stocks belongs to Agro Invest Brinky BV (Holland), 50% of stocks of the last in its turn belongs to Austrian company COR and Brinky Beheer
Participation in integration associations	Severnaya joint stock company enter banking house St. Petersburg

Source: Severnaya JSC annual issuer's report

Appendix 17 Lomonosovskaya JSC general information

<i>Full name</i>	<i>Joint stock company Lomonosovskaya poultry factory</i>
Short name	JSC Lomonosovskaya poultry factory"
Legal address	Russian Federation, 188512, Leningrad oblast', Lomonosovskii district, Gorbunki village.
Factual address	Russian Federation, 188512, Leningrad oblast', Lomonosovskii district, Gorbunki village.
Contact telephones	((812)421 38 51
E-mail, http	lomfab@lens.spb.ru www.prcr.spb.ru/newsinform
Volume of assessment capital	107 344 720 rubles
Main stockholders	- Agro Invest Brinky BV (Holland) - Primavera A.V.V. (Aruba) - Joint stock company Agricultural trade company Global trade - Joint stock company Sovetnik

Source: Lomonosovskaya JSC annual issuer's report

Appendix 18 Voiskovitsi JSC general information

Voiskovitsi JSC general information

Full name	Joint stock company Voiskovitsi pedigree poultry breeding factory
Short name	JSC Voiskovitsi pedigree poultry breeding factory
Factual address	Russian Federation, Leningrad oblast', Gatchinskii district, Voiskovitsi village.
Contact telephones	(81371) 63 – 245
E-mail, http	ppfv@mail.ru www.pcrc.spb.ru/newsinform
Volume of assessment capital	12 900 035 rubles

Source: Voiskovitsi JSC annual issuer's report

RUSSIAN AGRICULTURAL POLICY

Several challenges shape agricultural policy in Russia:

- Agriculture is one of the main socio-economic sectors with much diversified climatic, natural and economic conditions. Industrial agricultural farms and private backyards play equally significant role in the food supply; however, they are not always able to compete with imported goods. Economic growth leads to changes in food consumption patterns and increases demand for quality food.
- Technological state of the Russian agricultural sector is inferior in comparison with the agricultural sectors of the most European countries, and requires substantial investment in land improvements and infrastructure, equipment and machinery.
- Weak financial position of the agricultural companies, does not allow them to wield strong bargaining power in negotiating terms-of-trade with critical input suppliers and buyers of produce. Skyrocketing fuel costs make farmers' financial health fragile and uncompetitive with imports.
- The lack of primary processing/storage/warehousing facilities creates an obstacle to increase agricultural production and do not address needs of changing trade and commercial environment.
- Level of social services and quality of life in rural areas are not adequate to retain professional and adequately trained workforce.

Responding to these challenges, the Ministry of Agriculture at the federal level and Administrations at the regional level, pursue different policy measures stretching from interest rate subsidies to import quotas and tariffs to rural social development grants. The evaluation of the Russian Agricultural Policy (RAP) goes along several dimensions:

- 1) **Trade promotion:** Currently, RAP is more inward-oriented rather than outward-oriented. The measures undertaken by the Federal Government concentrated to protect domestic agricultural markets. The export potential of the Russian agricultural sector is not fully utilized; however, export trade promotion is mainly supported by local administrations.
- 2) **Agricultural producer policy:** RAP, tracing back to the year of 2000 when the main components of agri-food policy were adopted, constantly experienced changes in the nomination of the sector which will receive massive funds support from the state budget. The choice of the public policy was always between the inclination to support financially healthy companies during downturn periods and the necessity to implement policies which are based on principles of efficiency, equity and transparency. Not been able to provide direct payments to specific farms, the policies to cover a specific industry were developed. Considering the diversity of the agricultural conditions, one may expect that the same program that works in Leningrad Oblast may fail in Krasnodar Krai. The Ministry of Agriculture budget allocates more than € 1 755 million in 2006 to the implementation of the policies to promote competitiveness of the local agricultural products.
- 3) **Infrastructure policy:** Despite the fact that the government put infrastructure as one of the main components of agri-food policy, the state of the infrastructure remains poor. Currently implemented efforts require substantial investments to satisfy growing public concern about the safety of the domestically produced food.
- 4) **Conservation and environment:** Land fertility conservation and protection of the natural environment are the most acute problems facing the agricultural sector. The Government addresses such issue by allocating funds to land management and other measures required to preserve land, however such funds do not meet growing demands, and the soil conditions are worsening. The Ministry of Agriculture budget allocates almost € 330 million to undertake measures to achieve sustainable soil consumption.

- 5) **Rural communities:** The development of the rural communities and the elimination of the gap in living conditions are the mainstreams of the federal agricultural policy. The Ministry of Agriculture budget allocates almost € 104 million to create equal living conditions for rural communities
- 6) **Nutrition and food assistance:** is the weakest part of the overall agricultural policy since the support the federal or regional governments provide to ensure healthy nutrition consumption is quite limited. Despite the fact that for the majority of children, school catering is the only source of meat and other required nutrition, the level of support is inadequate and do not address the critical needs.

The financing of the agricultural programs is arranged through the allocation of funds to Special Federal Programs such as “Social development of the rural areas up to the year of 2010” which addresses national-wide problems and issues, and Special Regional Programs such as “Land Improvement Program for Leningrad Oblast” which addresses region-wide issues.

Another source of funding launched at the end of the year 2005 is a national priority project. The main instruments to implement the national priority project (NPP) is (i) the allocation of interest rate subsidies on loans provided to agricultural producers, with the special aim to support cattle growers, and (ii) promotion of the credit and production/processing cooperatives.

While the goals of the project are very appealing and important, the program composition raises questions pertaining to its long-term efficiency. Interest rate subsidies to cattle growers address the “cost of capital” issue; however, this issue is not, in our opinion, the main cause of the past poor performance of cattle farms. First of all, low farm returns during the last 5 years period were caused by weak demand, not excess production. Therefore, demand side requires at least the same level of attention as supply side. Second, lack of working capital experienced by the most of the agricultural farms was typically financed by pledging future harvest at “subsistence” prices. Such prices per se could not support capital replacement, not to mention expansion of production. Thirdly, easy access to capital along with the politically accepted attitude by borrowers that the “loans are granted” distort the investment decisions: loans are drawn to increase capacity, for example, without careful consideration of market potential, infrastructure availability, ecological requirements, and general business sustainability.

GRAIN FLOW DYNAMICS

Dynamics of the grain flows in the Russian Federation is influenced by several major factors assuming, for the purposes of this analysis, weather and world markets conditions constant:

- the geographical distinction between producing and consuming regions;
- the quality distinction between demand and supply (bakery industry requires a higher grade of wheat than the grade of wheat mostly grown domestically; the higher grades of wheat are being exported, for example, from Kazakhstan);
- the state regulations of the grain markets via a system of state grain interventions;
- available logistics infrastructure (grain warehousing facilities and transportation) and its costs;
- the state of the grain value chain.

The territory of the Russian Federation spans several climatic zones and the regions are typically divided between three categories related to the risks associated with the agricultural production: type 1 - zones with the unfavorable conditions for grain production (such as Murmansk Oblast, Arkhangelsk Oblast, Karelia, Vladimir Oblast, Ivanovo Oblast, Kostroma Oblast), type 2 - zones with tolerable risks (Altai, Adygeya, Nizhegorodskaya Oblast), and type 3 - zones with favorable conditions for grain production (Voronezh Oblast, Belgorod Oblast, Rostov Oblast, Krasnodar Krai, Stavropol Krai).

Type 1 regions produce a relatively low amount of grain which is consumed locally. Additional demand is satisfied by delivering to these regions processed products (like flour). Type 2 regions maintain some grain production but not as a main agricultural product, because of high agricultural risks (either droughts or excessive rain). Type 3 regions are the main grain producing regions.

Most of the grain produced in the South is of grade 3 and below, while Altai Region produces durum type of grain most valuable for bakery and flour production. The ease of the quality requirements for bread production, accompanied with the dismantling of the Grain Inspectorates, led to overall decline in bread and related products quality. This development was accompanied with the decline in bakery industry production (for example, by 4% in 2004) and bread consumption due to changes in consumption patterns with the personal income increases.

Low profitability of the bakery industry did not allow in the year of 2005 to extend financing to agricultural producers to secure seeds and gasoline purchases which led to decline in planting area. Such example could serve as evidence that grain value chain has not reached its maturity, and is subject to financial disturbances caused by weak position of grain processing industry.

The state regulates grain market via direct interventions which were introduced about 6 years ago. The 2005 Federal Budget allocated 6.2 billion rubles (€177 million) to finance grain interventions. With maximum intervention price set at 3100 Rubles per ton, the budget allocated funds would allow to purchase about 2 million tonnes of soft wheat.

Commodities subject to state interventions were soft wheat of grades 3 and 4, as well as rye of class A. Typically interventions start in the mid August by the special decree issued by the prime minister. The timing for the intervention in 2005 was criticized on the grounds that by the time the interventions (on 29 August 2005) began, agricultural producers already had sold grain at unaffordable prices in order to repay loans.

The prices set for the interventions are determined by the Ministry of Agriculture and endorsed by the Federal Tariffs Agency. However, currently, the intervention price setting mechanism is more political rather than economical. The Federal Tariffs Agency recently announced the tender to consulting companies to develop the economically feasible mechanism of setting grain intervention prices. The trading occurs in 7 trading floors, including Moscow, St-Petersburg, Rostov-on-Don, and Novosibirsk. The participants can access trading floors from remote terminals.

The eligible participants of the trading are agricultural producers who have to provide certain documental evidence to confirm their status as the agricultural producer (the legal definition who is actually an agricultural producer is set in the Law of Agriculture which is currently under discussion in the Parliament) and to register with the commodity exchange. The delivery of the commodity is set on the 30th day after the trading day.

Grain flow dynamics as well as the functioning of the wholesale grain market are obviously dependent on a grain warehousing (storage) facilities services since grain should be kept during the year under special conditions, in order to maintain the quality of grain. As of mid-year of 2005, there were about 1100 grain storage facilities in the Russian Federation with the overall capacity of 102 million tonnes. During the past 10 years the grain storage capacity utilization did not exceed 55%. It is believed that more than 60% of grain elevators are technologically outdated and could not provide modern services related to pre-sale grain treatment or grain disease prevention.

Because of the low capacity utilization, grain storage services market is mainly customer-driven. The relationship between warehousing facilities and the grain owner are governed by contractual arrangements, which are specifically reflected in the Civil Code. Generally, the elevator charges fees for storage (calculated on the daily basis), primary processing and treatment of grain. The delivery costs to elevator are covered by the owner of the grain. Most of the grains warehousing facilities are equipped with testing laboratory to control quality of the grain. Elevators also provide documentary evidence of the ownership title for grain owners.

The concentration of the grain warehousing facilities is low in the Type 1 regions and high in the Type 3 regions. The storage facilities in the Type 1 regions are mainly used to process and store Regional Grain Funds. The grain warehousing facilities in the Type 3 regions are evenly distributed. This system of locating distribution facilities is a legacy of the Soviet Union, when each elevator served a specific local grain producing districts and the location was selected as the most convenient to local agricultural producers. Typically, big grain producers maintain long lasting relationships with the warehousing facilities and deliver grain independently on the storage fee established by such warehouse. However, private farms are very price sensitive and try to choose warehouse with the lower costs, but because of a high transportation costs (12 to 17 rubles per 1 tonne per 1 km) to compare with the storage fees (45 to 73 rubles per 1 tonne per 1 month), the selection of the available grain warehouse is limited to 90 km.

Grain value chain is still at the early stage of development; however, the participants mention that the extent of coordination is growing, as well as the financing schemes are becoming more favorable to agricultural producers. The creation of the vertically integrated companies is also determined for the grain market: **Krasny Vostok** with owns several elevators in Kursk Oblast, **Razgulay-UkrRos** controls warehousing facilities in 8 Regions including Kursk, Voronezh, Orenburg, Stavropol, Krasnodar); **Nastusha** controls 13 grain warehousing and processing facilities in Krasnodar Krai, Omsk and Kemerovo.

Russian grain market is developing quickly, however, its functioning and economic outcomes are still subject to factors which are quite different from the grain markets in the countries with a more developed infrastructure. First of all, the supply is vulnerable because of weather conditions and

deterioration of the soil fertility since the land management activities were actually halted for the last 10 years. The volume of fertilizers declined by 10 times because fertilizer producers reallocated sales to exports due to the unstable financial position of the agricultural producers. The arable land acreage also declined. For example arable land under grain production in Irkutsk region in 1985 was 848.5 thousand hectares, and only 445.5 thousand hectares in 2005 (of cause, the decline might also be caused by uneconomic conditions of using land under the planned economy). Unregulated supply of grain from the producing regions to consuming regions accompanied with the unavailability of the necessary information lead to market instability and non-economic measures undertaken to secure necessary supplies. The first tire wholesale market (local agricultural producers and middleman) is quite competitive and competition leads to sharp fluctuations of grain prices. Agricultural producers are basically without any bargaining power due to the absence of the market infrastructure and its lack of transparency. The second tire wholesale market (middleman, warehouses and processors) is less competitive and accumulates most of the value. However, this market is influenced by the rail road tariffs and cost of fuels.

Further development of the grain market should be based on the sound state policy of sustainable agriculture, which should be aimed to support of the market infrastructure development. Modern grain storage and treatment facilities with the credible management shall provide necessary stability in the first tire market.

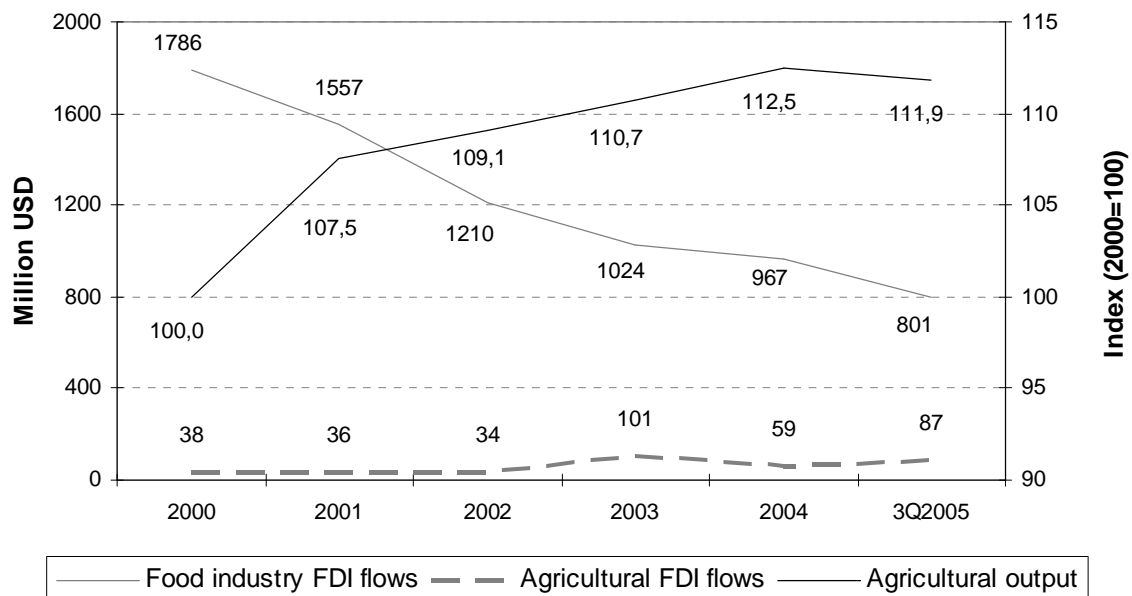
AGRIBUSINESS INVESTMENTS

This section reviews the latest (2000-3Q2005) developments in the Russian agribusiness in terms of investment activity. We first look into the statistics, and later provide a review of investment announcements of actual projects taking place across the Russian agribusiness value chains.

The statistical review is limited to the agricultural and the food processing industry related investments. In Exhibit 127 we may observe the underlying trend of increasing agricultural output (the last observation point being the situation in the 3rd quarter of 2005, thus the slight downward orientation). The increasing wealth level of the Russian consumer coupled with the favourable effect of government support in terms of agricultural subsidies and protective measures have induced growth in output.

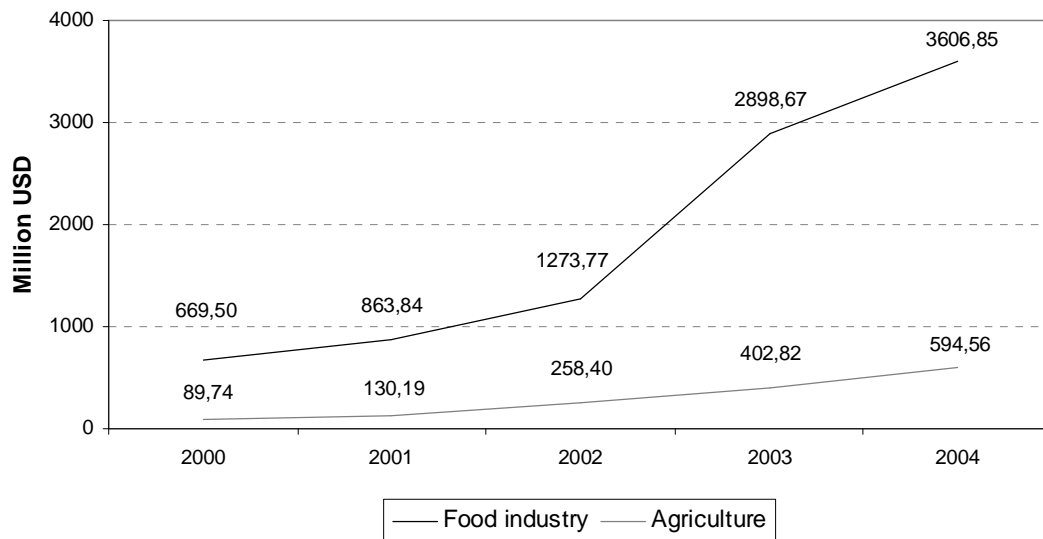
Foreign investment activity (foreign direct investments, FDI) has been somewhat modest in the focus sectors of the agribusiness value chain. Food processing industry attracts an annual inflow of around 800 to 1000 million USD (2003-2005), which took an approximate share of 2.4 percent of the total in 2004. The trend is somewhat downward sloping, while one should again note the incomplete data from 2005 (situation in 3Q2005). Agriculture attracts considerably less FDI (87 million USD in 1-3Q2005), as the sector is perceived as a challenge in terms of well planned and secure investments, due to for example the unclear legislation on the land ownership by foreign entities. The sectors share of total FDI was 0.2 percent in 2004.

Exhibit 127 FDI flows to the Russian food industry and agriculture (Rosstat 2006)



Investments by domestic organisations on the other hand are increasing both in agriculture and food processing (Exhibit 128). The volumes in the latter are greater (approximately 3600 million USD in 2004) and have been increasing during the focus period rapidly (more than 400%). In agriculture the domestic investments reached approximately 595 million USD in 2004, and the increase since 2000 has been more than 500%. Firms in this sector finance investments by the means of own capital resources and in lesser degree through credits. The preference of food processing over agriculture can be explained partly by the shorter investment pay-back period, which leads to more favourable investment risk levels (KTM 2005).

Exhibit 128 Financial investments of domestic organisations in the Russian food industry and agriculture (Rosstat 2006)



In order to complete the picture with latest developments in the micro level, a review of investment project announcements during 1Q2006 is provided, based on weekly Interfax data from the Russian agribusiness sector (Exhibit 129). The data covers the major investments across the different parts of the value chain, while our focus is on the upstream: production and processing activities and on input factor production.

The total monetary value of investment announcements during 1Q2006 was more than 2.8 billion USD. The actual capital expenditures of these sample announcements will take place during the next 1-3 years. While only a sample of the investment projects and capital expenditures, the sample announcements give a useful view on the agribusiness activity in Russia. It seems that the favourable development in the sector will continue, as firms demonstrate positive outlook on the business opportunities in the future through investments announcements and the consequent expansion of production and processing capacity.

The majority of the reported announcements were alone made by Russian firms (31 out of 39 in total), however some foreign players were also noted to be active: Valio (Finland), Campofrio (Spain), BANSS (Germany), Ulker (Turkey), Cecab (France), Kraft Foods (USA). The investment types range from acquisitions and greenfield investments, to development and expansion of existing capacity. Some of the major targets of activity were the building of pork and poultry production complexes in various Russian regions (e.g. Miratorg, Campofrio), as well as the M&A spree of Wimm-Bill-Dann in the dairy processing business. Another notable area of investments is the general food processing -sector, where capacity to process ready-made-meals and products with more value-added is increased. In general the investment activity in the production of meats as well as of dairy will eventually widen the supply base of quality raw materials for processing activity.

Exhibit 129 Investment announcements in the Russian agribusiness sector during 1Q2006 (Interfax 2006)

<i>time</i>	<i>company</i>	<i>status</i>	<i>industry</i>	<i>country</i>	<i>type</i>	<i>value / share</i>	<i>description</i>
Jan 2006	Wimm-Bill-Dann	implemented	dairy processing	Russia	M&A	63.53 %	Wimm-Bill-Dann acquired the Nazarovskoye Moloko in Kranoyarsk. The factory was launched in 1944 and reconstructed over the last 15 years. Production infrastructure was modernized between 2000-2004. Plant currently processes up to 300 tonnes of milk per day from dairies within a 150-kilometer radius. Canned dairy goods account for about 70% of production.
Jan 2006	United Confectioners	planned	confectionary	Russia	development	360 000 000 USD	The holding's investment program envisions investing more than 360 million USD in technical re-equipping and upgrading Moscow and regional production sites.
Jan 2006	NPF Altan	planned	general food	Russia	M&A / greenfield	35 000 000 USD	Barnaul's NPF Altan, which owns one of Russia's largest pasta factories, is planning to build or acquire a food combine in the European part of Russia (between Moscow and St. Petersburg).
Jan 2006	Dymov	implemented	meat processing	Russia	development	2 000 000 USD	Dymov, a Russian sausage and deli meats company that has a meat plant in Moscow, invested 2 million USD in producing new types of summer sausage in 2005, including meat snacks.
Jan 2006	PAVA	implemented	grain milling	Russia	development	na	PAVA, a Barnaul-based grain milling company, has begun building a distribution network in strategic regions of Russia with the aim of strengthening its market position by distributing branded products and boosting profits.
Jan 2006	Tsaritsyno	implemented	meat processing	Russia	greenfield	2 500 000 USD	The Tsaritsyno group of companies, one of the largest producers of meat products in Moscow, has invested 2.5 million USD in the opening of one of its food stores in Yaroslavl.
Jan 2006	Nefis Cosmetics	implemented	oil seed	Russia	M&A	100 %	Kazan-based Nefis Cosmetics has acquired 100% of the shares in OAO Kazansky Oil-Seed Extraction Plant (KMEZ)
Jan 2006	Tsentrpitseprom	planned	poultry production	Russia	development	23 000 000 USD	Poultry producer Tsentrpitseprom will invest more than 23 million USD over the next three years to increase broiler meat production at two of its own poultry plants: Urals Broiler and Orenburg Broiler.
Jan 2006	Eurodon	implemented	poultry production	Russia	greenfield	47 000 000 USD	Eurodon on December 26 launched a 47 million USD poultry production complex that will raise turkeys in the Rostov region's Oktyabrsky district by putting the first batch of eggs into the incubator.
Jan 2006	Marta	planned	packaging	Russia	development	4 500 000 USD	The Russian holding Marta will invest \$4.5 million in the production of packaging for the food industry. Marta recently launched the first line of biaxial polystyrene film production in the Moscow region town of Reutov. The first line has capacity to produce 300 million pieces of film per year. Marta plans to launch the second line of production in Feb 2006 and will double output of such film.
Jan 2006	United Confectioners Holding	planned	confectionary	Russia	development	13 000 000 USD	Company is planning a large-scale campaign to promote the Krasny Oktyabr brand and a number of measures to create and promote new Moscow and regional brands.
Jan 2006	Parnas-M	implemented	meat processing	Russia	M&A	3 000 000 USD	St. Petersburg-based OAO Parnas-M has invested about 3 million USD in the acquisition of 75% of OAO Novo-Sterlitamaksky Meat Combine in Baskortostan and its development.
Jan 2006	Uralkalii	planned	potash fertilizer	Russia	greenfield	1 000 000 000 USD	Uralkalii, one of Russia's biggest mineral fertilizer producers plans to invest more than 1 billion USD in production of potash fertilizer in the Perm territory.
Jan 2006	Miratorg, EBS, BANSS	planned	pork production	Russia, Russia, Germany	greenfield	62 000 000 USD	Moscow's Miratorg, Belgorod's EBS and Germany's BANSS are planning to implement a 62 million USD project to slaughter and process pigs in the Belgorod region. The project envisions building an enterprise to slaughter and process 2 million pigs a year.

FOOD INDUSTRY VALUE CHAINS
IN LENINGRAD OBLAST AND KRASNODAR KRAI

Supplement 3
Agribusiness
Investments

Jan 2006	Wimm-Bill-Dann	implemented	dairy processing	Russia	M&A	na	OAO Wimm-Bill-Dann Food Products has acquired the Pervouralsky Dairy in the Sverdlovsk region
Jan 2006	Mikoyanovsky Meat Combine	planned	pork production	Russia	greenfield	250 000 000 USD	Mikoyanovsky Meat Combine, one of the leading meat producers in Russia, plans to carry out an almost 250 million USD project to stimulate hog production in a number of regions
Jan 2006	KampoMos (Campofrio)	implemented	poultry processing	Russia (Spain)	development	7 000 000 USD	Meat producer KampoMos has launched a Fresca line to produce refrigerated poultry in which it invested 7 million USD. KampoMos plant is part of the international Campofrio group, the owner of 18 plants in five European countries.
Jan 2006	Ulker	planned	confectionary	Turkey	greenfield	na	Ulker Gida Sanayi & Ticaret AS, a large Turkish confectionery company whose shares are traded on the stock exchange, is planning to build three new plants in 2006 (one in Russia).
Jan 2006	Sun Products	implemented	oil seed	Russia	development	5 000 000 USD	The Sun Products (Solnechniye Produkty) holding, one of Russia's largest producers of oil products, plans to invest 5 million USD in expanding mayonnaise production at the Moscow Fats Combine.
Feb 2006	Wimm-Bill-Dann	planned	dairy production	Russia	greenfield	na	Wimm-Bill-Dann Food Products plans to begin construction in 2007 on a dairy farm for 2400 cows in the Krasnodar territory's Pavlovsky district. Construction will be completed in 1.5 years. After another year and eight months, the farm is projected to reach its projected production capacity – about 8 tonnes of milk per year from one cow. The project will recoup itself in the sixth or seventh year.
Feb 2006	Campofrio	planned	pork production	Spain	greenfield	20 000 000 USD	The Campofrio group, which owns the Moscowbased KampoMos plant, plans to invest about 20 million USD in a hog-raising complex in the Moscow region.
Feb 2006	Harry's	planned	confectionary	Russia	development	37 000 000 USD	Harry's has invested more than 37 million USD in the restoration of its confectionary plant in the Moscow region town of Solnechnogorsk.
Feb 2006	Russian Grain	planned	pork production	Russia	greenfield	35 000 000 USD	The Russian Grain (Russkoye Zerno) company plans to invest 35 million in a hog complex in the Voronezh region. The complex will be capable of housing 70,000 hogs.
Feb 2006	Valio	planned	dairy processing	Finland	greenfield	na	The Finnish company Valio plans to build a dairy in the Gatchina district in the Leningrad region.
Feb 2006	Cherkizovo Group	implemented	pork production	Russia	greenfield	149 000 000 USD	The Cherkizovo Group on Feb 17 launched the first phase, which consists of two modules of a hog complex in the Lipetsk region with overall cost of 149 million USD.
Feb 2006	Campofrio	planned	general food	Russia (Spain)	development	9 000 000 USD	Moscow-based KampoMos Meat Plant, which is owned by the international group. Campofrio, plans to invest about 9 million USD in increasing production and promotion on the market of innovative products.
Feb 2006	Novoe Sodruzhestvo	implemented	agricultural machinery	Russia	development	20 000 000 USD	The Novoye Sodruzhestvo industrial union invested 20 million USD in development at Rostselmash combine company in 2005.
Feb 2006	Karat	planned	cheese	Russia	development	56 000 000 USD	Moscow's Karat, one of Russia's largest producers of processed cheeses, plans to invest 45 million USD over the next year and a half in three new enterprises purchased in 2005.
Feb 2006	Kubanskiye Konservy	planned	vegetables production	Russia (France)	greenfield	na	Kubanskiye Konservy, a subsidiary of France's Cecab, and the administration of the Timashevsk district in the Krasnodar territory have signed a contract to rent land to raise vegetable for canning. The company will rent 6,000 hectares for the next 25 years to grow maize and peas.
Feb 2006	Meat Industrial Company	planned	pork production	Russia	greenfield	80 000 000 USD	Meat Industrial Company plans to carry out a 80 million USD project to set up hog production in the Orenburg region. The project envisions the construction of a hog raising complex with a closed cycle for production, raising and feeding of 100,000 hogs per year.
Feb 2006	Sun Products	implemented	oil seed	Russia	development	20 000 000 USD	The Sun Products (Solnechniye Produkty) Holding has invested 20 million USD in a new refining and bleaching workshop at the Saratov Fats Combine. A total of 12 million USD was spent on buying equipment, while the other 8 million USD went towards construction work.

FOOD INDUSTRY VALUE CHAINS
IN LENINGRAD OBLAST AND KRASNODAR KRAI

Supplement 3
Agribusiness
Investments

Mar 2006	Produkty Pitaniya	planned	general food	Russia	greenfield	200 000 000 USD	Produkty Pitaniya, one of Russia's largest producers of prepared poultry products, will begin building a 200 million USD prepared food plant in the Kaliningrad region. The plant will make pizza, lasagna, pastry products, crepes, meat dumplings, frozen dinners, vegetable and meat products under the Zolotoi Petushok brand.
Mar 2006	Russky Kholod	implemented	ice cream	Russia	greenfield	27 000 000 USD	Russky Kholod, one of Russia's largest ice cream companies, plans to open a new factory in the Moscow region town of Oktyabrsky. The company invested about 27 million USD in the factory, which will initially have capacity to produce 40,000 tonnes of ice cream per year, and then double capacity to 80,000 tonnes in three or four years.
Mar 2006	Mikoyanovsky Meat Combine	planned	pork production	Russia	greenfield	50 000 000 USD	Mikoyanovsky Meat Combine plans to invest 45-50 million USD in two hog complexes in the Lipetsk region. Domestic raw materials currently account for 75%-80% of production at the combine. As a result of the project, Mikoyanovsky will raise this figure to 100%.
Mar 2006	Cheremushki	implemented	confectionary	Russia	M&A	100 %	The Cheremushki Confectionery-Bakery Combine has become the sole owner of the Moscow-based Algo Confectionary plant, one of Russia's largest producers of frozen confectionary goods.
Mar 2006	Wimm-Bill-Dann	planned	dairy processing	Russia	development	100 000 000 USD	Wimm-Bill-Dann plans to have annual capital expenditures of almost 100 million USD over the next few years. These funds will mainly be spent on improving infrastructure, upgrading warehouse equipment at acquired enterprises and supporting existing production capacity.
Mar 2006	Unimilk	implemented	dairy processing	Russia	M&A	1.215 %	Unimilk won an auction on Mar 10 for a 1.215% stake in St. Petersburg dairy plant Petmol, which belonged to the city government (Spb Property Fund). Petmol shareholders in November 2005 approved a merger with Unimilk. Unimilk has 12 dairy plants in Russia and Ukraine that produce about 612,000 tonnes of dairy products per year. The group had turnover of more than 360 million USD in 2004.
Mar 2006	Kraft Foods	planned	coffee	USA	greenfield	100 000 000 USD	Kraft Foods is investing 100 million USD to build a plant to produce instant coffee in the Leningrad region. The plant will be built in the Gorelovo industrial zone in the Lomonosov district of the Leningrad region at a site where the company already has an enterprise to package instant coffee.
Mar 2006	Wimm-Bill-Dann	planned	dairy processing	Russia	M&A	40 000 000 USD	Wimm-Bill-Dann Food Products is interested in purchasing the Moscow-based Ochakovo Dairy, but has yet to hold any talks with Ochakovo shareholders. The Kommersant newspaper reported on Mar 23, citing a source at the dairy, that WBD had reached an agreement on the purchase of a controlling stock interest in Ochakovo for 40 million USD.