Dutch business opportunities in the Russian agrifood sector

Animal protein sector and Moscow Metropolitan fresh food chain

LEI
WAGENINGEN UR

Dutch business opportunities in the Russian agrifood sector

Animal protein sector and Moscow Metropolitan fresh food chain

Jo H.M. Wijnands
Natalia I. Valeeva
Siemen van Berkum

LEI Memorandum 13-018
January 2013
Project code 2271000291
LEI Wageningen UR, The Hague

LEI is active in the following research areas:

Agriculture & Entrepreneurship

Regional Economy & Land Use

Markets & Chains

International Policy

Natural Resources

Consumer & Behaviour

Dutch business opportunities in the Russian agrifood sector; Animal protein sector and Moscow Metropolitan fresh food chain

Wijnands, J.H.M., N.I. Valeeva and S. van Berkum

LEI Memorandum 13-018
p. 85, fig., tab., app.

BO-10-030-009 and 010: Opportunities for the Dutch agribusiness in the Russian agrifood sector. Animal protein sector and Metropolitan Food Security

This research has been carried out in the framework of the Policy Research Cluster International (BOCI) by commission of the Netherlands ministry of Economic Affairs (EZ) and of the Topsector Agro&Food.

This publication is available at www.wageningenUR.nl/en/lei

LEI is ISO 9001:2008 certified.

Contents

Summary

The Russian agribusiness has the ability to improve the country's food security situation. Given its natural endowments and the country's huge capital sources the sector should be able to produce higher volumes by using the available resources more efficiently, as well as more differentiated and better quality food products than currently performed. Dutch agribusiness companies and organisations can offer products and expertise that will help the Russian agrifood sector to better use its opportunities.

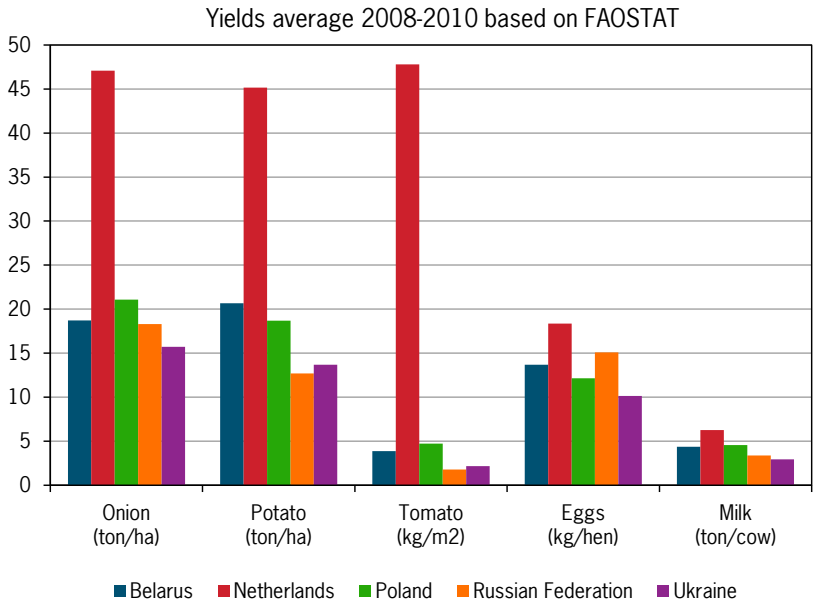
Food demand in Russia is expected to continue to increase as a result of the forecast future economic growth. Currently, the domestic agricultural production does not meet the domestic food demand and significant imports are required. This is remarkable as abundant agricultural land and water resources are available. Next, in a metropolis like Moscow an efficient food distribution is lacking because of insufficient capacity and proficiency at distribution centres, deficient logistics and inadequate supply of good quality produce. This affects both the quantity and quality of food products supplied to the country's biggest cities.

What the Russian agrifood chain needs

Dutch businesses will be most successful on the Russian market if their products and services contribute to an improved performance of the Russian agribusiness. It is crucial, then, to identify the Russian needs and match these with what the Netherlands can offer. Key factors that will improve the performance of the Russian agribusiness, and to which the Dutch portfolio of products and expertise can contribute, are:

1. Entrepreneurship and competencies on the farm level. Entrepreneurship can be encouraged by providing farmers with information about the results of their work (technical and economic indicators) and about the market (market intelligence). The performance of Russian agriculture can easily be increased by improving farm management practices and workers' skills. Meeting performance criteria should be a common and 'obvious' business goal among the full staff of farms. One such criterion is the yield, which is relatively low for many commodities in Russia (see Figure S.1). Workers need to acquire competencies and skills to ensure that they can contribute to the overall farm performance. Next, agronomic and animal husbandry specialists need to be well-trained for keeping the competencies up-to-date. Anecdotal evidence suggests that small improvements can already result in significant improvements in performance.
2. State-of-art equipment. Better performance starts with using the right tools and equipment. In crop production proper cultivation and harvest equipment are necessary to use optimally local growing conditions and to reduce harvest losses. In the animal sector housing, feeding and milking equipment are of key importance to achieve highest possible feed conversions and best quality products (e.g. by preventing contamination of milk and animal diseases). It requires well-trained staff who have the skills and tools (such as software) to operate this state-of-the-art equipment correctly and hence efficiently.
3. State-of-the-art cold stores. Post-harvest losses and seasonal fluctuation in supply can be reduced by up-to-date cold stores. Now domestic supply of fresh produce is insufficient in winter and early spring, because of too little storage capacity and/or poor knowledge on how to store products. Furthermore many warehouses are constructed for 'dry goods' storable within a large range of temperature and do not meet the requirements for fresh produce (like short shelf life for dairy, fresh meat or vegetables) that has to be stored in a very small temperature range to prevent quality losses.
4. High yielding breeds. Expanding the use of high yielding seeds and improved genetics of milk and meat producing animals will increase considerably the performance at Russian farms. Most of these high yielding inputs have to be imported. Again, the opportunities of the high performing breeds can only be exploited if staff and management are competent enough to use these inputs effectively.

Figure S.1 **Performance indicators of selected products in Russia and benchmark countries**



5. Improved organisation of supply chain. Supermarkets rapidly gained market shares during the last decade, especially in large cities. They complain about the difficulties in getting the quantities sourced that meet their quality requirements: the supply chain is too fragmented and unorganised to adequately respond to the demand. Basic standards on e.g. product quality, grading or packaging (size and quality) are largely lacking. Traceability methods are practically not applied. All these aspects create considerable transaction costs, making the market operation inefficient and costly.
6. Build adequate logistical infrastructure around Moscow. A city with 10 to 16m consumers needs sufficient plots for shopping facilities, wholesale markets, distribution centres, pick-and-drop places near shops, and road infrastructure enabling the delivery of goods timely and efficiently. At the same time, to ensure the food security of the metropolis an integrated supply chain approach is needed with efficient farming and trading partners responsive to market developments.

Animal proteins

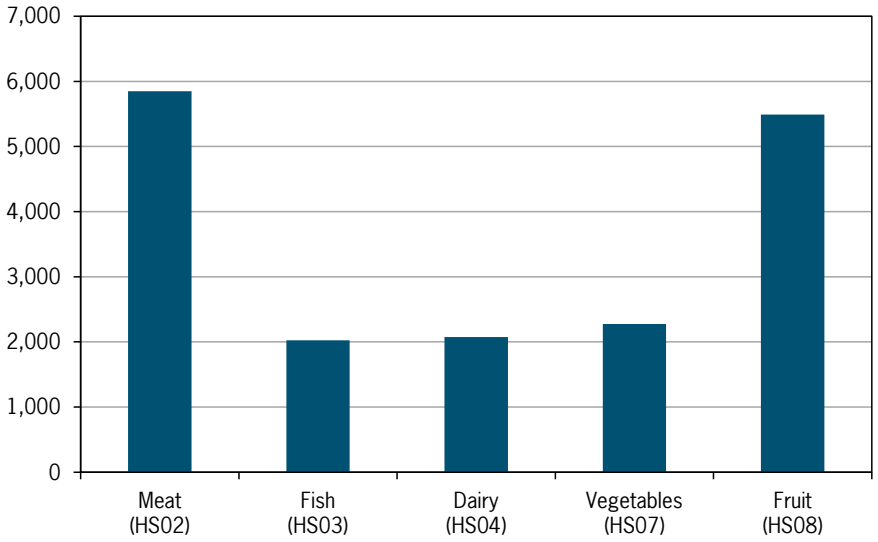
Russia is among the world's biggest importers of agricultural products. The country needs to import large volumes of animal protein products, largely meat (beef and pork) and dairy (cheese) products, as is shown in Figure S.2. The Netherlands is an important supplier of these animal products to international markets. In its trade relations with Russia, Dutch exports of cheese, fresh swine meat and poultry products, such as one-day chicken and hatching eggs (include in eggs export) account for a significant share of Russia's imports of these products. Also relevant in this regard is the Dutch strong position in the Russian market as supplier of feed ingredients and pet food.

Vegetables and fruits

Russia's self-sufficiency level for vegetables and fruit is rather low for products like tomato, onions and apples; a reason why the country is an important importer of these two product categories (Figure S.2). In addition seasonality in production affects trade flows: the majority of imports occurs in late winter and early spring, times of the year when Russia's own producers do not produce sufficiently to meet domestic

demands or cannot store the produce adequately. Many greenhouses in Russia are out-of-date and investments are needed to become up-to-date for year round production. The Netherlands is an important supplier of greenhouses and their interior equipment, vegetables seeds and of delicate vegetables (lettuce, capsicum). Obviously, Dutch business opportunities are great, supporting the supply chain to achieve higher production levels and to flatten the seasonality in production (either by increased production in winter or by storing).

Figure S.2 **Major agricultural commodities imported by Russia (2010, in million USD)**



Recommendations

To strengthen the economic relationship between Russia and the Netherlands in the agribusiness sector Dutch initiatives shall be taken at three levels:

1. Private initiatives that are directed to:
   - Direct sales by Russian or Dutch agents of Dutch commodities, already used in and familiar to the Russian agribusiness and requiring little after-sale efforts.
   - Providing final consumer goods. The Dutch agribusiness can offer high quality products or in insufficient supply from regular suppliers during short periods.
   - Investments in Russia to sell more sophisticated means of production (inputs, equipment etc) or capacity building expertise, where after-sales services or instruction for an efficient use of the production means is required. These are long-term investments and Russian partners should be involved.
2. Public initiatives from the Dutch government can be directed to:
   - G2G issues such as capacity building in policies related to e.g. phytosanitary, food safety, vocational training on international trade and tariffs.
   - A Business Support Office for Dutch trade relations and investments to further facilitate and promote Dutch-Russian business relations. Interviews with Russian business and authorities' representatives indicate that the Netherlands is not always in the top of their mind when it comes to strengthening business relations and strategic cooperation.
   - Stimulating a Dutch farming community in Russia. Russia offers Dutch farmers good opportunities for establishing large farms resulting in fair profits.

3. Public Private Partnerships (PPPs) can integrate the initiatives of several single companies. In this way the efforts can be minimised and the success rate maximised. We recommend exploring the possibilities in:
   - Holland Branding by 'Being good and telling it.' Show the success stories of Dutch businesses in Russia, emphasising the contribution they are making in enhancing the Russian agrifood supply chain
   - The Dutch 'Topsectoren Beleid.' Based on this study, there seem to be good business opportunities for establishing PPPs for potatoes (full range from seed potatoes to processing), greenhouse production, vegetal oil production and animal feed.
   - An integrated 'Metropolitan Food Security' approach, serving the ambitions of several sectors by tackling challenges that are of importance to more sectors. This study shows that potatoes and horticulture products need similar post-harvest chain and logistic services. A Metropolitan food security approach can exploit Dutch experience and expertise in all stages of the chain, and link these with the distributional actors up to the supermarket chains in highly populated cities such as Moscow.
   - Knowledge transfer as part of the deal and in a more generic way. The Russian agrifood sector development is hampered by a severe shortage of well-qualified labour. Successfully supplying equipment has to be accompanied by supplying training on how to use this equipment. Especially in the livestock sector improving competences and professional skills are necessary at all levels in the supply chain but especially at the farm level and in service institutions like veterinary and food safety inspection labs. As targeted government support to better match demand and supply of qualified labour in the agricultural sector is rather limited, public-private partnership initiatives are potential alternatives.

Key success factors for Dutch business

The key success factors for doing in business in Russia by Dutch are:
- Be present on the market either by local partners or by staff members who understand the Russian way of doing business thoroughly and speak Russian language fluently. This seems obvious, but neglecting this requirement generally results in a poor performance on the Russian market.
- Select a market with prospects. These are many, but focus is essential.
- Organise the supply chain. The infrastructure is too weak to deliver quality products and services (Just in Time, each day of the year).
- Invest in and maintain excellent relations with the Russian authorities at federal, regional and local level.
- Take your time, patience will be rewarded. Authority's capacity and motivation to provide assistance are generally low.
- Provide a viable business plan, money is not for free.

Russian partners/investors for potential projects

From our inquiry and interviews in Russia with authorities and businesses we collected the following potential leads.

General
- Special training and educational programmes (for example the President programme to train managers and specialists in the agribusiness sector as part of a Key Executive MBA programme; educating young specialist as part of the state programme for agricultural development 2013-2020)
- Governmental support at the national level:

    - Federal budget via Ministry of Agriculture: an example is the Danone programme for Milk Business Academy, providing practical training in best business and agricultural practices to Russian dairy farmers.
    - Special Investment Funds. For example, the Russian Direct Investment Fund (RDIF) is a USD10bn fund established by the Russian government for equity investments primarily in the Russian economy. This Fund pays special attention to agricultural projects. Putin and Medvedev discussed this with Rutten during his official visit to Moscow, in October 2011. The project budgets are between USD50 and USD500m.
- Regional level:
    - Federal budget funds, including funds of federal development institutes and ministries
    - Regional budget funds i.e. Razvitie Corporation in Belgorod region - Greenhouse cluster 500 ha, (2012-2017); Bio Gas project.
- Supporting banks. EBRD provides loans to the agribusiness (5-6 deals per year) and ING is eager to provide loans (about 10 a year). These banks need knowledge to evaluate the business plans of investors or investors need an impact assessment. These will be consultancy tasks with a small budget (probably between EUR10 to EUR50.000).

Metropolitan Food Security

- Moscow City Government - specifically relevant are the Metropolitan Food Security plans that aim at creating a modern and efficient wholesale sector plus a well-integrated supply chain of fresh produce that serves to secure the demand for these food products both in quantity and quality in the Moscow region.
- Russian Greenhouse Association is in contact with potential private investors in greenhouses and distribution centres. Investors need insights into market opportunities and feasibility of their plans.
- Magnit (a big Russian retailer) plans to invest in 100 ha of greenhouses in Krasnodar region. Due to lack of knowledge they experience some problems since the first 10 ha have been operational.

Animal Protein

- Follow investment initiatives of big players-companies, such as Danone and Pepsico in the dairy sector in Russia.
- Potentially Russian agroholdings (no concrete names yet) can be clients of Dutch suppliers of livestock, agricultural machinery, farm management knowledge programmes and other products and services. Usually these holdings try to use governmental support funds for investments.

Approach of the study

The feasibility study entails two pilots Animal Protein Sector and Moscow Metropolitan Food Security. The study assessed the current situation and bottlenecks for further development. The issues are addressed by using reports, databases and interviews with stakeholders in Russia and the Netherlands. The aim is identifying Dutch business opportunities for enhancing the Russian Animal Protein sector and the Moscow Metropolitan food security.

1 Introduction

Key findings

- This report studies the Russian animal protein sector and the Moscow Metropolitan Food Security.
- It aims at identifying the opportunities for Dutch business to do businesses through exports or via local investments.
- Public available government policies, papers and interviews with stakeholders are the information sources for this study.
- Russia has a population of 140m and a robust GDP growth.
- Doing business indicators indicate several deficiencies in the economic environment in the country, yet the outlook for agricultural development and food consumption patterns show ample business opportunities.

1.1 Problem statement and background

The Netherlands Ministry of Economic Affairs (EZ) has listed the Agricultural and Food Sector in Russia as a priority sector for enhancing businesses relations between both countries. The Topsector Agro&Food also identified Russia as one of the appealing countries for further enhancing the sector's internationalisation.

To this extent, two pilot projects have been set up:

1. Development of Animal Protein Sector in Russia with a focus on the lack of knowledge
2. Development of Metropolitan Food Security in and around large cities in Russia with a focus on the lack of an efficient agro-logistic structure.

For both pilot projects a team with Russia-experienced agribusiness representatives, Wageningen UR and government officials (from EZ), and coordinated by the Dutch Agricultural Counsellor in Moscow has listed a number of major needs of stakeholders to further develop the Russian animal protein sector and enhance metropolitan food security. Findings hinted at the huge scope for improvement in the livestock sector performances by upgrading technical, economic and management knowledge and skills. Next, food supply in large cities like Moscow suffers from insufficient logistical infrastructure and poor organised supply relations. However, a more in-depth feasibility study was deemed necessary to get better insights into the exact obstacles Russia faces in developing the Animal Protein Sector respectively Metropolitan Food Security. Such a study should provide founded arguments for recommending which (next) steps the Dutch agribusiness itself should take and where governments (both the Russian and the Dutch) should facilitate.

The problem statement of this research is: What are the bottlenecks in the animal sector and in the (agro)logistic food supply chain around and in big cities and what are Dutch business perspectives in helping Russia solving these bottlenecks? Tto further elaborate on the Dutch perspectives, this study aims also at identifying possible (Russian/Dutch) private partnerships that are willing to invest in the sector's development. Suggestions for those partnerships are based on investigating public documents that clarify public programmes to invest in the sector's development and indicate how private investments could engage in these public programmes, as well as through interviews and consultations with Russian and Dutch stakeholders.

This report provides the background analysis of the current strengths and weaknesses of the Russian animal sector and its agro-food and logistic system around large cities, identifies opportunities and recommends steps to be taken by the Dutch agribusinesses to use these opportunities.

Background of the two pilots

As this project combines two pilots that differ in target group and challenges to be tackled for further development, both pilots require their own introduction.

For the Animal Protein (AP) sector development, Russia's policy objective of being (more) self-sufficient in its food supply by 2020 is highly relevant. The government priority foods in this respect are dairy and meat, which Russia would also like to export (among others to the EU) within the coming years. However, even though the domestic production has tremendously increased in the past few years (mainly dairy, poultry and pork), the animal sector faces major challenges, such as the organisation structure (both between farms/companies at sector level but also in-company) and a relatively low level of professional knowledge and management skills. This pilot largely concentrates on improving the use of the primary production potentials in the animal sector by focusing on the needs for better quality and higher yielding inputs, including knowledge and skills. The target groups of this part of the feasibility study are the Dutch and Russian agribusinesses or related business to the livestock sector.

The second pilot is the Moscow Metropolitan Food Security (MFS). With Russia's general standard of living increasing in a fast pace, new consumption patterns varying from a demand for high quality foods to a more diverse supply with fresh flowers and fresh foods, especially fruits and vegetables, imported from other countries. Also, the amount of restaurants and fast food chains has increased tremendously, especially in Moscow and St Petersburg. However, this high speed development has not been accompanied by structural improvements to the (agro)logistic infrastructure around and in the cities, nor to a competitive and efficient structure in the retail and supply chain. Besides that, quality levels of locally produced food are still very modest as is the case with for example potatoes (80% post-harvest loss!). The government priority in infrastructure improvements is concentrated on major investments around big events, such as the Sochi 2014 Olympic Winter Games and the FIFA (soccer) World Cup in 2018. Indirectly, these investments will benefit the food supply and distribution system as well (via upgrading and extending major airports, river ports, highways). And gradually, to some extent due to the good experience with Dutch greenhouses, the Russian government also spends more attention to upgrading, renewing and expanding horticultural projects. So all in all, the challenges Russia faces in which the pilot Metropolitan Food Security could assist are for example the improvement of agro-logistics around big cities, the improvement of post-harvest, cold chain and cool storage facilities and/or enhancement of local production of fresh products and assemblage possibilities in horticulture and arable crops.

Investments are necessary to tackle these challenges indicated above. Several Dutch companies are interested to invest in Russia's production potential and agro-logistic infrastructure, yet they need more in-depth insights into bottlenecks for improvements to identify their perspectives and decide upon their possible involvement. This report aims at providing these insights and provides further suggestions where Dutch business opportunities may lie and how to use them.

1.2 Approach and method

The feasibility study that entails the two pilots APS and MFS will address the following main issues in the following way (activities):

- Assessment of the current situation and the exact bottlenecks in the RF animal protein sector and in the agro-logistics around big cities by looking at experiences so far by Dutch investors in and exporters to Russia, by studying and discussing (with relevant stakeholders) sector development programmes and the priorities/incentives that these programmes may give to sector investments.
- Identification of Dutch business perspectives in solving these bottlenecks, by assessing the current state of affairs in Russia and by indicating the strengths of Dutch agribusiness to improve this state.
- Identification of Russian private partners/investors in this project, by listing important (relevant) stakeholders (government, agro holdings, retail, logistics companies, etc.), approaching them to discuss their plans, wishes, intentions and possible interest in business connections with Dutch private partners. The study includes a number of suggestions for further steps to be taken.

- The issues are addressed by using relevant reports and information, and interviews with stakeholders. Interviews were held in the Netherlands as well as in Russia.
- The result of the study is a concise report describing the findings, conclusions and recommendations (in terms of practical tips for doing businesses) of the identification study. Presentations of results are envisaged in the Netherlands to businesses interested. Communication with the business community will be through presentations and a supportive policy brief in which key findings and recommendations are summarised.

Table 1.1 Key indicators Russian Federation in 2010

Indicator	Description
Population (2011)	142m. Annual growth rate -0.3%
Capital and large cities* (2009)	Moscow (capital) 10.5m; Saint Petersburg 4.6m; Novosibirsk 1.4m; Yekaterinburg 1.3m; Nizhniy Novgorod 1.3m
Land Area	1,638m ha, 485 times the size of the Netherlands.
Agricultural land (2009)	212m, 13% of land area is in use as agricultural land. 110 times the area in the Netherlands
Freshwater resources (2009)	Annual freshwater withdrawals are 1% of internal resources. In the Netherland 12%
Road density (2005)	5 km of road per 100 sq. km of land area, compared to 28 in Ukraine, 46 in Belarus, 122 in Poland and 232 in the Netherlands
GDP (current USD)	USD1,858bn, 2.2 as much as the Netherlands
GDP-growth	Since 2001, annually average 19.7%.
Origin value added (2009)	Agriculture 5%, industry 34% and services 62%
Labour force (2009)*	Agriculture 10%, industry 27% and services 63%
GDP / capita (2011)	USD13,089 (current USD) or USD21,248 PPP (Current USD): Netherlands 50,087 viz. 42, 834
Currency (1/07/2012)**	RUB100= EUR2.435= USD3.086
Life expectancy at birth	69 years
Inflation	Consumer price 7%, average 2007-2011 10%
Interest rate	8%, average 2007-2011 11%
Main exports (2011)*	Petroleum and petroleum products, natural gas, metals, wood and wood products, chemicals
Export destinations (2011)*	Netherlands 12.3%, China 6.5%, Italy 5.6%, Germany 4.6%, Poland 4.3%
Main imports (2011)*	Machinery, vehicles, pharmaceutical products, plastic, semi-finished metal products, meat, fruits and nuts, optical and medical instruments, iron, steel
Main imports (2011) from*	China 15.6%, Germany 10%, Ukraine 6.6%, Italy 4.3%

Sources: World Development Indicators, *CIA World fact book, **www.oanda.com/currency/converter/

1.3 Country profile Russia

Russia has 9 times the number of inhabitants of the Netherlands. The economy has grown rapidly since 2000: in 2011 Russia's GDP was over 6 times its 2000 GDP level (Table 1.1). However, there are serious concerns over the country's prospects to continue its economic growth path, which relate to the economy's heavy dependence on oil and gas exploitation. Further diversification of the economy would help to secure the economy's vulnerability to price fluctuations of fossil fuels. Next, the country seems politically rather stable, yet does not make much progress in the World Bank's ranking of doing business (World Bank, 2012), being listed as number 112 among 185 countries. The country's scores on issues like getting construction permits, electricity and credit, plus the number of documents needed for imports procedures are particularly poor. Neighbouring countries Belarus (58) and Kazakhstan (49) rank much higher, while doing business in Ukraine (137) is more difficult (For comparison: The Netherlands ranks 31).

Russia is a huge country, of which the surface can be used for agricultural purposes only for about 13%. Nevertheless, with over 200m hectares the agricultural area is more than 100 times the Dutch area (Table 1.1). Furthermore, large areas suitable for agriculture are still abandoned, partly due to the collapse of the Soviet Union in the 1990s: Prishchepov estimated that 31% of agricultural land used in 1990 was abandoned in 2002, in the first place the less productive land or land in low populated areas (Prishchepov et al., 2013). To date there are still huge areas of agricultural land unused and/or farmed with very low inputs. Productivity in both the arable and livestock sector are pretty low compared to what could be achieved based on agro-ecological criteria. This all indicates the huge agricultural production potentials of this country, which makes this country an interesting destination for Dutch agribusinesses that are focused on primary agriculture. Next, Russia is among the fastest growing markets for food and beverages, providing ample opportunities to exporters of and investors in consumer-ready food products.

2 Policies and trade developments

Key findings

- Russia's WTO membership (since August 2012) implies a more equal level playing field for exporters interested in the Russian market. Market access to Russia is expected to improve for animal products (dairy, beef, pork and poultry).
- The new State programme on agricultural development (2013-2020) continues to support agricultural production, with an emphasis on increasing animal production. However, early December 2012 no detailed information on the implementation of each specific support programme, priority setting and/or the regions' co-financing budgets have been made public.
- Moscow' food supply is a major concern to local authorities who want to invest in logistics, distribution centres and well-integrated food supply chain.
- Self-sufficiency rates for animal products are pretty low, although increasing rapidly for poultry. Russian agricultural imports are dominated by animal products, fruit and vegetables and beverages.
- The Netherlands has a share of about 5% in total Russian agricultural imports by Russia. The Netherlands has significant (import) market shares for bulbs and flowers, animal feed, vegetables and for vegetal oils. In addition, the Netherlands is a significant supplier of live animals and preparations of cereals, flour, starches and dairy.

2.1 International policy agreements

Russia has joined the World Trade Organisation (WTO) only very recently, on 22 August 2012, after 19 years of negotiations. As a consequence, countries that export agricultural and food products to Russia are expected to benefit from the country's accession in several ways. They include a reduction in Russia's custom duties, trade facilitation and predictability of Russia's regulation of foreign activity, and unification and transparency of Russia's non-tariff measures for trade regulation. These benefits will strengthen the competitiveness of imports in Russia's domestic agricultural and food market. As consumer demand grows, this will lead to an increase of Russia's agricultural and food imports. On the other hand, the new WTO membership will open opportunities for Russian export business too. A 2012 World Bank study (Shepotylo and Tarr, 2012)[1] estimates Russia will stand an extra 3% (or USD49bn) annual GDP increase in the medium term, due to increased trade. The impact of WTO membership on the agricultural and food sector has not been reported separately in that study, while Kiselev and Romashkin (2012)[2] estimate possible effects of Russia's WTO accession on agricultural trade and production in a qualitatively way, expecting a substantial increase of Russian imports of sugar, pork and beef.

On average, the final legally binding tariff ceiling for the Russian Federation will be 7.8% compared with a 2011 average of 10% for all products. The average tariff ceiling for agriculture products will be 10.8% (WTO, 2011).[3] This is lower than the current (2012) average of 13.2%, however, it can continue to be applied at different levels for different products. The final bound rate will be implemented on the date of accession for more than one third of national tariff lines with another quarter of the tariff cuts to be put in place three years later. The longest implementation period is 8 years for pork, so full implementation of all bound levels occurs only in 2020. Tariff rate quotas (TRQs) would be applied to beef, pork, poultry and some whey products. Imports entering the market within the quota will face lower tariffs while higher duties will be applied to products imported outside the quota. Some of these quotas are also subject to

[1] Shepotylo, O. and D. Tarr, (2012) Impact of WTO Accession and the Customs Union on the Bound and Applied Tariff Rates of the Russian Federation. Policy Research Working paper 6161. The World Bank, Washington.

[2] Kiselev, Sergey; Roman Romashkin; (2012); *Possible Effects of Russia's WTO Accession on Agricultural Trade and Production*; ICTSD Programme on Agricultural Trade and Sustainable Development; Issue Paper No. 40; International Centre for Trade and Sustainable Development,Geneva, Switzerland, www.ictsd.org.

[3] WTO, Tariff database. www.wto.org

member-specific allocations - for instance Russia would allow preferential treatment to Belarus and Kazakhstan with which it has established a customs union since 2010. Quantitative restrictions on imports, such as quotas, bans, permits, prior authorisation requirements, licensing requirements or other requirements or restrictions that could not be justified under the WTO provisions would be eliminated and not (re) introduced (Russia has committed, among other things, to develop and apply international standards on Sanitary and Phytosanitary (SPS) measures through membership in the Codex Alimentarius, the World Organisation for Animal Health (OIE), and the International Plant Protection Convention). All agricultural export subsidies will be bound at zero. The total trade distorting agricultural support would not exceed USD9bn in 2012 and would be gradually reduced to USD4.4bn by 2018. To avoid excessive concentration of support on individual products, from the date of accession to 31 December 2017, the annual agricultural support going to specific products would not exceed 30% of the agriculture support that is not for specific products (WTO, 2011).

The above analysis of possible consequences of the WTO membership for the Russian agrifood sector indicates both advantages (export opportunities for grains and oilseed) and disadvantages (more import competition for animal products, like dairy, beef, pork and poultry meat). For countries eager to export to Russia, a major gain is that now Russia is a WTO member, the country is obliged to adhere to the provisions of the WTO SPS Agreement when imposing measures to protect human, animal, or plant life or health. The main objective of the SPS Agreement is to prevent WTO members from using such measures as disguised protectionism. The Agreement allows members to apply their own standards but requires that they be based on science; that they should be applied only to the extent necessary to protect human, animal, and plant life; that they should not discriminate between countries where similar conditions prevail; and that they should distort trade as minimally as possible. In addition, members are expected to practice equivalence to facilitate trade. That is, if an exporting country can demonstrate that its inspection measures achieve the same level of safety protection as the importing country, then the importing country is expected to accept the exporting country's standards and procedures as 'equivalent' to its own.

Another challenge in the WTO negotiation process was the formation of the customs union (CU) between Russia, Belarus and Kazakhstan. Russia has signed agreements with its CU partners that cede authority over customs matters to the CU and require that customs regulations, including SPS regimes, be harmonised among the three CU countries. For example, CU authorities, rather than national agencies, will issue SPS certificates. In the process of the harmonisation, not all of the Russian measures, such as provisions on equivalence and adherence to international standards, were reflected in the CU regulations. Now, at the date of WTO membership Russia's commitments to adhere to the SPS Agreement are reflected in the CU regulations. For exporters to the CU countries, this implies that WTO SPS rules apply to all three CU member states, which should simplify exports to this region.

2.2 Agricultural and food security policy

Main lines of agricultural policy

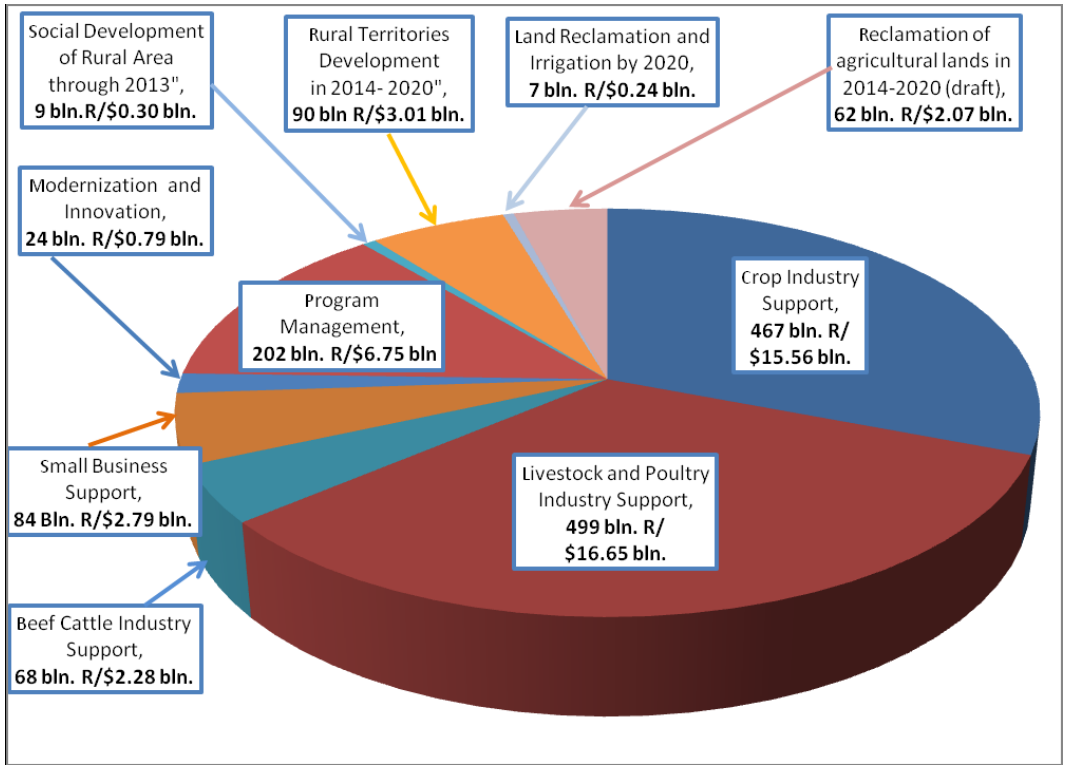
Due to its diversified agricultural policy implemented and its institutional setting, agricultural production in Russian has been mostly affected by ad-hoc or regional policy measures. The Russian federal state policy, in general, is largely focused on consumers to maintain a reasonable food price level and therefore it is greatly oriented towards market stability in favour of consumer interests. One example in agricultural policy that illustrates this position is the grain intervention policy, consisting of purchasing and selling interventions, with the prime objective to regulate the grain market prices, not to provide support to grain producers or form state reserves (Liefert and Liefert, 2012). The intervention fund is to be sold out in the years of high prices. To keep the effect of product intervention, export taxes are part of the policy they are accompanied by export taxes and in 2010 even by an export ban.

Agricultural market price support is mostly enacted by border measures, while input subsidies and output payments are the dominant policy instruments in Russia. Applied domestic measures are mostly input subsidies, including interest rate subsidies, both at federal and regional levels. Prominent border

measures are the export taxes on cereals and sunflower seed, a variable import duty for raw sugar, as well as TRQs for meat. During the surge of food prices in 2006-2007 and in 2009-2010, the Russian government applied additional measures to limit exports and to control food prices.

Agricultural support in recent years has been provided according to The Programme for Development of Agriculture and Regulation of Markets of Agricultural Production, Inputs and Food (Government of Russian Federation, 2007). This policy has clearly favoured livestock producers over crop producers (see FAS, RS7051, 2007 for details of key components of the 2008-2012 programme spending). In 2013 this programme will be succeeded by the 'The State Programme on the Development of Agriculture and regulation of the agricultural produce, raw materials and food stuff market for the years 2013-2020', approved by a Government's decree on 14 July 2012.[1] This eight-year programme will draw RUB1.5 trillion (approximately EUR37bn in 2012 exchange rate) from the federal budget. Another RUB770bn (EUR19bn) will come from the regional budgets (see also the next subsection on the organisation of agricultural support). The development of the livestock industry will remain the top priority for the Ministry of Agriculture (see Figure 2.1 with planned spending per sub-programme from the federal budget only). One major change in the State Programme is the method of support to agriculture will shift from subsidised interest rates toward direct income support for farmers.

Figure 2.1 **Federal budget allocations by sub-programmes in 2013-2020 (figure from FAS, RS1270, 2012)**



General objectives of the policy for the years to come is to ensure the farming sector a reasonable income (the programme refers to the introduction of a subsidy seeking to ensure that the farmers earn at least a 10% profit on every hectare of land) and the increase of the country's self-sufficiency of key agricultural commodities. Considering the latter, incentives to increase the production of meat, dairy and fruit and vegetables shall receive much attention in the federal and regional government programmes in order

[1] For more details please see http://www.government.ru/gov/results/19885/ and http://www.mcx.ru/documents/document/show/16834.77.htm. See also FAS, RS1270, 2012).

the achieve the targets set for 2020. Sub-programmes are designed to enhance seed breeding, green house production, animal breeding (more specifically: development of milk cattle and meat cattle breeding, and the development of selection-genetic and selection-hybrid pig-breeding centres and of pig processing units) and husbandry and eradication of animal diseases (African swine fever). Separate sub-programmes are dedicated to the development and support of small farming. However, there is no (sub)programme that is explicitly focusing on improving entrepreneurial and/or labour skills, nor increasing human capital through investments in education and/or extension (see also chapter 6).

Since the announcement of the agricultural development programme in July 2012, several draft laws on support for the farming community have been proposed and discussed with the Duma. However, early December 2012 no detailed information on the implementation of each specific support programme, priority setting and/or the regions' co-financing budgets have been made public. Yet, it is clear from the design of the programme that the Russian federal government aims at encouraging the livestock sector to increase its production capacity and production levels. USDA FAS analysts anticipate an increase of the milk cow herd in 2013, which is due, in part, to government support for large scale imports of high-quality dairy cattle (FAS, RS 1269, 2012). Next, production in the poultry sector will continue to growth in large part because of favourable on-going government support programmes, coupled with growing investments from businesses (FAS, RS1251, 2012). Also, the support programme aims at stimulating greenhouse production, especially by providing subsidised investment loans. In 2010, the total area of greenhouses in Russia amounted to 2.6 thousand hectares. By 2020, this figure will increase to 4.7 thousand hectares, according to government's targets. The draft state programme for the development of the greenhouse vegetable production in the country for the years 2013-2020 provides for a set of support measures, such as the reimbursement of 20% of costs for the purchase of energy suppliers and R & D investments, next to subsidised interest on investment loans for the construction, reconstruction and modernisation of greenhouses and purchase of production equipment.

Organisation of agricultural support and basic legislation regulating agricultural production in the RF

Some background information on the way agricultural support is organised and based on laws, might be helpful to understand the institutional complexities to which agricultural policy is subject to. The Russian Federation has developed a system whereby authority in the field of agricultural support is also given to the regional level. The federal government is responsible for developing and implementing the federal departmental special-purpose programmes, providing general conditions for the agricultural sector through the financing of entities in charge (federal government unitary enterprises, federal government agencies) and regulating agro-food markets, as well as developing the main directions of agricultural policy.

The federal budget subsidies are provided to the regions on a co-financing basis. The co-financing in implementing the federal agricultural policy at the regional level encourages development and strengthens Russia's common agricultural market. Thus, regional spending on agriculture may be funded from both the regional and federal budgets. When the regional authorities finance and implement support programmes with federal funding, they are required to meet certain obligations developed at the federal level. This contributes to align regional expenditures with federal policy priorities and guidelines.

Several programmes aim to ensure the availability of agricultural machinery, equipment and breeding stock through the development of leasing by means of soft loans to lessees or leasing companies. In some regions, certain categories of lessees (e.g., private farmers) receive subsidies to compensate for 50% of the initial lease payment. Regional leasing programmes exist alongside the federal leasing programme.

In addition to leasing, some regions apply subsidies to stimulate the adoption of resource, energy and water-saving technologies in agriculture. Moreover, loans on preferential terms and subsidies for electricity costs of farm-irrigation stations are provided widely at the regional level. Also, to regulate regional agricultural and food markets, regional authorities may carry out procurement and commodity interventions.

Agricultural production in Russian Federation is regulated by a number of legislative acts; the main documents at the federal level relevant for the agricultural policy in recent years are:

1. The Federal Law No 264 from 29th of December 2006 'On the Development of Agriculture' (Duma of Russian Federation 2006), setting the general framework for the state regulation of agricultural production in Russian Federation.
2. The State Programme of Agricultural Development and Regulation of Markets on Agricultural Products, Raw Materials and Food for 2008-2012 (Government of Russian Federation, 2007), translating general policy goals into concrete objectives, and the precise measures to achieve those objectives are developed with indication of funding sources (see FAS, 2007 for details of key components of the 2008-2012 programme spending).
3. Next to the Federal Programme of Agricultural Development the meat production is regulated by The National Priority Project on 'Development of the Agro-Industrial Complex' with targeted programmes on the development of poultry and pork production.
4. Decrees of the President of the Russian Federation, such as The Russian Doctrine of Food Security, adopted by President Medvedev in January 2010. This is a development of principles set out in sections 49-51 of the National Security Strategy (much broader than agriculture), which had already highlighted the need to reduce dependence on imported food. The 2010 document added to this by setting out explicit goals for self-sufficiency in different agricultural sub-sectors. This includes 95% self-sufficiency in grain, 85% in meat and meat products, and 90% in dairy.
5. The Targeted Programme of the Ministry of Agriculture 'Development of Infrastructure and Logistical Provision of Agricultural Market for 2010-2012' (Ministry of Agriculture of Russian Federation 2010b). The programme aims specifically at improving the facilities for the transshipping and storage of grain.
6. The State Programme of Agricultural Development for 2013-2020 (Ministry of Agriculture of Russian Federation, 2012) prolongs the measure 'Support of the Economically Important Programmes of the Subjects of Russian Federation' (see Figure 2.1 above and FAS, RS1270, 2012 for more background details).

The legal framework of agricultural markets and policies changes frequently. For more information and details of legislation and policy programmes, please consult the government website at www.government.ru/gov.

2.3 Metropolitan food security ambitions

The agricultural support programme aims at meeting the major self-sufficiency targets already set in Russia's Food Security Doctrine in 2010. Next to the emphasis on increased production, the support programmes will also promote the marketing and distribution of agricultural commodities and food to Russia's major population centres, by 'supporting the development of agro-food market infrastructure' that is identified as one of the tasks of the programme (FAS, 2012: 11). To date, however, the government has not yet further elaborated the Programme with regard to the mechanisms or the federal or regional budgets that might be involved.

Moscow is a metropolis with over 14m inhabitants these days. A secure and stable food supply to its population is a major concern of the city's governmental authorities (socially and politically). The city is sourced by Russian regions and imports (over 50% of meat and butter and 25% of fish consumed in Moscow are imported). Key for an efficient, timely and secure supply are the infrastructure and the organisation of the agrifood supply chain. In Moscow and its close surrounding processing and warehouse facilities do exist, yet supply chains are poorly integrated, both at regional and interregional level.

Until recently, Moscow's approach to ensuring food security for its citizens was mainly built on administrative measures, such as subsidising wholesale enterprises to reserve sufficient stock, supporting socially vulnerable people by offering discounts, state investments in the creation of regional integrated agricultural holdings. Now, however, the city's plans with regard to improved food security is now largely

focused on enhancing infrastructural development in wholesale and retail trade. The change in its approach is based on the recognition that the real difficulty for (regional) enterprises entering the Moscow market has been the underdeveloped physical infrastructure.

In an interview Dmitry Krasnov of the Moscow City Government points at fact that the maintenance of food security will be based on an interlinked development of infrastructure in wholesale and retail trade. Programmes[1] to invest in food security have the objectives of:

- Creating a modern, efficient wholesale sector (part of the chain) to guarantee sales and free access quality domestic agricultural products to the Moscow market, creating conditions for a free implementation of competitive domestic products;
- Strengthening cooperation with the regions of Russian Federation on the basis of intergovernmental agreements, as well as partnerships with foreign companies (CIS and other countries);
- Increasing retail space and the development of all retail formats and catering;
- Developing fair trade and well-functioning agricultural markets;
- Excluding/preventing monopolisation and economising on administrative resources.

In explaining the City government's objectives, Mr. Krasnov unfolds ambitions plans. To correct the imbalances in what is supplied and what is needed (in terms of volume and qualities), Krasnov argues it is necessary to double the amount of retail space in the city. There will be big agricultural markets, and small shopping centres, and convenience stores. In the next five years 6.7m square meters trade facilities have to be built, he projects.

These ambitions offer opportunities for Dutch businesses that can exploit the extended knowledge in handling and logistics of fresh produce. We will discuss the opportunities in more detail in the chapter 7 'Business opportunities.'

Besides the increase of retail space, it is necessary to create new channels of supply and convenience stores with food, primarily through the development of wholesale centres. For development of commercial business outside the Moscow Ring Road, it is planned to create a large wholesale food market with the assistance of regional suppliers, manufacturers and farmers. This will be one of the largest integration projects of the city, aimed at stimulating domestic production, which would allow the entrance to the city of quality food from small business enterprises, by organising trade shows and networking. The result of these efforts would be an improved food supply structure for all Muscovites, Mr. Kranov states.

Among the priorities the city government sets for the near future are:

- Organising guaranteed food supply of required quality, different assortment, quality and price classes, in first turn, by means of domestically produced foods;
- Improving the system of regulations and requirements for the quality of products;
- Improving public and private (by NGOs) quality control (with the legislative provision of control procedures);
- Improved trade infrastructure, including different retail formats, establishing wholesale food markets and a network of efficient retail food markets, farmers markets as an important instrument of eliminating intermediaries, improve product quality, fair consumer prices;
- Development of effective social food aid;
- Special monitoring of the quality and range of products for the organisation of social catering.

Presently the Moscow Government and the regional administrations are working on enhancing trade and economic cooperation by signing agreements to invest in agricultural production, agro-logistics and market infrastructure. With regard to the latter the city is allowing more weekend and regional markets which has to increase food availability, diversity and competition among suppliers.

[1] Moscow's food security strategy main documents are a) The state program of the Moscow city 'Stimulating economic activity in 2012-2016'; b) The sub-program 'The development of wholesale and retail trade, catering and domestic services in Moscow in 2012-2016.' http://www.mos.ru/en/authority/activity/economy/index.php?id_14=23349.

2.4 International trade and self-sufficiency

2.4.1 Self-sufficiency and utilisation of selected products

A quick insight into Russia's food needs is provided by figures on the country's self-sufficiency (the share of consumption covered by own production) and import data. Most products in Table 2.1 (a selection that is most relevant for our two pilots) show self-sufficiency rates below 100%, in particularly for fruits (30% of the domestic utilisation is domestically produced). Appendix 2.1 shows bench mark countries producing (much) more than what is domestically used and who are exporting, potentially also to Russia.

The domestic supply has different applications; main use is human consumption (Table 2.1). Potatoes and eggs are used as seed potatoes viz. hatching eggs. Feed is also an important use of some products: milk is used for rearing calves, and potatoes and vegetables as feed. Next, some products are wasted due to improper handling or too low quality. The FAO statistics indicate rather low waste levels in Russia, compared for instance to bench mark countries.

Table 2.1 is based on FAO statistics and refer to the period 2007-2009, the most recent data available in FAO's database. For some products recent years showed rather quick development in production, use and self-sufficiency rates. This is especially the case for poultry meat. The 2012 FAS-report on poultry meat production (RS1251) concludes that 'given the increase in domestic production, it is anticipated that domestic production will satisfy the needs of the Russian consumers. In fact, it is expected that domestic production, plus imports equivalent to the Russian poultry import TRQ volume (i.e., 330,000 MT which is anticipated to be fully utilised), plus the 70,000 MT of poultry meat already imported from CU member-countries (mainly Belarus) this year, will exceed the needs of the country. The volume of poultry available in the Russian market is expected to increase price competition within the country which may, in turn, encourage poultry exports.'

On dairy, FAS (2012, RS1269) reports that milk production is rather stagnant over the years, yet than an increasing share of the milk produced domestically is processed into dairy products like skimmed milk powder and cheese. For cheese, however, production only covers 57% of Russia's domestic consumption. For butter the 2011 self-sufficiency rate was 65%, for whole milk powder 80% and for skimmed milk powder only 44%. This indicates a strong need for imports of dairy products. Most of these imports are coming from Belarus.

Table 2.1 **Self-sufficiency and utilisation of selected products in Russian Federation (average 2007/2009)**

		Utilisation as percentage of domestic supply				
	Self-sufficiency	**Feed**	**Seed/hatching**	**Waste**	**Processing**	**Food**
Bovine Meat	67.1	0.0	0.0	0.2	0.0	99.8
Pig meat	73.3	0.0	0.0	0.2	0.0	99.8
Poultry Meat	64.1	0.0	0.0	0.0	0.0	100.0
Milk, Whole	100.0	13.2	0.0	0.1	33.7	53.0
Cheese	73.8	0.0	0.0	0.0	0.0	100.0
Eggs	99.7	0.0	4.7	0.2	0.0	95.1
Apples	44.2	0.0	0.0	0.6	16.1	83.3
Fruits (Total)	30.2	0.0	0.0	0.6	13.6	85.9
Onions	76.9	0.0	0.0	2.1	0.0	97.9
Potatoes	98.1	22.8	18.5	4.4	1.6	52.6
Tomatoes	62.3	0.0	0.0	1.3	0.0	98.7
Vegetables (Total)	77.3	3.4	0.0	1.8	3.2	91.6

Source: Calculation based on FAOstat, food balance sheets/ commodity balances (Self-sufficiency is production divided by total supply for domestic utilisation).

Beef production is a by-product of the Russian dairy sector. As cow inventories continue to show a declining trend over the past years, beef production is slowly decreasing too. On the other hand, pork production is on the rise. Self-sufficiency rates calculated from figures presented in the FAS report RS 1213 (2012) result in 59% for beef and 68% for pork, for 2011.

2.4.2 Russian imports of agricultural products

Table 2.1 shows that Russian self-sufficiency rate is below 100% for many commodities and thus Russia needs to import these commodities. Table 2.2 shows Russian imports of agriculture products in 2010 from the world and the Netherlands. From 2000 to 2010 the Russian imports increased 17.9% annually; the imports from the Netherlands grew slightly more by 18.2% each year.

The Russian imports are dominated by animal products (in particular meat), fruits, vegetables and beverages. The Netherlands has a share of more than 5% in these total imports by Russia. However, the Dutch export portfolio varies from the overall total Russian import portfolio picture: the top-5 Dutch export products in order of value are bulbs & flowers, vegetables, animal feed, dairy products & eggs, and vegetal oils. For some of these products the Netherlands has significant (import) market shares: 45% of all Russian imports for bulbs and flowers, 20% for animal feed, 12% for vegetables and 12% for vegetal oils. In addition, the Netherlands is a significant supplier of live animals and preparations of cereals, flour, starches and dairy. Below we will discuss the commodity groups on 6-digit level in more detail that have an import value from the Netherlands above USD10m or the Dutch market share on Russian imports is above 5% and the value is at least USD2m.

Table 2.3 shows the Dutch positions at the Russian market in more detail for those products for which the Netherlands appears to be among the most important suppliers of Russia.

Meat and meat products

The meat categories in Table 2.3 covers 96% of all Dutch meat export to Russia under the 'chapter 02 - Meat and edible meat offal.' The Russian imports are mainly frozen swine meat and chicken meat. Russia only imports 1% of its total meat imports from the Netherlands, but Russia is an important market for the Netherlands as it is the fourth and fifth export destination of all Dutch meat exports.

Fat and oils

Russia imports significant quantities of fats and oils. It is number 1 export destination of pig fat for the Netherlands. However, the import portfolio of Russia is much more diverse: Germany (share 40%), France, Spain and Denmark are larger suppliers. For most other oils product Malaysia and Indonesia are the main suppliers. Nevertheless the Dutch are in the top-5 import suppliers. Note that the Dutch export mainly exists of processed oil and fats, such as refined, partly/wholly hydrogenated/inter-esterified/re-esterified/elaidinised. Most products are based on non-Dutch raw materials, but processed in the Netherlands. The Russian market is important for the Netherlands, as Russia ranks always in the top 10.

The Netherlands is also important as supplier of 'milk fats' (other than butter or spreads); however Russia is just one of the many destinations.

Dairy

Next to milk fats, the Netherlands ranks fourth as import country for cheese, after Ukraine (34%), Germany (21%) and Lithuania (11%). Russia (rank 8) is one of the many destinations of the Dutch cheese export.

Eggs

The Netherlands is the number 1 foreign supplier of eggs, with a market share of 43%. Russia is also an important destination for Dutch eggs.

Table 2.2	Total imports of agriculture product by Russia in total and from the Netherlands in 2010				
	World		Netherlands		% from Netherlands in total Russian imports
	Million USD	%	Million USD	%	
01 - Live animals; animal products	320	1.0	44	2.5	13.7
02 - Meat and edible meat offal	5,848	18.0	62	3.6	1.1
03 - Fish, molluscs and other aquatic products	2,023	6.2	10	0.6	0.5
04 - Dairy products and eggs	2,075	6.4	177	10.2	8.5
05 - Products of animal origin, not elsewhere specified	135	0.4	5	0.3	3.7
06 - Live trees and other plants; bulbs & flowers	758	2.3	340	19.6	44.9
07 - Edible vegetables and certain roots and tubers	2,275	7.0	281	16.2	12.4
08 - Edible fruits and nuts	5,491	16.9	92	5.3	1.7
09 - Coffee, tea, mate and spices	959	2.9	3	0.2	0.3
10 - Cereals	231	0.7	-	0.0	0.0
11 - Products of the milling industry	110	0.3	7	0.4	6.4
12 - Oilseeds and other seeds	1,004	3.1	17	1.0	1.7
13 - Lac; gums, resins and other vegetable saps	135	0.4	3	0.1	1.9
14 - Vegetable plaiting material	3	0.0	0	0.0	0.4
15 - Animal or vegetable fats and oils	1,359	4.2	164	9.4	12.1
16 - Preparations of meat, of fish or of crustaceans	320	1.0	3	0.2	1.0
17 - Sugars and sugar confectionery	1,512	4.6	9	0.5	0.6
18 - Cocoa and cocoa preparations	1,282	3.9	119	6.8	9.3
19 - Preparations of cereals, flour, starch or milk	651	2.0	67	3.8	10.2
20 - Preparations of vegetables, fruit, nuts or other	1,382	4.2	76	4.4	5.5
21 - Miscellaneous edible preparations	1,480	4.5	57	3.3	3.8
22 - Beverages, spirits and vinegar	2,240	6.9	10	0.6	0.5
23 - Residues food industries and animal feed	954	2.9	192	11.1	20.2
Total	32,547	100.0	1,739	100.0	5.3

Source: based on UNcomtrade. Note: agricultural related products that are not in the agricultural products definition of HS01-24 such as agricultural machineries are discussed in Chapter 5.

Vegetables

For most of the selected vegetables the Netherlands is an important (top-3) supplier of Russia. For most products Russia is also an important export destination for Dutch exporters. For tomatoes, though, Russia takes the 11th position: Russia imports tomatoes from Turkey (45.9%), China (9.7%) and Ukraine (7.1%). China and Israel are important competitors for several products. Spain ranks high in imports of tomatoes, aubergines, capsicum and lettuce, the more delicate vegetables. As overall conclusion: the Dutch imports are of high significance for Russia, Russia is also an important destination country for the Netherlands.

Fruits

The Netherlands is the second supplier of apples after Argentina (50%) and before Brazil (16%). For pears Belgium (30%) and Argentina (24%) are more important for Russia than the Netherlands. Belgium and the Netherlands get 10% higher prices than the average import prices: this indicates differentiated products and/or high quality. The Dutch position for apples and pears might be the result of transit trade based on imported products from the southern hemisphere (such as South American countries, South Africa and New Zealand). The mutual trade for strawberries is slightly lower (5th supplier for Russia, 7th destination country for the Netherlands) and has an annual trade value of around EUR4 to 5m.

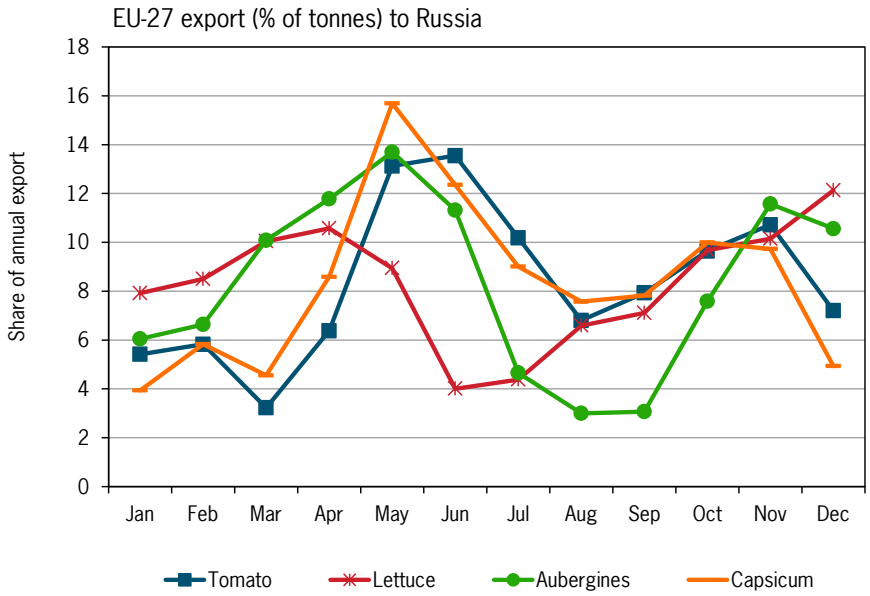
Table 2.3	Importance of Russia for the Netherlands based on average trade value 2008 to 2010						
Category	**Product**	**Code**	**Imports by Russia**			**Export from Netherlands**	
			Total value	**Share NL**	**Rank NL**	**Share Russia**	**Rank Russia**
			1,000USD	%		%	
Meat	Swine carcasses fresh	020311	12,550	21.6	4	0.9	12
	Swine meat fresh	020319	70,593	10.2	4	1.0	6
	Swine meat frozen	020329	1,582,570	1.1	10	6.0	4
	Chicken cuts frozen	020714	939,728	1.2	5	3.7	5
Fats & oils	Pig fat	020900	378,274	6.8	5	33.4	1
	Soya oil refined	150790	34,901	83.2	1	4.0	8
	Palm oil refined	151190	646,817	10.5	4	4.0	7
	Coconut oil refined	151319	97,685	9.7	3	1.5	10
	Palmkernel/babassu oil refined	151329	55,917	9.8	3	10.5	3
	Processed fats and oils	151620	86,532	19.1	3	2.7	10
	Milk fats (no butter)	040590	20,367	16.8	3	2.4	11
Dairy	Cheese	040690	926,187	9.0	4	3.5	8
Eggs	Eggs	040700	78,059	43.2	1	4.3	3
Vegetable (fresh)	Potato (table)	070190	198,517	22.6	1	18.2	1
	Tomato	070200	683,797	4.4	7	2.1	11
	Onions	070310	156,059	27.8	1	9.8	3
	Cabbage, kohlrabi	070490	81,415	7.4	5	8.8	4
	Lettuce	070511	11,091	33.4	2	13.3	2
	Carrots, turnips	070610	90,892	10.3	3	4.9	4
	Edible beetroots	070690	25,972	21.0	2	5.6	5
	Aubergines	070930	18,152	23.8	2	9.3	3
	Capsicum (sweet pepper)	070960	152,561	32.1	1	3.1	6
Fruit (fresh)	Apples	080810	262,720	17.4	2	7.2	3
	Pears	080820	325,367	12.8	3	13.2	3
	Strawberries	081010	71,052	6.2	5	3.0	7

Source: based on UNcomtrade.

2.4.3 Seasonality in Russian imports of fresh vegetables

Export opportunities to foreign markets are strongly affected by seasonality in local production. The latter is an important feature of the Russian vegetable production. Therefore, vegetables imports show seasonality in local production. Figure 2.2 shows the monthly export of delicate and very perishable products from the EU27. Export peaks appear in April to June and in November. These products are mainly consumed in spring and summer. Figure 2.2 indicates that during summer the domestic production is an important supply source and in the spring and autumn the imports. The seasonality of the storable vegetables shows only one peak in imports, presented in Figure 2.3. The largest volumes of storable products are exported in late winter and especially in the spring. The export volume of onions shows the greatest amplitude, while that of carrots (and turnips) show a rather flat export pattern, indicating almost no seasonality.

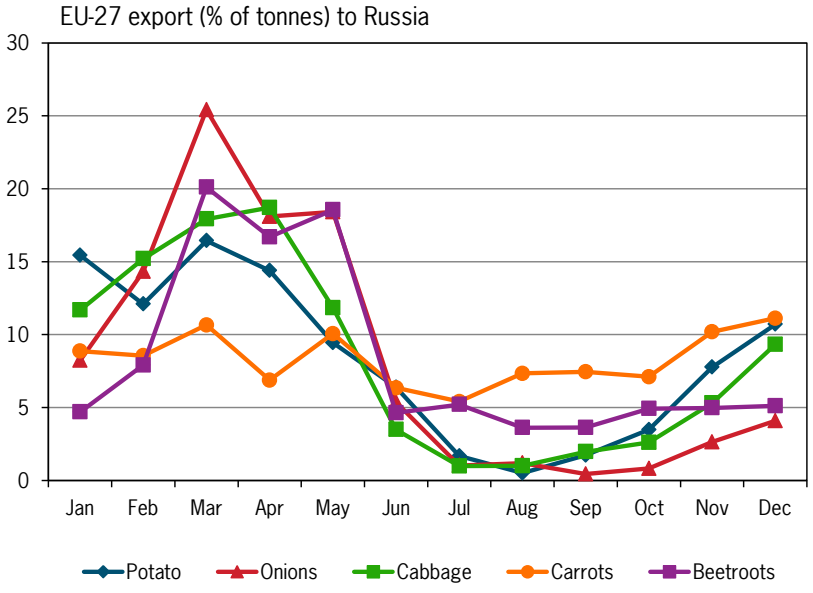
Figure 2.2 **Monthly export share delicate vegetables of EU-27 exports to Russia**



Source: Based on Eurostat. Monthly share in annual exports in tonnes, average 2008-2011.

Seasonality indicates that Russia consumes domestic products during and directly after the growing season. Shortage in supply occurs in the late winter and in the spring. These shortages can be levelled with imports during these seasons. Other possibilities are to increase the domestic production during these periods and/or to invest in the storage capacity and know-how of storing.

Figure 2.3 **Monthly export share storable vegetables of EU-27 exports to Russia**



Source: Based on Eurostat. Monthly share in annual exports in tonnes, average 2008-2011.

3 Consumption patterns

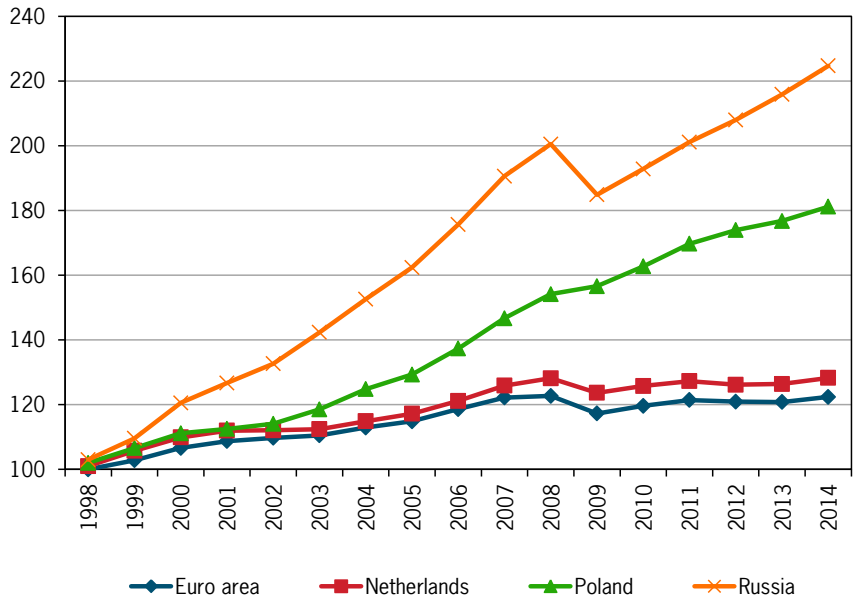
Key findings

- The Russian Gross Domestic Product grows faster than in the euro area.
- The consumption of animal proteins, fresh fruit and vegetables and vegetal oil is growing fast: an expected development with rising income.
- Food safety perceptions of Russian consumers are similar to those in EU countries, but Russians rely more on their own responsibility than on institutions and organisations.
- Private labels of retailers have now a share of 3-5% and will grow to 15% in coming years. This indicates their increasing market power in the food chain.
- The share of organic food in food expenditure is low, but higher in metropolitan regions and is expected to grow.

3.1 Expenditures on food

Figure 3.1 shows the annual growth of the real Gross Domestic Production (GDP) for Russia, Poland, The Netherlands and the euro area. This is an indicator for the per capita income development as the population growth is rather low in the selected countries. Russia's GDP-development in the past were high compared to the benchmark countries. The OECD outlook for the coming years is also positive about Russia and projects an annual growth rate of 4%, higher than in Poland and the euro area. The Russian development shows that the country is catching up with the benchmark countries. However in 2011 the GDP/capita was still only 25% of the Dutch level, in GDP measured in Purchase Power Parity(PPP) 50% of the Dutch level.

Figure 3.1 **Growth of the Gross domestic production in Russia and benchmark countries (index, 1998=100)**



Source: Word Development indicator (1999 to 2011) www.oecd.org/eco/economicoutlook.htm, retrieved November 30th, 2012 (2012-2014).

A growing income affects food consumption patterns: the consumption of animal proteins increases with increases with rising incomes. Table 3.1 shows this development pointing at the increased retail volume of these products. The growth is even stronger for the fresh vegetables and fruit. An even higher growth is expected for the more 'delicate' vegetables, fruits in general and exotic fruit in particularly. The change of fat and oil consumption fits also in the expectation when incomes increase: higher consumption of vegetal oils and margarine at the cost of butter. Butter has relatively high levels of saturated fats, whereas vegetal oil and margarine have high levels of unsaturated fatty acids claiming health benefits. Developments in per capita consumption of some products is shown in more detail in the sections below.

Table 3.1 Volume indices of retail trade (2004 =100)

	2004	2005	2006	2007	2008	2009	2010
Eggs	100	109	121	125	130	132	141
Fish	100	105	121	130	138	133	142
Meat and poultry	100	109	110	117	125	119	122
Cheese	100	110	116	121	119	122	130
Whole milk/dairy	100	107	122	137	145	133	140
Butter	100	101	104	104	87	80	79
Margarine	100	104	110	128	125	119	124
Vegetal oil	100	113	120	141	153	162	175
Fresh vegetables	100	106	116	125	136	141	144
Fresh fruit	100	113	125	142	157	162	178
Fresh potatoes	100	105	106	117	119	124	111

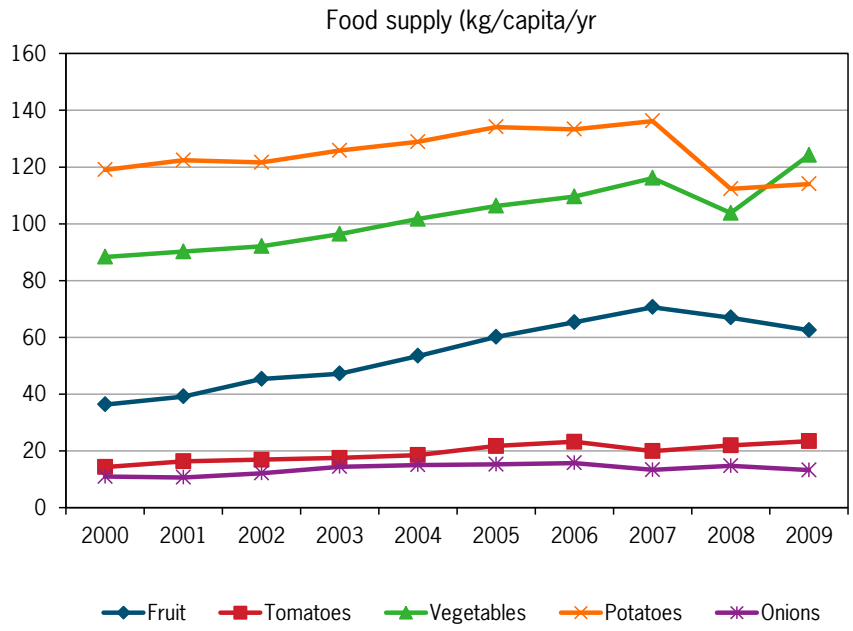
Source: www.gks.ru/bgd/regl/b11_12/IssWWW.exe/stg/d02/21-08.htm, retrieved December 2nd 2012.

3.2 Food consumption per capita

3.2.1 Vegetables

The consumption of vegetables grew annually 3.9% and fruits 6.2% between 2000 and 2009 (Figure 3.2). The consumption level of fruits and vegetables in Russia is comparable with the levels in Belarus, Poland and Ukraine: the Dutch consume twice as much fruit and only 75% the Russian quantity of vegetables. Little information is available on the composition of the vegetable and fruit basket. In general with rising income more 'delicate' vegetables, like lettuce, cucumber, sweet peppers, asparagus, are consumed instead of potatoes, onions, carrots or cabbage. The FAO provides also data on the consumption of tomatoes (5.6% growth), potatoes (growth until 2007 and a strong decline in 2008 and 2009) and onions (2.2% growth). The consumption level of these products is more or less comparable to levels in the Belarus, Ukraine and Poland. However, Ukrainians consume 180kg potatoes per capita per year whereas the Russians 130kg. For all these products the Russian consumption levels are above the Dutch level. This is in line with the observation of a switch to more delicate vegetables with rising incomes. Striking is the difference in tomato consumption per capita per year: 10kg in the Netherlands and above 20kg in Russia. With rising income we expect a higher consumption of 'delicate' vegetables and a lower consumption of vegetables like cabbages, carrots and onions. Detailed information of the before mentioned products in Figure 3.1 is presented in appendix 3.1.

Figure 3.2 **Consumption of vegetables in the Russian Federation**



Source: FAOstat, food supply, crops primary equivalent.

3.2.2. Meat and dairy

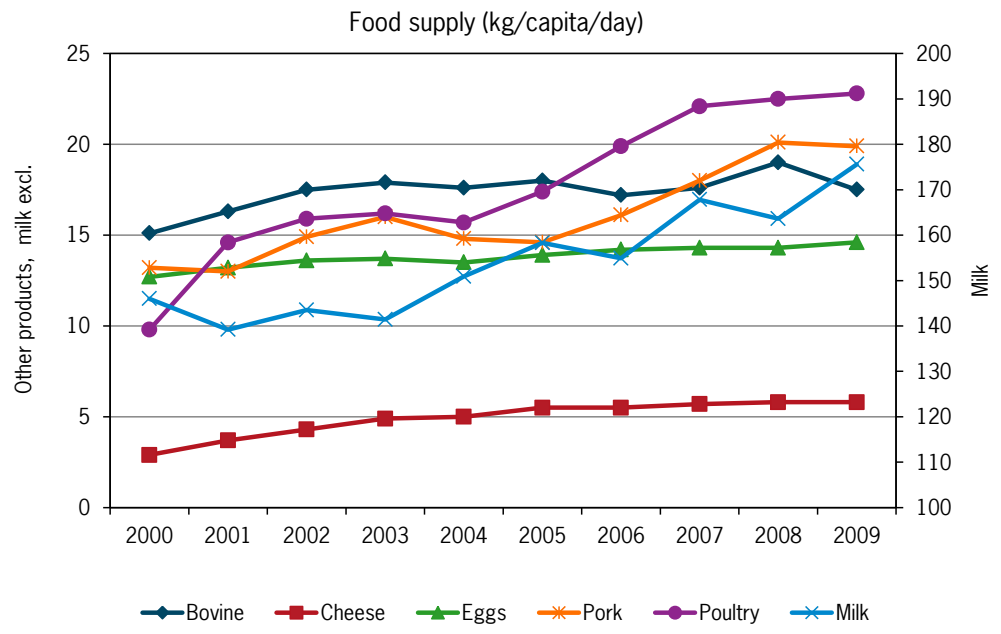
Figure 3.3 depicts the consumption of animal (protein) products: all products show an increasing consumption in line with the growing income per capita. Poultry (9.8% annual growth in the period 2000-2009) cheese (8.0%) and pork (4.7%) show high growth rates. The consumption growth of other products mentioned is between 1.6 and 2.1%. The consumption of pork (20kg in 2009) is low compared to the 35 kg in Belarus and the Netherlands and certainly compared to the 50kg in Poland. The consumption of beef is on the same level as in the Netherlands and Belarus, much higher than in Ukraine and Poland. The other products are more or less on the same level as the comparison countries, except that the Netherlands have high cheese and milk (including dairy products) consumption. This consumption levels suggest that the quantity consumption per capita will show not a significant growth except for poultry. In all mentioned countries poultry meat consumption increased between 4.4% in Poland to even 20% in Ukraine. Poultry meat is higher valued for its convenience in cooking, as low-fat-food in diets.

3.3 Quality perception and private-label products

3.3.1 Quality perception

Difference between the EU-countries (Denmark, Germany, Greece, Slovenia and UK) and Russia regarding governance structures and historical contexts did not result in different psychological determinants of Food Risk Management. Consumers in the EU attributed more responsibility to food chain actors and the authorities compared to Russian consumers. Russian consumers expressed concern about the quality of Food Risk Management because they are concerned about the extent to which the authorities are able to protect consumers. Consumer trust in institutions and organisations with responsibility for certification, as well as relevant governmental bodies, was low among others due to corruption among governmental officials. Therefore, Russian consumers assume responsibility for their own health protection (Popova et al., 2010).

Figure 3.3 **Consumption of animal products in the Russian Federation**



Source: FAOstat, food supply, livestock and fish primary equivalent.

3.3.2 Private labels

Private labels have a stable share of 3-5% in Russian retail sales. Private brands support retailers in the bargaining power (price negotiation) with brands suppliers. Furthermore consumer loyalty is shifting from branded products to store formats. Experts expect a rise to 15% in coming years, which is still far below the 25% in most Western European (which according to Schreijen (2011) will be 50% by 2025). The reasons for the low market share in Russia are according Kolchevnikova (2011b):

- Difficulties to establish long-lasting and trusting relationships with contractors.
- Private labels bring processors little profits.
- Private labels cannot compete with brands. The leading retailers are investing in better packaging and improving the quality of private-label products.
- Russian consumers are brand-oriented; however an increasing number of consumers became loyal to private during the economic crisis.

In conclusion private labels are expected to grow considerably in the coming years, because of shifting consumers' preferences but also because of the growing market share of the leading retailers who have the means to strengthen the private labels in their assortment. Some retailers such as the Pyaterochka chain (X5 retail group) aim at 50% as well as some low-end supermarkets (Kolchevnikova, 2011b).

3.3.3 Organic food

Increasing disposable income levels and health consciousness boosted the spending on organic food by mainly urban Russians. The organic product sales in Russia reached the level of USD255m in 2011; twice as much as in 2005 and tenfold the level in 2004. Given a population of round 140m, the 2011 expenditures mean a consumption of a mere USD2 per capita (Kolchevnikova, 2011a). The share in total retail food expenditures (section 4.1) is 0.05%. This amount is low compared to the Netherlands. The Dutch total expenditures are EUR803m in 2011 (EZ, 2012) or almost EUR50 (USD70) per capita.

The consumers of organic food are mainly mid-to-high income, highly educated, middle and high class residents of Moscow and St. Peterburg between 25 and 45 years. Negative publicity on food safety (crop protection residues), on 'unhealthy' ingredients in packaged food and on biotech ingredients influenced the growth of organics. Furthermore, the Western lifestyle that consuming organic food is fashionable contributes to purchases of food (Kolchevnikova, 2011a).

The majority of the organic food (round 80%) is sold in the super/hypermarkets such as Perekrestok Green, Metro Cahs and Carry, Globus Gourmet, Azbuka Vkusa or Seventh Contintent ((Kolchevnikova, 2011a). Most of the chains selling organics do not belong to the top-10 retail chains mentioned in Table 4.1. Grundwald, the only dedicated and specialised all-organic supermarket, has 2 stores in Moscow and intended to open a third one in 2011 (Kolchevnikova, 2011a). The main categories of organic food in 2011 are:

- Baby food (USD80m) and fast growing annually 18% between 2006 and 2011;
- Soft Drinks (USD52m) and annually growth of 6.5%;
- Bakery products (USD45m) and annually growth of 2.3%.

The consumer prices are 20 to 400% higher compared to conventional products, similar to the price difference in many Western European countries.

Russia has no official system for organic certification. The only document is Regulation 26 issued by the chief Health officer 'Approval of Sanitary and Epidemiologic Rules and standards no 2.3.2.2354-08.' The majority of the criteria comply with EU regulations. According the Russian Ministry of Agriculture 12 organic farms are registered. However AGROSOFIA identified already 30 organic farms in 2005. Nevertheless these are small numbers. IFOAM stated in 2009 that 3,580 ha are certified in accordance with the EU regulations, of which 2,270 ha are in conversion and thus only one-third or1,310 ha in production. In 2012, the Netherlands count 1,400 organic farms cultivating 10,700 ha of crops, 120 ha of protected horticulture and 35,000 ha of grassland (Statline.CBS.nl). The low Russian domestic production is one of the reasons that Russia imports the majority of organic products form EU countries (Kolchevnikova, 2011a). The actual high growth rates and the developments last decades in the Western Europe countries indicate a further growth of organic product. This growth will be strengthened by a prosperous development of the consumer income.

4 Retail, wholesale and distribution

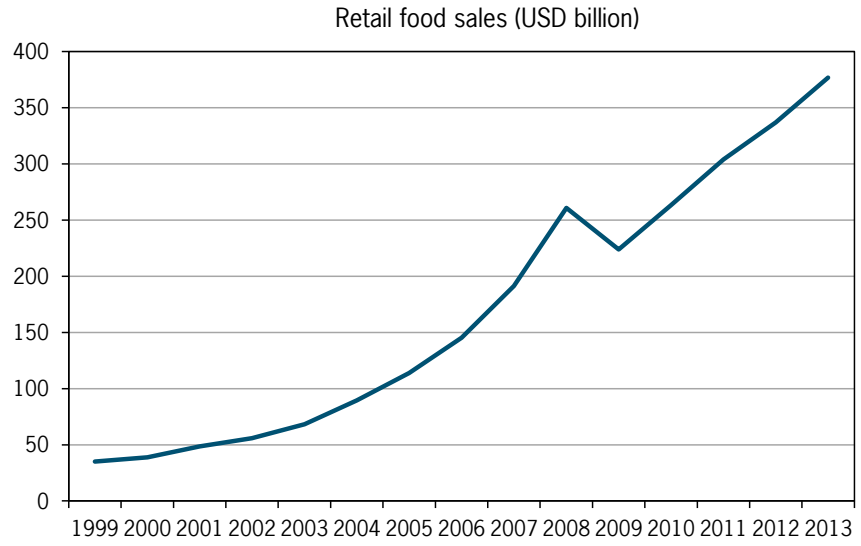
Key findings

- Since 1999 the registered food retail grew 22% annually and is expected to grow by 11-15% in the coming decade.
- One third of the retail sales are in the central regions, including among others Moscow.
- The state regulation on trading activities prohibits slotting fees and opening new outlets if the market share of a chain is above 25% in a region and regulates the suppliers' payment and maximum price increases.
- Domestic retail chains are leading; the top 4 chains had a market share of 5% in 2000 and 20% in 2010.
- Out of home sales is approximately 10% of the retail sales and growing 3.2% annually.

4.1 Retail food sales

With the rising income, the retail food sales grew annually in double digits: during the period 1999 to 2010 with 22.4% annually. The suffering of the economy in 2008/2009 affected directly the retail sales. The sales recovered after 2009 and reached in 2010 the value of USD263.4m, slightly above the 2008 level. Twardzik (2011) from PWR indicates a continuous growth in double digits (11 to 15% annually) in the period 2011 to 2013 for the food and non-food retail sector. The food sales will reach USD400m in 2013, if these growth levels can also be achieved for the food sector.

Figure 4.1 Retail food sales in Russia



Source: Rosstat cited from Kolchevnikova (2011b), forecast 2011-2013 from Twardzik (2011).

4.2 State's regulation on retail trade

Since 1992 till the end of the first decade of 2000s, the retail sector was one of the most liberalised market segments in Russia. In 1992 the Russian federation president signed the decree 'On freedom of

trade': any legal person or entity was allowed to carry out trade activities without special licensing. This trade liberalisation induced a mass privatisation of the trading outlets. By the end of the nineties 96% of the Russian retail activities were private, in Moscow even 99% (Radaev, 2011).

In 2009 the Federal trade law 'On main Provision for State Regulation on Trading Activity' passed the State Duma. The most important legislative statements of this law that restrict the free market for stores are (based on Radaev, 2011 and Kolchevnikova, 2010):

- Prohibition of slotting fees (entree fee payments made by manufacturers to retailers for shelf space. Retailers have to avoid exclusive contracts and 'entry fees' for shelf space. Additional fees, up to a maximum of10%, may be subject to separate marketing contracts, but are illegitimate as precondition for procurement contracts. Slotting fees have become increasingly prevalent in USA grocery retailing since the eighties (Klein and Wright, 2007).
- Payment is legally fixed for chain at 10, 30 or 45 days depending on the shelf life: e.g. 10 days for meat and poultry and 45 days for most other goods. The average days payable for listed retail companies is 62 calendar days approximately 9 weeks.
- Despite that the retailers' gross margin and prices are not subject of the law, the government can intervene. The government has the right to fix a price for 90 days if the price increase on necessities exceeds 30% in 30 days.
- Opening additional outlets is prohibited if a retail chain obtains a market share of 25% or higher in a municipal district. Many big retailers see this as a barrier: opening a single store in small might breach this threshold. A trade chain is defined as two or more stores under common control or common business name. As will be shown in Table 4.1 a mother company such X5 or Auchan have several chains, that are considered as different trade chains.

The trade law is non-systematic: it concentrates on chain store companies and does not address direct selling organisations, street markets of off-store trade. Furthermore it protects the supplier side of the market and might reduce incentives for investments. Moreover the law is non-transparent and allows ambivalent interpretations by different public officials and lawyers. Despite these comments, empirical results showed that for most sellers, contractual terms and conditions have not significantly changed (Radaev, 2011). As the impact is unclear, the relevancy of a continuous update of Russian development is of high importance for Dutch exporters and investors.

4.3 Food retail

The food retail is growing with the growing disposable consumer income. Food retail contributed almost 50% in total retail market in 2010 (Kolchevnikova, 2011b). In contrast to many other Eastern European countries domestic retailers are leading in the top 10 retailers. Foreign retailers are the German Metro group and the French Auchan group. Carrefour started in 2009 in Russia and already left the market, a few months after opening the first store. The attempt of Wal-Mart to penetrate the Russian market by acquisitions has been thwarted (Moscow times, 2012). The concentration ratio CR_4 (sum of market share of the 4 largest retailers) were in 2000 4.9 and increased to 19.7% in 2010. In 2012 the two foreign retailers were among the top 4, in 2000 not. Furthermore the share in total food sales of the 2010 top-10 increased from 6.8% to 28.1% in 2009. Compared to developed countries, where modern retailers have 80% market share, the share of Russian retail chain stores is small but fast growing (PlanetRetail, 2010). This indicates a shake out of significant numbers of the many small scale retailers.

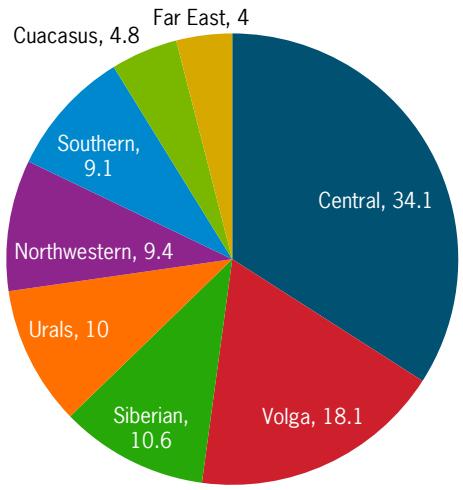
Traditional retail formats such as small groceries, kiosks and street markets keeps declining. Street markets declined by 5% in 2010, amounting 12-15% in the retail sales (Kolchevnikova, 2011b; Radaev, 2011). As retail chains have less than 30% and open-air markets 15%, over 50% of the retail sales is provided by independent stores.

Table 4.1	Top-10 retailers and chain formats, number of outlets and sales								
No.	**Retailer**	**Chains (format*)**	**Origin**	**Geographic spread**	**No. of outlets**	**Sales (million EUR)**			**Market share**
						2010	**2005**	**2000**	**2009**
1	X5 Retail group	Pyaterochka (a) Perekrestok (b) Karusel (c)	Local	European part Russia	2,210	9,020	1,433	74	7.9
2	Magnit	Magnit (b,c)	Local	Southern and central Russia	3,490	5,470	1,318	98	4.9
3	Metro Group	Metro (d) Real (c) Media Markt (electronics)	German	Large cities European part	92	4,791	1,211		3.3
4	Auchan	Auchan (c) Atak (b) Raduga (a)	French	European part and eastwards	88	4,593	870		3.6
5	O'Key	O'Key (c) O'Key Express (b)	Local, Luxemb. & Estonia	St. Petersburg, Southern Russia, Siberia	49	1,944	276		1.6
6	Dixy group	Dixy (b)	Local	Moscow, St. Petersburg, European part Russia, Siberia	634	1,733	736	87	1.6
7	Lenta	Lenta (c)	Local & USA	European part Russia, Urals, Siberia	38	1,700	407	50	1.4
8	Kopeika	Kopeika (b)	Local	Moscow, central Russia	578	1,478	543	60	1.5
9	Sedmoi Kontinent	Sedmoi Kontinent (b) Nash gipermarket (c)	Local	Moscow, central Russia	147	1,204	604	123	1.2
10	Victoria group	Kvartal (b) Victoria (c)	Local	Moscow, St Petersburg, Kaniningrad	217	762	423	37	1.1
	Subtotal						3.962	529	28.1
	Share in total						18.8	6.8	28.1

* Formats: a=discounter; b= supermarket; c=hypermarket; d=Cash & Carries. Appendix 4.1 provided as description of the formats.
Source: PlanetRetail (2010) and sales data 2005 & 2000 and market share 2009 (AGF, 2010).

Most of the largest retail chains are based in the European part of Russia and especially in the two largest cities Moscow and St. Petersburg. The Central Federal district (which includes Moscow region) is the most populous region and accounts for over one third of the retail sales.

Figure 4.2 **Regional distribution of retail (food and non-food) sales**



Source: PlanetRetail (2010).

4.4 Out of home sales

The out-of-home sales are round 10% of the retail sales on food in Russia. The annually growth of 3.2% (based on EUR) from 2007 to 2011 is low compared to the double digit growth rate of the retail expenditures. The fast- food sector grows the fastest. Moscow and St. Petersburg are the largest 'restaurant cities' Kolchevnikova et al. (2012).

The USA is well-known for its out-of-home consumption: round 50% of the consumer (monetary) expenditures are out of home. In the EU countries is this around one third. US fast food chains like McDonald (market share of 43% in fast food) and Subway are rapidly developing. Compared to these figures, a future boost of out-of-home might be expected, certainly in the two big cities. Serving the sector with products meeting the standards of the fast-food provides is required and most probably hard for European suppliers.

Tabel 4.2 **Food Service Industry Sales in Russia**

	2007	2008	2009	2010	2011
Million EUR	8785	9271	7603	9463	9967

Source: Kolchevnikova et al. (2012), own conversion from RUB to EUR.

5 Food processing, production and input supplies

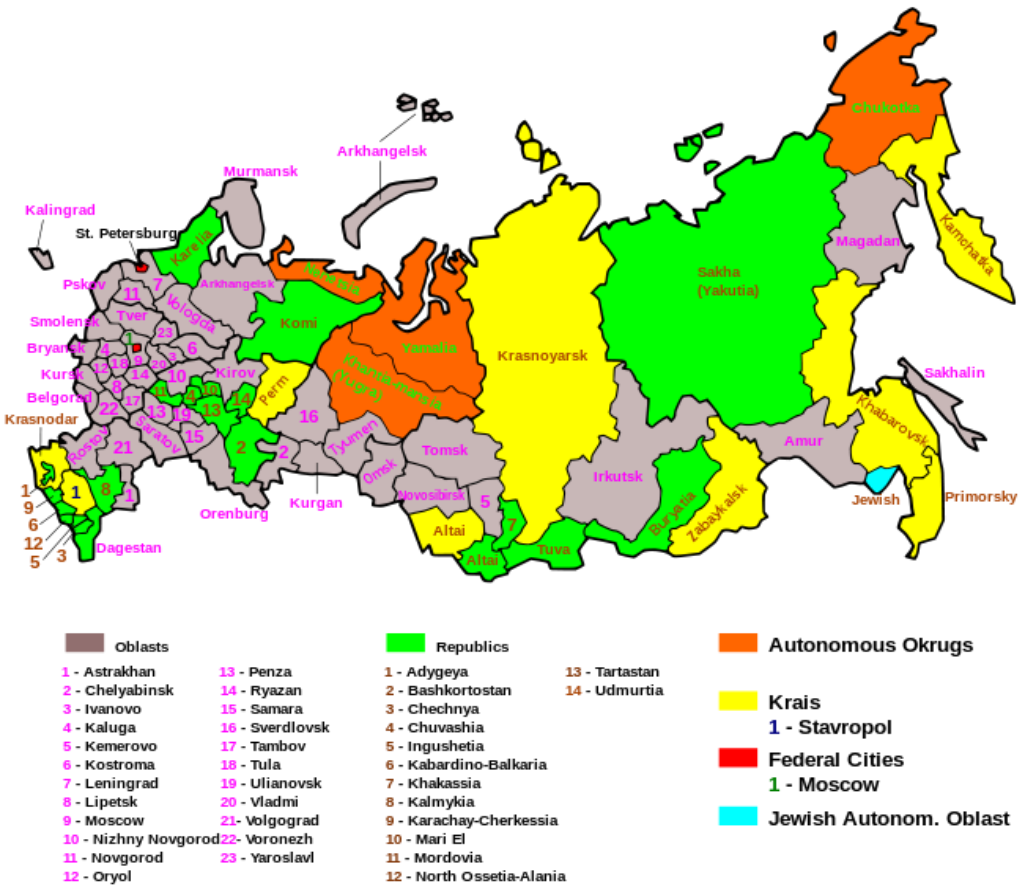
Key findings

- Important production regions are in the south-western part of Russia at a distance of 1,000 to 1,500 km of Moscow
- The greenhouse area declined last decades and in not up-to-date. Investments are recommended
- The yields are relatively low and only slowly improving.
- The production of poultry meat grew considerable last decade: other products could hardly follow the increased consumption.
- Subsistence farmers produce over 50% of the vegetables and raw milk.
- Russian agriculture depends on the imports of improved seeds and breeds. Also machinery is imported, the Dutch have severe competition in this field from Germany, Italy and UK.

5.1 Overview of agricultural regions

This section provides a concise overview of the main production regions, mainly in the Western part of Russia. Some interesting regions in the Western part of Russia are described below (see also Min EZ, 2011).

Figure 5.1 **Administrative regions in Russia**



Source: http://en.wikipedia.org/wiki/File:Russian_Regions-EN.svg. Six types of federal subjects are distinguished—21 republics, 9 krais, 46 oblasts, 2 federal cities, 1 autonomous oblast, and 4 autonomous okrugs.

1. Krasnador in the southwest of Russia, 1,200 to 1,300 km south of Moscow. The region contributes the largest volume of grains, sugar beets, fruits, berries and soya beans; it is the second largest in sunflower seeds, eggs, beef and poultry, and third in milk. The region possesses 4.8m ha of the richest agricultural land. The agribusiness is underutilised.
   This region locates the French food processors Bonduelle (canned vegetables) and CECAB Group (canned and frozen vegetables) and the German agriculture equipment factory Claas.
2. Rostov in the southwest of Russia, 1,100 to 1,200km south of Moscow. This region has well developed roads and infrastructure. Despite the rich black soils and availability of cheap farmlands the agribusiness is undercapitalised. The region offers opportunities for investing in greenhouses, vegetable production and livestock. The population are friendly for foreigners but are not willing to let them invest. Foreign investors are: PepsiCo (potato chips, snacks and bottling), Coca cola (450m litres of soft drinks) and Provimi (feed). Russian companies are: Foodland (cheese), Yug Rusi's (a large vegetal oil crusher, above 1m tonnes).
3. Belgorod in the southwest of Russia, 700 km south of Moscow. The region is the centre of domestic animal protein production. Animal production has high priority. The region produces 18% of the Russian poultry meat and 23% of pork. It produces also a considerable share in raw milk, second among the regions in the Central Federal districts (around Moscow).
   Miratorg, one of the largest Russian importer and produces of meat is located in Belgorod. Their capacity is more than 1m hogs annually and aiming in the future at 2m. Prioskol'e also located in this region is the largest poultry company, has capacity of 50 tonnes per day for poultry meat products. It produces 38 products under the brand 'Nice mark.'
4. Stavropol, 1400 km south of Moscow, is considered as one of the best regions in the world to grow Durum wheat. It is also suitable for greenhouse and horticulture production. The total agricultural production value is on the same level as in the Moscow region.
5. Leningrad in the northwest of Russia, 700 km northwest of Moscow. This region is close to St Petersburg that is considered as one of the most European cities. It is Russia's gateway to Europe and after Moscow region the largest food market. It produces dairy and eggs. Kraft Foods is active in instant coffee. In the egg sector, Dutch -Russian Severnaya Poultry Company managed by Dutch invested RUB13bn. Provime acquired Volosovo feeds plants. Furthermore JSC Agro Vyborzhets planned to invest RUB4.5bn in 20 ha of greenhouses.
6. Moscow region is the largest food market; Moscow city alone has more than 11m inhabitants. The agricultural land is relatively infertile (fertilisers are needed) and in Moscow oblast also polluted by chemicals and household and industrial wastes. Over 40% of the region is covered with forest. The food industry is important: 27% of the industrial output is from food processing.

Next to the vast distances within Russia, one should keep in mind that the distance Moscow - Amsterdam is over 2,500 km. Logistics is of major importance for both domestic transport as well as for exporters.

The vastness of the Russia provides Russia with several climate conditions:

- Subarctic in the North with long and cold winters and short mild summer.
- Continental east of the Ural Mountains, with hot summers and cold winters. Most of Russia's fertile farmlands are in this climate region.
- Maritime west of the Ural Mountains in the proximity of the Black sea, with mild winters and cool summers.

5.2 Animal protein production: developments and trends

5.2.1 Food processing sector

The Russian food processing industry is a relatively strong sector in Russia, representing 11.5% of Russian industrial production, and is considered to be among the leaders in industrial production along with iron and steel production and the fossil fuel industry (Lubentsova, 2012).

Table 5.1 shows selected performance indicators of Russian food processing sector, with a more specific focus on animal protein production sector. Recent developments in Russian food processing sector include a decline in the number of businesses since 2007, in particular there was a significant decline after the 2008 economic crisis. In 2010, the meat industry had about 3,660 companies located in all regions of the Russian Federation, including slaughterhouses - 460, refrigerated slaughter houses - 1200, meat processing plants - 2000 (Anonymous, 2012). However, as suggested in the table, economically viable firms survived and more than filled the void. Specifically, the value of food production actually increased each year during the 2007-2011 period, and as up by 12.6% and 12.3% in 2010 and 2011, respectively. Net profit was also up in 2010, by 15%.

Table 5.1 Russian food processing sector and animal protein related industries 2007-2011

	2007	2008	2009	2010	2011	%change	
						2010/2009	2011/2010
Food processing sector as a whole							
Number of businesses, including beverage and tobacco manufacturers (as of the beginning of the year)	53,510	49,973	44,878	43,064		-4.04	
Value of food production, billion RUB	2,143	2,656	2,822	3,177	3,555	12.6	12.3
Balance, financial (profit less loss), billion RUB	102.03	101.47	151.67	174.44		15.0	
Meat processing industry							
Meat, incl. offal, thousand tonnes	2,561	2,899	3,380	3,879		14.7	
Sausages, thousand tonnes	2,411	2,454	2,238	2,395		7.0	
Semi-finished meat, thousand tonnes	1,254	1,451	1,538	1,553		0.9	
Dairy processing industry							
Whole milk products, thousand tonnes	10,515	10,300	10,900	11,848		8.7	

Source: Russian Federal State Statistics Service (www.gks.ru/).

The Russian economy has entered a 'post-crisis' period of moderate growth. Domestic demand, which collapsed in 2009, has been gaining strength. The food processing sector in Russia continues its recovery, supported by rising disposable income, increasing real wages, declining unemployment and growing food expenditure. During the January to August 2011 period production of the following increased versus 2010 (not shown in the table): meat and offal, sausages, meat products, dry milk and cream, butter, canned milk, pasta, sugar, confectionery, frozen fruits and vegetables, and mineral water. However most food processing companies believe that the food industry has not fully recovered yet from the crisis (Lubentsova, 2011). Furthermore, despite the increase in the production of processed food in recent years, Russia remains highly import dependent on certain types of agricultural products and foodstuffs (see section 2.4, Table 2.2), most of which are raw materials and ingredients for processing sector. This leaves ample opportunities for foreign exports to Russia. The major consumer of food ingredients in the Russian food market is the meat processing industry. One of the latest trends in the meat processing sector is increasing emphasis on 'natural' food ingredients (Lubentsova, 2011).

A list of Russian meat importers can be found at the following link:
www.infomeat.ru/english/meat_importers.php

Among major trends and processes that affect the entire food processing sector and specifically food processing equipment are the production of new types of food products, the introduction of new, high-tech machinery, technologies and techniques, and quality improvements. Russian food processing companies are seeking a wide variety of equipment and materials. This also leaves ample opportunities for foreign exports to Russia.

In the Russian food processing sector, the meat-processing is one of the leading industries with an average annual growth of 15% between 2007 and 2010. In the same period, an average annual growth in the dairy processing was 6%.

The food processing industry in Russia consists of foreign and domestic manufacturers with the latter dominating number wise. The biggest Russian food manufacturers in animal protein production are described more in detail in the sections below. The leaders in this market are focused on consolidation and expansion into regions outside of Moscow and St. Petersburg. The foreign investors are also strengthening their positions with investments and marketing activities that overshadow domestic companies (Lubentsova, 2011). Besides continuing consolidation, a further vertical integration along the chain takes place, with processing industry acquiring interests not only in their suppliers (livestock farms), but also in suppliers of their suppliers (e.g. integrating feed production) and in distributors (integrating retail) As described below, further development of vertical integration, infrastructure and logistics of agro-food market is one of the priority measures of a Strategy of Development of the Food Processing Industry of the Russian Federation until 2020 (Anonymous, 2012). See the sections below for more detailed examples of such integration in meat sector. The top domestic companies have ambitions to export their poultry and meat products.

The potential for export of equipment and materials is large in the meat processing due to the need to replace and modernise equipment. In 2005, approximately 84% of meat processing equipment has been in service for more than ten years, 14% for 10 to 20 years, and 2% for over 20 years.

- Slaughterhouse equipment: All equipment, but especially that for the processing of animal blood, bones, fat, and other bi-products that are usually thrown away (20-30% loses during preliminary meat processing).
- Butchering and make-up machinery, and shredders.
- Sausage-making equipment: machinery, such as grinders, cutters, mincers, injectors, heating and thermal equipment designed for processing over 10 tonnes of meat products per shift.
- Vacuum packaging machinery: vacuum packaging is progressively becoming the industry standard in Russia.
- Refrigeration facilities: plants with foreign investment are interested in creating modern storage facilities on site. Older central storage facilities need replacement or elimination.
  www.ipe13.org/uscomservice/docs/Russia%20Food%20Processing%20Equipment%20Market.pdf

As described below, modernising food processing production facilities and increasing their capacity through innovation and technologies is another priority measure of a Strategy of Development of the Food Processing Industry of the Russian Federation until 2020 (Anonymous, 2012). Since modern retail stores and food service establishments become more prevalent, the production lines and packaging for products such as quality fresh meat products and semi-frozen products, are expected to be increasingly in demand.

In April 2012, the Russian government adopted a Strategy of Development of the Food Processing Industry of the Russian Federation until 2020 (Anonymous, 2012). The document contains production targets for 2020, confirms the need to modernise the industry, and estimates necessary investments in the amount of RUB777.83bn (USD26bn) to reach the targets.

According to the Strategy, in 2020 food production in Russia should increase by 1.4 times, with an average annual growth of 3.5-5.0% compared to the 2010 level. The Strategy assumes a higher growth rate of production of meat and meat products, as well as some sectors of dairy products, sugar, starches, fruits and vegetables. Specific growth targets for animal protein production are summarised in Ta-

ble 5.2. For meat and meat products the Strategy aims to increase the share of Russian production (including stocks in end of the year) to 88.3%; for milk and milk products to 85.3%.

Table 5.2 Production targets for the Food Processing Industry 2013-2020, thousand tonnes

	2013	2014	2015	2016	2017	2018	2019	2020
Meat processing industry								
Slaughter and primary meat processing capacity increase, thousand tonnes	266	301	364	259	259	259	249	210
Dairy processing industry								
Production of whole milk products, million tonnes	11.5	11.8	12.2	12.5	12.8	13.0	13.2	13.5
Cheese and cheese products production, thousand tonnes	522	522	527	529	531	536	541	546
Butter production, thousand tonnes	264	264	265	267	270	273	276	280

Source: Russian Federal State Statistics Service (www.gks.ru/).

Major issues as defined by the Strategy are summarised in Lubentsova (2012).

Factors constraining development:

- weak physical infrastructure of many food processing industry organisations which reduces the safety and quality and leads to additional losses in transportation, storage, processing and higher prices;
- low-level technology decreases profitability and competitiveness;
- the physical deterioration and obsolescence of fixed assets which are the main causes of the unacceptably high levels of waste production, discharge of untreated industrial effluents into surface waters and emissions of industrial pollutants in the atmosphere.

Major systemic problems in the food processing industry:

- lack of locally sourced raw materials with specific quality characteristics for industrial processing;
- technological and physical deterioration of equipment, lack of capacity for certain types of agricultural raw materials;
- low level of competitiveness of Russian food product producers in domestic and international food markets;
- insufficient infrastructure for storage, transportation and logistics;
- lack of compliance with environmental requirements in the industrial areas of food industry organisations.

Main targets of the Strategy:

- Increase food production;
- Modernise facilities and expand their capacity;
- Increasing competitiveness, create conditions for import replacement and potentially fuel exports;
- Develop infrastructure and logistics for food products;
- Address ecological problems in industrial zones.

Major measures of the Strategy:

- Develop vertical integration, infrastructure and logistics of agro-food market;
- Improve quality and safety of raw materials and food products;
- Replace Imported food and stimulate exports to existing and new markets;
- Defend geographical names of food products;
- Modernise and foster technological innovation;

- Train qualified manufacturing personnel in modern technology.

The financial part of the Strategy is very short and only mentions that currently state support for the food processing industry is carried out in accordance with the State Programme for 2008-2012, through subsidies from the federal budget to agricultural organisations via reimbursement on loan interest for certain activities including the purchase of raw materials and some kinds of equipment. Also, the Strategy states that financial resources for the implementation of the Strategy will consist of private investments and bank loans. That means that financing will basically depend on private companies' resources (Lubentsova, 2012).

5.2.2 Meat sector

The Russian meat sector is one of the largest sectors of the Russian agro industry. The meat and poultry sectors were downsized dramatically after the collapse of the Soviet Union. The growth trend of quantitative and qualitative indicators of domestic meat production is observed in the period from 2006 to 2011. Domestic production of livestock and poultry for slaughter in 2011 was 7.5m tonnes - slaughter weight (Table 5.3), including 3.2m tonnes of poultry meat, 2.4m tonnes of pork and 1.6m tonnes of beef. Meat consumption per capita reached 70.3 kg in 2011, with the following consumption structure: poultry meat - 36.3% (25.5 kg), pork - 31.2 (21.9 kg) and beef - 23% (16.2 kg). The achieved meat consumption is 93.7% relative to ration standards (75 kg). State support in the framework of the National Priority Project 'Development of Agriculture' in 2006-2007 and the State Programme of Agricultural Development for 2008-2012 played an important role in the recovery of the meat sector. The sector is to be further supported by State Programme for Development of Agriculture and Regulation of Agricultural Commodities Markets in 2013-2020, in a way similar to the previous programme 2008-2012 (Ministry of Agriculture of Russian Federation, 2012).

Table 5.3 Resources and use of meat and meat products - self-sufficiency (m tonnes)

	1992	1995	2000	2005	2007	2008	2009	2010	2011
Resources									
Stocks as of beginning of year	1.0	1.0	0.6	0.6	0.7	0.7	0.7	0.8	0.8
Production a)	8.3	5.8	4.4	5.0	5.8	6.3	6.7	7.2	7.5
Imports	1.4	2.3	2.1	3.1	3.2	3.2	2.9	2.8	2.7
Total	10.7	9.1	7.1	8.7	9.7	10.2	10.3	10.8	11.0
Use									
Production consumption	0.3	0.1	0.1	0.05	0.1	0.05	0.04	0.04	0.04
Losses	0.1	0.05	0.01	0.02	0.02	0.02	0.02	0.02	0.02
Exports	0.1	0.01	0.03	0.1	0.1	0.1	0.1	0.1	0.1
Personal consumption	8.9	8.1	6.6	7.9	8.8	9.4	9.4	9.9	10.1
Stocks, end of the year	1.3	0.8	0.4	0.7	0.7	0.7	0.8	0.8	0.8

a) Livestock and poultry for slaughter.
Source: Source: Russian Federal State Statistics Service (www.gks.ru/).

According to the Agrarian Marketing Institute, by 2012 meat production in Russia will increase by more than 30% compared to 2009 level. The main growth is expected in the poultry market where the poultry share is expected to exceed 40% of the Russian market's meat production. Beef's declining share will continue in spite of the forecast increase in beef production. Domestic poultry and pork production have shown steady growth while beef production decreased in 2010 (Lubentsova, 2011).

In recent years, major investments in animal proteins took place in the Central Black Soil regions. These regions have a good combination of fertile soil (feed production), nearness to ports (imports of relatively cheap feed) and consumer regions (Min EZ, 2011). The number of animals kept pace with the higher production: a slightly lower growth due to the higher efficiency.

Despite the stabilisation and growth of meat production, the Russian needs are satisfied only by 73%, the country continues to be an importer of meat and meat products (Table 5.3). Russian meat processing sector is developing, and exports of processed beef and pork products are delivered mostly to neighbouring countries; while the ambition of Russia is to increase exports of Russian meat. According to the Ministry of Agriculture, the potential volume of Russian exports in 2020 may achieve 400 thousand tonnes of poultry meat and 200 tonnes of pork (Ministry of Agriculture of Russian Federation, 2012).

As mentioned above, the consolidation and vertical integration of the agricultural enterprises is continuing in the meat sector. In 2011, almost 2/3 of meat (63.2%) was produced on agricultural enterprises, compared to 46.2% in 2005.

Table 5.4 **Production of meat by types of farms (percentage of total production volume of farms of all types)**

	Agricultural enterprises			Household farms			Private (peasant) farms a)		
	2005	2010	2011	2005	2010	2011	2005	2010	2011
Livestock and poultry for slaughter (slaughter weight)	46.2	60.6	63.2	51.4	36.5	33.8	2.4	2.9	3.0

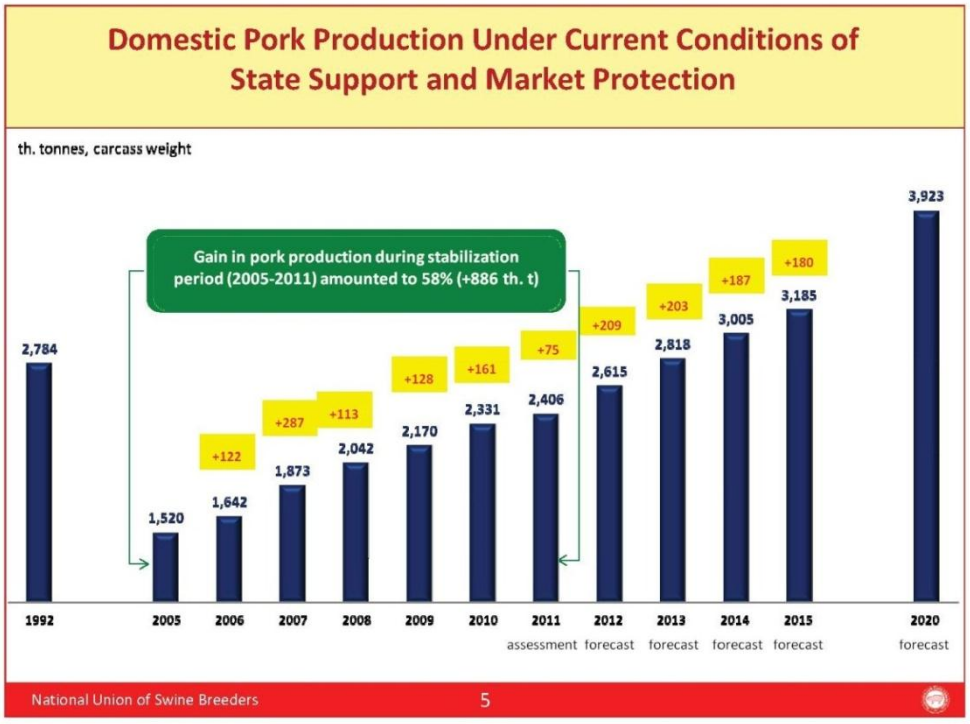
a) Including individual entrepreneurs.
Source: Source: Russian Federal State Statistics Service (www.gks.ru/).

Pig meat

Russian pig production sector is one of the growing in the world. the National Priority Project 'Development of Agriculture' in 2006-2007 and the State Programme of Agricultural Development for 2008-2012 allowed to put into operation and reconstruction more than 750 pig facilities (Kovalev, 2012).

Gain in pork production during the growth period (2005-2011) amounted to 58% (increase of 886 thousand tonnes, carcass weight) (Figure 5.2).

Figure 5.2 **Domestic pork production under current conditions od state support and market protection**



Source: Kovalev (2012).

Despite the fact that some anticipate self-sufficiency in pork production within 3-4 years, pork imports remain rather high; in 2010 pork imports totalled 625,000 tonnes: which is 2% lower than in 2009. The biggest pork suppliers are Brazil (34.4%), Germany (17.6%) and Denmark (Lubentsova, 2011).

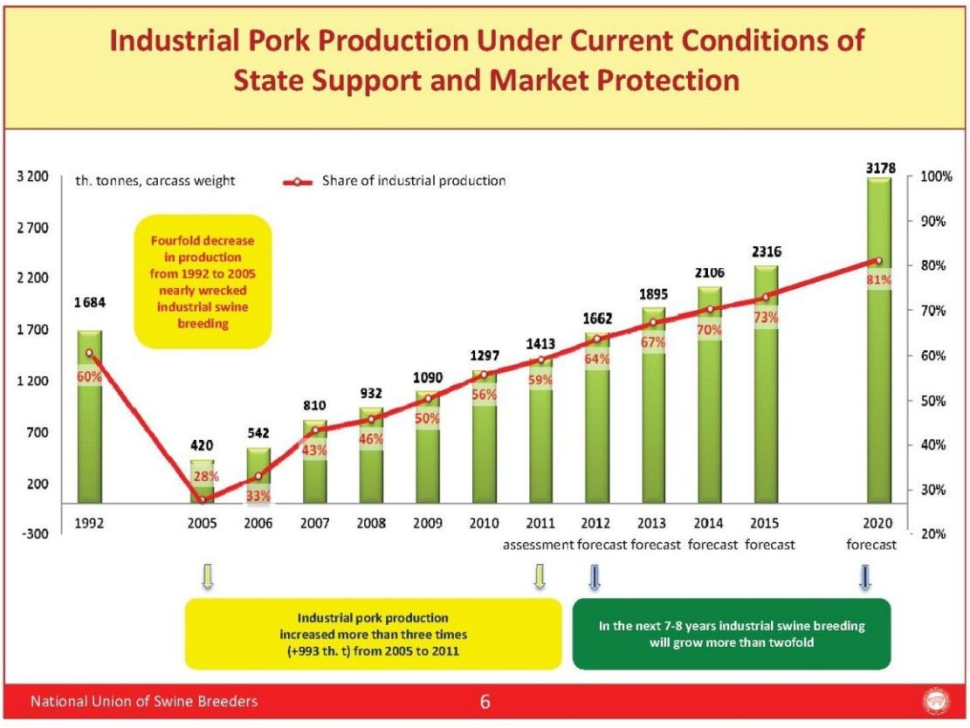
International companies play an important role in this developments. Dutch companies Topics, Hypor, Provimi, De Heus, Pigtk, Fancom and Schippers are active in Russia by delivering their products, but also knowledge and expertise.

As shown in Figures 5.3 and 5.4, there are two main farm types producing pork in Russia. These are large industrial farms and relatively small scale private back yard farms. In particular, in the Southern regions of Russia there are a lot of small scale private back yard production.

Control of animal diseases is being seen as crucial factor Especially, there are concerns about control of African Swine Fever (Ministry of Agriculture of Russian Federation, 2012). On 4 December 2007, the Russian Federation reported to the OIE their first ASF outbreak since the 1970s (FAO, 2009). Outbreaks have been reported mainly in backyard pigs, but also on some commercial farms and in wild boar. Especially, virus entering into Belgorod oblast (most densely populated pig region in Russia) can bring the Russia's pig production in danger. Wild boar (their movement can also be risky for Western Europe) and backyard farming are considered as main risk factors. Swill feeding is common practice for backyard swine farms, and these are farms with a small number of animals and farms are spread around).

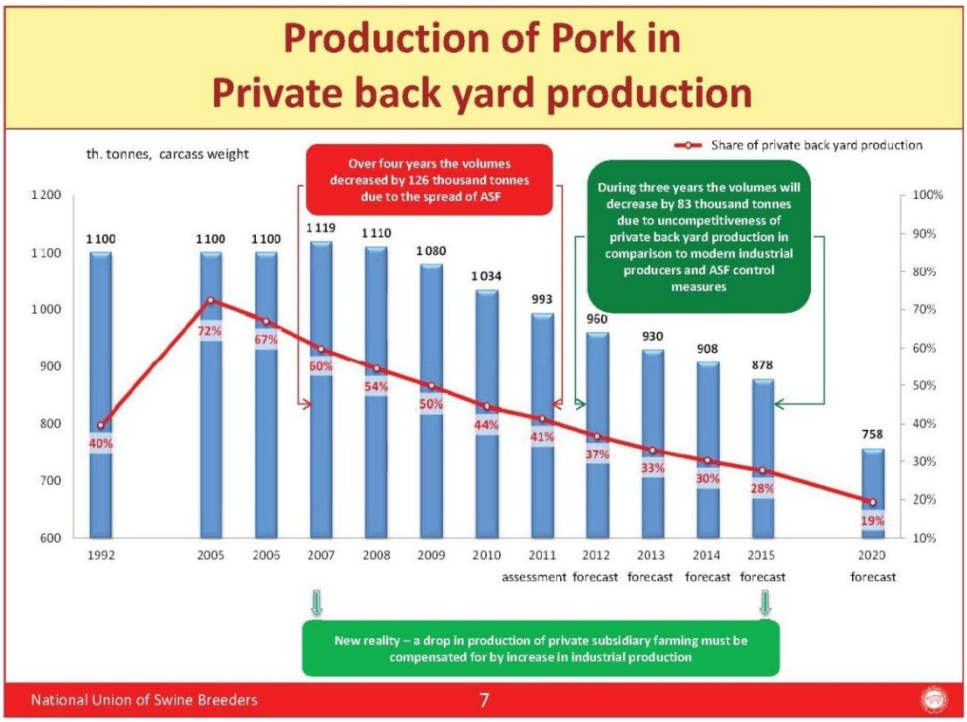
It is anticipated that a drop in production of private subsidiary farming due to African Swine Fever must be compensated by increase in industrial production, see Figures 5.3 and 5.4 (Kovalev, 2012).

Figure 5.3 **Industrial pork production under current conditions of state support and market protection**



Source: Kovalev (2012).

Figure 5.4 **Private back yard pork production**



Source: Kovalev (2012).

Table 5.5 describes productivity performance of Russian pig farms compared to those in developed countries. Productivity of high-effective top industrial farms is approaching the level of developed countries. In Boerderij on July 17, 2010, the Dutch expert characterised the performance of top Russian farms as follows: 'The fattening pigs (30-115 kilogram) grow on average 730 grams with a feed conversion of 3.20.' It was said about the top Russian companies, often with a thousand sows, have good breeding programme and 25 piglets per sow or more.' According to experts of Dutch breeding companies, from 75 to 100% of sows on the top industrial Russian enterprises are of Western origin.

Table 5.5 **Performance of Russian pig production compared to developed countries in 2011**

	Europe, North America	Russia		
		High effective	Effective	Low effective
Piglets per sow per year, heads	27	25	24	18
Meat produced per sow per year, kg	2,190	2,100	2,016	1,400
Average daily weight gain, g	778	760	680	520
Feed conversion ratio, kg/kg	2.76	3.0	3.6	5.6

Source: Kovalev (2012).

However, there are big differences in productivity between the farm categories. Obviously, it is still a lot to be improved on effective and, especially, on low-effective farms. Lack of practical knowledge (climate control, hygiene, feeding, etc.) remain to be a problem for all kind of farms, according to Dutch experts.

According to the rating of the top meat-processing holdings in Russia, GC 'Miratorg' became the largest producer of pork in 2011 (Table 5.6). The company set up by brothers Alexander and Viktor Linnik in 1995, became for the first time Russia's largest pork producer in 2010 and has moved into poultry. It is followed by GC 'Agro-Belogorye' and 'Cherkizovo.' Previously, the largest producers expressed willingness to increase production in the future. For example, CEO 'Rusagro' Maxim Basov said that the company

plans in the next 3 years to increase pork production three times more, up to 200 thousand tonnes per year. CEO of the 'Agro-Belogorye' Vladimir Zotov said that within two years, his company will increase the production of pork by 50% to be about 150 thousand tonnes. A CEO 'Cherkizovo' Sergei Mikhailov announced pork production in 2013 to be raised to reach 180 thousand tonnes, which is 80 thousand tonnes more than in 2011.[1]

Table 5.6 Rating of the top pork meat-processing holdings in Russia in 2011

Producer	Region	Production for slaughter, live weight in thousand tonnes	Share, %
1. GC 'MIRATORG'	Belgorod oblast	144.8	7.7
2. LLC 'GC Agro-Belogorye'	Belgorod oblast	106.0	5.7
3. GC 'CHERKIZOVO'		101.2	5.4
4. LLC 'PRODO Mannagement'		72.2	3.8
5. GC 'RUSAGRO'		63.0	3.4
6. ZAO 'Agrarian Group'		61.1	3.3
7. OOO 'KOPITANIYA'		60.2	3.2
8. GC 'KOMOS Group'	Republic of Udmurtia	39.0	2.1
9. ZAO 'EKSIMA'	Orel oblast	36.2	1.9
10. OOO 'APK DON'		33.9	1.8
11. GC 'Ostankino Group'		29.5	1.6
12. OOO 'Kama Bacon'	Republic of Tatarstan	26.7	1.4
13. AH 'BEZRK Belgrankorm'	Belgorod oblast	23.0	1.2
14. OOO SKHPK 'Zvenigovsky'	Republic of Mari El	21.1	1.1
15. ZAO 'Agri Doronichi '	Kirov oblast	20.6	1.1
16. JSC 'Perm pig'	Perm krai	20.0	1.1
17. OOO 'Ryurik Agro'	Leningrad oblast	18.5	1.0
18. OOO SKHPK 'Chistogorsky'	Kemerovo oblast	17.6	0.9
19. ZAO 'Talina'		17.1	0.9
20. OOO 'UK RAPT' '	Rostov oblast	16.9	0.9
21. UHK 'Prom-Agro'	Belgorod oblast	16.5	0.9
22. OOO 'UK 'BVK'		16.0	0.9

Source: **National Union of Pork Producers**, 01.02.2012 (www.myaso-portal.ru/analitika/natsionalnyy-soyuz-svinovodov-rf-opublikovan-reyting-krupneyshikh-proizvoditeley-svininy-v-rf-top-20/).

15 largest companies made only 44.7% of the market in 2011. The rest, 1,065 thousand tonnes (55.3%). It indicates that the market is still rather fragmented. According to the Russian Union of pig producers, market consolidation will further take place by 2015 and the share of 15 largest companies will grow till 65% (Kovalev, 2012). The rating of Russia's regions on annual pork production in farms of all categories is also to be found in Kovalev (2012).

GC 'Miratorg', the largest company in the Table 5.6 overview, is an example of further vertical integration along the chain, with processing industry acquiring interests not only in their suppliers (livestock farms), but also in suppliers of their suppliers (e.g. integrating feed production) and in distributors (integrating retail). The company has recently announced plans to put into operation a third feed mill in the Belgorod region, which will increase the company's feed production by 62% to 1.1m tonnes per year, which will make it the largest animal feed producer in Russia. The two current feed mills are in Ivnyanskom and Prokhorovka areas of the Belgorod region. Their annual production capacity is 680,000 tonnes per year. All the feed produced by Miratorg is use to meet the demands of the pork production industry in Belgorod and Kursk regions. The third feed mill is planned for the Prokhorovka district of Belgorod region, and it was expected to be completed by August 2012. 'With the launch of the third feed processing plant

[1] http://foodmonitor.ru/2009-09-21-12-34-52/poll/6460-porkrating.html

Miratorg will become the largest producer of animal feed in the country with an annual production capacity of more than 1.1m tonnes of feed.' Miratorg is also busy with a separate soy processing facility which will be incorporated into the Prokhorovka feed mill. It will be equipped with Dutch and American equipment to produce soybean meal, soybean oil and granulated husks of the highest quality. Total annual capacity of this facility is expected to be 150,000 tonnes per year. After reaching the full production capacity this soybean plant will be one of the largest and most automated soybean production facilities in Russia, according to Miratorg's official statement.[1]

Recently, Miratorg has announced plans to create its own retail chain to sell its meat in major Russian cities. The company said it is hoping to open 500 specialist meat outlets in the next three years, with the average investment in each shop estimated to be RUB20m (USD660,000). The assortment of the outlets will include a wide range of the company's own meat products. If the new project was supported by the Russian Ministry of Agriculture, it would increase investment RUB20bn (USD660m and open 1,000 store in different Russian cities by 2015. The company would prioritise development of stores in Russia's biggest cities.

To date the company has already opened 22 stores in Moscow and Moscow region. The company announced that future stores are to be opened in major cities where Miratorg logistics centres already operate: St. Petersburg, Samara, Rostov-on-Don, Yekaterinburg, Chelyabinsk, Novosibirsk among others. What is more, in Bryansk Province, the company has its own agricultural production facilities, as well as of stock and poultry breeding, meat processing and the production of mixed fodder. Miratorg is to build up to 20 retail stores in Bryansk Province in 2013. Despite the scale of the project, however, Miratorg would still not have a significant position in the total Russian retail market. But it will allow Miratorg to be less dependent on retailers.

Beef meat

With its expanding middle class and a tripling of some wages in recent years, Russia is experiencing a surge in demand for beef. In the last decade, however, the annual production of beef is about 1.7m tonnes (Table 5.7); while in the late 1980s it was produced more than 4m tonnes of beef a year. This decline is mainly a result of the industry's low profitability, as Russian beef production continues to be a by-product of the local dairy industry, which has undergone tremendous upheaval in recent years.

Table 5.7 Production of cattle for slaughter

	1992	1995	2000	2005	2007	2008	2009	2010	2011
Cattle for slaughter (slaughter weight), thousand tonnes	3,632	2734	1898	1809	1699	1769	1741	1727	1635

Source: Russian Federal State Statistics Service (www.gks.ru/).

However, this situation is expected to change. Russian President Vladimir Putin has an ambitious plan to cut the country's USD3bn annual import bill for beef. A set of measures was developed by government to increase beef production in the coming years, and beef cattle development is considered as a separate issue, see also a separate subprogramme 'Development of Beef Cattle' in Ministry of Agriculture of Russian Federation (2012).

Russian Government officials stated that they believe Russian production will be able to satisfy most of Russia's beef needs by 2018-2020. To accomplish this, Russia's Ministry of Agriculture announced it will fund 8-10 large support projects for beef production as well as dozens of medium-sized projects throughout the country. It is anticipated that Altay, the Far East and Siberia, which have large areas of pastures, to be the focal points for the assistance (Maksimenko, 2012).

A large running project of Miratorg (the Russian biggest meat producer and importer) in an example of large support project for Russia's largest beef farm. Over the past decade Miratorg has received state fi-

[1] http://www.allaboutfeed.net/Process-Management/Management/2012/7/Miratorg-to-become-Russias-largest-animal-feed-producer-AAF013476W/ (by Editor AllAboutFeed 18 Jul 2012).

nancing, investment subsidies and tax benefits to start the USD800m project in Bryansk, about 400 kilometres southwest of Moscow. Miratorg has Texas-size ambitions: it already runs 16 beef farms around Bryansk, with an additional 17 set to open in the area by the end of 2013. Another three are under construction in Kaliningrad, on the Baltic Sea. Each operation has about 3.000 breeding cows.

However Russia has only about 250.000 beef cows, representing about 1% of its total herd of mainly dairy cattle. So, Miratorg has brought in 60.000 head of livestock in the last twelve months. At Bryansk, the plan is to almost double the size of the parent herd by the end of 2013. With new calves, the integrated operation, which involves everything from slaughterhouses to meat-processing facilities, will expand more than fourfold to 250.000 head by 2014.

According to the Russian Prime Minister Dmitry Medvedev, the investment project for the production of high quality beef in the Bryansk region will close the country's needs in beef by almost 10%, and to completely cover the needs of the production must be increased by 90%.
(http://ria.ru/economy/20120523/656065065.html#ixzz2FPlNDwGw).

But Russians consume only 17 kilograms of beef per capita annually (or half the US equivalent), reports the Moscow-based National Meat Association, so domestic consumption should have plenty of room to rise. Russia purchased 1.1m tonnes of beef and veal from abroad last year, according to USDA data, the equivalent of about 3.3m fattened steers. Beef imports were valued at USD2.6bn in 2011, making up about 33% of domestic consumption. (http://en.mercopress.com/2012/07/28/russia-investing-heavily-in-becoming-self-sufficient-in-beef-production).

5.2.3 Poultry sector

The general trend of poultry meat production was one of rapid increase, from about 750 thousand tonnes in 2000 to over 3m tonnes in 2011. The poultry production was hampered in 2010 by the drought that drove up feed prices which make up 70% of production cost and to a lesser extent by the lifting of the ban on American poultry imports. According to Russia's State Statistical Service, farms of all types produced about 4.6m tonnes of poultry and livestock for slaughter (live weight) in the first half of 2011, 3.8% more than January-June 2010. Agricultural enterprises increased production by 7.4% at the same time. The Russian Ministry of Agriculture reported that Russia will increase livestock production by 2.8% in 2011. The poultry market appears to be close to self-sufficient although imports are still well represented in the processing sector (Lubentsova, 2011).

Poultry meat production hits record levels in Russia. The production of poultry meat together with the edible poultry by-products in the first quarter of 2012 increased by 20.7%, up to 826,000 tonnes, according to data recently released by the Russian Federal Statistics Service. Separately, the volume of poultry meat production increased by 16.7%, which is significantly higher than all forecasts of industry growth trends expressed by analysts at the beginning of the year. The growing success of poultry business confront the painful issue of export. According to Fisinin, some work still needs to be done in this direction. Also, after WTO accession, a quota of 300 tonnes of imported meat still remains.

Currently poultry meat production accounts for the largest share of the meat market in Russia. For the first quarter the share of poultry meat in the structure of all meat producing in Russia amounted to 45% or 1,133,000 tonnes - the maximum mark for the last twenty years. Also, the production of poultry meat has set a new record, for the first time ever the growth rate in the sector (together with by-products) was over double the overall rate of growth in the meat industry of the country, where the rate of increase of production in the first quarter of the year amounted to only 8.1%. Interestingly poultry meat accounted for about 85% of the increase in the meat production industry in Russia in the first quarter of 2012. According to Russia's State Statistical Service, in the first quarter of 2012 poultry stock in all categories of the Russian Federation grew by 10.7%, compare to the level of the fourth quarter of 2012 (May 10, 2012. www.worldpoultry.net/Broilers/Markets–Trade/2012/5/Poultry-meat-production-hits-record-levels-in-Russia-WP010364W/).

80% of the increased in poultry production (1,800 tonnes for 2006-2011.) was assured by poultry enterprises in 20 regions of the Russian Federation. The share of the Belgorod oblast - 24%; Chelyabinsk ob-

last - 6%, Rostov oblast - 5%, Leningrad oblast - 5%, the Krasnodarsky krai - 4%, Novgorod oblst - 4%, Republic of Tatarstan - 4%. The main growth of poultry production (86%) in 2011 was provided by the 20th largest poultry companies, specifically companies of the Belgorod oblast -25%, Leningrad oblast 10%, Krasnodarsky krai - 8% and Voronezh oblast - 6% (Fisinin, 2012). Table 5.8 provides an overview of the largest companies.

Table 5.8 Rating of the top poultry meat-processing holdings in Russia in 2011

Producer	Region	Production for slaughter, live weight in thousand tonnes	Share, %
1. Holding ZAO 'Prioskolie'	Belgorod oblast	366	14
2. JSC 'Cherkizovo Group'		255	10
3. OAO 'Ptitsefabrika Severnaya' (Dutch-Russian)	Leningrad oblast	163	6
4. GAP 'Resurs'		151	6
5. Holding 'Belgrankorm'	Belgorod oblast	148	6
6. OOO 'PRODO-Treid'		127	5
7. Holding ZAO 'Belaya Ptica'		77	3
8. OOO 'Lisko-Broiler'	Voronezh oblast	62	2
9. OOO 'Chelny-Broiler'	Republic Tatarstan	56	2
10. Agroholding 'ALPI'	Krasnoyarsk krai	52	2
11. OOO 'Ravis - Ptitsefabrica Sosnovskaya'	Chelyabinsk oblast	43	2
12. ZAO 'Uralbroiler'	Chelyabinsk oblast	41	1,6
13. Group of companies 'Rubezh'		41	1,6
14. OOO PK 'OPTIFOOD'		39	1,5
15. OAO 'Agrofirma 'Oktyabrskaya'	Republic of Mordoviya	37	1,4
16. Company 'Michailovsky Broiler'	Primorsky krai	35	1,3
17. Group of companies 'OGO		34	1,3
18. 'Agrocomplex'	Krasnodarsky Krai	31	1,2
19. ZAO 'Elinar-Broiler'	Moscow region	31	1,2
20. OGUP 'Ptitsefabrika 'Reftinskaya'	Sverdlovsk region	30	1,2
21. OOO UK 'Russkoe Pole'		30	1,2

Source: Fisinin (2012).

5 largest companies made 47% of the market in 2011, compared to 44.7% made by 15 largest companies in Russian pork sector, as described above. It indicates that the poultry industry is the most consolidated sector. It is comprised of around 600 producers.

Most Russian poultry producers operate large-scale, industrial-type enterprises. Some of them operate at the Federal and interregional levels. In 2008, they produced 86% of total poultry meat in the country. The remaining 14% was produced by farmers and backyard producers. This structure has been formed in previous decades. These 'poultry factories' will continue their dominating position, although development of farmers and backyard production is supported by the government and local authorities. Similar to pork sector, according to specialists, role of industrial-type production is justified, because such enterprises can more efficiently use production and financing resources, introduce new technologies and equipment, etc. (Anonymous, 2009, in World Poultry Vol. 25 No. 3 (2009) Aug 10, 2009 www.worldpoultry.net/Home/General/2009/8/Russia-moves-to-high-productive-self-sufficiency-WP006943W/

Russian poultry meat and egg producers use both domestic and imported strains and crosses with high performance potential. Both on the meat as well as on the egg side, domestic and commercial imported strains are used.

In recent years there has been a downward trend in the share of the domestic strains, particularly in broiler production. The reason for the low competitiveness of domestic breeding production is associated with poor material and technical base of breeding enterprises. Moreover, domestic breeding plants with their small population cannot ensure the delivery of large quantities of breeding material to large industrial poultry enterprises. To implement the targeted Programme of Poultry Development in the Russian Federation in 2010-2012 concrete measures needed to be taken to modernise breeding base in the country. The first steps have already been taken. So, OAO 'Sverdlovsky', FGUP PPZ SGC 'Smena' and FGUP PPZ 'North-Caucasian ZOSP') got the status of breeding and genetic centres for egg, meat poultry and turkey, respectively. These projects will have to expand capacity on the basis of modernisation and import of high-yield industrial strains and crosses (Fisinin, 2012).

Similar trends for further vertical integration are also observed in the poultry sector, especially after drought of 2010. Feed production is being more and more integrated.

5.2.4 Dairy sector

The dairy products market is valued at USD16-17bn and is growing annually by 7-9% in terms of value. Wimm-Bill-Dann and Unimilk maintained the dominant positions in the Russian dairy market. 2010 was a significant year for the Russian milk processing market: Danone took over Unimilk, and PepsiCo acquired Wimm-Bill-Dann. These companies control about 50% of raw milk processing, indicating a rather high concentration of the milk processing sector. The Russian dairy market produces milk, cottage cheese and sour cream and Russians are very loyal to local brands. However, in 2010 Russia imported 255,000 tonnes of dairy products and cheese (Lubentsova, 2011).

As can be seen from Table 5.9, Table 5.10 and Figure 5.5, milk production fluctuated between 31 and 33m tonnes in the last decade. The yield (average for all types of farms) increased from 2.50 tonnes/cow in 2000 to 3.77 tonnes in 2010, implying that the current production level is achieved with a lower numbers of dairy cows. This means lower numbers of calves as well as cows for slaughtering. Table 5.10, however, indicates that large industrial farms have higher productivity (4.19 tonnes/cow in 2010), compared to productivity on smaller private farms (3.29 tonnes/cow in 2010) and private households (3.51 tonnes/cow in 2010). However, this productivity level is still significantly lower than in developed countries.

By linking the dada from Table 5.10, it can be noticed that there was a substantial increase in beef production due to a mass culling of dairy cattle caused by decrease in farm-gate milk prices.

Table 5.9 Resources and use of milk and dairy products - self-sufficiency (m tonnes)

	1992	1995	2000	2005	2007	2008	2009	2010	2011
Resources									
Stocks as of beginning of the year	1.9	1.8	1.3	1.7	1.9	1.9	2.1	1.9	1.9
Production	47.2	39.2	32.3	30.8	32.0	32.4	32.6	31.8	31.7
Imports	3.2	6.3	4.7	7.1	7.1	7.3	7.0	8.2	7.9
Total	52.3	47.3	38.3	39.6	41.0	41.6	41.7	41.9	41.5
Use									
Production consumption	7.8	7.0	5.2	4.1	4.2	4.3	4.4	4.3	4.1
Losses	0.04	0.1	0.03	0.02	0.02	0.02	0.02	0.03	0.03
Exports	0.2	0.4	0.5	0.5	0.6	0.6	0.5	0.5	0.3
Personal consumption	41.8	37.4	31.3	33.2	34.3	34.6	34.9	35.2	35.2
Stocks, end of the year	2.5	2.4	1.2	1.8	1.9	2.1	1.9	1.9	1.9

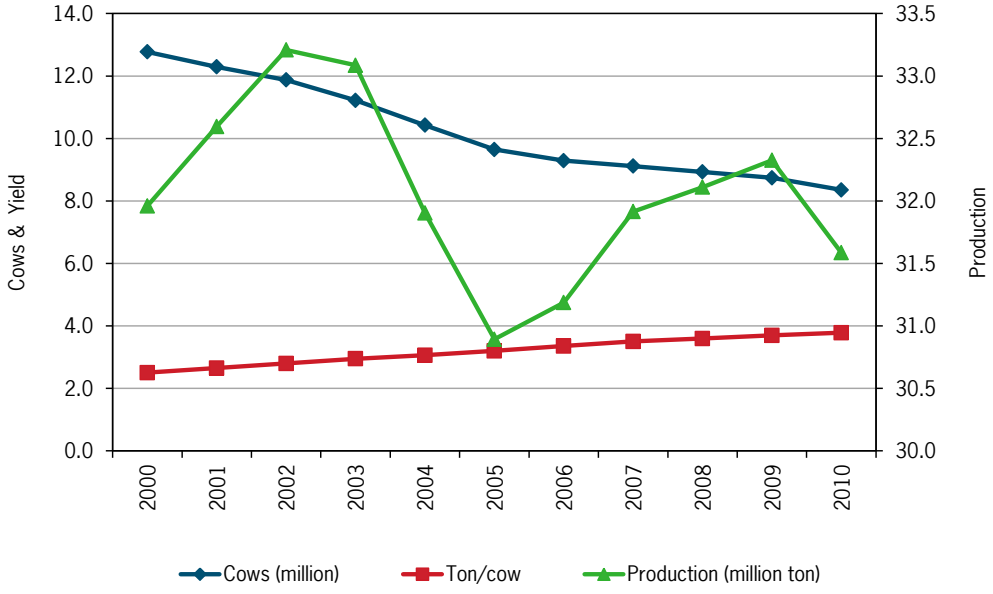
Source: Source: Russian Federal State Statistics Service (www.gks.ru/).

Table 5.10	Annual milk productivity by types of farms (kilogram)										
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Farms of all types	2,502	2,651	2,797	2,949	3,037	3,176	3,356	3,501	3,595	3,737	3,776
Agricultural enterprises	2,341	2,551	2,802	2,976	3,065	3,280	3,564	3,758	3,892	4,089	4,189
Private farms	2,253	2,328	2,401	2,538	2,565	2,607	2,642	2,714	2,746	3,268	3,291
Private households	2,687	2,767	2,812	2,948	3,043	3,130	3,249	3,378	3,456	3,513	3,510

Source: Source: Russian Federal State Statistics Service (www.gks.ru/).

In 2011, an average yield of 4,306 kg per cow was achieved (Ministry of Agriculture of Russian Federation, 2012).

Figure 5.5 Dairy cows, yields and milk production, 2000-2010



Source: Based on Faostat.

The distribution of milk production by types of farms (Table 5.11) indicates that almost 50% of raw milk is produced on household farms, often implying lower quality of milk, lower milk price, longer distances to milk processing facilities, lower profitability, low level of mechanisation, seasonality of milk production. This distribution suggests possibilities for making the sector more professional and increase higher yields. For instance the farms supplying Campina in Stupino have much higher levels of milk production up to 8,000 litres twice as much as the average level. However, more professionalism means not only a higher and more efficient milk production, but also less employment, keeping traditions and income for smaller farms.

Table 5.11	Production of milk by types of farms (percentage of total production volume of farms of all types)								
	Agricultural enterprises			Household farms			Private (peasant) farms a)		
	2005	2010	2011	2005	2010	2011	2005	2010	2011
Milk	45.1	44.9	45.4	51.8	50.4	49.7	3.1	4.7	4.9

a) Including individual entrepreneurs.
Source: Russian Federal State Statistics Service (www.gks.ru/).

For a complete overview of the Russian dairy sector (both raw milk production, processing and market), see Serova and Karlova (2010).

To meet the targets of the Food Security Doctrine milk production in 2020 will have to increase by 6.2m tonnes or 20%, compared to the level of 2012. The significant increase has tol come from agricultural enterprises and private farms. The measure to increase the production of milk and to make dairy investment attractive, to reduce seasonality of milk production, to stimulate the growth of the number of cows, to improve profitability, is a subsidy per litre of milk sold (not lower that the first class quality). The subsidy will come from the federal budget (co-financed by regional budgets) for agricultural producers that market milk (Ministry of Agriculture of Russian Federation, 2012). This measure is different from the measures in the previous State Support Programme 2008-2012.

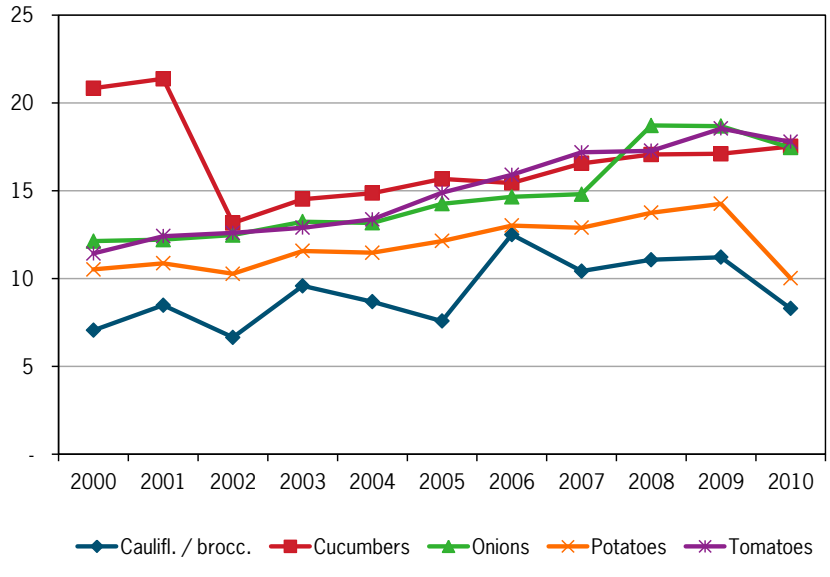
5.3 Primary production: greenhouse and vegetables

The area of greenhouse is declining since the beginning of this decade: almost 2,300 ha in 2002 to 1,840 ha in 2010. In Moscow oblast the acreage declined from 393 to 170ha. Of the 1,840 only 300 ha have modern facilities (Min EZ, 2011). The main regions with greenhouses are:

1. Volga federal district: 657 ha.
2. Central federal district: 466 ha.
3. South federal & North Caucasus district: 356 ha.
4. Other regions: 420 ha.

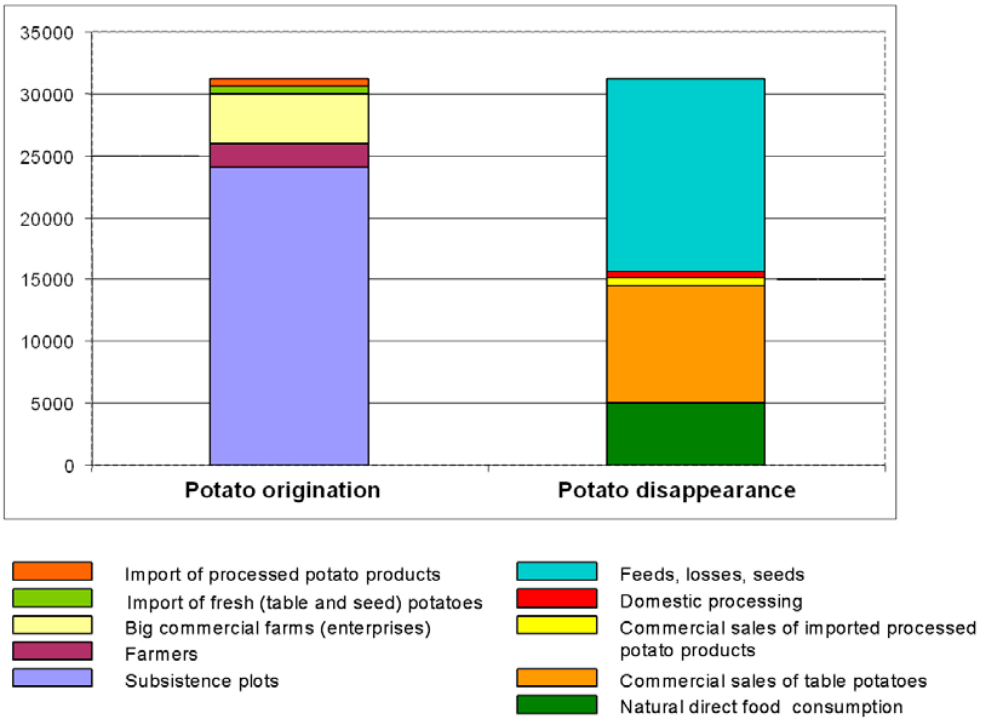
South Russian regions such as Stavropol, Krasnodar, Rostov and other northern Caucasus republics have substantial competitive advantage over the rest of Russia, due to higher solar radiation. However water, energy, staff and distance to the consumption centre are other important competitiveness determining production factors.

Figure 5.6 **Yields in tonnes/ha of some crops**



Source: Faostat.

Figure 5.7 Potato supply and demand



Source: Min EZ, 2011.

Despite the declining area with 20%, the production of greenhouse vegetables was in 2010 485,000 tonnes or (26kg/m^2): 97% of the level in 2002. Further improvements of the production can be achieved: in the Netherlands the tomato production is at least 50kg/m^2. This requires first of all a modernisation of almost all greenhouses and secondly highly competent staff to exploit the potentials of 'the state of art greenhouses.' Also for others crops the yields per ha are rather low and slowly increasing. The total production remained on almost the same level last decade. The majority of vegetable production is on subsistence plots as in shown in section 5.2 for potatoes. This offers opportunities for improving the yields by increasing the competences of the farmers.

Subsistence plots are important for the production of vegetables. Figure 5.7 shows the supply of potatoes and the production and demand of potatoes. A major part is produced on subsistence plots and used for own consumption or as seed potatoes (Min EZ, 2011).

5.4 Suppliers of equipment and other inputs

Live animals

Russian imports of live animals amount USD320m in 2010. The main categories, representing 94% of the import value, are:

1. Live bovine animals: pure-bred breeding animals (HS-code 010210) USD116m
2. Live swine: pure-bred breeding animals (HS-code 010310) USD23m
3. Live swine weighing 50 kg or more (HS-code 010392) USD107m
4. Live fowls of Gallus Domesticus (one-day-old-chicken) (HS-code 010511) USD54m

The Netherlands has a significant share in the import of the first (USD27m) and last item (USD16m) in 2010. Netherlands export value in the category 'live swine', neither for breeding nor for slaughtering, is insignificant.[1]

For bovine animals, the Netherlands shows import market shares on the Russian market between 0 and almost 50% (see Table 5.11). Main competitors are USA and Canada that performed rather well during in last years, however also with fluctuating market shares, and but with relative high prices. Russia ranks first in the Dutch exports: 27% of Dutch exports of bovine breeding animals are shipped to Russia.

The Dutch market shares for one-day-old chicken increased slightly in the period 2006 to 2010, however the Netherlands is outperformed by Hungary. Since 2001 the number of exported one-day-old-chicken increased steadily. The export dip in 2003 is related to the outbreak of avian flu in 2003. Russia ranks number 4 in Dutch exports: 6.4% of one-day-chickens have Russia as destination.

Seeds

Russian vegetable producers are strongly dependent on imported machinery and seeds. During the last decade 40 to 60% of the Russian seed potatoes imports were from the Netherlands. Germany ranks second and Finland third. Dutch export prices of seed potatoes to Russia are a little higher than the average Russian import price. Russia has a share of 2.3% in the Dutch seed potato export and takes position 16 out of over 100 countries that imports from the Netherlands.

Russia imports 60 to 80% of vegetables seeds from the Netherlands, except in 2010 (only 24%).The import of seeds in 2010 was tenfold the value of 2001. Since 2007 several other suppliers gained a substantial market share. Russia has a share of 3.5% in the Dutch seed potato export and takes position 8 out of over 100 countries that imports from the Netherlands. The large Russian selection centre Gavrish, is also partially dependent on imported seeds.

Table 5.11 **Importance of Russia import for the Netherlands based on average trade value 2008 to 2010**

Category	Product	Code	Imports by Russia			Export from Netherlands	
			Total value	Share NL	Rank NL	Share Russia	Rank Russia
			1,000USD	%		%	
Live animals	Breeding cattle	010210	47,339	14.4	2	27.2	1
	One-day-chickens	010511	55,209	25.6	2	6.4	4
Seeds	Seed potatoes	070110	16,409	7.6	4	2.3	16
	Vegetable seeds	120991	49,020	47.7	1	3.5	8
Animal feed	Soya Oil-cake	230400	262,720	17.4	2	0.7	15
	Dog/cat food	230910	161,170	26.2	1	5.7	4
	Animal feed preparations	230990	404,678	27.0	1	6.3	4

Source: Uncomtrade,average trade value 2008 to 2010.

Animal feed ingredients

The Netherlands is also an important supplier of some animal/pet feed and feed preparations, with market shares up to 27% in Russia's imports. Although Russia is not that important for the Netherlands, the value of Dutch export ranges between EUR40m (soya cake meal, pet food) to over EUR100m for feed preparations). Argentina has 50% of the market share, Brazil (16%) is the third supplier after the Netherlands. This information indicates the need for protein rich animal feed raw materials, pre-mixen and the luxurious pet feed.

[1] Some Dutch companies (e.g. Topigs) also own farms in other countries (e.g. France) and export breeding pigs to Russia via these countries.

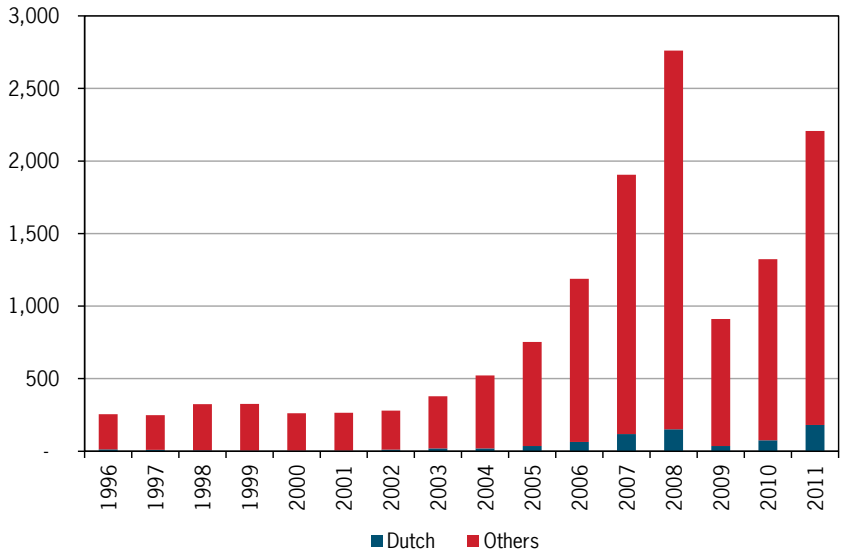
Machinery

In the 1990s Dutch machinery dealership had a strong position. However in recent years Germany, Italy and Great Britain gained market share. Even in the most developed regions lack infrastructure for the post-harvest chain such as collection points, pre-cooling, sorting and packaging, cold storage stations, and freezing tunnels for fruits and vegetables. This is problem for the Russian supply chain but an opportunity for Dutch to create trading and investment partnerships (Min EZ, 2011).

Little information could be retrieved on the Russian supplying industry. During our fact finding mission stakeholders were positive on the service level of suppliers of the installation. Most of the parts were imported, but assembled and maintained in Russia.

The average imports are in total around USD2,000m last 5 years: the share from the Netherlands is approximately 5%. The imports show a strong (Figure 5.8) relation with the economic situation in Russia: low imports during the years of economic crisis. As several inputs are not explicitly registered in the UN-comtrade, like construction works for greenhouses, only a part of the imports are measured: mainly machineries and parts of it.

Figure 5.8 **Imports of agriculture machinery in million USD**



Source: UNcomtrade codes 8432 to 8437.

Table 5.12 provides the imports from the Netherlands for the largest items: these are largely related to livestock production and processing and in particular for poultry meat.

Table 5.12 **Imports of machinery from the Netherlands in 2011 in USD1,000 and share in Russian's total**

Code and description	USD1,000	Share (%)
843340 Straw/fodder balers, incl. pick up balers	2,111	7.8
843360 Machines for cleaning/sorting/ grading eggs fruits agricultural produce	10,416	37.7
843420 Dairy machinery	1,680	5.1
843610 Machinery for preparing animal feeding stuff	5,979	16.3
843621 Poultry incubators & brooder	21,117	48.9
843629 Other poultry-keeping machinery	77,767	26.9
843680 Miscellaneous machinery	43,690	9.0
843699 Parts of machinery	1,311	7.0

Fertilisers

The use of fertilisers is rather low as is shown in Table 5.13. The level is of nutrients (NPK) consumption on world level is 37kg/ha in 2010 almost the same as in Russia: in the EU level is 84kg/ha and in Poland even 133kg/ha on all agricultural land. The statistics in Table 5.13 seems to be inconsistent: the fertilisers used just increased 25% whereas the kg/ha and the share are more or less double. The low consumption will be one of the factors that explains the relatively low yields levels.

Table 5.13 Inorganic fertiliser consumption

	Metrics	1995	2000	2005	2010
Mineral fertilisers used (100% nutrient equivalent)	Million tonnes	1.5	1.4	1.4	1.9
Kg/hectare of total sowing area	Kg/ha	17	19	25	38
Share of fertilised area in total cultivated area.	%	25	27	32	42

Source: Rosstat. www.gks.ru/bgd/regl/b11_12/IssWWW.exe/stg/d01/15-10.htm.

6 Agricultural knowledge and expertise

Key findings:

- The Russian agrifood sector development is hampered by a severe shortage of well-qualified labour; skills and knowledge levels of university graduates do not meet demand and needs of agribusiness companies.
- Major factors causing this shortage of qualified labour are the decline in the number of students at agricultural universities, reluctance of those graduated to work in the agricultural sector (in rural areas) and 'low' quality of education.
- Available knowledge is too scattered and focused on separate farm processes: farm performance improvements are possible by integrating knowledge on technical, economic and managerial aspects of cropping and livestock systems. Small improvements can already result in big progress.
- The Russian higher education system is in transition, including higher agricultural education institutes
- Targeted government support to better match demand and supply of qualified labour in the agricultural sector is rather limited; public-private partnership initiatives are potential alternatives.

6.1 The knowledge gap - Shortage of qualified labour

A number of qualified managers and workers

According to the Ministry of Agriculture, the growth of the Russian agrifood sector is hampered by a severe shortage of qualified labour. The Government estimates the need for 77,000 specialists with higher education, such as agronomists, zoo engineers, veterinarians and agricultural engineers in the sector to match the demand for qualified labour by the agrifood sector. Furthermore, about 14,000 young professionals are needed annually to meet the demand for replacement of retirees. The higher agricultural education institutions prepare 28,000 graduates for employment in agricultural sector. However, young professionals do not seek jobs in rural areas because wages and living standards are low. Only ca. 50-60% of graduates end up employed in the agrifood sector (including processing and services), 12% go to the army, 15% go to other sectors, 12-15% continue Master and PhD education, 1-2% become unemployed (personal communication with the Ministry of Agriculture, August 2012). Also, it should be noted that due to the significant fall in the birth rate during the 1990s, a decrease in the number of applicants to Russian universities takes place. Children born in the 1990s are reaching the college and university age now. It was estimated that in 2010 the number of applicants to Russian universities would reduce by 1.2m, compared to 2009. And in 2016, the number of graduates of secondary schools will reduce by a half, compared to 2005 (Novyje Izvestia, 21 June 2010). So, the supply of young graduates is unlikely to meet the demand of the sector in the near future.

Over the past decade, employment in agricultural sector decreased rapidly, thought it remained rather stable in the industrial sectors. The restructuring of the farming sector resulted in a reduction by one third of the active population employed in agriculture (2.5m individuals over ten years). Between 1990 and 2002, corporate farms lost 4.5m workers (55% of their workforce), of which 2.5m shifted to small peasant farms and individual plots. In 2008, 1.9m were employed by large corporate farms, approximately 1m were in peasant farms and 4.5m were living of individual household plots (Anonymous, 2010).

It should also be noted that the shortage of labour in agrifood sector is not specific to qualified labour only. According to the interviewed agribusiness managers, also in the neighbourhood of large cities, working in agriculture is not attractive. The companies often need to employ low-qualified guest-workers, though employment of guest-workers is not typical for Russia only. It was also observed that local Russian people prefer to be employed seasonally, that is to be employed in the winter period and to work on own dachas in the summer period. Special bonus systems are being designed by companies to stimulate workers to keep their job and improve their skills and in this way to stabilise the employment flow.

Skills and qualification level of managers and workers

In 2010, FAO conducted a survey of Russia's large agricultural companies to assess their demand for qualified professionals and managers. The respondents were asked to evaluate the quality of workers available on the market on the 5-point likert scale (5 = high and 1 = low). The average score was 3.8. The respondents gave the scores of 4 to top managers; animal professionals, field workers, and marketing experts were scored at 3.7. In informal interviews, the respondents complained of unreliability, low motivation and alcoholism among the majority of unskilled workers. For seasonal work, employers prefer to hire workers from Central Asia rather than local villagers. More details on survey is to be found in Anonymous (2010). The shortage of skilled and qualified labour was also observed in the International Finance Corporation Russian agribusiness survey in 2006. This market survey included overviews of the following sectors: meat, dairy, poultry, fish, grains, vegetable oil and fat, and fruit and vegetables. The survey pointed at the lack of professional skills of the staff and poor qualified management and suggested personnel training to tackle this problem in each stage of each food value chain (Anonymous, 2006).

Several open interviews with Russian agricultural and Dutch companies operating in Russia were also conducted within this study in August and September 2012. The interviewees also recognised the shortage of skilled and qualified labour as one of the major problems in each stage of the food value chain, including distribution. Though this study mainly focuses on analysing this problem in sectors related to animal protein production, it was obvious that lack of skilled and qualified labour is also urgent in crop production, including production of vegetables in greenhouses. During the interviews it was stressed that skills and quality of specialists supplied by universities do not meet demand and needs of agribusiness companies. It is common practice that university staff contacts leading agricultural companies to learn about new agricultural technologies. Russian and international companies do not value knowledge provided by local agricultural universities as very high. It is positively mentioned that universities strive to improve but there is still a long way to go. Russian specialists are very dependent on Russian (and translated) knowledge and have rather limited access to advanced international agricultural knowledge. The same is true for most teachers of agricultural universities. Language barriers remain until the English skills of qualified personnel improve.

The interviewees also mentioned that sometimes the initial level of skills and qualification of some workers is not such a big issue, because motivated people can easily learn all the necessary skills using the 'learning by doing' approach. The bigger problem in Russia is that even qualified workers do not always apply their knowledge optimally from a long-term perspective of the whole company (with a perspective to be rewarded later). They prefer (if there is such a possibility) to earn a bit more personally on the short-term by taking not the best decision and potentially put the whole business at risk on the longer run.

Need for integrated knowledge

Another crucial issue identified in this study by means of interviews is that currently available knowledge is often scattered around and focused on separate farm processes. Basically, many Russian agricultural companies have developed and grown rapidly during the last decade. Big investments have been made in new technology, buildings, equipment, genetics and processing. The challenge now is to increase productivity by making optimal use of the new technology, optimise the way how farm/agricultural business is operated. This can be achieved by integrating knowledge and understanding technical, economic and managerial aspects of cropping and livestock systems. A basic example for dairy farm is linking crop production (feed production for dairy cows) and milk yield, while at the same time crops need minerals from cow manure.

Interviews showed that integrated knowledge is also needed for farms with relatively old equipment (e.g. farms of former Soviet collective farms). Big productivity progress (relative to the progress potentially possible given the current state of equipment, technology, etc.) can already be achieved with rather basic steps by efficient linking of different farm processes.

Some Russian and Dutch companies would like to hire Dutch managers to operate the company.

6.2 System of agricultural education and research

6.2.1 Quality of agricultural higher education and research

Russia joined the Bologna Process in 2003 and is in the process of actually transforming its higher education system to make it compatible with Bologna principles. In particular, Russia has essentially moved to the two-tier, bachelor's-master's or four-plus-two year system. In most universities, the actual transformation is yet to happen, but all the legal foundations are in place (Guriyev, 2010).

It would be wrong, however, to assume that the adoption of the two-tier system would automatically make Russian universities competitive, especially for agricultural universities. It is, after all, a formal structural change, though it is indeed a necessary one for building competitive programmes. But it is still only a prerequisite. To compete successfully in the global education market, it is necessary to improve the content and quality of university programmes, even for the best Russian students and faculties. For this, there should be both serious efforts at the level of individual universities and further federal reforms (Guriyev, 2010).

Higher agricultural education in Russia is currently formed by 59 institutions of higher education: 23 specialised universities, 35 educational academies and 1 educational institute. All of them are under authority of the Ministry of Agriculture. About 450 000 students get enrolled in these institutions, about half of them as full-time students (personal communication with the Ministry of Agriculture, August 2012).

Russian agricultural universities are not included in the international ranking lists. However, it is assumed that Russian agricultural universities are rated low, given the brief evaluation of basic criteria as described in Anonymous (2010) and as discussed with the Ministry of Agriculture:

- Research activities: Providing education seems to be the main focus of Russian agricultural universities. Research performance is rather poor. According to the Ministry of Agriculture, in 2008, only 25% of the faculty was involved in scientific research. Numerous papers are published, however only one percent is published in international peer-reviewed journals. Only 25% of professors in agricultural universities are involved in research. The number of postgraduate and undergraduate students involved in research is even lower: 23 and 3% respectively.
  To change this situation, In recent years there have been additional budget available for applied agricultural via specific grants up to RUB60,000, basically implying bonus money for better research performance.
- Aging personnel: In 2010, 40% of full professors were over 65 years old and 20% of associate professors were over 60 years old. Similar to the situation in agricultural production sector, there is lack of qualified young people willing to work in agricultural universities due to rather low wages, compared to other sectors. The official task, as stated by V. Putin (2012), is that by 2018 university employees should have 200% salary increase, compared to the average levels in Russia: 1/3 is to be achieved via reducing not effective programmes and institutes (see description of changes below) and 2/3 is to be achieved via budget support.
- Equipment: The equipment in Russian agricultural universities need to be modernised. The State Secretary of the Ministry of Agriculture Alexander Petrikov reported in 2010 that about 70% of the equipment in agricultural universities is worn down. Funds allocated by the Ministry for higher education in the next planning period are sufficient to update only a quarter of the equipment (www.agrardialog.ru/activities/details/id/7). During the implementation of the Education National Priority Project in 2006-2008, only 4 agricultural universities (in Moscow, Stavropol, Orel, Krasnodar) received grants (tender-based, competition among 80 universities in total) to modernise their equipment such as modern labs, milking equipment and other new technologies. One of the tasks of the project was to support 30 universities for a total of RUB20bn (more than USD700m).

6.2.2 Reorganisation of agricultural universities

Due to reduction in the number of applicants and questionable performance of some universities, in 2008, the former Minister of Education and Science (A. Fursenko) announced plans to reduce the number of Russian universities in 2008-2012 (Russian Gazeta, 2008). In July 2012, President Vladimir Putin announced that those poorly performing state higher education institutions should be identified by the end of 2012, and a programme their reorganisation should be developed and approved by May 2013. As announced earlier, the numbers of state high education institutions and their affiliates are to be reduced by 20% and 30%, respectively. In November 2012, the classification of not-effective institutes was officially published, including a number of agriculture-related ones to be reorganised (Ziganshina, 2012).

To see more on general development in Russian education in the past decades, see an overview on the following website: www.hse.ru/en/en/rus-ed.html (in Russian).

6.2.3 Secondary agricultural education

Technical secondary agricultural schools are specialised schools that provide professional agricultural education (college level). Being previously under authority of the Ministry of Agriculture, all 285 schools were handed over to the regional governments (62) and the Agency for Education (223) as of January 1, 2005. 70 schools have training farms. There are 320,000 hectares of farm land available both for training and agricultural production. Similar to higher agricultural education, the number of graduates from technical secondary agricultural schools is declining each year. Many do not end up working in agriculture, indicating similar problems of shortage of professional workers as described above for higher education level.

In 2010, the Agency for Education was abolished and the schools were put under authority of the Ministry of Education and Research. The Agency for Education was not regarded as the appropriate governing body to manage agricultural land and to train professional agricultural specialists. Many representatives of the agricultural community indicated that the agency lacked the necessary background to run farms and to train students due to its general education orientation (Anonymous, 2010). In some regions the professional level of agricultural education is integrated into universities, e.g. in Orenburg (Urzula).

6.3 Public-private partnership in agribusiness education as option?

Both agro-food companies and government recognise shortage of qualified labour as a priority. However, this does not help solve the problem fully on a short run. This means that agricultural business need do something now as well to solve the problem.

According to a FAO survey spending of agricultural companies on training of own personnel has increased (Anonymous, 2010), as only 3 companies out of the 22 participated in the survey reported spending less on training in 2009 than in the previous year. However, representatives of agro-food companies interviewed in this study indicated that Russian companies (even big ones) are not willing to pay for knowledge and expertise. So far, knowledge and expertise are not immediately seen as useful and necessary investment, next to investing into new technologies, equipment, buildings.

The Dutch companies operating in Russia often organise trainings themselves, and often at no cost, since they want to be sure that their products are to be used properly. Another strategy is the provision of one year supervision by a Dutch employee 'in the package' with, for example, stable and milking equipment for a dairy farm.

Similar initiatives are taken by Russian large agro-holdings. For example, in May 2006, one of the largest Russian food producers and suppliers 'EXIMA' and 'MIKOYAN meat processing plant' started construction of the first Swine Genetic Selection Center in Russia in the Oryol region. The goal of the project «Znamensky GSC» is to improve in the shortest possible time the genetic part of the swine production chain and on this basis to provide for the accelerated development of the industry. Training on the basis of the Oryol Agricultural University was a component of this innovative programme. The company 'Exima' in

2006 allocated eight special grants of USD600,000 to the Oryol Agricultural University. Three of them are designed for university scientists working in the field of pig breeding and genetics, and five grants for students. Basically, it was training of employees for own needs.

According to the same FAO survey mentioned above (Anonymous, 2010), such public-private partnership could provide solutions to the problem of agricultural education because it is less costly, attracts better trainers and establishes more relevant programmes. Examples of existing public-private partnerships in Russian agricultural education include: direct scholarships/grants, endowment funds, practical training, independent centres for certification of qualification, joint education and corporate training centres and corporate universities (Anonymous, 2010).

6.4 Russian initiatives and (investment) programmes to boost agricultural know-how and expertise

6.4.1 Government support

On the initiative of the former President of Russian Federation Dmitry Medvedev, a specialised programme 'Key Executive MBA - Corporate and industrial strategy' (agribusiness) was developed as a special case of the Presidential programme 'The initiator of Innovation in Agro-industrial Complex.' The main goal of this programme is to train managers and specialists that have high-level competences and are capable of leading and implementing radical innovations in the agricultural and fisheries industry (Anonymous, 2011). Centre of International Agribusiness of the Higher School of International Business of the Russian Academy of National Academy and State Service under the President of the Russian Federation acts as coordinator. The official text of the programme is available now only by request at the Centre of International Agribusiness. Victor F. Lishchenko, Director of the International Agribusiness Department, Graduate School of International Business, Russian Academy of National Economy, and Director of the programme, indicated that the programme will start in 2012 (personal communication, August 2012). The programme is to be partly executed in the best foreign educational and training centres. In total, RUB1bn is allocated for the programme. The programme mainly focuses on training of key 'higher-level' managers of agribusiness, at both business and governmental (ministry) level, and also includes preparing WTO specialists. Next to providing new qualities and skills managers, the programme also aims at partnership establishment, i.e. bringing Russian managers together with their colleagues in different countries. About 1500 people will be sent abroad within this programme, basically people would need to pay for their MBA education in Russia, and the programme will subsidise study trips abroad. Based on their own work experience, students should exactly know why they go to a particular country and what they want to learn. Study visits can take from 10-20 days to 1-2 years. The Netherlands is being seen as one of A-countries for study visits. Prof Lishchenko regularly informs the Dutch Embassy in Moscow about the progress of this programme.

Apart from this President's Programme for training of agricultural specialists there are other forms of support for educating young specialists (beginners) envisaged by the Ministry of Agriculture. So, in November, 2011 the first all-Russian student forum 'Rural young people is the future of agrarian Russia' took place in St. Petersburg. The forum was attended by representatives of all 59 institutions of higher agricultural education. During the forum the Minister of Agriculture of Russia, Yelena Skrynnik, stressed sustainable development of agriculture as one of the priorities of the Russian Agricultural policy, so that it was included in the draft 'State Programme for Development of Agriculture and Regulation of Agricultural Commodities Markets in 2013-2020.' The new programme aims to continue the modernisation of the sector and the transition to an innovative development model, which is not possible without qualified personnel. As it was announced during the forum, to attract highly skilled young graduates to rural areas, the state is ready to act in several directions. For example, for young graduates who would like to establish their own business the government was planning to provide a 50% subsidy to cover cost of land ownership registration. For this purposes, according to Elena Skrynnik, RUB1.4bn were planned to be allocated only in 2012, which will allow to provide farmers with 3m hectares of land. Another RUB1.5bn were planned to be allocated for the establishment of family livestock farms. In addition, the state programme

was planning to subsidise 70% of the housing costs for agricultural employees in rural areas. The remaining 30% are often subsidised large companies for their own employees. And if now the share of housing for young agricultural professionals represents 38% of the total area built in rural area, the draft state programme was aiming to increase this percentage up to 50% (Golubkova, 2011).

The officially published 'State Programme for Development of Agriculture and Regulation of Agricultural Commodities Markets in 2013-2020' (Ministry of Agriculture, 2012) indeed emphasises a social and rural development orientation, although the planned funds for these sub-programmes are small, see the federal target programme 'Social development of the rural areas till 2013' and the federal programme 'Sustainable development of the rural areas till 2020.' Meanwhile, as compared with the previous plans described above, federal allocations for some important social sub-programmes were drastically reduced. Thus, the sub-programme on social development of rural areas was cut by RUB60bn (USD2bn), and most of the socially important targets of the programme, such as sustainable rural development, increased rural employment and improved rural living standards, have not been reached. Official estimates on the implementation of the Programme 2008-2012 will be available only in mid-2013 (Vassilieva, 2012).

Another governmental tool to stimulate agricultural employment is providing scholarships to students going to study agricultural sciences. The scholarship funds offered by the Ministry of Agriculture represent RUB3.1bn or 18% more than in other scientific fields.

According to the Ministry of Agriculture, 54 thousand of students, i.e. 36% of the total student number in agricultural universities, are educated in the frame of the target training contract, based on tripartite agreements (employer-university-student). The number of graduates employed in agribusiness companies has grown from 47% in 2008 to 60% in 2011 (Golubkova, 2011).

6.4.2 Public-private partnership as element of governmental support

Russian Technology Platforms

Technology Platforms (TP) are considered to be among the key tools of innovation policy in Russia. Similar to European Technological Platforms, Russian Technology Platforms as mechanisms of public-private partnership in innovation are aimed at bringing together stakeholders in most promising technological areas to bridge the gap between science and industry. It is assumed that since 2012, the technology platforms will determine demand for applied research on priority areas for the government. 'Consolidated' projects will be more likely to receive funding from the federal targeted programme. At least two approved platforms 'Bio-Industry' and 'Bio-Resources - BioTech2030' are directly related to development of innovative agriculture-related expertise, for example for development of new feed components or veterinary medicines. See example of the federal project 'PARK: Industrial-Agrarian Regional Clusters, which is a part of the platform 'Bio-Resources - Biotech20130': www.center-inno.ru/ru/partnership/public-private_partnership; www.center-inno.ru/about (in Russian).

The current official list of approved platforms can be found on the following website: www.hse.ru/org/hse/tp/catalogue (in Russian). The specific agricultural platform 'Technologies for the food industry and agriculture' is also under development. In December 2012, documents for registration of non-profit partnership will be submitted to the Government Commission on High Technology and Innovation.

During agricultural congress in Voronezh in 2011, almost 90 major Russian agricultural enterprises and the food industry, universities and research organisations agreed on cooperation in the framework of a new technology platform 'Technologies for the food industry and agriculture.' Initiators of the platform, are 15 high education institutes, 15 applied research institutes, six industry associations and dozens of companies, including - large holdings (Tkacheva, 2011).

PPS initiatives by big companies

Danone will soon begin a long term education project in Russia, a Milk Business Academy, following an agreement with the Russian Ministry of Agriculture that is estimated to be a EUR1.3bn (USD1.75bn) in-

vestment. The academy will offer educational programmes providing practical training in best business and agricultural practices to Russian dairy farmers.

In 2010, a pilot project was launched. Danone - Unimilk created a training centre on an existing farm near St. Petersburg with the support of the Danone Ecosystem Fund in partnership with the local agricultural university. Objective of this pilot project is to improve the quality and quantity of milk production without increasing the size of the livestock. The knowledge obtained by farmers in the training centre should help sustainably increase the productivity of Russian farmers and ensure high quality and long-term supply of milk to Danone Russia and Unimilk. The training centre provides both practical trainings and more fundamental agricultural education (http://ecosysteme.danone.com/nl/2012-02/en/index.html#/3).

The Milk Business Academy project includes creation of an Educational centre for dairy farmers, with a training farm of 100 cows for practical classes. The project integrates partner organisations (Institut de l'Elevage, Danone Unimilk Russia; 3 local Agricultural Universities in Voronezg, Orel, Kursk; National Milk Producers Union, i.e. Soyuzmoloko) in a co-creation and co-investment process. The purpose is to educate employees of about 800 farms in 5 years. Opportunity to replicate the project in different regions of Russia for the bigger impact is foreseen. In this way, the Milk Business Academy project would support government's efforts in dairy industry development; introduce modern international practices for Russian dairy farmers and by that secure farms' existence and working places for employees and ensure availability of milk volume for CBU needs through vertical growth (http://ecosysteme.danone.com/wp-content/uploads/2010/10/Russia_Education_project_EcoSysteme_final.pdf; http://ecosysteme.danone.com/wp-content/uploads/2010/10/Final-Business-case-Russia-complement-presented-to-SIC-27-jan-2012-with-comments.pdf).

6.5 Knowledge transfer to animal protein sector

Dvorkovich, vice prime-minister and co-chair of the Russian-Dutch Joint Economic Committee, stated twice explicitly in his talks to Minister Verhagen resp. mayor Van Aartsen of The Hague (2013 project leader) that he really attached great value to the cooperation with Wageningen UR and other scientific institutes (such as STOAS) in the Netherlands. The fact that at this level the issues of education, knowledge, expertise and science are mentioned at all, is really illustrative for the needs at the Russian side and where Russia sees opportunities for intensifying bilateral cooperation (communication with Suzanne van Tilburg, Agricultural Counselor at the Dutch Embassy in Moscow, July 2012).

Current Dutch knowledge transfer initiatives in animal protein sector include:

- Livestock Expertise Center and Plus for Progress: consortia of Dutch companies that with Dutch government support have aimed at improving farm management by training middle and high management levels, incorporating (internationally accredited) MBA programmes in four Russian agricultural universities and establishment animal health and feed testing laboratories (www.lecrusland.ru/en.html).
- G2G project for training of Rosselkhoznadzor experts on poultry farms and processing establishments.
- Improvement of meat and meat product quality: consortia of Dutch meat exporting companies have already some arrangements with regard to knowledge transfer to Russian (government) institutions on inspection services. Potential subjects of this collaboration are training on HACCP and improvement of logistics, including freezing and cooling.
- In June 2012, a Round Table 'Russian-Dutch co-operation in the field of experts' training in the livestock sector' was organised in the Netherland by the Ministry of Agriculture of the Russian Federation and the Ministry of Economic Affairs, Agriculture and Innovations of The Netherlands to discuss potential cooperation. About 10 Russian agricultural universities participated in this round table.

Lessons learned (unfortunately due to rather short project time very limited number of people was interviewed to identify these issues):

- With help of ongoing projects, the Netherlands has been promoted as a agricultural knowledge and expertise centre and business networks have been extended. Dutch agricultural educational and research institutions are well known in Russia.
- In the frame of the LEC project, the Dutch-Russian Livestock Foundation was established which provides access to an established network as a useful leg to successful business on the Russian market.
- The Netherlands can, however, be further promoted as agricultural knowledge pool. In particular, small and medium enterprises (SMEs) in the agricultural sector could promote their business more effectively if they join forces. The International Dutch Lab is also an example of an already established activity which can be promoted further to exploit synergies and spill-overs. Next to animal health and feed testing laboratories in Russia, establishment of another type of Dutch lab might be considered. This would again require involvement of a local partner; though at the same time the presence of a local partner can affect the trust of clients positively.
- While designing the Dutch initiatives, it is good to take into account that the long-term ambitions of Russian Federation is to become more self-sufficient not only in food production but also in knowledge and expertise needed for this.
- WTO-related issues are not well known by Russian companies: training of Russian WTO specialists will be needed, also to meet the increased demand for knowledge of import requirements in the European Union (e.g. food safety and hygiene standards), for processing plants willing to export Russian animal protein products.
- Participation of Dutch companies in Russian initiatives for public-private partnerships, in particularly initiatives of large agro-business companies could be attractive. For example, establishment of training and knowledge centres.

7 Business opportunities

Key findings

- A key success factor is being familiar with the Russian way of doing business which requires local presence and speaking the language.
- The Dutch agribusinesses should better promote their possible contributions to the Russian objective of improved food security: they are not in the top of mind of the Russian decision makers in public organisations nor in private companies.
- Initiatives to use the opportunities should be developed on three levels: by Dutch private companies, by public initiatives and by a combination of public and private partnerships. Several suggestions are being made. Companies should also explore the advantages of working together and take an integrated chain approach in offering their products and services to Russian clients.
- The supply chain serving Moscow with fresh produce needs further improvement to catch up with the fast developments in the retail sector that serve an increasing number of consumers discerning for high quality and differentiated products. This implies a huge scope for business opportunities for Dutch suppliers of inputs to fresh produce producers, for companies with expertise in logistics both organisational and building hardware, and for companies selling consumer products to the Moscow wholesalers and retailers.
- Dutch agribusiness has good perspectives in all stages of the animal protein supply chain, specifically for supplying farm equipment, milk production control systems, equipment for processing (such as poultry processing equipment) and feed pre-mix.
- The Russian agrifood sector development is hampered by a severe shortage of well-qualified labour. Knowledge transfer therefore offer good business prospects. These can take the form of being part of a commercial deal (equipment/product plus knowledge) and/or being offered in a more generic way through training and education programmes aimed at improving competences and professional skills of farmers, specialists and managers in the agricultural sector.

Business opportunities in the Russian agrifood sector are framed in a SWOT analysis. The focus of the strengths and weaknesses is on the enterprises in the supply chain. These enterprises can influence the action they take, e.g. farmers can buy improved seeds or implement a higher technology (e.g. new breeds, state of art greenhouses). The supporting and enabling organisations are discussed in the opportunities and threats part of the SWOT. The entrepreneurs have to take this environment and cannot easily change that environment. As example if the agriculture research is absent, each actor individually cannot establish an adequate research centre. He has to retrieve the information himself by experiments or from foreign research organisations. Furthermore the focus is on the opportunities within the Russian economy. It is obvious that Dutch business opportunities have to improve the performance of Russian enterprises or organisations.

In this chapter we first discuss the Russian business environment in section 2 on opportunities and threats: these are more or less generic. That section is relevant for both Metropolitan Food Security and Animal Proteins. Next we discuss the strengths and weaknesses and suggest business opportunities separately for the research objective on the Metropolitan Food Security and on Animal Proteins.

7.1 Opportunities and threats

The focus in this section is on the business environment for Russian producers: what is favourable for the actors in the supply chain and what inhibits growth.

Table 7.1	Opportunities and threats for the Russian value chains	
	Opportunities	**Threats**
Resources	- Plenty fertile soil especially in the Black Soil Region that would allow for (much) higher productivity than the current levels	
Infrastructure	- Several international airports and seaports enabling trade with other countries. - Government intends to spend billions on road and railway infrastructure in the coming decade	- Weak electricity grid, old facilities - Poor ICT-infrastructure - Insufficient road and railway infrastructure (congestion around cities and fast transport facilities over long distances are missing) - Lack of retail space in Moscow region
Knowledge infrastructure	- Many well trained people - Training on the job is the prevalent education in Distribution Centres (DCs)	- Education does not comply with demand from the sector. - Education is insufficient to comply with standards of good and efficient agricultural practices. - Lack of logistic software for planning and inventory purposes - Lack of control on food safety of agricultural products
Credit	- Attractive lending conditions for agribusiness within State programmes - Capital available, often from not agro-related business	- Unfavourable credit conditions - Agribusiness is not the most attractive sector for investment
Culture	- Modern DCs are managed like Western companies - Workers can be motivated to work long hours, being quality conscious and being productive.	- Informal local contacts are essential to get things done - Contract discipline is weak - Workers and management are not focused on and eager to improving competences - Jobs in agriculture and retail are badly paid - Retail business is sometimes considered as 'parasitic to society' - Much more paperwork has to be done in Russia, compared to West-European countries - Russians want to control the company, instead of being partner in a joint venture
Economy	- Energy sector boosts the economy - Rising incomes of consumers and thus rising demand for animal proteins and differentiated products. - Concentrated consumer markets in a few large cities - Fair group of high demanding and spending consumers in large cities	- Oil and offshore industry are more competitive in attracting skilled labour and capital - Unpredictable economic environment and aggressive competitors (backed up by local authorities) - Profitability in other industries (especially energy) are better
Government	- Aiming at higher self sufficiency - Improving the infrastructure - Diversifying the economy: i.c. agricultural and food processing - Doing business environment is still harsh but moving in the right direction - Work permits (for essential ex pat workers) can be smoothly acquired	- Excessive paperwork (including customs procedures) and poor performance of institutions (doing business indicators) - Unclear or complicated rules and procedures (VAT, import/ export procedures, alcohol sales licenses) - Informal contacts with highly placed officials are of major importance for doing businesses.

	- WTO membership provides level playing field for trade rules (following international standards) - It is possible to do business according to official rules, without bribes (it takes much more time, but it is possible)	- Import regulations (Tariff and Non-Tariff measures) change frequently, without giving notice
Source: Own research, PricewaterhouseCoopers (2008, p13/14), Kolchevnikova, O. (2011b, Table 2).		

The key success factors for doing in business in Russia are:

- Be present on the market either by local partners or by staff members who understand the Russian way of doing business thoroughly. One of the competences is being fluently in the Russian language. This seems obvious, but not meeting this key success factor generally results in a poor performance on the Russian market. The culture and doing business practice in Russia deviates strongly from the Dutch. Without (near) locals it will be almost impossible for foreigners to do business successfully. Doing business at a distance (from the Headquarter in the Netherlands) is advised against due to the culture differences. A representative, understanding both the Dutch and Russian way of doing business should be in control on the Russian site.
- Select a market with prospects. These are many, but focus is essential.
- Organise the supply chain. The infrastructure is too weak to deliver quality products and service that respects the Just in Time principle, each day of the year. It means that an integrated chain upstream and downstream has to be established. Economies of scale might be critical to be successful. E.g. using efficiently a cool chain, truck, storage, needs sufficient scale.
- Invest and maintain excellent relations with the Russian authorities at Federal and local level. This demands time investments of the companies. However, without consent of the authorities, doing business will be hard. Support of the (federal and/or local) authorities will be gained when they are convinced that Dutch investments will contribute to improved living standards of the local population (e.g. jobs, subcontracting).
- Take your time; patience will be rewarded. Authority's capacity and motivation to act and respond quickly is generally low.

7.2 Metropolitan Food Security

7.1.1 Strengths and weaknesses

This section summarises strengths and weaknesses of the value chain of fresh vegetables and fruits. The focus is on the Moscow Metropolitan Food Security case. The question is whether the domestic actors in Russia are able to serve Moscow population with sufficient and differentiated quality fresh produce during all days of the year. As reference we use the actual practice in cities in north-west European countries. We distinguish actors at the level of suppliers of farm inputs till the consumers.

The overall finding is that the supply chain of fresh produce is rather weak on all levels. All chain actors upstream from input suppliers to DC's need to improve rapidly to follow the fast development s of the state-of-art retailers that serve an increasing number of consumers discerning for high quality and differentiated products in the Moscow region.

Table 7.2	Strengths and weakness of the actors in the Moscow metropolitan food security chain	
Actor	**Strengths**	**Weaknesses**
Suppliers of farm inputs	- Own brand and assemblers of farm equipment - Importers and dealers of equipment from international brands - Supply of imported improved seeds	- Most quality machinery, greenhouse technology and seeds are imported - Domestic seed breeding is poorly developed - Quality of domestic equipment is low - Machinery spare parts have to be imported resulting in a long lead time and domestic spare parts are hard to get. - Poor skills for maintenance or operating modern machineries
Producers	- A few well-managed farms with state of art knowledge on agronomics and cultivation methods - A limited share of 'commercial' farmers with state of art knowledge on grading and storing the produce - Large-scale farms, enabling efficient use of resources and investments - Some greenhouses are modern, trying to achieve Dutch state-of- art level - Government support for soft credit	- Mainly traditional farming methods from the Soviet period - Poor focus on production resulting in a low productivity - Management is poorly focused on performance - Decreasing area of greenhouses and old fashioned - No cool storages on farms or in their neighbourhood - Processing (grading, cleaning, packaging) on farms is in many cases absent - Insufficient supply, especially in the winter and spring (seasonality) - Supply of fresh produce is not in time, not in right quality nor in sufficient quantities - Too much relying on government support
Wholesalers, distributors and processors	- Mainly done by producers - International fruit and vegetable processor very active (Bonduelle, Frito-lay) - Grading and packaging of fresh vegetables on some of the larger greenhouses - Some efficiently operating DC's available, especially managed by foreign investors	- Wholesalers (collecting and distributing) are sparsely available meaning that the market function collecting, grading and distributing is underdeveloped - Many farmers sell their own products - Responsibility for quality standards is not clear (e.g. sorting and grading) - Imports of quality and differentiated products especially by foreign supermarket chains - Shortage on warehouses in Moscow region, especially for chilled (day-fresh) and frozen food. - Traffic congestion in Metropolitan Moscow, restricts deliveries by large trucks and only in the night
Retailers	- Growing concentration and market share supermarkets - Some international supermarkets chains - Quality of fresh produce is on a fair level in modern service supermarkets - Full range of retailers: from traditional street vendor, kiosk to high quality supermarkets - Demand for organic food, especially baby food - Private labels will grow: now 3-5% compared to over 35% in West European countries	- Poor quality of fresh produce also in supermarkets - Not enough floor traffic - Products on traditional markets are not graded, sometimes mixed varieties and in small quantities - Limited assortment of products in shops, due to poor logistics - Not enough plots for new stores

Consumers	- Consumer preference for domestic produce - Open for new and ready-to-eat products - Significant number of consumers can afford high-quality and differentiated food	- Per capita spending outside Moscow and St. Petersburg is quite low
Source: Own research, Kolchevnikova, O. (2011b, Table 2).		

7.2.2 Opportunities for the Dutch agrifood sector

The overview of strengths and weaknesses summarised in Table 7.2 implies a huge scope for business opportunities for Dutch suppliers of inputs to fresh produce producers, for companies with expertise in logistics both organisational and building infrastructural hardware, and for companies selling consumer products and able to organise their logistics to the Moscow wholesalers and retailers. In making use of the opportunities the Dutch agrifood companies should ensure that their activities contribute to the Russian ambitions to further develop their own agrifood sector, to get support of local and federal authorities. Market prospects are good: we expect a strongly growing demand and production of high quality and differentiated produce in especially Moscow Region. To strengthen the economic relationship between Russian and the Netherlands in the agribusiness sector initiatives on three levels shall be developed:

1. Private initiatives that can be directed to:
   - Direct sales agricultural input supplies by Russian or Dutch agents of Dutch commodities, already familiar to the Russian agribusiness and that require little after sale efforts. These supplies include, e.g., seeds, seed potatoes, plants (e.g. strawberries), agricultural machinery and other (food processing) equipment. These are short-run mainly cost-price oriented trade businesses (hence, though competition from other countries). These direct sales support the Russian ambition to improve the self-sufficiency by higher efficiency on farms.
   - Exports of final consumer goods with distinctive features in quality, taste, application and so on. The Dutch agribusiness can fill some gaps in the supply of high quality products or in case of inadequate supply from regular suppliers during short periods. As the distance between Russia and the Netherlands is large, the opportunities are especially for high value/ low volume products. Such products might, for instance, be very delicate vegetable (like cresses) and fruits for the quality supermarkets and restaurants. The daily flights offer the opportunity for supplying such these high segments. Challenges are establishing relationships with the retail sector and catering providers (logistics and contacts) especially in Moscow, or St Petersburg of other densely populated and relatively rich urban regions.
   - Investments in Russia to sell more sophisticated, high-technology means of production, where after sales services or instruction for an efficient use of the production means is required. Supplies should offer the combination of hard ware and knowledge transfer. If only hardware is provided, the image of the supplier will suffer because the Russian client cannot exploit fully his investments. These Dutch investments have a long-term focus and Russian partners should be involved. Examples of these investments can be found in the development of the logistic infrastructure, such as cold stores and cooling transport facilities, distribution centres and equipment for processing (including grading) products. This applies also for investments in protected horticulture such glass greenhouse technology or fertigation and covering (by simple plastic covers) of soft fruit.
2. Public initiatives from the Dutch government that can be directed to:
   - G2G issues that are focusing on capacity building in policies related to phytosanitary, food safety, vocational training or international trade.
   - A Business Support Office for Dutch trade relations and investments. At this moment Russia is not always in the top of the mind of the Dutch private sector, while the opportunities are there. At the same time, Russian public authorities and the agrifood sector is not always aware of the Dutch capabilities to offer the products and expertise the Russian agrifood sector needs for further development. Promotional activities aimed at matching Dutch supply with Russian demand might have significantly enhance the business relations between the two countries.

- Related to the previous item, more in depth sector studies sectors such as greenhouse sector, potato, fresh open air vegetable (onion, cabbage, carrots) or oilseeds will increase the awareness of opportunities for the Dutch private sector. Furthermore, the Dutch government can stimulate Public Private Partnership between Russian and Dutch sectors.

3. Public Private Partnerships (PPPs) can integrate the initiatives of several single companies. In this way, business' efforts can be more effective and success rates higher. We recommend exploring the possibilities in:
   - Being good and telling it. Show the success stories of Dutch businesses in Russia. This might be by actively organising meetings, field trips or excursions with Dutch companies that are interested in doing business in Russia. Publish about these successes in professional magazines.
   - The Dutch 'Topsectoren Beleid.' Based on this study, PPPs for potatoes (full range from seed potatoes to processing), greenhouse production, vegetal oil production may have good prospects. Some example are provided in section 7.4.[1]
   - An integrated 'Metropolitan Food Security' approach, serving the ambitions of several sectors by tackling challenges that are of importance for more sectors. This study shows that potatoes and horticulture products need similar post-harvest chain and logistic services. A Metropolitan food security approach can exploit Dutch experience and expertise in all stages of the chain, and link these with the distributional actors up to the super market chains in highly populated cities such as Moscow.
   - Knowledge transfer in a more generic way.
     - As identified before, the knowledge and competencies of labour working in the agrifood sector need to be improved. Supplying equipment has to be accompanied by supplying training how to use this equipment. In addition service provision (delivering spare parts and maintenance) should be delivered over a long period.
     - Capacity building in all stages of the supply chain. It deals with improving competences at all levels for the production but especially in the processing and logistic areas: innovative and integrated food security concepts. Also, competences at government level could be strengthened, for instance by offering support to establish a modern state-of-the-art phytosanitairy service, to increase knowledge of and align to international standards on food safety and environmental issues, etc. An example is laboratories for analysing products related to food safety.
     - Providing management and consultancy. Dutch firms can support commercial farmers and Russian companies, teaching skills, increasing competencies and their ability to improve their technical and economic performance.

7.3 The Animal Protein Case

7.3.1 Strengths and weaknesses

This section analyses the strengths and weaknesses of the value chain of animal protein. The question is whether the domestic actors in Russia are able to serve the Russian population with sufficient and differentiated quality meat, eggs and dairy products during the year. As reference we use the actual practice in north-west European countries. As many actors are involved we distinguish actors at the level of suppliers of farm inputs till the consumers.

[1] See for further information on the Dutch Topsectorenbeleid and opportunities to use this policy framework for business development: www.top-sectoren.nl/agrifood and www.top-sectoren.nl/tuinbouw. Next, see for further steps towards using identified opportunities, http://www.agentschapnl.nl/programmas-regelingen/partners-international-business-pib.

The overall finding is that the supply chain of animal protein is rather weak on all levels. Especially the chain actors upstream from input suppliers to DC's need to improve more rapidly to follow the fast development s of the state-of-art retailers and the growing demand for animal proteins enabled by the rising income. This is not only of high importance for the 'rich' regions like Moscow city, but also for other regions. Furthermore the development in the poultry meat sector might result in the very near future in a surplus production for export.

Table 7.3 Strengths and weakness of the actors in the Russian Animal Protein chain

Actor	Strengths	Weaknesses
Suppliers of inputs for farms and processors	- Advanced technology available, especially for poultry and dairy mainly imported - Dealers of equipment from international brands are present in the country - High yielding breeds (one-day chickens/ dairy cattle) available via imports - Own breeder in poultry (up to grandparents flock) - Import and some production of feed concentrates and pre-mixen	- Machinery spare parts have to be imported resulting in a long lead time - Domestic spare parts are hard to get. - Poor skills for maintenance or operating modern machineries - Foreign investment in feed pre-mixen - Breeding relies heavily on imports
Veterinary service	-	- Deficiency of veterinarians in number and qualifications - Lack of veterinary services for livestock - Inadequate logistics of veterinary service - The need for methodological foundations of planning and economic assessment of veterinary measures - Not well performed veterinary and zootechnical activities, which leads to the emergence and spread of particularly dangerous infectious animal diseases - Insufficient financing of veterinary activities in selected agricultural firms - Lack of proper control by the management of agricultural firms for the acquisition and spending of veterinary drugs
Producers	- A few well-managed farms with state of art knowledge on agronomics, livestock management and cultivation methods - Large-scale farms, enabling efficient use of resources and investments - Integrated farms and processors - Decrease of home grown products	- Mainly traditional farming methods from the Soviet period - Poor focus on production resulting in low productivity - Low level agriculture competence, despite many agriculture universities - Management is poorly focused on performance - Seasonality milk supply, peaking in late spring and summer - Too much relying on government support
Wholesalers	-	- Imports by large supermarket chains, especially foreign
Processors	- Dairy processing is well developed - Some integrated value chains in broilers and pigs	- GMO-products and their control (state control programmes need to be further developed) - Poor quality of raw materials - Lab control food safety of agricultural products - Low efficiency of processing sector in general

Distribution	- Some efficiently operating DC's available, especially managed by foreign investors -	- Underdeveloped. - Shortage on warehouses in Moscow region, especially for chilled (day-fresh) and frozen food - Traffic congestion in Metropolitan Moscow, restricts deliveries by large trucks and only in the night
Retailers	- Growing concentration and market share supermarkets - Some international supermarkets chains - Quality of fresh produce is on a fair level in modern service supermarkets - Full range of retailers: from traditional street vendor, kiosk to high quality supermarkets - Demand for organic food, especially baby food - Private labels will grow: now 3-5% compared to over 35% in West European countries	- Not enough floor traffic - Products on traditional markets are ungraded, sometimes mixed varieties and in small quantities - Not all produce is always available in the shop, due to poor logistics - Not enough plots for new stores
Consumers	- Consumer preference for domestic produce - Open for new and ready-to-eat products - Significant number of consumers can afford high-quality and differentiated food	- Per capita spending outside Moscow and St. Petersburg quite low

Source: Own research, Kolchevnikova, O. (2011b, Table 2).

7.3.2 Animal Protein opportunities for Dutch agriculture sector

The Dutch business opportunities for the animal protein sector are based in the growing demand for animal products in all regions of Russia, the Russian government policy to become self-sufficient and the strong export performance of the Dutch animal sector related companies and organisations with products and services for which the sector is well-renown on international markets.

To strengthen the economic relationship between Russian and the Netherlands in the agribusiness sector we recommend initiative on three levels.

1. Private initiatives can be directed to:
   - Direct sales by Russian or Dutch agents of Dutch commodities, already used in the Russian n agribusiness and that require little after sale efforts. These commodities are e.g. hatching eggs, breeding animals, feeds mixes and equipment for farmers and processors. These are short run, mainly cost-price oriented trade businesses.
   - Investments in Russia for more sophisticated means of production or capacity building, where after sales services or instruction for an efficient use of the production means is required. These are investments for the long run and Russian partners should be involved. Examples of these investments can be found in the development of the logistic infrastructure, which is connected to fresh dairy and meat products. Of specific interest in the animal proteins sector are farm equipment, milk production control systems and equipment for processing (such as poultry processing equipment, where Dutch suppliers already have a strong position).
   - Providing final consumer goods. Exporting these goods might be an opportunity for specific qualities. As shown the Netherlands do not have a strong position in the Russian import portfolio; the competition with other suppliers is thus severe.
2. Public initiatives from the Dutch government can be directed to:
   - G2G issues are capacity building in policies related to e.g. veterinary issues, food safety, vocational training or international trade and tariffs.
   - A Business Support Office for Dutch trade relations and investments. At this moment Russia is not always in the top of the mind of the Dutch private sector, while the opportunities are there. At the same time, Russian public authorities and the agrifood sector is not always aware of the Dutch ca-

pabilities to offer the products and expertise the Russian agrifood sector needs for further development. Promotional activities aimed at matching Dutch supply with Russian demand might have significantly enhance the business relations between the two countries.
    - Related to the previous item, more in depth sector studies such as dairy, meat, fish or compound feed will increase the awareness of opportunities for the Dutch private sector.
3. Public Private Partnerships (PPPs) can integrate initiatives of several single companies. In this way, business' efforts can be more effective and success rates higher. We recommend exploring the possibilities in:
    - Being good and telling it. Show the success stories of Dutch businesses in Russia, such as cooperative approach of Campina, by organising actively meetings, field trips, excursions with Dutch companies that are interested. Publish about these successes in professional magazines.
    - The Dutch 'Topsectoren Beleid.' Based on this study, PPPs dairy husbandry, feed production, and animal breeding seems to have good prospects.
    - Knowledge transfer in a more generic way.
        - As identified before the knowledge and competencies needs to be enhanced. Successfully supplying equipment has to be accompanied by supplying training how to use this equipment. In addition services (delivering spare parts and maintenance) should be delivered over a long period.
        - Capacity building in all areas of the animal protein supply chain. It deals with improving competences at all levels in the supply chain but especially at the farm level, next to the processing and logistic part: innovative and integrated food security concepts. The competences also have to be strengthened at governmental level to establish a state-of-the-art veterinary service, to increase knowledge of and align to international standards on food safety and environmental issues, etc. An example is the Centre of excellence for training and testing advanced equipment in a Russian setting.
        - Providing management and consultancy. Dutch firms can support commercial farmers and Russian companies, teaching skills, increasing competencies and their ability to improve their technical and economic performance.

7.4 Potential leads

From our inquiry and interviews in Russia with authorities and businesses we collected the following potential leads.

General

- Special training and educational programmes (as described in the report, for example President programme of retraining the agri-specialists).
- Governmental support at the national level:
    - Federal budget via Ministry of Agriculture: see example of Danone programme for Milk Business Academy.
    - Special Investment Funds. For example, the Russian Direct Investment Fund (RDIF) is a USD10bn fund established by the Russian government for equity investments primarily in the Russian economy. This Fund pays special attention to agricultural projects. Putin and Medvedev discussed this with Rutten during his official visit to Moscow, in October 2011. The project budgets are between USD50 and USD500m.
- Regional level:
    - Federal budget funds, including funds of federal development institutes and ministries.
    - Regional budget funds i.e. Razvitie Corporation in Belgorod region - Greenhouse cluster 500 ha, (2012-2017); Bio Gas project.

- Supporting banks. EBRD provides loans to the agribusiness (5-6 deals per year) and ING is eager to provide loans (about 10 a year). These banks need knowledge to evaluate the business plans of investors or investors need an impact assessment. These will be consultancy tasks with a small budget (probably between 10 to 50.000EUR).

Metropolitan Food Security

- Moscow City Government - specifically the Metropolitan Food Security plans, that aim at creating a modern and efficient wholesale sector plus a well-integrated supply chain of fresh produce that serves to secure the demand for these food products both in quantity and quality in the Moscow region.
- Russian Greenhouse Association is in contact with potential private investors in greenhouses and distribution centres. Investors need insights into market opportunities and feasibility.
- Magnit (a big Russian retailer) plans to invest in 100 ha greenhouses in Krasnodar region. Due to lack of knowledge they experience some problems since the first 10 ha have been operational.

Animal Protein

- Follow investment initiatives of big players-companies, such as Danone and Pepsico in the dairy sector in Russia.
- Potentially Russian agroholdings (no concrete names yet) can be clients of Dutch suppliers of livestock, agricultural machinery, farm management knowledge programmes and other products and services. Usually these holdings try to use governmental support funds for investments.

The Dutch government promotes internationalisation of the Dutch agribusiness in several ways. General information about ambitions and support programmes can be found on www.agentschap.nl and www.topsectoren.nl. For further steps towards using identified opportunities, see for instance http://www.agentschapnl.nl/programmas-regelingen/partners-international-business-pib.

8 Conclusions

This concluding chapter summarises the major findings of the study.

Introduction

- This report studies the Russian animal protein sector and the Moscow Metropolitan Food Security.
- It aims at identifying the opportunities for Dutch business to do businesses through exports or via local investments.
- Public available government policies, papers and interviews with stakeholders are the information sources for this study.
- Russia has a population of 140m and a robust GDP growth.
- Doing business indicators indicate several deficiencies in the economic environment in the country, yet the outlook for agricultural development and food consumption patterns show ample business opportunities.

Policies and trade

- Russia's WTO membership (since August 2012) implies a more equal level playing field for exporters interested in the Russian market. Market access to Russia is expected to improve for animal products (dairy, beef, pork and poultry).
- The new State programme on agricultural development (2013-2020) continues to support agricultural production, with an emphasis on increasing animal production. However, early December 2012 no detailed information on the implementation of each specific support programme, priority setting and/or the regions' co-financing budgets have been made public
- Moscow' food supply is major concern to local authorities who want to invest in logistics, distribution centres and well-integrated food supply chain.
- Self-sufficiency rates for animal products are pretty low, although increasing rapidly for poultry. Russian agricultural imports are dominated by animal products, fruit and vegetables and beverages.
- The Netherlands has a share of about 5% in total Russian agricultural imports by Russia. The Netherlands has significant (import) market shares for bulbs and flowers, animal feed, vegetables and for vegetal oils. In addition, the Netherlands is a significant supplier of live animals and preparations of cereals, flour, starches and dairy.

Consumption patterns

- The Russian Gross Domestic Product grows faster than in the euro area.
- The consumption of animal proteins, fresh fruit and vegetables and vegetal oil is growing fast: an expected development with rising income.
- Food safety perceptions of Russian consumers are similar to those in EU countries, but Russians rely more on their own responsibility than on institutions and organisations.
- Private labels of retailers have now a share of 3-5% and will grow to 15% in coming years. This indicates their increasing market power in the food chain.
- The share of organic food in food expenditure is low, but higher in metropolitan regions and is expected to grow.

Retail

- Since 1999 the registered food retail grew 22% annually and is expected to grow by 11-15% in the coming decade.
- One third of the retail sales are in the central regions, including among others Moscow.

- The state regulation on trading activities prohibits slotting fees and opening new outlets if the market share of a chain is above 25% in a region and regulates the suppliers' payment and maximum price increases.
- Domestic retail chains are leading; the top 4 chains had a market share of 5% in 2000 and 20% in 2010.
- Out of home sales is approximately 10% of the retail sales and growing 3.2% annually.

Production, processing and input supply
- Important production regions are in the south-western part of Russia at a distance of 1,000 to 1,500 km of Moscow.
- The greenhouse area declined last decades and in not up-to-date. Investments are recommended.
- The yields are relatively low and only slowly improving.
- The production of poultry meat grew considerable last decade: other products could hardly follow the increased consumption.
- Subsistence farmers produce over 50% of the vegetables and raw milk.
- Russian agriculture depends on the imports of improved seeds and breeds. Also machinery is imported, the Dutch have severe competition in this field from Germany, Italy and UK.

Agricultural knowledge and expertise needs
- The Russian agrifood sector development is hampered by a severe shortage of well-qualified labour; skills and knowledge levels of university graduates do not meet demand and needs of agribusiness companies.
- Major factors causing this shortage of qualified labour are the decline in the number of students at agricultural universities, reluctance of those graduated to work in the agricultural sector (in rural areas) and 'low' quality of education.
- Available knowledge is too scattered and focused on separate farm processes: farm performance improvements are possible by integrating knowledge on technical, economic and managerial aspects of cropping and livestock systems. Small improvements can already result in big progress.
- The Russian higher education system is in transition, including higher agricultural education institutes.
- Targeted government support to better match demand and supply of qualified labour in the agricultural sector is rather limited; public-private partnership initiatives are potential alternatives.

Business opportunities
- A key success factor is being familiar with the Russian way of doing business which requires local presence and speaking the language.
- The Dutch agribusinesses should better promote their possible contributions to the Russian objective of improved food security: they are not in the top of mind of the Russian decision makers in public organisations nor in private companies.
- Initiatives to use the opportunities should be developed on three levels: by Dutch private companies, by public initiatives and by a combination of public and private partnerships. Several suggestions are being made. Companies should also explore the advantages of working together and take an integrated chain approach in offering their products and services to Russian clients.
- The supply chain serving Moscow with fresh produce needs further improvement to catch up with the fast developments in the retail sector that serve an increasing number of consumers discerning for high quality and differentiated products. This implies a huge scope for business opportunities for Dutch suppliers of inputs to fresh produce producers, for companies with expertise in logistics both organisational and building hardware, and for companies selling consumer products to the Moscow wholesalers and retailers.
- Dutch agribusiness has good perspectives in all stages of the animal protein supply chain, specifically for supplying farm equipment, milk production control systems, equipment for processing (such as poultry processing equipment) and feed pre-mix.

- The Russian agrifood sector development is hampered by a severe shortage of well-qualified labour. Knowledge transfer therefore offer good business prospects. These can take the form of being part of a commercial deal (equipment/product plus knowledge) and/or being offered in a more generic way through training and education programmes aimed at improving competences and professional skills of farmers, specialists and managers in the agricultural sector.

Literature and websites

AGF, 2010. *Rusland: supermarktverkoop nog altijd erg versnipperd*. www.agf.nl/nieuwsbericht_detail.asp?id=57212 Retrieved July 19, 2012.

Anonymous, 2006. Summary of the Russian Agribusiness Survey. Peja International B.V. World Bank working paper #39556, pp. 63. Washington D.C.: World Bank6. Available online: www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2007/04/19/000310607_20070419135139/Rendered/PDF/395560RU0Agribusiness0Survey01PUBLIC1.pdf.

Anonymous, 2010. *Russian Federation: Public-Private Partnerships in agribusiness education*. FAO Investment Centre Division / EBRD cooperation programme. Report series - N.17- September 2011.

Anonymous, 2011. *President programme* <Key Executive MBA - corporate and sector strategies> (agribusiness), World of MBA: Education for Business, 3: 40-43. Available online: www.mir-mba.ru/pdf/MIR_MBA_03_2011.pdf (in Russian).

Anonymous, 2012. *Strategy of development of the food processing industry of the Russian Federation until 2020.* Approved by resolution of the Government of the Russian Federation N559-R on 17 April, 2012. 62 p. Available online: government.ru/gov/results/18785/; www.dvnekc.ru/stryb.pdf (In Russian).

Ministry of EZ, 2012. *Monitor duurzaam voedsel 2011*. Den Haag.

Golubkova, M., 2011. *Your positive future is predetermined*. Rossiyskaya Gazeta, November 22, 2011. Available online: www.rg.ru/printable/2011/11/22/reg-szfo/skrynnik.html (in Russian).

FAO, december 2009. *EMPRES Watch - African swine fever spread in the Russian Federation and the risk for the region*. Available online: ftp://ftp.fao.org/docrep/fao/012/ak718e/ak718e00.pdf.

Interview with the Minister of Education (the former one), Russian Gazeta, November 25, 2008. Available online: www.rg.ru/2008/11/25/vuzy.html.

Klein, B. and J.D. Wright, 2007. 'The Economics of Slotting Contracts.' In : *Journal of Law and Economy* 50, pp. 421-454.

Kovalev, Y., 2012. *Pig Production in the Baltic Region - Chances and Challenges*. Presentation at EPP Congress 2012, Vilnius, Lithuania, May 30 - June 1. Available online: www.pigproducer.net/uploads/media/3_Jurij-Kovalev_.pdf.

Kolchevnikova, O., 2010. *Russian Trade Law Equals Transperency?* USDA Foreign Agriculture Service, Moscow. Gain report RSATO1002.

Kolchevnikova, O., 2011a. *Russian Organic Market Taking Root*. USDA Foreign Agriculture Service, Moscow. Gain report RSATO1109.

Kolchevnikova, O., 2011b. *Russian Retail Market Continues Expansion*. USDA Foreign Agriculture Service, Moscow. Gain report RSATO1110.

Kolchevnikova, O., W.A. Putiy and O.Lubentsova 2012. *Russian Federation exporter guide Opportunities for Future Growth.* USDA Foreign Agriculture Service, Moscow. Gain report RSATO1204

Lubentsova, O., June 6, 2012. *Strategy of the Russian Food Industry Development until 2020*. Global Agricultural Information Network (GAIN) Report RSATO1205. USDA Foreign Agricultural Service Available online:
http://gain.fas.usda.gov/Recent%20GAIN%20Publications/Strategy%20of%20the%20Russian%20Food%20Industry%20Development%20until%202020_Vladivostok_Russian%20Federation_6-7-2012.pdf.

Lubentsova, O., December 9, 2011. *The Food Processing Sector in Russia. Global Agricultural Information Network (GAIN) Report RSATO1127*. USDA Foreign Agricultural Service. Available online:
http://gain.fas.usda.gov/Recent%20GAIN%20Publications/Food%20Processing%20Ingredients_Moscow%20ATO_Russian%20Federation_12-8-2011.pdf.

Maksimenko, M., September 2012. *Livestock and Products Annual: Russia Continues to Focus on Improving Domestic Meat Production.* Global Agricultural Information Network (GAIN) Report RS1255. USDA Foreign Agricultural Service. Available online: www.thefarmsite.com/reports/contents/rlsep12.pdf.

Ministry of EZ, 2011. *Russian Regions: Opportunities for Dutch Agribusiness*. The Hague, Ministry of Economic Affairs Agriculture and Innovation.

Ministry of Agriculture of Russian Federation, 2012. *State Programme for Development of Agriculture and Regulation of Agricultural Commodities Markets in 2013-2020*. Adopted by the Russian Government on July 14, 2012. Published on: 07.09.2012 at 17:40:00; last modifications on: 09.11.2012 at 14:30:00 Available online: www.mcx.ru/documents/document/v7_show/16834.342.htm (in Russian).

Moscow Times, July 2012. *Krasnodar-Based Magnit Challenges Global Retailers*.

Popova, K., L.J. Frewer, J. De Jonge, A. Fischer and E. Van Kleef, 2010. 'Consumer evaluations of food risk management in Russia.' In: *British Food Journal*, Vol. 112 (9): pp. 934-948.

Planet Retail, 2010, *Russia's Consumer Framework*. Frankfurt am Main, Planet Retail GMBH. www.freshcongress.com/resources/documents/1271673433borisplaner.pdf Retrieved July 19, 2012.

PricewaterhouseCoopers, 2008. *Shopping for the future*. Russian Retail Market Survey. www.pwc.com/gx/en/retail-consumer/pdf/pwc-retail-survey_eng.pdf Retrieved July 19, 2012.

Prishchepov, A.V., D. Muller, M. Dubinin, M. Bauman and V.C. Radeloff, 2013. 'Determinants of agricultural land abandonment in post-Soviet European Russia.' In: *Land Use Policy* 30, pp. 873-884.

Putin, V., February 12, 2012. *Строительство справедливости: Социальная политика для России. Building fairness : Social policy in Russia* (in Russian). Available online: www.kp.ru/daily/3759/2807793/ (more official sources are available).

Radaev, V., 2011. *Where does the demand for regulation come from? The state's return to retail trade in Russia*. National Research University Higher School of Economics (HSE), Moscow

Sergei Guriyev, October 2010. *How Will Russia Handle the Bologna Process?* The Moscow Times. Available online:
www.themoscowtimes.com/careercenter/JC/417853/eng/article/417892.html#ixzz2EMFXMicV.

Schreijen, S., 2011. *Private labels vs. Brands. An Inseparable Combination*. Utrecht, Rabobank International.

Tkacheva, T., November 2011. *Found denominator: Combining business and science will allow farmers and processors to introduce modern technology*. Rossiyskaya Gazeta. Available online: www.rg.ru/2011/11/07/reg-cfo/znamenatel.html (in Russian).

Twardzik, K., 2011. *Russian retail market expected to exceed 800million USD in 2013*. PMR.

Vassilieva, Y., November 6, 2012. *Agriculture Development Programme 2013-2020GAIN Report Number: RS1270*. USDA Foreign Agricultural Service. November 6, 2012. Available online: http://gain.fas.usda.gov/Recent%20GAIN%20Publications/Agriculture%20Development%20Program%202013-2020_Moscow_Russian%20Federation_11-6-2012.pdf.

Ziganshina, N., 2012. *Universities shared the 'black list': the Ministry of Education and Science determined the universities to be reorganised*. Gazeta.ru 21.11.2012. Available online: www.gazeta.ru/social/2012/11/21/4861685.shtml.

Websites
http://faostat.fao.org
http://statline.cbs.nl
www.gks.ru/wps/wcm/connect/rosstat/rosstatsite.eng/main/

Appendix 1

List of consulted stakeholders

A1.1 Mission to Moscow for Food Security and Animal Proteins investigation

Time	Organisation	Contact
27 Augustus 2012		
9.00 - 11.00	Distribution Centre (DC) Univeg	Pascal van den Luijster, Country project manager
14.00 - 16.00	National Dairy Producers Union (Souzmoloko)	Andrey Danilenko, Chairman Valentin Trofimov, General director
17:00	Two supermarkets on Tverskaya Ulitsa	Shop 1 Magnolia (<1,000m^2) Shop 2 Perekrestok, X5 (<1,000m^2)
20.00	Organic supermarket on 3-IV Lesnoy Per	Bio-market (<1,000m^2) next to several restaurants in a new business centre (with PWC building)
28 Augustus 2012		
11.00 - 12.30	Campina Russia, Long-life yoghurts desserts and drinks	Jeroen van Douveren, Managing Director
15.00 - 16.30	X5 group	Igor Kovalev, Head of Government Relation (GR)-activities
17.30 - 20.00	Milten Agro, Diary/pig (sows) farm	Johannes Crooijmans, Director / co-owner
29 Augustus 2012		
10.00 - 11.30	Agrocombinat 'Moskovsky', Greenhouses, producers of vegetables, pot plants, seedlings, processing and packaging, importer	Viktor Semkin, staff and regime director Evgeny Sidorov, Chairman of the board of directors
15.00-16.30	ING BANK (EURASIA) ZAO	Pieternel Boogaard, Managing director, Head of Agriculture Finance
30 August 2012		
9.00-10.30	EBRD European Bank for Reconstruction and Development	Natalya Zhukova, Senior Banker, Agribusiness Team Andrei Krasutski, Assistant banker, Agribusiness
10.30-11.30	3 shops on Bol'shaya Gruzinskzya Utilitsa	Shop1 Perekrestop (>2,000m^2) Shop 2 Aeboeka Vkoesa (<2,000m^2) Shop 3 Dixie (<2,000m^2)
15.00-16.30	Ministry of Agriculture of the Russian Federation	Yuriy Lilein, Department of International Cooperation Elena Koldaeva (Genetics department) Viktor Egor'evich Berdishev (Deputy Head, department of Higher Education)
16.30-17.00	Shop on Orlikov per.	Miratorg, (>2,000m^2) Miratorg holding is largest pig producer.

Time	Organisation	Contact
31 August 2012		
9:00-11:00	Republican production-scientific association Hothouses of Russia (Greenhouse association)	Natailia Rogova, general director Tatiana Kulik, deputy of the general director
12.00-1400	The Russian Presidential Academy of National Economy and Public Administration. Graduate School of International Business. International Agribusiness Center	Victor Lishchenko, Director Professor
15.00-16:30	Government Moscow Region, Department of Trade and Consumer Services	Dmitri Krashnov, Deputy Head
1 September 2012		
15.00-15.30	Shop in ГУМ (Goem)	Gourmet>2,000m^2,Very luxury food shop
17.00-18.30	Phillip de Jong	Agricultural counsellor. Embassy of the Kingdom of the Netherlands

Other consulted stakeholders:

1. Electronic questionnaire among members of the Russian Round Table of Greenport Holland International
2. Interviews by phone Metro Russia by phone. Pieter Boone (General Director), Maxim Gatsuts (Sales Director), Elena Kolesnik (General Director METRO Group Logistic (MGL)) and Yulia Kalistratova (Director Logistics).
3. Face to face interview Stefan Kanter, General Manager Russia/CIS, MSD Animal Health (former Intervet)

A1.2 Key figures of benchmark countries

	Export to Russia (agricultural products)			GDP/capita	
	2010	**% annual growth 2005-2010**	**Rank**	**2011**	**% annual growth 2006-2011**
	USD1,000			**USD**	
Russian Federation				13,089	13.5
Brazil	4,036,321	8.3	1	12,594	16.8
Belarus	2,719,589	18.5	2	5,820	8.9
Germany	2,466,639	14.7	3	43,689	4.4
Ukraine	1,876,263	6.3	4	3,615	9.4
Netherlands	1,773,602	12.1	5	50,087	3.9
China	1,467,467	16.0	6	5,430	21.3
USA	1,213,671	3.9	7	48,442	1.7
Lithuania	1,026,337	36.7	8	13,339	8.5
Poland	1,002,109	9.4	9	13,463	8.5
Turkey	998,529	20.0	10	10,498	6.4

Source: UNcomtrade and Word Development Indicators of the WorldBank.

Appendix 2

Self-sufficiency* of selected commodities

Product	Country	Self-sufficiency	Utilisation in percentage of domestic supply				
			Feed	Seed/ hatching	Waste	Pro-cessing	Food
1 Bovine Meat	Belarus	138	0.0	0.0	0.8	0.0	99.2
	Netherlands	132	0.0	0.0	0.0	0.0	100.0
	Poland	200	0.0	0.0	0.0	2.3	97.5
	Russian Federation	67	0.0	0.0	0.2	0.0	99.8
	Ukraine	101	0.0	0.0	0.0	0.0	94.4
Pig meat	Belarus	114	0.0	0.0	0.7	0.0	99.3
	Netherlands	232	0.0	0.0	0.0	0.1	99.9
	Poland	95	0.0	0.0	0.0	0.0	95.4
	Russian Federation	73	0.0	0.0	0.2	0.0	99.8
	Ukraine	80	0.0	0.0	0.0	0.0	100.0
Poultry Meat	Belarus	99	0.0	0.0	0.0	0.0	100.0
	Netherlands	207	0.0	0.0	0.0	7.0	93.0
	Poland	132	0.0	0.0	0.2	0.2	99.6
	Russian Federation	64	0.0	0.0	0.0	0.0	100.0
	Ukraine	81	0.0	0.0	0.0	0.3	99.7
Milk, Whole	Belarus	109	22.0	0.0	0.0	69.1	8.9
	Netherlands	101	0.0	0.0	0.0	79.8	20.0
	Poland	102	3.4	0.0	1.0	80.1	15.5
	Russian Federation	100	13.2	0.0	0.1	33.7	53.0
	Ukraine	101	13.2	0.0	0.1	33.7	51.4
Cheese	Belarus	391	0.0	0.0	0.0	0.0	100.0
	Netherlands	233	0.0	0.0	0.0	0.0	100.0
	Poland	121	0.0	0.0	0.0	3.6	96.4
	Russian Federation	74	0.0	0.0	0.0	0.0	100.0
	Ukraine	131	0.0	0.0	0.0	0.0	100.0
Eggs	Belarus	117	0.0	6.2	0.0	0.0	93.5
	Netherlands	222	0.0	19.7	0.4	0.0	80.0
	Poland	121	0.2	8.5	0.3	0.0	91.0
	Russian Federation	100	0.0	4.7	0.2	0.0	95.1
	Ukraine	102	1.8	3.9	0.2	0.0	80.2
Apples	Belarus	75	37.5	0.0	6.0	5.1	51.4
	Netherlands	73	0.0	0.0	0.6	2.0	97.5
	Poland	192	0.0	0.0	7.1	28.6	64.3
	Russian Federation	44	0.0	0.0	0.6	16.1	83.3
	Ukraine	95	4.6	0.0	1.5	35.2	58.7
Fruits (Total)	Belarus	62	19.4	0.0	6.1	5.1	69.3
	Netherlands	30	0.0	0.0	4.3	0.7	95.5
	Poland	119	0.0	0.0	8.7	12.9	78.4
	Russian Federation	30	0.0	0.0	0.6	13.6	85.9
	Ukraine	65	1.3	0.0	2.3	22.2	74.2

Product	Country	Self-sufficiency	Utilisation in percentage of domestic supply				
			Feed	Seed/ hatching	Waste	Pro-cessing	Food
Onions	Belarus	99	0.0	0.0	6.1	0.0	93.9
	Netherlands	750	0.0	0.0	25.2	0.0	74.8
	Poland	109	0.0	0.0	10.0	0.0	90.0
	Russian Federation	77	0.0	0.0	2.1	0.0	97.9
	Ukraine	103	0.0	0.0	0.9	0.0	99.1
Potatoes	Belarus	102	55.8	18.1	1.9	1.7	22.6
	Netherlands**	182	8.0	8.1	4.4	4.7	39.9
	Poland	105	30.0	12.9	8.3	1.7	44.8
	Russian Federation	98	22.8	18.5	4.4	1.6	52.6
	Ukraine	100	40.9	23.9	1.3	1.3	31.2
Tomatoes	Belarus	84	0.0	0.0	3.3	0.0	96.7
	Netherlands	408	0.0	0.0	25.4	0.0	96.4
	Poland	81	0.0	0.0	8.7	0.0	91.3
	Russian Federation	62	0.0	0.0	1.3	0.0	98.7
	Ukraine	97	0.0	0.0	0.9	0.0	99.1
Vegetables (Total)	Belarus	97	34.0	0.0	5.8	0.0	60.2
	Netherlands	264	0.0	0.0	12.5	0.0	90.4
	Poland	109	0.4	0.0	10.5	0.0	89.1
	Russian Federation	77	3.4	0.0	1.8	3.2	91.6
	Ukraine	100	16.5	0.0	2.0	2.5	79.1

* Data are based on the average value of 2007 to 2009 to mitigate fluctuations; ** 35% of the Dutch domestic potato supply is indicated as 'other utilisation.' These are 'starch-potatoes.'
Source: Calculation based on FAOstat, food balance sheets/ commodity.

Appendix 3

Consumption of vegetables in Russia, Netherlands and comparison countries

Fruits (kg/capita/yr)	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**
Belarus	26.2	34.4	52.9	41.2	52.9	53.3	65.8	65.8	66.1	65.7
Netherlands	121	122.1	143.5	133	129.1	132.5	143	136.6	128.1	129.8
Poland	47.2	54	49	48.9	49.7	51.2	51.8	46.6	57	56.4
Russian Federation	36.3	39.1	45.3	47.2	53.4	60.1	65.3	70.6	66.9	62.5
Ukraine	30.8	28.7	29.4	36	36.9	40.4	39.3	42.4	47.7	49.3
Vegetables (kg/capita/yr)	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**
Belarus	94.7	99.9	104.8	108.5	119.9	129	136.3	140.2	145.5	148.6
Netherlands	94.7	100.5	84.9	74.8	99.5	86.7	93	102.7	93	82.8
Poland	127.9	118.8	100.1	108.8	121.2	115	112.9	127.1	113.7	126.1
Russian Federation	88.3	90.2	92.1	96.4	101.7	106.3	109.6	116.1	103.8	124.2
Ukraine	102.3	106	109.3	115.2	116.5	128.6	149.4	128.1	146	155
Tomatoes (kg/capita/yr)	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**
Belarus	12.9	13.5	13.4	22.1	25.2	28.3	30	32.7	32.9	33.4
Netherlands	18.4	17.2	15.7	12.9	7.9	10.1	14.6	10.8	10.4	10.5
Poland	9.6	9.9	7.8	15.4	16	16.8	17.8	19.8	20.4	21.7
Russian Federation	14.3	16.3	16.9	17.5	18.5	21.7	23.2	19.9	21.9	23.4
Ukraine	22.7	24.3	27.8	26.9	25.1	33.3	38.7	29.9	34	45.4
Potatoes (kg/capita/yr)	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**
Belarus	174.3	172.7	171	173	185.7	181.7	188.6	188.8	190.2	182.8
Netherlands	103.7	90.8	97.2	89.8	86.9	85.3	77.2	92.1	92.8	93.5
Poland	133.5	131.2	131	129.9	129.4	126.4	131.6	120.9	119.1	116.9
Russian Federation	119	122.4	121.6	125.8	128.9	134.1	133.3	136.2	112.3	114
Ukraine	135.4	139.7	131.9	136.2	141.3	136.1	134.7	131.1	132.4	133.4
Onions (kg/capita/yr)	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**
Belarus	6.8	7.5	8.2	13.3	16.2	15.8	17.2	18.1	20.7	18.8
Netherlands	17.6	11	2.8	3.1	16.7	5.7	7.6	9.9	8.7	3.1
Poland	14	14.2	13.8	13.1	17.2	12.9	11.3	16.7	13	15
Russian Federation	10.9	10.6	12.1	14.4	15	15.2	15.7	13.3	14.7	13.2
Ukraine	11.3	11.1	10.6	10.7	14.9	15.9	18.5	14	23.7	17.8

Appendix 4

Description of retail formats[1]

a. *Discounter*
   A store with 300 to 1,000m^2 retail space, selling goods with a minimum margin of 5 to 7% and small assortment of 500 to 2,000 items of which 50% private-label products. According to Kolchevnikova (2011b) no clear discount formats exists according to the Western Standards.
b. *Supermarket.*
   This outlet has a retail space from 400 to 2,500m^2. At least 70% of the product line is food products and everyday goods. These stores benefit from convenient location in residential areas. They target thus consumers without in a car, low income households, elderly people and students.
c. *Hypermarket.*
   The store has a retail space of more than 2,500m^2. At least 35% of this space is used for sales of non-food products. In Russia food sales in hypermarkets counts for about 83% of the total sales value in 2010. Hypermarkets target car-owners of all income households. They are generally located on the outskirts of large cities or is the anchor store of large urban shopping centre.
d. *Cash & Carries*
   A retail outlet of 8,000m^2 working under the principle of small wholesaling, generally large-scale -big box stores. The format aims at trade customers, who must normally prove they represent a registered business.

[1] This appendix is largely based on Kolchevnikova (2011b).

LEI Wageningen UR develops economic expertise for government bodies and industry in the field of food, agriculture and the natural environment. By means of independent research, LEI offers its customers a solid basis for socially and strategically justifiable policy choices.

Together with the Department of Social Sciences and the Wageningen UR, Centre of Development Innovation, LEI Wageningen UR forms the Social Sciences Group.

More information: www.wageningenUR.nl/en/lei

LEI Memorandum 13-018