



IPM RESEARCH CENTER

Research • Forecasting • Monitoring

AGRI-FOOD SECTOR OF BELARUS: TRENDS, POLICIES, AND DEVELOPMENT PERSPECTIVES

01.04.2015

Prepared by the Research Centre of the Institute for Privatization and Management

Authors: Vasilina Akhramovich, Alexander Chubrik, Gleb Shymanovich

Acknowledgements. The authors gratefully acknowledge the valuable assistance by Dr. Irina Tochitskaya, academic director of the IPM Research Centre, Ms. Elena Schufmann, consultant of the IPM Research Centre, and Darya Uryutina, sociologist of the IPM Research Centre. The report benefited from the materials of the Belarusian Association of Renewable Energy, the Centre for Environmental Solutions, and the UNITER Investment Company.



This project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement no 612755

Content

1. MACROECONOMIC ENVIRONMENT AND POLICIES	7
1.1 Background data	7
1.2 Macroeconomic developments	8
1.3 Macro-economic and other general policies	10
1.4 Institutional environment of the agro-food sector	11
2. SITUATION AND DEVELOPMENT OF THE AGRICULTURAL SECTOR	14
2.1 Role of agricultural sector in the economy	14
2.2 Land use	15
2.3 Farm structures (including land properties)	16
2.4 Production and output (including major sectors and yields)	17
2.4.1 Crop production and yields	18
2.4.2 Animal production	23
2.4.3 Organic production	27
2.5 Prices, costs and income	27
2.5.1 Prices	27
2.5.2 Costs	30
2.5.3 Farm income	31
3. SITUATION AND DEVELOPMENT OF UPSTREAM AND DOWNSTREAM SECTORS	33
3.1 Input production and use	33
3.1.1 Input production	33
3.1.2 Input use	34
3.2 Food industry	36
3.2.1 Structure of the food industry	37
3.2.2 Prices, costs and performance indicators	44
3.2.3 Food policy framework and laws	47
3.3. Bioenergy production	49
3.4 Food retail and consumption patterns	50
3.4.1 Food retail sector	50
3.4.2 Patterns of human consumption	53
4. AGRI-FOOD TRADE AND TRADE RELATIONS	55
4.1 Agri-food trade	55
4.1.1 Overall agri-food trade	55
4.1.2 Agri-food trade by trading partner	57
4.1.3 Agri-food trade by products	59

4.2 Trade policy and infrastructures	62
4.2.1 Measures directly affecting trade imports and exports.....	62
4.2.2 Logistics and infrastructure	64
4.2.3 Main trade agreements.....	66
5. AGRICULTURAL POLICY AND INSTITUTIONAL ENVIRONMENT	68
5.1 Agricultural policy framework.....	68
5.1.1 Agricultural policy objectives and mechanisms	68
5.1.2 Institutional arrangements.....	69
5.2 Main agricultural policy instruments and measures.....	69
5.2.1 Market price support measures	69
5.2.2 Budgetary and other transfers to agriculture	70
6. FUTURE PERSPECTIVES FOR THE AGRICULTURAL AND FOOD SECTOR.....	75
6.1 Strengths and weaknesses of the agricultural and food sector	75
6.2 Potential of production and yields by sectors.....	76
6.3 Bottlenecks for the future development of agri-food sector	78
6.4 Growth attractiveness for specific commodities	79
7. CONCLUSIONS AND RECOMMENDATIONS	82
References.....	84
Annexes	86
Annex A. Import origin by commodity groups, 2013	86
Annex B. Yields of grains and milk in Belarus and selected EU countries.....	88
Annex C. Specification of the yields equation.....	89
Annex D. Producer prices in Belarus and selected EU countries	90

List of tables and figures

Figure 1.1. Map of Belarus: distribution of agricultural land	7
Figure 1.2. Doing business distance to frontier indicator, Belarus vs. the region	10
Figure 1.3. Education level of employees in agriculture	13
Figure 2.1. Crop production structure in Belarus at current prices, 2011–2013	18
Figure 2.2. Area, production and yields of cereals in Belarus, 2004–2013.....	19
Figure 2.3. Area and production and structure of cereals in Belarus, 2004 and 2013	20
Figure 2.4. Structure of vegetable area and production of fruits in Belarus	22
Figure 2.5. Area and yields of fodder crops in agricultural enterprises in Belarus	23
Figure 2.6. Structure of animal production in Belarus.....	24
Figure 2.7. Milk and egg production, 2004–2013	26
Figure 2.8. Dynamics of agricultural product prices	29
Figure 2.9. Cost structure and cost dynamics in agriculture in Belarus	30
Figure 2.10. Costs structure and dynamics in agriculture.....	31
Figure 2.11. Revenues and profitability of agriculture in Belarus.....	32
Figure 3.1. The role of food sector in industrial output and investment in Belarus.....	37
Figure 3.2. The role of food sector in employment and regional structure of the output	37
Figure 3.3. Structure of the food industry production, 2013.....	38
Figure 3.4. Meat and sausages production in Belarus, thousand t, 2005–2013.....	39
Figure 3.5. Production structure of dairy products and volume of sugar production in Belarus	41
Figure 3.6. Labour productivity dynamics in food industry	45
Figure 3.7. Price dynamics for food and agricultural products, level of 2004 = 100%, 2005–2013.....	46
Figure 3.8. Renewable energy sources in Belarus.....	50
Figure 3.9. Value added in trade (and vehicle repair) and role of food retail turnover in Belarus	51
Figure 3.10. Food retail growth rates and structure.....	51
Figure 3.11. Retail network in Belarus	52
Figure 3.12. Share of food products in the structure of households expenditures, 2004–2013.....	54
Figure 4.1. Total agricultural trade in Belarus, 2004–2013.....	55
Figure 4.2. Agricultural export by commodity groups (HS 2-digits), 2004–2013.....	56
Figure 4.3. Export prices and export volume increase of meat and dairy products, 2004–2013.....	56
Figure 4.4. Agricultural import by commodity groups (HS 2-digits), 2004–2013	57
Figure 4.5. Directions of the agri-food trade in Belarus, 2004–2013.....	58
Figure 4.6. Export destination by commodity groups in Belarus, 2013	58
Figure 4.7. Structure of meat and dairy products export in Belarus, 2009–2013	59
Figure 4.8. Structure of Belarus export to the EU and share of Belarus in the world trade of selected goods	61
Figure 4.9. Tariff protection of agricultural products in Belarus according to CU/CEA regulations.....	63
Figure 4.10. Tariff protection level of meat, milk and and related products in Belarus.....	63

Figure 4.11. Number of transactions and turnover of agricultural production section of commodity exchange	65
Figure 4.12. Belarus regional trade agreements obligations within CU/CEA	66
Figure 5.1. Breakdown of total budgetary support by source of financing	70
Figure 5.2. Indicators of domestic support in Belarus	71
Figure 5.3. Breakdown of producer support aimed at reducing variable input costs in Belarus	72
Figure 5.4. Breakdown of producer support aimed at reducing on-farm investment costs in Belarus	73
Figure 6.1. Yields in Belarus and neighbouring EU countries, 2004–2013.....	76
Figure 6.2. Average yields of grains and potatoes in 2004–2013 in Belarus in relation to soil productivity scores by rayons	77
Figure B.1. Yields of selected grains in Belarus, Germany, Poland and Baltic states in 2004–2013	88
Figure B.2. Yields of milk in Belarus, Germany, Poland and Baltic states in 2004–2013	88
Figure C.1. Residuals of the regression	89
Table 1.1. Main country view, 2013.....	7
Table 1.2. Main macroeconomic indicators in Belarus, 2004–2013	9
Table 1.3. FDI flows in Belarus, 2004–2013	11
Table 2.1. Key macroeconomic indicators of agriculture sector in Belarus, 2004–2013	15
Table 2.2. Agricultural land use in Belarus, 1989–2013, 1000 ha.....	15
Table 2.3. Agricultural holdings by type, 1989–2013, thousand ha.....	16
Table 2.4. Structure of agricultural enterprises by utilized land area, 2012, ha.....	17
Table 2.5. Structure of agricultural enterprises by type of ownership, %	17
Table 2.6. Agricultural output and its structure, 2004–2013.....	18
Table 2.7. Rape production, 2004–2013	21
Table 2.8. Production of vegetables, potatoes and fruits and berries, 2004–2013.....	21
Table 2.9. Production fodder and technical crops, 2004–2013	22
Table 2.10. Animal number in Belarus, thousand, 2004–2013.....	23
Table 2.11. Meat production in Belarus, live weight, thousand t, 2004–2013.....	23
Table 2.12. Agricultural output price index, yoy, %	28
Table 2.13. Average producer (selling) prices for certain agricultural products (BYR thousand/t).....	28
Table 2.14. Profitability of agricultural product sales, %, 2004–2013	32
Table 3.1. Balances of fertilizers and agricultural machines in Belarus, 2013	34
Table 3.2. Production of agricultural machinery, 2005–2013.....	34
Table 3.3. Fertilizer use in Belarus, 2004–2013	35
Table 3.4. Availability of agricultural machinery in Belarus, 2005–2013	36
Table 3.5. Production of dairy products, thousand t, 2004–2013	40
Table 3.6. Confectionary production, thousand t, 2004–2013	42
Table 3.7. Production of alcoholic beverages, million dal; and cigarettes, billion pieces, 2004–2013	43
Table 3.8. Production of some other food products, thousand t, 2004–2013	44
Table 3.9. Structure of the costs in food industry compared to the average in the economy, %, 2013	45
Table 3.10. Human consumption of food products per capita, 2009–2013	53

Table 4.1. Key Belarus export goods (HS 6-digits), 2009–2013.....	60
Table 4.2. Key Belarus import goods (HS 6-digits), 2009–2013	62
Table 4.3. Legal framework of non-tariff regulation of CU in relation to the rest of the world	63
Table 4.4. Structure of the Belarusian export supplies of agricultural products by distribution channels, %.....	65
Table 4.5. Main indicators of the Open Joint-stock Company “Belarusian Universal commodity exchange” for agricultural production section in 2013	65
Table 5.1. Budgetary and other transfers arising from policy measures that support agriculture in Belarus, USD million	71
Table 6.1. Assessment of the influence that domestic and external factors exert on the development of the agricultural and food sector in Belarus.....	79
Table 6.2. Yields and growth attractiveness for specific commodities in Belarus	80
Table 7.1. Policy recommendations for improving competitiveness of agri-food sector in Belarus	83
Table C.1. Estimated coefficients	89

1. MACROECONOMIC ENVIRONMENT AND POLICIES

1.1 Background data

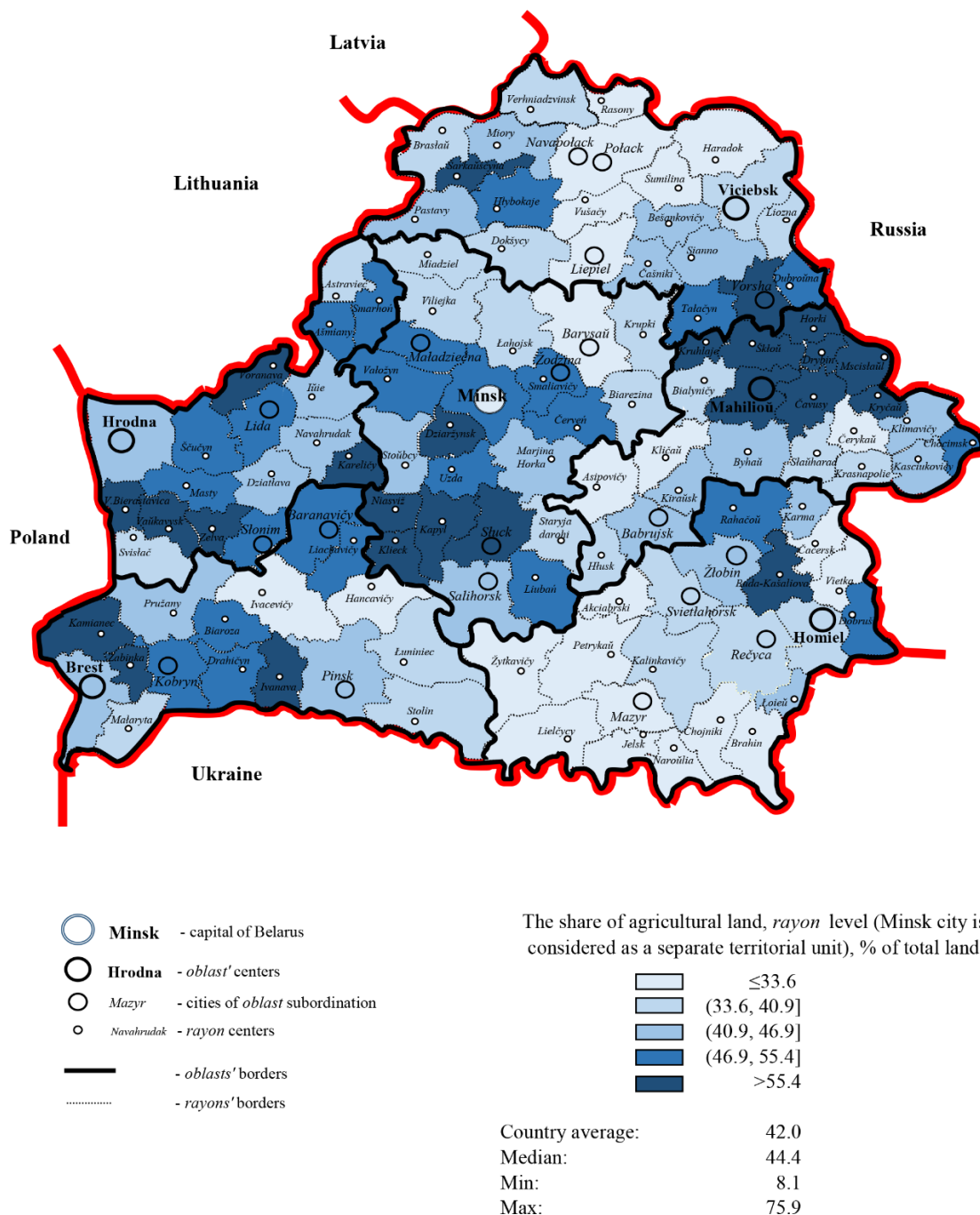


Figure 1.1. Map of Belarus: distribution of agricultural land

Table 1.1. Main country view, 2013

Belarus – Year 2013	
Population (1st January of 2014) (thousand inhabitants)	9,468
Area (sq. km)	207,595
Real GDP growth rate (% change on previous year)	0.9
Unemployment rate (%)*	6.1
Agricultural Utilized Area (thousand ha)	5,739.2
Agriculture, hunting and fishing (% of total GVA)	9.1

* Census 2009 data. Registered unemployment is 0.5%, while the LFS data are classified.

Source: Belstat.

Belarus is a landlocked, generally flat country without natural borders, neighbouring with Lithuania (Northwest), Latvia (North), Russia (Northeast and East), Ukraine (South), and Poland (West). It occupies an area of 207.6 thousand km²; extension from North to South is 560 km, from West to East is 650 km. The country has temperate continental climate with winters lasting between 105 and 145 days and summers up to 150 days. The average temperature in January is –6 °C and in July is 18 °C. Humidity is high, average annual precipitation ranges from 550 to 700 mm.

Belarus' plant formation consists of about 1,600 highest plants; species diversity includes about 1,000 mushrooms, 350 lichens, 400 mosses. Fauna of Belarus include more than 400 species of vertebrates and several dozens of invertebrates; wild fauna consists of 73 species of mammals and 290 species of birds.¹

According to the land register² (as of January 1, 2014), the share of utilized agricultural area was 26.8% of the country's territory, other agricultural land – 15.3%, forests – 41.6% (plus 3.2% under shrub vegetation), inland water and marshes – 6.4%. Roads and infrastructure cover 2.6% of the territory of Belarus, real estate development – another 1.7%. The agricultural and overall economic potential of the country was seriously affected by the Chernobyl accident: about 4.7% of utilized agricultural land was excluded from utilization, about ¼ of forests were contaminated in different extent, and significant share of mineral resource deposits were excluded from utilization³.

In terms of human resources, Belarus has declining population (since 1994) caused by low (although improving⁴) fertility and relatively high (although decreasing) death rates. In addition, Population Censuses of 1999 and 2009 revealed negative net migration as an additional important factor of the population decline (see e.g. Chubrik et al. (2009)). The share of rural population is steadily decreasing⁵ and at the beginning of 2014 it was equal to 23.2% of the total population (26.1% in 2009, 30.7% in 1999, 34.6% in 1989). Population pyramid in Belarus has transformed from stationary (early 1990th) to regressive. Aging is becoming an important challenge for Belarus' long-term development.

According to the census of 2009, Belarusians are the dominant nation (87.7% of the population). Russians are the largest foreign nationality (8.3%), but their share fell by 3.2 percentage points comparing to the Census-1999 and by 5 percentage points comparing to the Census-1989. Poles (3.1%) and Ukrainians (1.7%) are coming next. The share of any other nationality does not exceed 0.14%, which makes ethnic composition of the population homogenous.

1.2 Macroeconomic developments

European Bank for Reconstruction and Development ranks Belarus among the transition outsiders. However, according to the IMF estimates, Belarusian per capita GDP (in PPP) in 2013 exceeded the indicator of Bulgaria and Romania – new member states of the EU. Some facts should be taken into account to understand the phenomenon of Belarusian growth. First, Belarusian exports exceeds 60% of the GDP, and Belarusian companies (both private and state owned) should compete with companies from countries that are more advanced reformers. The second fact – state owned enterprises (SOEs) dominate in the economy (about 70% of GDP) and receive huge subsidies from the state (around 10% of GDP⁶, or from 1/5 to 1/4 of the general government budget). Through the state owned enterprises the government ensures effectiveness of its income policy and implements its investment programs financed either from the budget or via so called 'directed loans' provided by the state owned banks in accordance with the government regulations at preferential interest rates. The third fact is that

¹ Based on wikipedia articles (Belarusian and English).

² See http://www.gki.gov.by/upload/new%20structure/press%20service/GZK_2013.doc.

³ See http://www.chernobyl.gov.by/index.php?option=com_content&view=article&id=105&Itemid=54. More details here: http://www.chernobyl.gov.by/index.php?option=com_content&view=article&id=88&Itemid=38.

⁴ In 2013, the fertility rate amounted to 1.67 children per 1,000 woman of fertile age as compared to 1.23 children in 2003. However, it is still below 2.1-children reproductive threshold. The growing share of women born in the 1980th (the second wave of the post-war baby-boom) partially explains this increase.

⁵ Rural population is declining steadily since 1956.

⁶ World Bank, 2012.

macroeconomic policies in Belarus until recently closely correlated with electoral dynamics (see Chubrik, 2012).

Therefore, macroeconomic performance of Belarus is mixed. On the one hand, between 2004 and 2008, it demonstrated strong real GDP growth of 10% annually, but between 2009 and 2011 the country faced two currency crises (and the most recent happened in the end-2014). At the end of 2011, Belarusian Rouble cost only 26.2% of its end-2008 value. As a result, between 2009 and 2014, the average annual GDP growth rate fell to 2.9%, and if the fact that fast growth of 2010 and 2011 was enhanced by loose monetary and fiscal policies is taken into account, growth rate falls even lower (about 1.5% annually between 2012 and 2014). According to the estimates by the IPM Research Centre, by the end of 2014, the long-term trend of the annual growth rate of real GDP fell below 1.5% after more than 8% in 2007 (IPM Research Centre, 2014).

Fast growth of 2004–2008 was backed by two key factors: (i) domestic demand enhancing policies (especially strong before the constitutional referendum of 2004, presidential elections of 2006 and parliamentary elections of 2008) and (ii) low prices for gas and oil imported from Russia (so called “energy subsidy”). Strong growth of the global economy and high commodity prices also contributed to the “successes” of Belarusian economy. However, the rapid growth of the domestic demand led to a fast accumulation of the external imbalances followed by the first currency crisis. That time Belarus received the IMF stand-by loan, but the imbalances sustained and after the program completion increased dramatically: current account deficit exceeded 15% of the GDP (see Chubrik, 2014). Additionally, between 2007 and 2010, Russia withdrew large part of its energy subsidy⁷ that pushed Belarus towards external debt accumulation. Currently, after another large depreciation of the domestic currency in the end-2014, the authorities prefer to follow tight macroeconomic policy in order to prevent further destabilization of the money market and to regain confidence to their policy. This approach would lead to stagnation or recession, while high dollarization and inflation expectations keep inflation high even under rather tight monetary policy, and further debt accumulation as a source of current account deficit financing looks questionable.

Table 1.2. Main macroeconomic indicators in Belarus, 2004–2013

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Population (thousand inhabitants)	9,763	9,697	9,630	9,579	9,542	9,514	9,500	9,481	9,465	9,464
Real GDP growth rate (% change on previous year)	11.4	9.4	10.0	8.7	10.3	0.1	7.7	5.5	1.7	0.9
GDP at current prices (trillion BYR)	50.0	65.1	79.3	97.2	129.8	137.4	164.5	297.2	530.4	636.8
GDP per capita at current prices (million BYR)	5.2	6.8	8.3	10.2	13.6	14.5	17.3	31.4	56.0	67.3
GDP per capita at purchasing power (PPP; USD)	7,437	8,610	9,829	11,024	12,445	12,595	13,755	14,832	15,379	15,753
GVA at current prices (trillion BYR)	42.8	55.9	68.7	83.4	110.9	118.1	143.6	261.0	463.0	557.2
GDP deflator (%)	22.7	19.0	10.8	12.8	21.1	5.7	11.1	71.2	75.4	19.0
Inflation (annual average, % change on previous year)	18.1	10.3	7.0	8.4	14.8	13.0	7.7	53.2	59.2	18.3
Total employment (thousand persons)	4,324	4,414	4,470	4,518	4,611	4,644	4,666	4,655	4,577	4,518
Unemployment rate (%)*	1.9	1.5	1.1	1.0	0.8	0.9	0.7	0.6	0.5	0.5
Current account balance (% of GDP)	-5.2	1.5	-3.8	-6.7	-8.2	-12.5	-15.1	-9.9	-2.9	-10.2
General government balance (% of GDP)	0.0	-0.7	1.4	0.4	1.4	-0.7	-1.8	0.9	1.9	0.2
General government gross debt (% of GDP)	8.9	8.3	8.8	11.5	12.9	22.2	23.3	48.5	31.3	32.5
Exchange rate, annual average (BYR/EUR)**	2,698	2,684	2,715	2,959	3,046	3,983	4,007	8,332	10,778	11,834
Exchange rate, annual average (BYR/USD)**	2,164	2,155	2,146	2,149	2,149	2,803	2,994	5,984	8,370	8,971
Total government budget (trillion BYR)	22.1	31.3	37.3	47.6	63.8	63.8	71.2	106.8	200.1	266.9

* Official unemployment figures take into account only registered unemployment. According to the Censuses 1999 and 2009 data, the unemployment rate was 6.2 and 6.1% as of February 1999 and November 2009, respectively. Since 2012, the LFS was launched in Belarus, but the only LFS-based figure openly published was unemployment rate in May 2012 (5.1%).

** Between April and September of 2011, multiple exchange rate regime existed. For these months, the data on black market

⁷ Belarus gains from cheap gas (for instance, in 2013 its price for Belarus amounted to about 42% of the price for Germany) and cheap oil (in 2013 Belarus paid for the Russian crude oil about 50% of its market price) which Belarus refines and exports 3/4 of the refined volume. Prior to 2007, Belarus kept all price difference for itself. Between 2007 and 2009, Russia withdrew it partially via special export duties for crude oil supplied to Belarus. In 2010, Belarus paid market price for gas and for most of the oil imported from Russia. Since 2011, gas price fell to the domestic level of Russia, but Belarus started to return all duties collected from its exports of oil products.

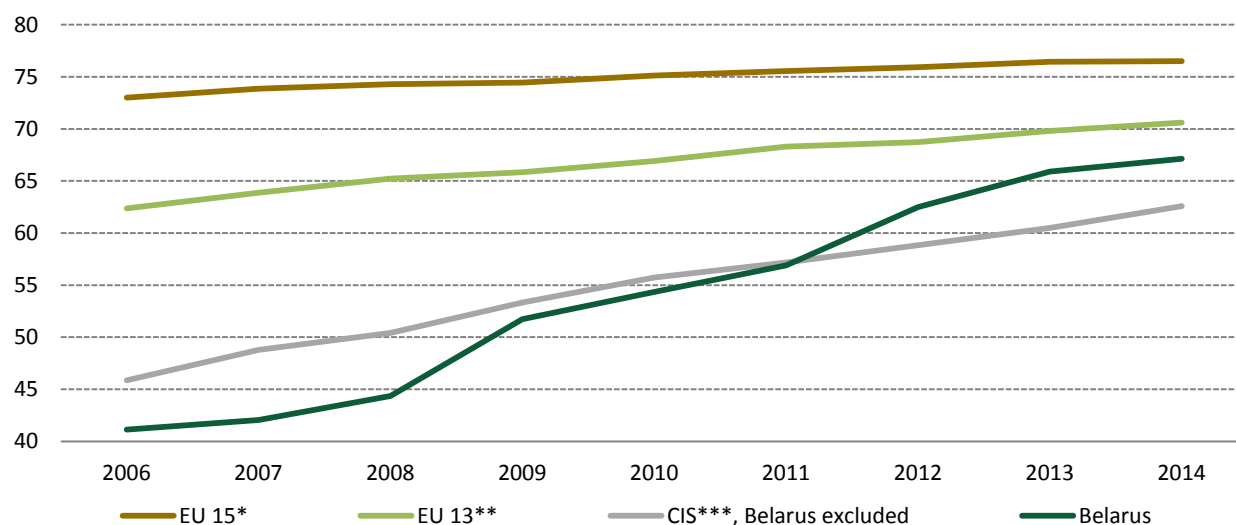
exchange rates was taken from the open sources, and the annual figure is calculated as monthly simple average (source – IPM Research Centre). Exchange rates for other years are weighted annual averages (source: NBB).

Sources: Belstat, NBB, IMF, IPM Research Centre, own estimates.

Situation at the labour market was determined by (somewhat populist) economic policy aimed at preserving employment in the sector of SOEs and by very low social protection of the unemployed. Provision of unemployment benefit is short-term (up to 6 months), conditioned on relief works, and extremely low (about 20% of subsistence minimum), which makes unattractive to register as an unemployed person officially (see e.g. Haiduk et al. (2006)). However, after the currency crisis of 2011 employment at SOEs has been reducing steadily, while small and medium enterprise (SME) development absorbed large part of this workforce. However, after the recent depreciation of the Russian Rouble the situation aggravated: SOEs started to release their workers faster, while SME sector does not have enough stimulus to expand. Contrary to this, many private companies that work at the Russian, Belarusian or Ukrainian markets undertake mass dismissals in order to cut their costs. It seems that the current crisis is deeper than the previous crises and may push forward more careful reform attempts.

1.3 Macro-economic and other general policies

International rankings provide mixed picture of Belarusian economic policies and business environment. Heritage Foundation puts Belarus at the end of the global rating of economic freedom (154th among 161 ranked countries). EBRD rankings also treat Belarus as regional outsider (see e.g. EBRD, 2014). However, the most recent World Bank's *Doing Business* ranking names Belarus as the world's fourth reformer in 2010–2015 and world's third reformer in 2006–2014. Since 2012, Belarus is performing better than the rest of the CIS. As a result, in 2013 the SME sector employed 18.6% of total employment as compared to 11.4% in 2005.



* Without Luxemburg. Indicators for the country groups are simple averages.

** Without Cyprus and Malta.

*** Including Georgia and Ukraine, without Turkmenistan; Belarus is excluded.

Source: World Bank (Doing Business, Distance to frontier database <http://doingbusiness.org/data/distance-to-frontier>).

Figure 1.2. Doing business distance to frontier indicator⁸, Belarus vs. the region

However, SME survey conducted by the IPM Research Centre in 2014 showed that external environment has a significant negative impact on most SME, while internal factors (i.e. controlled by an enterprise) are less important in explaining the success of a company. For almost all SME macroeconomic instability is the most important problem. Tax regulation and tax rates are impediments for doing business, as well as foreign currency regulation. At the same time, administrative procedures (obtaining registrations, licenses and permits) became less important burden for Belarusian SME, compared to the previous survey (see Shappo, Knuth, 2014; similar results were obtained in the IFC, 2013). However, SME sector is

⁸ See World Bank, 2013, p. 156 for methodological notes about this indicator.

heterogeneous, and attitude of enterprises to the environment differs a lot by companies. As it is demonstrated in Shappo and Knuth (2014), successful SMEs do not mention that external factors affect strongly their businesses, while a number of the most successful enterprises managed to benefit from administrative procedures, and the level of property rights protection.

In terms of foreign investment, the government's position is somewhat inconsistent. On the one hand, the government proposes many benefits for companies that may enter with greenfield investment. On the other, FDI increase through privatization is related only to several large privatization deals when large SOEs were sold to "insiders" (e.g. gas transportation company "Beltransgaz" to Russian "Gazprom" and some others). According to the existing legislation, FDI through privatization is more risky (see Znak, 2013), while uncertainty remains the largest issue for all investors. Moreover, Belarusian President has rather strict position towards privatization: it is not in the list of strategic priorities of the state. As a result, FDI stock per capita is one of the lowest in the region, and the large share of this investment came as either already mentioned big privatization deals or via reinvesting of revenues.

Table 1.3. FDI flows in Belarus, 2004–2013

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
FDI (million USD), of which:	163.8	306.6	357.1	1,807.3	2,187.9	1,876.5	1,393.4	4,002.4	1,463.6	2,232.7
in agricultural sector*	na	na	na	na	na	na	4.0	8.4	17.4	na
in food-processing sector*	na	na	na	na	na	na	30.8	78.2	65.4	na

* Until 2010, Belstat provided sectoral data on FDI in "national definition" only, which considers trade loans as FDI. As a result, Belstat data was inconsistent with NBB data and overvalued FDI inflows substantially (sometimes by an order of magnitude).

Source: Belstat.

1.4 Institutional environment of the agro-food sector

State regulations

The agricultural sector of Belarus is represented mainly by large state-owned enterprises. Private sector is represented mainly by subsistence farming (22.1% of the total agricultural output), while farm enterprises produce only about 1.5% of the total agricultural output. Furthermore, agricultural land is fully state-owned, while enterprises and farmers have to rent it. Access to the land by farmers is limited as agricultural enterprises enjoy preferential treatment by local authorities.

Prevalence of the state ownership implies that the agricultural sector is subject to numerous regulations. On the one hand, producers are subject to direct price regulation that may limit their profitability. On the other, the government provides many preferences/direct subsidies to state-owned agricultural enterprises, including:

1. Direct government spending (including financing of respective government programs⁹).
2. Tax exemptions.

A "special" position of the agricultural sector could be illustrated with the ratio of after-tax profit to gross profit. In 2013, this share amounted to 0.989 in agriculture and 0.747 in other sectors, or, in other words, effective profit tax rate for agriculture was 1.1% as compared to 25.3% for other sectors (actual tax rate was 24%). Overall, agricultural producers have the following tax preferences:

- Lower VAT (10% for the most products instead of 20%);
- Exemptions from farm real estate tax;
- Permission to use a single tax (1% of revenues) if agricultural production generates at least 50% of a company's or its affiliates' revenues;
- Exemptions from profit tax;
- Lower social insurance contribution (22% between 2011 and 2014 instead of 34%) and possibility to postpone its payment;
- Other exemptions obtained within government programs.

⁹ As of the end-2014, 20 government programs related to agriculture were implemented in Belarus.

3. Loans at below-market interest rate, government guarantees for loans to agricultural enterprises.

The authorities make a special focus on providing agricultural enterprises with access to credits. The government adopts the plan of government programs annually, financed by Belarusian banks that include the list of investment projects and size of crediting (directed loans). Estimated average annual interest rate for preferential loans to agriculture is about 6.5–7%¹⁰ (Mitrofanova, 2014) – far below the market rates. Additionally, the maturity of these loans is high – up to 12 years. Considering this together with the fact that the real interest rates for these loans are negative, directed loans provide additional subsidy for agricultural producers. To compensate bank losses, the government covers interest rate gap and provides capital injections for the state banks that service government programs or provides additional subsidy for agricultural enterprises to pay off bank loans. The practice of directed crediting of the agricultural sector creates significant market distortions and reduces the total factor productivity (Kruk, Haiduk, 2013).

4. Practices of debt restructuring according to the government regulations.

The government regularly provides agricultural producers with deferment of payments on their debt arrears and other forms of debt restructuring.

5. Subsidising of compulsory insurance.

The government pays 95% of insurance contribution to the state insurance company “Belgosstrakh” (provider of compulsory insurance of agricultural products).

6. Cross-subsidization.

Agricultural producers often get lower prices for fuel, machinery, electricity and other goods and services. On the other hand, the government sets up ceiling prices for many agricultural products. As a result, on the one hand, authorities reduce costs in agriculture (while industrial producers usually have higher tariffs, e.g. on electricity¹¹). On the other, agricultural producer price regulation provides indirect subsidies for food processing industry and final consumers, thus distorting incentives and generating market inefficiencies.

However, the government plans to revise the system of the state support to agriculture. According to the statement of the Deputy Minister of Finance Mr. Maxim Ermolovich, the revised version will include quantitative efficiency indicators, define priority areas (based on a net social benefit), and will set a single operator of government programs (the Development Bank).

Regulations within the Customs Union and the Common Economic Area

Additionally, as Belarus joined the Customs Union (CU) and the Common Economic Area (CEA) with Russia and Kazakhstan, it should follow the WTO regulations of agriculture subsidization. This may serve an external anchor for faster and deeper reform of the state support of agricultural sector.

Establishment of the Customs Union and the Common Economic Area of Belarus, Kazakhstan and Russia limited the scope of Belarus foreign trade regulations. First, member-states apply unified measures of customs and tariff regulation. The regulation is based on the obligations the member countries of the WTO. It implies that Belarus has to reduce level of tariff protection and apply almost all regulations that Russia negotiated with the WTO. Second, the Customs Union and the Common Economic Area implies common system of non-tariff regulation, including veterinary, sanitary and phytosanitary control. WTO obligations of Russia imply improved transparency in application of these norms within the CU and the CEA. However, WTO regulations of sanitary and phytosanitary norms allow for flexibility. Hence, technical norms of the CU and the CEA differ from the EU norms. There are also possibilities for application of related protection measures, if they are based on the research findings.

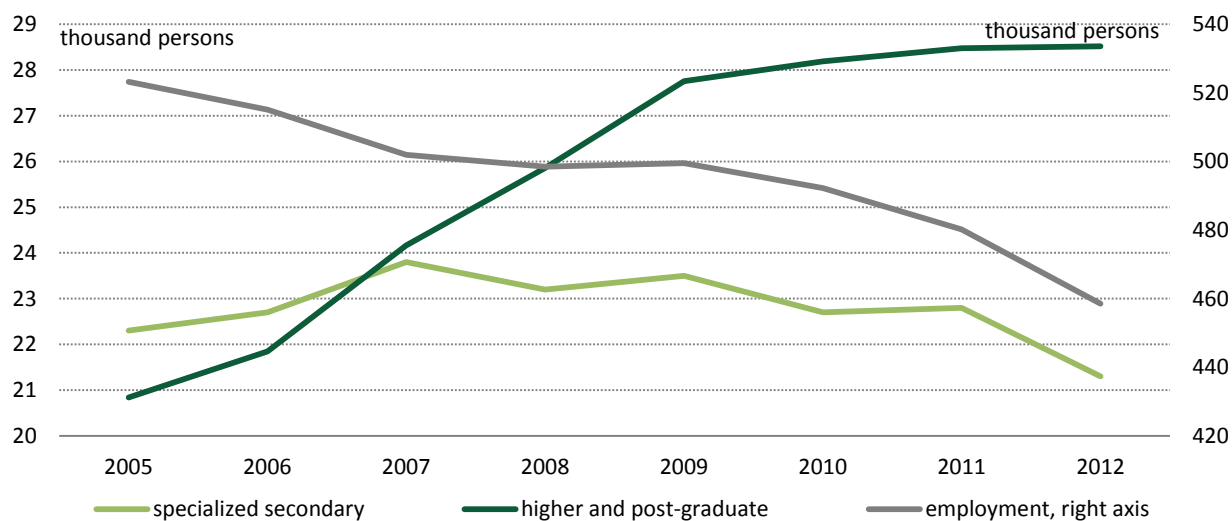
¹⁰ In September 2014, average annual interest rate for bank loans (both short and long-term) to agricultural enterprises amounted to 10.2%, while agricultural price growth amounted to 20.3% yoy.

¹¹ See World Bank, 2011.

Human resources

In terms of attractiveness, agriculture offers one of the lowest wages among sectors of the economy of Belarus (76% of the country average in 2013). Along with poorer infrastructure (including access to utilities, education, health care, etc.¹²) it pushes workforce out of the rural area. Between 1989 and 2013, the working age population in rural area fell by 526.6 thousand, while in urban settlements it increased by 464.6 thousand in the same period. At the end of 2013, the share of working age population in rural area was 52.2%, compared to 61.6% in urban area. Moreover, between 1989 and 2013 population below the working age fell by half, which may create a deficit of the workforce. Although there is a large room for efficiency increase in agriculture, this requires retraining of the existing labour force and creates challenges for domestic education system.

Belarus has four agricultural universities that provide education in 35 specialities (the largest one is Belarusian State Agricultural Academy in Horki, Mahiliou *oblast*). Additionally, Agricultural Academy and Belarusian State Agrarian Technical University have regional affiliates (5 and 1 respectively) on the base of agricultural colleges. Specialized secondary education in agriculture is provided by 27 colleges (18 specialities), vocational education – in about 40 specialized vocational colleges and schools (8 specialities). The number of students of agricultural specialties in higher educational institutions is growing, while the number of students in specialized secondary and vocational education is decreasing. In fact, dynamics of the number of students of secondary educational institutions (vocational and specialized) follows the dynamics of employment in agriculture, (see Figure 1.3). As a result, education structure of employment in agriculture is changing. Between end-2007 and end-2012, the share of agricultural¹³ workers with higher education increased by 1.2 percentage points; the share of workers with specialized and vocational education also increased by 1.2 and 2.6 percentage points respectively at the expense of the workers with secondary and basic education. However, current trends in secondary specialized education imply that this growth should stop in the future.



Source: Own estimates based on Belstat data.

Figure 1.3. Education level of employees in agriculture

¹² See e.g. IPM Research Centre, 2013.

¹³ Agriculture and forestry.

2. SITUATION AND DEVELOPMENT OF THE AGRICULTURAL SECTOR

2.1 Role of agricultural sector in the economy

Agriculture sector does not dominate in Belarusian economy. It generates slightly less than 10% of the value added. In 2013, the share fell to 9.1%. Dynamics of the agricultural sector production do not follow a typical business cycle, as it is determined by environmental factors, including veterinary-sanitarian issues, external factors influencing prices of agricultural products, and state agricultural policy. For instance, fall in agricultural production in 2013 was related to harsher weather conditions and African swine fever rather than weak economic environment.

Share of agriculture in employment is slightly higher being around 10–11% (see Table 2.1). It is close to the average level of the CEE region, although contribution of agricultural sector to the GDP in CEE region is significantly lower (around 5% on average). This is related to the differences in the organizational structure of agricultural sector in Belarus and CEE region, as agricultural production in Belarus is capital-intensive and is dominated by large agricultural holdings (see section 2.3).

Agriculture sector plays a key role in the economic policy of Belarus. Direct public support to this sector constitutes around 7–9% of the general government expenditures (see Table 2.1) or 3–4% of GDP. The World Bank estimated public subsidies to the sector at the level of 5% of the GDP in 2010. It implies that state support in Belarus plays similar role in agricultural production as in OECD or EU countries. However, significant size of the sector creates burden to the public finances¹⁴. Furthermore, the sector benefits from directed lending. Its scale was estimated at 20% of all loans provided to the economy in Belarus in 2006–2011 (Kruk, Haiduk, 2013). As a result, agriculture accumulates around 15% of all investments in fixed capital in Belarus. In some years the share was close to 20%. In 2014, it decreased to 14% as tight monetary policy, aimed at sustaining macroeconomic stability, implied constriction of directed lending.

Special public attention to agriculture is partly politically driven, but it has economic rational as well. First, the sector is the primary in providing employment in rural area. It stands almost for half of the total employment in rural area (46.7% in 2011). Provision of employment possibilities in rural area is an important instrument of poverty reduction in Belarus, as state support to vulnerable groups is very limited while possibilities for entrepreneurship and farming are constrained by business regulations (IPM Research Centre, 2013). Wages in agriculture sector are lower than average (see Table 2.1). But the gap is narrowing as the government supports wage increase in the sector. This policy is aimed also at reduction of incentives for rural-urban migration, which is determined by unattractiveness of employment in agriculture (Shahotska, Bobrova, Shymanovich, 2013).

Second, foreign trade in agri-food products is characterized by surplus, which contributes to the reduction of the pressure on the currency market, rooted in permanent current account deficit. Trade in agri-food products began to generate surplus in 2010, when exports of dairy products began to grow rapidly due to the negotiated price increase on milk powder with Russia. In 2013, the surplus amounted to USD 1.5 billion, which limited the trade deficit down to USD 4.5 billion and current account deficit down to USD 7.3 billion.

Still, the volume of the current account deficit is significant and its reduction is a key task for Belarusian authorities. In 2014, it was largely achieved by import reduction, as export increase is more complicated. Machinery and equipment that constitute a large share of Belarus export, are lacking competitiveness and suffer from the economic slowdown in Russia. Food products export is undermined by the consequences of the African swine fever, but has some potential for increase as Russia close its market for food products from the EU, USA and other countries implementing sanctions against Russia. Hence,

¹⁴ EU average support to the agriculture equaled to 0.8% of GDP in 2013, while average contribution of the sector to the GDP was only 1.7%.

in the long-run Belarusian government will continue supporting agriculture in persuading the goal of export increase.

Table 2.1. Key macroeconomic indicators of agriculture sector in Belarus, 2004–2013

	2004*	2005	2006	2007	2008	2009	2010	2011	2012	2013
Agriculture value added growth rate, %	13.7	2.4	5.9	4.7	8.7	0.2	2.4	6.8	6.5	-4.2
Share of agriculture in GVA, %	9.7	9.8	9.8	9.5	10.0	9.7	10.5	9.4	9.7	9.1
Employment in agriculture, thousand persons	463.4	523.2	517.8	507.6	498.5	499.5	492.2	480.2	458.5	433.4
Share of agriculture in employment, %	10.7	11.9	11.6	11.2	10.8	10.8	10.6	10.3	10.0	9.5
Wages, % of average	58.0	65.4	65.8	64.7	67.8	69.9	69.0	70.1	75.3	76.3
Share of agriculture in investments in fixed capital, %	8.4	13.6	17.5	15.0	15.6	19.0	17.8	13.0	16.1	14.0
Share of general government expenditures on agriculture in total expenditures, % (GFS)	8.8	9.5	9.4	8.7	7.6	8.8	7.9	8.4	6.8	--
Share agri-food products in export, %**	8.5	8.3	7.5	7.5	6.8	10.7	12.9	9.5	10.7	15.0
Share of agri-food products in import, %**	10.7	10.7	9.4	7.9	7.7	8.2	8.2	7.0	7.8	9.5
Agri-food trade balance, USD billion	-0.6	-0.5	-0.6	-0.5	-0.8	-0.1	0.4	0.7	1.3	1.5
Current account balance, USD billion	-1.2	0.5	-1.4	-3.0	-5.0	-6.1	-8.3	-5.1	-1.8	-7.3

Notes.

* Data for 2004 for value added, investments, employment, and wages in agriculture are based on All-Union Classifier of Economy Branches. Since 2005, data presented cover agriculture, hunting and forestry as it is understood in Common Classifier of Economic Activity.

** Calculated based on the HS codes from 01 to 24.

Sources: Belarusian Statistical Committee, UN Comtrade, IMF GFS.

2.2 Land use

The share of agricultural land in Belarus has been steadily falling. The total area of agricultural land has decreased by 0.7 million ha since 1991 when Belarus regained its independence. It is partly related to the problem of soil erosion, which stems from the unsound introduction of land into agricultural use in the Soviet times. One third of the agricultural land in Belarus is drained (2.9 million ha in 2013) and exposed to a high risk of degradation. The process of agricultural land reduction is organized within the state program of land use optimization adopted in 2001. Most of the land taken out from agricultural use is turned into forest and bushland, area of which steadily increases (from 8.8 million ha in 2004 up to 9.4 million ha in 2013).

Table 2.2. Agricultural land use in Belarus, 1989–2013, 1000 ha

	1991	2001	2005	2009	2013
Land area, total	20,760.0	20,760.0	20,760.0	20,760.0	20,760.0
Agricultural land, total	9,414.8	9,257.7	9,076.3	8,944.7	8,817.3
Arable land	6,088.3*	6,133.2	5,547.9	5,516.4	5,521.6
Land under permanent crops	Na	123.5	119.2	120.8	119.9
Meadows	3,090.8*	2,995.1	3,289.7	3,279.7	3,154.0
Other agricultural land**	151.1*	5.9	119.5	27.8	21.8
Wooden area	8,229	8,437	8,335	8,512	8,588
Land under bogs and water bodies	1,407	1,440	1,395	1,364	1,330
Other land***	1,709	1,625	1,954	1,939	2,025

Note. * Data on arable land, meadows and other agricultural land in 1991 is provided on different methodology. It covers agricultural land used by land users engaged in agricultural production, which amounted to 9,330.2 in 1991.

** Fallow land in 2001–2013. It includes land under permanent crops in 1991.

*** It includes roads and transport facilities, streets, buildings, and disturbed land. Disturbed land is around 500 thousand ha as a result of Chernobyl disaster.

Sources: Belarusian Statistical Committee.

Most of the reduction of the agricultural land took place at the expense of the arable land. Its area shrank by 0.6 million ha in 2001–2013. The meadow land, on the contrary, slightly increased in this period (see Table 2.2). However, the increase took place in the last decade of the XX century. Nowadays the trend is opposite. Meadows area fell almost by 0.2 million ha within 2012–2013, as part of it was

turned into arable land¹⁵. This contributed to the stabilization of the arable land area and its slightly growth in 2012–2013. More than half of meadows are situated on the drained land (1.6 million ha).

The area of land under permanent crops is rather stable, and almost half of it (42.3% in 2013) is used for households subsistence farming. Large-scale orchards designed for commercial use are not wide-spread in Belarus.

2.3 Farm structures (including land properties)

Agricultural sector in Belarus is dominated by large agricultural enterprises. They utilize 86.5% of the agricultural land in Belarus. This share is lower than in 1991, but it grew steadily in the last decade (see Table 2.3). The growth was accompanied by the reduction of the land area utilized by households for subsistence farming that reached its maximum in 1996 and then decreased by 40% by 2013. On the one hand, this trend is explained by negative demographic dynamics in rural area. On the other hand, the increase of population welfare reduced the role of subsistence farming as a coping strategy¹⁶. Farmers utilized only 1.6% of agricultural land in 2013.

Table 2.3. Agricultural holdings by type, 1989–2013, thousand ha

	1991	1996	2006	2009	2013
Agricultural land area, total, thousand ha	9,414.8	9,338.8	9,011.5	8,944.7	8,817.3
Agricultural enterprises	8,728.0	7,753.0	7,484.7	7,634.8	7,628.1
Farms	1.3	53.1	130.5	103.0	138.3
Households	600.9	1,466.9	1,226.5	1,020.9	881.4
Other (fallout)	84.6	65.8	169.8	186.0	169.5
Number of organizations					
Agricultural enterprises	Na	na	1,900.0	1,813.0	1,530.0
Farms	71.0	3,029.0	2,222.0	1,867.0	2,436.0
Land per organization, ha					
Agricultural enterprises	Na	na	3,939.3	4,211.1	4,985.7
Farms	18.3	17.5	58.7	55.2	56.8

Note. Data from 2006 based on main economic activity of the enterprise or farm according to Common Classifier of Economic Activity.

Source: Belarusian Statistical Committee.

Number of farmers varied significantly from year to year. In the middle 1990-s it exceeded 3,000, as small business (including farming) development was part of structural reforms in Belarus. Collapse of these reforms¹⁷ and following retrenchment to state controlled economy made farmers less competitive than large agricultural enterprises. A new wave of farming began in 2009, as situation in the sector and economy as a whole became more liberal, and situation in external markets for Belarusian agricultural products improved. However, the size of the average farm by utilized agricultural area remains rather small and incomparable with the average area of agricultural enterprise (see Table 2.3). Farmers generate only 1.5% of the total agricultural output. They focus largely on crops and generate 2.7% of the total crop output. Their role is relatively high in production of vegetables, where economy of scale is less obvious than in grains. Farmer's share in vegetable production was equal to 13.8% in 2013. Still, grains account for most of the land cultivated by farmers (52.1% of cultivated area), while vegetables stand for less than 10% of the cultivated area (9.1% in 2013).

Agricultural enterprises on average have up to 5 thousand ha of land at their disposal. Number of enterprises utilizing less than 2 thousand ha is very limited. Land area of majority of enterprises is between 2 and 8 thousand ha (see Table 2.4). However, enterprises with more than 10 thousand ha are also common for Belarus. Statistics reveals that the average land area of agricultural enterprises is growing, while the number of enterprises is falling. It is a result of the state policy of increasing concentration in agricultural sector (as well as other sectors of the economy) creating holdings and affiliating loss-making enterprises to more competitive enterprises.

¹⁵ http://www.nsmos.by/tmp/fckimages/01_2013.pdf.

¹⁶ For relation between subsistence farming and household income see IPM (2012), p.26.

¹⁷ See EBRD transition indicators <http://www.ebrd.com/downloads/research/economics/macrodatab/tic2012.xlsx>.

Table 2.4. Structure of agricultural enterprises by utilized land area, 2012, ha

	Number of enterprise	%
< 1000	13	1.2
1000–2000	21	1.9
2000–4000	298	27.4
4000–6000	372	34.2
6000–8000	215	19.7
8000–10000	100	9.2
10000–15000	60	5.5
15000–20000	9	0.8
≥ 20000	1	0.1
Total	1089	100.0

Note. * Data covers only enterprises under control of Ministry of Agriculture and Food.

Source: Zaprudskaya, Gorbachev (2013).

Table 2.5. Structure of agricultural enterprises by type of ownership, %

	2006	2013
Total	1900	1530
Private ownership	1397	1157
of which mixed:		
with state share	78	409
with foreign share	21	53
Public ownership	489	337
Republican	137	31
Community	352	306
Foreign ownership	14	36

Source: Belarusian Statistical Committee.

Number of agricultural enterprises shrank by 370 entities (by 19%) within 2006–2013. Most of the reduction occurred within private companies without state share, as their number fell from 1,319 to 748. According to statistics, the number of public owned companies also decreased by 152 entities. However it was only due to the fact that agricultural enterprises of republican ownership were either turned into community owned enterprises or corporatized without being privatized. As corporatized companies are viewed as private (with the state share) by Belarusian statistics irrespectively of the actual share of the state ownership in the company, it resulted in the increase in the number of private companies with state share from 78 to 409. So in practice, the number of agricultural enterprises controlled by the government increased by 179 legal entities within 2006–2013, which is a sign of increasing state control in the sector. Moreover private companies are mainly represented by collective farms that are not truly private, as the director of a farm is pointed by local authorities and the state has other instruments of control over these farms (Burduk, 2014).

Households produce more than 20% of the total agricultural output in Belarus (22.1% in 2013). They produce different kinds of crops, as they stand for more than one third of the total crop production (37.2% in 2013). Households play the most important role in the labour intensive sectors of vegetables, potatoes, and fruits and berries production. They accounted for 68%, 80.2% and 78.1% of the total production of these products in 2013. Contribution of households to animal production is much lower (9.1% in 2013).

2.4 Production and output (including major sectors and yields)

Agricultural output in constant prices grew in Belarus despite the decrease of agricultural land area. In 2004–2013, the growth rates were not stable, fluctuating within a range between 1% and 12.6%. The highest growth rates were observed in 2004 and 2008. Reduction of the agricultural output was recorded only once, in 2013, after two years of steady increase.

Fluctuations in agricultural growth rates in Belarus are largely caused by crop output dynamics. Crop production at significant extent depends on weather conditions. Rather favourable conditions in 2004, 2008 and 2011–2012 led to a rapid growth of crop production. Consequently, the following years - 2005, 2009 and 2013 - were characterized by production decrease. Dynamics of animal production were more stable, depending on economic policy and investments at greater extent than crop production. Animal

production grew at average rate of 5.5% in 2004–2012. The situation changed in 2013 as Belarus faced problem of African swine fever and meat export prices decrease.

Table 2.6. Agricultural output and its structure, 2004–2013

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Growth rates of agricultural goods output in constant prices, % yoy	12.6	1.7	5.9	4.1	8.9	1.0	2.5	6.6	6.6	-4.2
Crop output	16.1	-3.6	5.2	5.5	11.1	-2.8	1.3	9.6	7.4	-8.6
Animal output	7.5	8.5	6.9	2.2	6.0	6.0	3.8	2.8	5.8	-0.5
Structure of agricultural goods output at current prices, %	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Crop output	54.3	52.6	54.2	54.3	55.6	53.5	56.0	52.6	46.0	46.4
Animal output	45.7	47.4	45.8	45.7	44.4	46.5	44.0	47.4	54.0	53.6

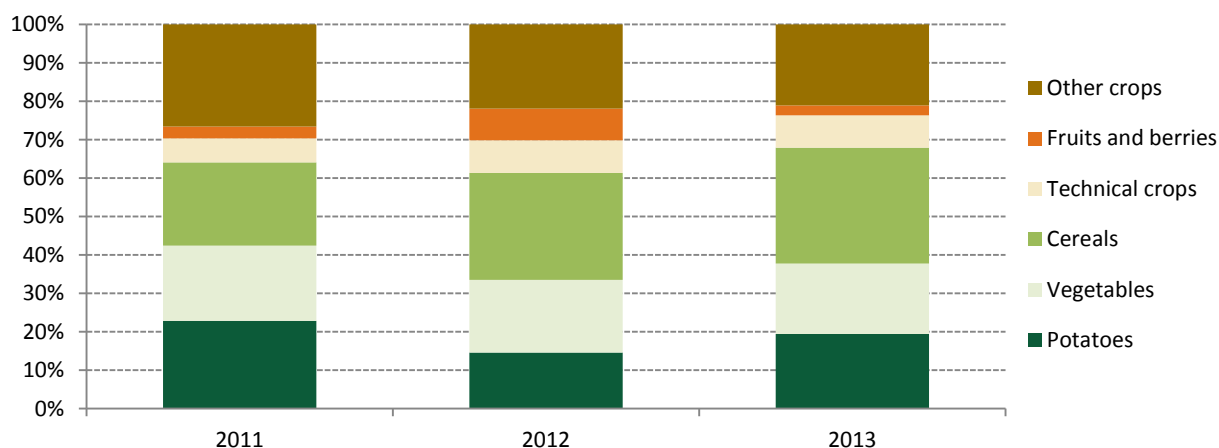
Source: Belarusian Statistical Committee.

The highest growth rates of agricultural production are generated by farmers. Volume of their agricultural production increased 3 times within 2005–2013, but that did not influence the overall dynamics of the sector much as the share of farmers in the total agricultural output is small. Most of the increase occurred in crop production (3.4 times), while animal production of farmers grew with the same rates as agricultural enterprises animal production (by 60%). At the same time, agricultural production of households did not grow, as the area of cultivated land shrank significantly. Households reduced animal production (by 36% between 2005 and 2013) due to ageing of rural population and high labour intensity of animal breeding by households, while crop production slightly grew (by 12.1%).

In general, output of crop and animal production measured in current prices is almost equal. Crop output was slightly larger than animal one until 2012 (see Table 2.6). Its share reached the maximum of 56% in 2010. Afterwards, the increase of milk price due to the export to Russia determined change in the agricultural output structure towards increase of the share of animal production. It exceeded 50% in 2012 and was equal to 53.6% in 2013. Despite equal output, the sectors are treated very differently by agricultural policy. Crop production is viewed as subordinated to animal production, as latter generates most of agricultural exports.

2.4.1 Crop production and yields

Main crops produced in Belarus are cereals, potatoes and vegetables. However, the structure of crop production is not stable (see Figure 2.1). It is very sensitive to yields observed in a specific year and determined by external factors, and changes in prices. For instance the share of potatoes in crop production fell from 22.8% in 2011 to 14.6% in 2012 (as relative prices of potatoes decreased dramatically, see Tables 2.12–2.13). On the contrary, the share of cereals grew from 21.7 to 27.8% (against a background of relative price increase). Very dependent on specific weather conditions is production of fruits and berries. Its relatively high share of 8.3% in 2013 is explained by good harvest of apples in the region that year. The only firm trend in the structure of crop production is gradually growing share of technical crops, as increasing of rape oil and sugar production is determined by the state policy.



Source: Belarusian Statistical Committee.

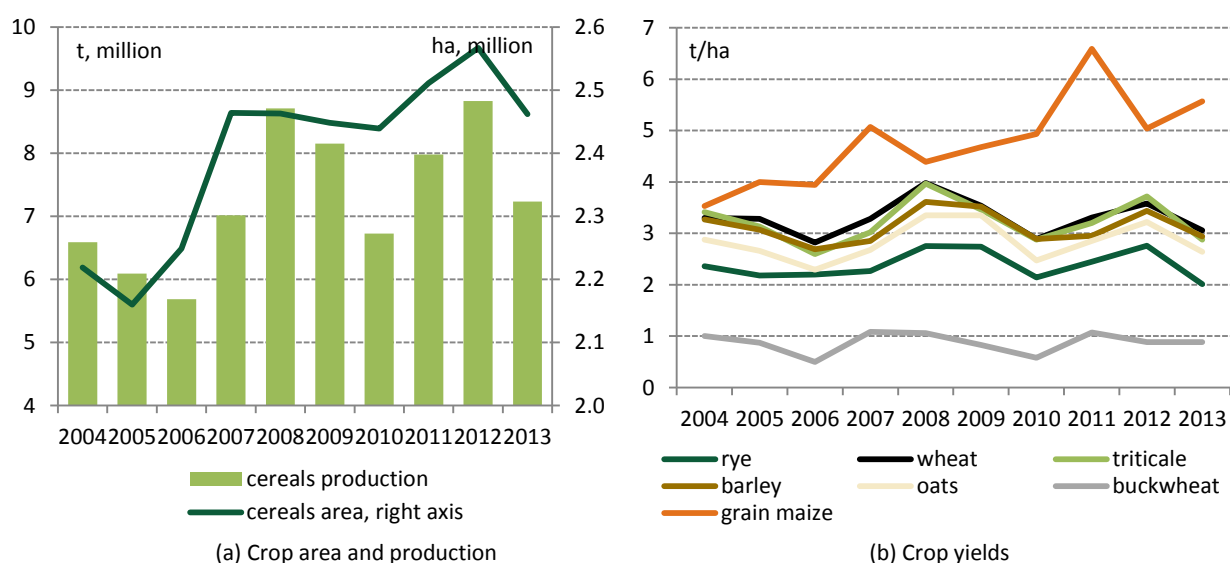
Figure 2.1. Crop production structure in Belarus at current prices, 2011–2013

Cereals and technical crops are almost exclusively produced by agricultural enterprises. At the same time, production of vegetables and potatoes is out of focus of large agricultural enterprises. Enterprises accounted only for 18.2% and 15.4% of the production of these crops in 2013. A decade ago, the corresponding shares of enterprises were even lower (11% and 7.4% in 2005), as production of vegetables and potatoes was dominated by households (86.1 and 96.1% respectively). Low growth rates of household crop production, as well as increase in farmers' production have led to a more diversified structure of vegetable and potato production by different types of agricultural holdings¹⁸.

2.4.1.1 Cereals

Land area under cereals increased significantly in the period of 2004–2013. The current level of around 2.5 million ha of cereals corresponds to the level of early 1990-s, while the historical minimum of the area cultivated under cereals was observed in 2003. The recent growth of sown area of cereals took place partly at the expense of area under potatoes and vegetables. Most of the increase occurred in 2007–2008 (see Figure 2.2a) and was fuelled by cereal price increase relative to other crops (see Tables 2.12–2.13). Cereals are primary used as a forage crop, so their price determines the competitiveness of meat production. Local cereal prices are set lower than world prices, but have to follow world trends. Price hike of cereals in 2011 made cereal import very costly and the government stimulated local cereal production raising output prices. As a result of this policy, cereal production grew in the long-term (see Figure 2.2a). In general, current level of production of around 8 million tons (between 2008 and 2013) is much higher than in late 1980s or early 1990s, when production of cereals in Belarus was around 5 million tons. It implies significant growth of the average yields of cereals in Belarus in the last 20 years. However, short-term dynamics of cereal production and yields is very unstable, as climatic conditions are not very favourable for grains cultivation.

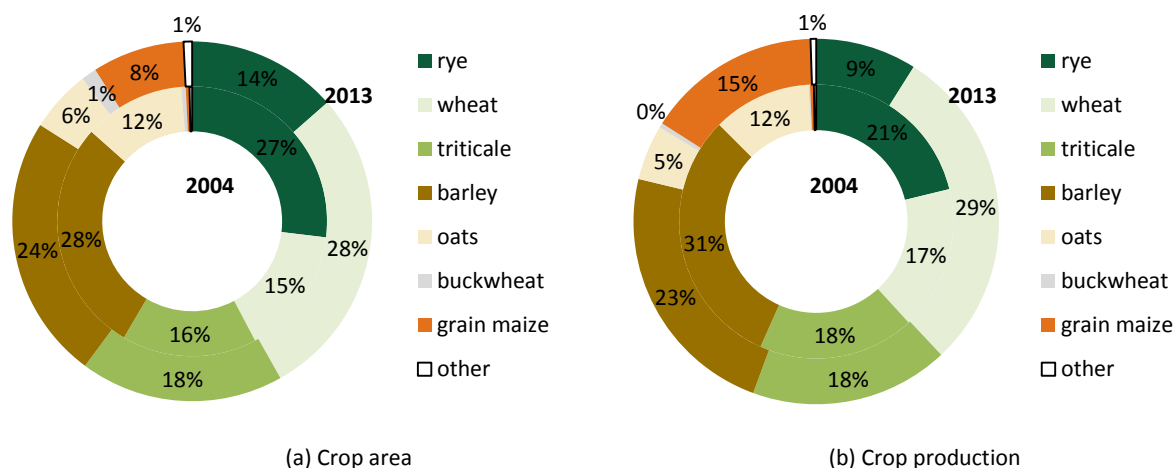
Therefore, long-term yield growth was achieved not by improving efficiency of individual cereal production, but rationalization of cereals production structure. Yields of individual cereals did not increase in 2004–2013 (see Figure 2.2b) and are below average one for neighbour EU countries (see section 6.2 for yields comparison). Moreover, short-term yield dynamics of spike grains (rye, wheat, triticale, oats, and barley) followed the one path, proving that it depends greatly on weather conditions. Oats and rye are characterized by lower yields among spike grains, while yield parameters of wheat, triticale and barley are very close. This fact determined significant reduction of the area cultivated with oats and rye. Production of these grains was substituted with wheat and triticale production (see Figure 2.3). Share of barley in cereal production fell as well. It occurred in 2012–2013 as the area cultivated with barley decreased by 14.4%.



Source: Belarusian Statistical Committee.

Figure 2.2. Area, production and yields of cereals in Belarus, 2004–2013

¹⁸ See the shares of farmers and households in vegetables and potato production in section 2.3.



Source: Belarusian Statistical Committee.

Figure 2.3. Area and production and structure of cereals in Belarus, 2004 and 2013

Changes in structure were also stimulated by price regulations: oats and rye prices are lower than wheat or barley prices. A key target for agricultural enterprises according to the state agricultural policy is a volume of grains harvested, as it is broadly viewed as a forage crop needed to extend animal production. Therefore, regulating output prices the state creates incentives for cultivation of needed grains, mainly with higher yields. Production of other grains is stimulated in case there are changes in demand for grain components of forage mixtures. Production of barley is also supported by its use in alcohol beverage industry.

Another trend is significant increase of grain maize production in Belarus (see Figure 2.3). Its full-scale cultivation began in 2007, supported by significant increase of corn seed factories capacities. The area under this crop reached 8% of total area under cereals, and its share in cereals production, measured in quantities, amounted to 15% in 2013. In contrast to other cereals, the growth of maize production was also related to yield increase (see Figure 2.2b). Grain maize production is also driven by the demand from animal production sector. This crop contains protein which is lacking in other forage crops cultivated in Belarus. Thus, grain maize production contributes to the improvement of feed mixtures available for animal production.

Buckwheat is a traditional cereal crop in Belarus. In the middle of XX century it contributed around 6–7% of total cereals production. However, its production was almost eliminated in 1970-s. Slight increase in the area cultivated with this cereal occurred in 2011 due to the spike in buckwheat prices against the background of low yields and low production volume of buckwheat in Russia at that time. However, the area cultivated with buckwheat constitutes less than 1% of total area under cereals, as its yields in Belarus are rather low.

2.4.1.2 Oilseeds

Rape is the only oilseed crop cultivated in Belarus by agricultural enterprises and farmers for industrial use. Area used for rape cultivation amounted to 7.3% of the cultivated land in 2013. Role of this crop in Belarus agriculture increased significantly in the last decade, as the crop area grew more than 3 times (see Table 2.7). The yields, however, are not stable and fluctuate from 1 to 1.8 t/ha¹⁹, depending on weather conditions. It determines volatile dynamics of crop production.

Introduction of this crop was fuelled by several factors. First, rape oil used for biofuel production is an export good, which is vital in terms of trade deficit observed in Belarus. There is demand for the rape oil in the EU countries. Oilseeds themselves were also exported for some time but it caused underperformance of local oil producing plants, and seeds export was prohibited by means of export duties. Second, rapeseeds and seeds meal are broadly used in forage mixtures for birds. Availability of local rape made feed cheaper and more effective. Third, rape oil allowed Belarus to report biodiesel production, and export it without levying petroleum export duties that should be transferred to Russia

¹⁹ These yields are lower than in Baltic states or Poland, see section 6.2 for comparison.

in case ordinary diesel is exported²⁰. At the same time, cultivation of rape is constrained by its unstable yields and negative influence over soil.

Table 2.7. Rape production, 2004–2013

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Crop area, thousand ha	123.8	127.9	115.6	205.3	293.1	352.6	325.8	317.9	438.6	417
Crop production, thousand t	143	150	114.9	240.1	513.9	610.8	374.3	379.3	704.5	676
Yields, t/ha	1.2	1.2	1.1	1.2	1.8	1.8	1.2	1.3	1.7	1.7

Source: Belarusian Statistical Committee.

2.4.1.3 Fruits and vegetables

Potatoes are one of the most important crops in Belarus. Volume of their production is comparable with cereal production. However, area under this crop fell significantly within 2004–2013, which resulted in the reduction of potato production by one third. Potatoes are largely cultivated by households, so their production decrease is related to falling agricultural activity of the households. Low prices for potatoes and improved welfare of population made home production of potatoes unattractive. Farmers, on the contrary, increased area under potatoes, while agricultural enterprises kept it stable. The yields of potatoes were almost constant being close to 20 t/ha (see Table 2.8).

Vegetable production fell in the last five years as well. However, the volume of their production is significantly higher than in 1990-s. As in case of potatoes, reduction of the area cultivated with vegetables is related to decreasing agricultural activity of population. Key vegetable crops in Belarus are cabbage, carrot, beet, and onion (see Figure 2.4a), they produce high yields do not demand capital investments (e.g. in greenhouses) and are easily stored or preserved. The area under cucumbers is relatively low, but it is important crop for southern regions of Belarus. Local farmers specialize on greenhouses production of cucumbers and their export to Russia. Competitiveness of this crop is partly based on cheap energy resources. Tomatoes are also cultivated in Belarus but they are less competitive due to climatic factor.

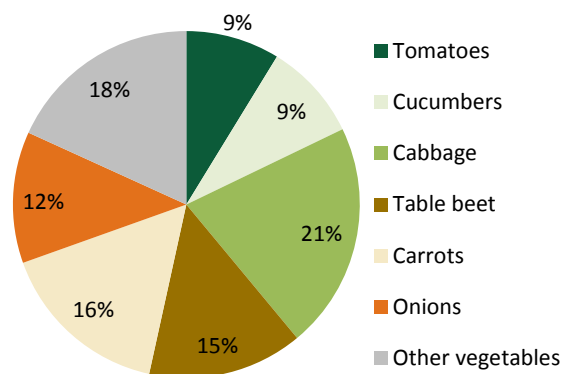
Table 2.8. Production of vegetables, potatoes and fruits and berries, 2004–2013

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Potato area, thousand ha	509.0	467.0	437.1	415.5	398.2	389.2	371.0	344.8	335.4	309.0
Potato production, thousand t	9,902	8,185	8,329	8,744	8,749	7,125	7,831	7,148	6,911	5,914
Potato yield, t/ha	19.5	17.7	19.2	21.2	22.1	18.6	21.4	21.0	20.8	19.4
Vegetable area, thousand ha	93.5	88.3	95.1	89.8	88.6	86.0	85.7	73.1	65.3	66.0
Vegetable production, thousand t	2,035	2,007	2,173	2,153	2,296	2,308	2,335	1,816	1,581	1,628
Vegetable yield, t/ha	20.3	20.8	21.2	22.0	23.4	24.2	24.7	24.9	23.6	23.7
Fruit and berry area, thousand ha	100.0	100.6	102.2	101.7	104.1	105.3	107.5	106.6	105.9	104.5
Fruit and berry production, thousand t	357.6	381.6	716.7	419.6	594.7	691.7	799.2	301.7	630.4	476.2
Fruit and berry yield, t/ha	3.6	3.8	7.2	4.4	5.9	6.6	7.4	2.8	6.0	4.6

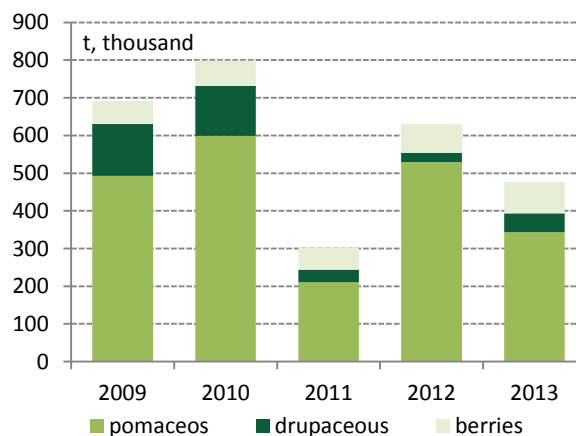
Source: Belarusian Statistical Committee.

Fruits and berries are also produced mainly by households. The land under these crops did not decrease much in the last decade in contrast to vegetables (see Table 2.8), as they need less effort for their cultivation. Furthermore, prices for fruits and berries are high which creates incentives for their cultivation (see Table 2.13). Dynamics of fruit and berry production is fully determined by yields that depend on weather conditions and life cycles of plants. More precisely, pomaceous fruit yields, largely represented by apples, is a key factor that explains variations in production of fruits and berries. Meanwhile berries were the only crop in this group that had an evident growing dynamics (see Figure 2.4b). Strawberry is an important crop for some southern regions of Belarus which is partly exported to Russia.

²⁰ Biodiesel can be classified either as a petroleum product or chemical industry product depending on the contents. The later was not taxed by export duties. Whether exported biodiesel of Belarus met necessary criteria to be classified as a chemical industry product is not clear. Its export reached maximum in 2011. Along with export of solvents it was claimed by Russia to be illegal and it was stopped by the introduction of additional duties on these products.



(a) Structure of vegetable crop area, 2011



(b) Production of fruits and berries

Source: Belarusian Statistical Committee.

Figure 2.4. Structure of vegetable area and production of fruits in Belarus

2.4.1.3 Other crops

Belarus produces two technical crops other than rape. It is flax and sugar beet. The area cultivated with flax has been gradually falling since 1990. In 2013, the area under this crop was three times lower than in 1990. Flax cultivation is restrained by low efficiency of fibre production and big losses of fibre flax plants (profitability of rotted straw production in 2013 was negative at the level of -54.6%). The government started modernization of this industry in 2012 as flax fibre is one of the traditional Belarusian products, being a part of the cultural heritage. Results of this modernization are not yet observed²¹.

Sugar beet production, on the contrary, increased more than 2 times compared to the level of 1990. Most of this increase took place in the 1990-s. During the last decade, the land area under this crop stabilized at 100 thousand ha (see Table 2.9). The yields of sugar beet grew in 2008–2013 due to the state policy aimed at improving agro-technology of sugar beet production, as the yields only of 45–55 t/ha were estimated to be sufficient for profitable beet production (profitability was close to 0 till 2011). Further growth of area under sugar beet is not expected as capacities of sugar plants are limited.

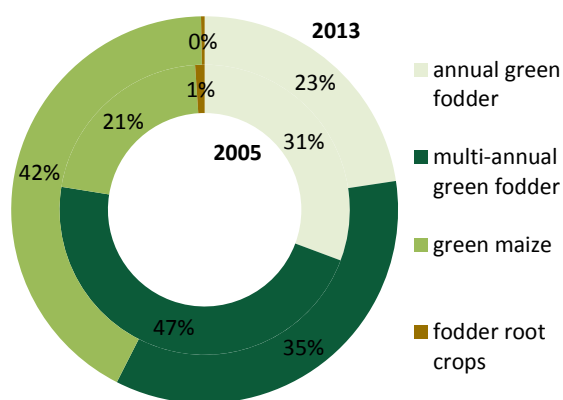
Table 2.9. Production fodder and technical crops, 2004–2013

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Fibre flax area, thousand ha	79	78	75	70	80	68	62	68	64	57
Fibre flax production, thousand t	57	50	29	39	61	47	46	46	52	45
Fibre flax yield, t/ha	0.7	0.7	0.4	0.6	0.8	0.7	0.8	0.8	0.9	0.8
Sugar beet area, thousand ha	86	100	108	96	93	93	97	101	100	102
Sugar beet production, thousand t	3,088	3,065	3,978	3,626	4,030	3,970	3,773	4,487	4,772	4,343
Sugar beet yield, t/ha	36.8	31.6	37.6	38.7	43.9	45	39.5	45.4	48.5	43.7
Forage crops area, thousand ha	2,247	2,289	2,309	2,143	2,075	2,123	2,066	2,188	2,051	2,131

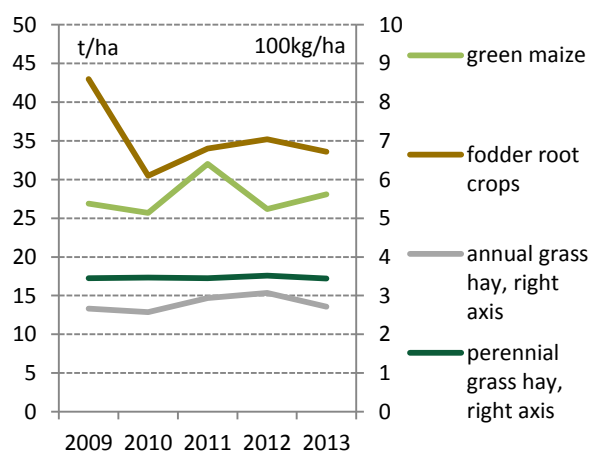
Source: Belarusian Statistical Committee.

Fodder crops cover significant part of agricultural land in Belarus. The area cultivated with these crops is around 2.1 million ha and it did not change much in the last years (see Table 2.9). However, there were changes in the structure of forage crops cultivated in Belarus (see Figure 2.5a). Most of the forage is produced by agricultural enterprises (94.2% of area under fodder) and they focus on green maize production due to its high yields. Share of the land under green maize in Belarusian agricultural enterprises grew 2 times within 2005–2013. Consequently, the share of annual and permanent green fodder area fell significantly, as they produce lower yields (see note to the Figure 2.5b). Another fodder crop that is cultivated in Belarus is fodder roots. Yields of these roots are comparable with green maize, and they are largely cultivated by households (82.1% of production in 2013). However, overall reduction of agricultural activity of households led to the reduction of fodder root production (2 times compared with the level of 2005).

²¹ <http://www.interfax.by/news/belarus/1167191>.



(a) Structure of fodder crops area, 2005 and 2013



(b) Yields of fodder crops, 2009–2013

Note. Yields of green fodder from annual and permanent grassland are not shown. In 2013 they were 11.2 t/ha for annual green fodder and 24.5 t/ha for perennial green fodder.

Source: Belarusian Statistical Committee.

Figure 2.5. Area and yields of fodder crops in agricultural enterprises in Belarus

2.4.2 Animal production

Key animal products in Belarus are meat and milk. Milk contributes around 40% of the total animal output in current prices (see Figure 2.6a). The share of meat is not much bigger, but the gap widened in the last years (in 2011 shares of milk and meat were 43% and 50% respectively). Production of eggs is also important constituting 6% of the animal output. Other animal products are produced in Belarus in minor volumes. Within meat production key sectors are beef, pork and poultry meat production.

Meat and milk production is export oriented. It implies that their development is viewed as a priority for state agricultural policy. There are state programs aimed at supporting investments in dairy and pig farms. Public support is a key factor that contributes to the increase of the production in these sectors. As a result, the sectors are mainly represented by large agricultural enterprises, which are beneficiaries of the support. On the contrary, sectors of animal production, which households and farmers specialize in, do not play a significant role in the total production.

Table 2.10. Animal number in Belarus, thousand, 2004–2013

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Livestock	7,529.0	7,676.0	7,814.0	7,908.9	7,876.1	8,098.0	8,185.5	8,275.1	8,462.0	8,835.0
Cattle	3,924.0	3,963.0	3,980.2	3,988.7	4,006.7	4,130.5	4,151.0	4,151.6	4,247.0	4,367.0
of which cows	1,658.0	1,613.0	1,565.0	1,505.6	1,459.0	1,452.2	1,444.6	1,478.1	1,477.0	1,521.0
Pigs	3,287.0	3,407.0	3,545.1	3,641.8	3,597.8	3,704.0	3,781.5	3,886.7	3,989.0	4,243.0
Sheep	63.0	59.0	53.1	52.2	52.5	52.5	52.4	51.8	53.0	60.0
Goats	63.0	66.0	68.0	70.0	72.0	74.0	75.0	72.0	73.0	73.0
Horses	192.0	181.0	167.6	156.2	147.1	137.0	125.6	113.0	100.0	92.0
Poultry, m	24.5	25.1	28.5	28.7	29.4	31.2	34.1	37.5	39.9	42.4
Other animals										
Rabbits	171.0	173.6	181.4	197.7	222.2	262.4	279.6	282.0	283.2	300.4
Bee-hives	161.7	179.5	199.7	208.2	213.2	214.5	224.8	223.0	228.3	222.6

Source: Belarusian Statistical Committee.

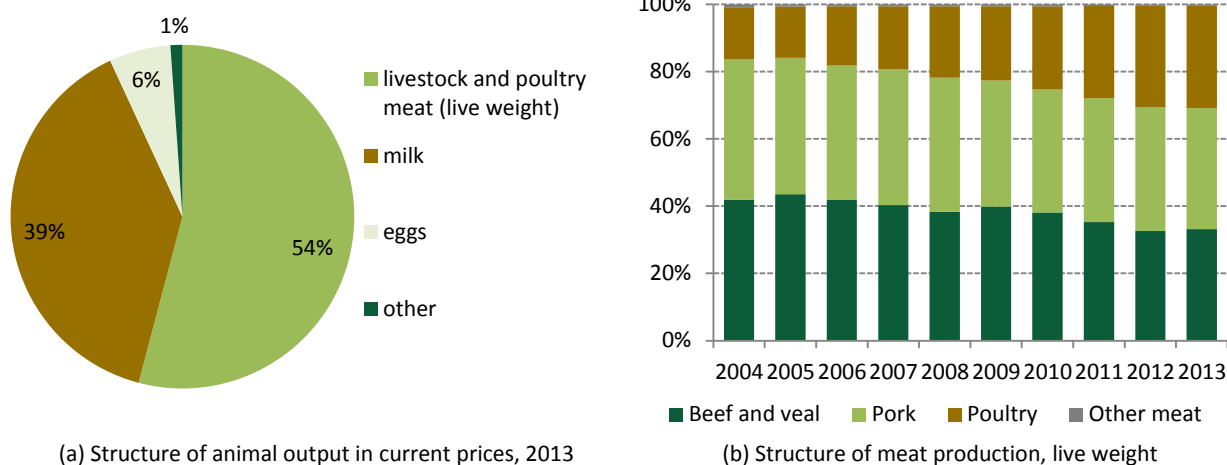
Table 2.11. Meat production in Belarus, live weight, thousand t, 2004–2013

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Meat (live weight)	929.5	1,023.7	1,121.4	1,176.2	1,209.1	1,334.8	1,399.8	1,464.0	1,556.7	1,669.3
Beef and veal	389.3	445.3	468.7	473.9	463.5	531.5	533.1	516.2	507.5	554.4
Pork	387.4	415.1	448.7	474.1	481.8	500.5	511.5	539.6	573.0	598.8
Poultry	142.8	156.0	196.8	220.8	255.8	294.5	346.8	400.1	470.3	509.8
Other meat	10	7.3	7.2	7.4	8.0	8.3	8.4	8.1	5.9	6.3

Source: Belarusian Statistical Committee.

2.4.2.1 Pork

Pork production grew steadily in Belarus until 2013. Number of animals increased by 29.1% between 2004 and 2013 (see Table 2.10), but was still lower than in the beginning of the 1990-s, when the livestock exceeded 5 million of pigs. Meat production grew faster than animal number (by 54.6% in 2004–2013, see Table 2.11). This means that meat productivity significantly improved during this period. First, it is attributed to the change in the structure of pork production by type of agricultural holdings. Share of households in pork production fell from 34% to 22.5%, while share of agricultural enterprises proportionally increased to 76.9%. Second, meat productivity in agricultural enterprises grew against a background of the state supported modernization of the sector. Improved feed availability related to increase of corn production also contributed to the increase of meat productivity.



(a) Structure of animal output in current prices, 2013

(b) Structure of meat production, live weight

Source: Belarusian Statistical Committee.

Figure 2.6. Structure of animal production in Belarus

Despite the increase of pork production its share in the total meat production fell from 41.7% to 35.9% in 2004–2013 (see Figure 2.6b), as other sectors (poultry) grew even faster. Moreover, African swine fever epidemic of 2013 will significantly affect pork production in 2014 and coming years. The number of animals at the beginning of 2014 was 23% lower than in 2013. In the households the scale of livestock decrease was much higher (by 46.8%), as households were forced to slaughter all pigs in epidemic zones and 5 km buffer zones created around every pig farm.

However, there are officially set targets of livestock volume recovery in coming years and significant meat production increase. There is demand for pork from food processing industry, as Belarus specializes on export of prepared meat products containing swine meat. Moreover, Belarus imports significant volume of pork to cover demand of food processing industry. The key importers are enterprises resident in the free economic zones on the border with Poland. But volume of imports is limited by quotas set within CEA to protect domestic production.

2.4.2.2 Poultry and eggs

The role of poultry production significantly increased in the last decade. Its volume grew 2.56 times within 2004–2013 (see Table 2.11). As a result, poultry production accounted for 30.5% of the total meat production in 2013 (see Figure 2.6b). In 2004, this share was only 15.4%. The increase occurred within production of agricultural enterprises as households accounted only for 2% of poultry production in 2013. Number of birds raised in households slightly fell in 2004–2013. Growth of poultry production is rooted in its competitiveness which is indicated by high profitability (see Table 2.14), other kind of meat production in Belarus is either less profitable or loss-making. Profitability of poultry production is explained by the absence of price regulation, so prices are close to the world prices²² (see Figure 2.8b); high demand by population; and high meat productivity. High demand is explained by lower retail prices for poultry as compared to pork and beef prices. Productivity of poultry production grew more than

²² According to FAO data, output price of chicken meat in Belarus was by 8% higher than in Poland in 2011,

twice within 2004–2013 against a background of investments in the sector and improved feed base (maize and rape seeds meal availability). The sector will continue to develop further as the level of income in Belarus and the CIS region is not expected to grow fast and demand for relatively cheap meat will remain high. Furthermore, poultry is broadly used for export oriented food processing, emphasizing its importance from the state policy point of view.

Production of eggs also increased by 34.3% in 2004–2013 (see Figure 2.7b), and the production volume was even higher than in 1990 (by 8.3% in 2013). Production of eggs is not fully dominated by agricultural enterprises. Around 30% of eggs were produced by households in 2013. The share of households has decreased, as enterprises increased their production volumes (by 45% between 2005 and 2013), while households kept the volume stable. However, even stable volume of egg production by households signalizes about the significant role this product plays for households in rural area. Rural population decreases in Belarus, which implies that production of eggs in the households per capita is on the rise.

2.4.2.3 Beef and veal

Number of cattle raised for meat increased in Belarus by 25.6% within 2004–2013. Agricultural enterprises accounted for 98.6% of all beef cattle in the country. Neither households, nor farmers raise beef cattle as its production is loss-making in Belarus and therefore receive public support, which is accessible primarily to agricultural enterprises. Beef production grew faster than the livestock (see Tables 2.10–2.11), proving increase of meat productivity. However, the scale of productivity increase is much lower than in pork and poultry production. Increase of meat productivity took place in 2005–2006, afterwards meat productivity stabilized. The cycle of beef production is much longer than for pork and it did not benefit much from feed base improvement in the country. Potential for further productivity increase is rather limited, as Belarusian agricultural enterprises focus on dairy breeding rather beef breeding, i.e. beef is a side product of dairy breeding. This kind of beef production lacks efficiency if compared to direct beef breeding and implies low quality of meat.

As a result, the share of beef in the total meat production fell from 41.9% to 33.2% in 2004–2013 (see Figure 2.6b). Moreover, the number of cattle is much lower than it was in early 1990-s (4.6 million of beef cattle in the beginning of 1991). Despite the fact that beef production is loss-making, even despite recent price increase (see Figure 2.8 and Annex D (i)), the sector will not contract. First, it generates export revenue, which is important from economic policy view. Unlike pork and poultry, beef is rarely used in food processing and is exported in carcass weight. Second, active public support to the dairy industry implies further growth of associated beef production.

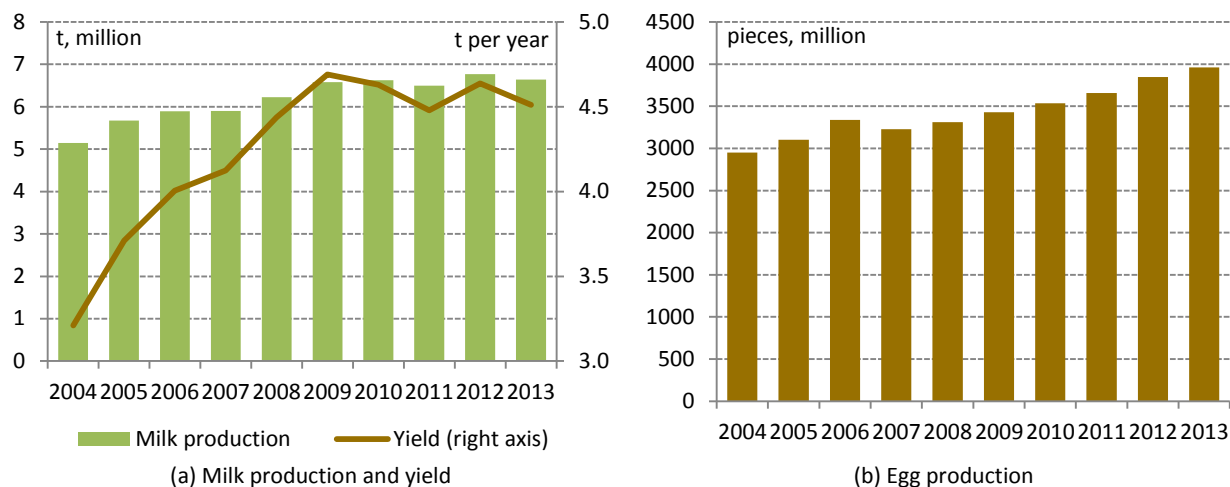
2.4.2.4 Milk production

Herd of cows in Belarus decreased by 8.3% in 2004–2013 (see Table 2.10). Most of the reduction occurred within the livestock kept by households. In 2013, only 8.6% of the total cows were raised by households, while in 2006 this share was 23.2%. The smallest number of cows was observed in Belarus at the beginning of 2010, the number of cows was 12.9% lower than in 2004 and 38.8% lower than in 1991. Afterwards, the livestock grew against a background of improved conditions of export and growing profitability.

Milk production, in contrast to dynamics of cow number, grew steadily in 2004–2013 (see Figure 2.7a). It increased by 30% within this period. This growth was guaranteed by agricultural enterprises, as volume of milk produced by the households decreased 3 times between 2005 and 2013. Increase of milk production by enterprises was rooted in improved milk yields. Milk yield of enterprises was lower than yield of households in 2005 (3.7 tons versus 3.8 tons of milk per year). In 2013, the situation was opposite, as milk yield of enterprises increased to 4.6 tons, and in the households it remained largely unchanged. Nevertheless, even increased yields do not allow Belarus to reach the level of milk production observed in 1990. The level of 2013 was still 11% lower. However, potential for yields improvement and consecutive milk production growth is not fully utilized, as gap in yields between Belarus and neighbour EU countries has broadened in recent years (see Annex B).

Improvement of the terms of trade in dairy products motivated the implementation of the state program of dairy farms construction and modernisation. Results of this program depend heavily on the external market conditions and trade regulation within CEA which is the only export market for

Belarusian dairy products. The perspective of entering EU market is limited due to the technical barriers, as only three Belarusian dairy enterprises are certified for exporting food products to the EU (see section 3.2.1). Furthermore, broad public support to the sector may provide ground for anti-dumping investigations if Belarusian firms start exporting to the EU.



Source: Belarusian Statistical Committee.

Figure 2.7. Milk and egg production, 2004–2013

2.4.2.5 Sheep and goats

Sheep and goats are mainly raised by households. Number of goats was rather stable in 2004–2013 (see Table 2.10), exceeding the level of the early 1990s by more than 50%. However, absolute figures of the livestock are very low (1 goat per 130 persons), as agricultural enterprises are not interested in rearing of goats. Households increased the number of these animals because keeping them is easier than cows. It is important factor for rural area where population is ageing. Besides, goat milk is considered better for children than cow milk, so some households use this possibility to sell milk as a coping strategy, gaining some extra income.

Livestock of sheep began to increase in 2012. Sheep were wide-spread in Belarus in the middle of the XX century, as the number of sheep was close to the pig and cattle livestock. By early 1990s it decreased more than 10 times, as a result of Chernobyl accident – wool accumulates radiation. The trend of livestock reduction ended only in 2007, there were 1 sheep per 184 persons in Belarus. Some recovery began only in 2012, as households and farmers increased the livestock number. This trend may continue as there are considerations about starting a state program aimed at sheep sector recovery, implying that agricultural enterprises may also start raising sheep., The development of the sector requires wool price increase and creation of lamb processing capacities, as the sector is loss-making (see Table 2.14).

2.4.2.6 Other animal products

Horses are still used in Belarus as a workforce in rural areas. However, falling agricultural activity of households has led to the reduction of the livestock (two times within 2004–2013). Around 60% of horses were raised by the households in 2013. Number of horses in agricultural enterprises fell even sharper. Availability of tractors, produced in Belarus, imply low need for horses as a workforce. Only some enterprises raise horses for meat.

Rabbits are also raised by households. Until 2013, there was increasing trend of rabbit number. At the beginning of 2014, the number of rabbits slightly fell to 260.1 thousand (from 300.4 thousand). Rabbits gained popularity due to their productivity.

Another animal product typical for Belarus is honey. It is also produced by households and the number of bee-hives remains stable.

2.4.3 Organic production

There is no official statistics on organic farming in Belarus²³. However, according to the Centre for Environmental Solutions whose information is based on data gained by Research Institute of Organic Agriculture (FiBL) and International Federation of Organic Agricultural Movements (IFOAM), in the end of 2013 there were 7 certified (or in the process of certification) farms of different forms of ownership in Belarus. In 2012, there were only 3 farms. Total area of certified organic farms is slightly more than 402 ha, which is 0.035% of the total amount of agricultural lands of Belarus. In 2013, there were 2,436 traditional peasant farms with a total area of 138.3 thousand ha. The proportion of organic farms of the total number of farms was 0.29%.

Even though there are only 7 organic farms in Belarus, marketing research conducted in 2011 by the Centre of System Business Technologies "SATIO" showed that 95.4% of respondents want to buy organic products, 89.4% of them attribute this to the fact that such products are good for health, 55.8% of respondents are ready to pay more for organic than for non-organic products. The sample is representative for urban population of Belarus over 18 years, but it does not control what exactly people understand under organic products and what price effect they expect. In practice, the difference between prices for organic and non-organic products varies from 2 to 4 times. For example, the average price for non-organic milk per litre is BYR 8.6 thousand while organic milk costs BYR 40 thousand, non-organic boneless beef costs BYR 105.9 thousand per kilogram and organic – BYR 190 thousand, non-organic potatoes price is BYR 4.7 thousand per kilogram, at the same time, price of organic potatoes is BYR 14 thousand.

One of the reasons for slow development of the sector is the lack of institutions which have the right of certification in Belarus and therefore the process of certification is carried out by Ukrainian ("Organic-Standard" company) or Germany companies. Lithuanian certification companies are also trying to get the right of certification of Belarusian agricultural lands.

Another factor is that legislative framework for organic market began to emerge only in 2012 as a Resolution of the Council of Ministers No. 639 on the development of organic agriculture in Belarus was enacted on 12.07.2012. Within this framework, a plan of implementation of measures for organizing the production of organic products was designed, including the development of the draft legislative act "On organic production". However, experts of the Centre for Environmental Solutions say that since then there were no significant changes in the industry. Still, the latest Presidential Decree No. 347 from 17.07.2014 "On the state agrarian policy" sets the goals of the state agrarian policy that coincides with the development of organic agriculture.

2.5 Prices, costs and income

2.5.1 Prices

High inflation is typical for Belarus. Its last hike occurred in 2011 as a result of currency crisis. It even reached 3-digit level in December of 2011. Price stabilization was partly achieved only in 2013, but 1-digit level is not feasible in the next years due to high inflation expectations and high inflation potential within services sector (IPM RC, 2014). Output prices for agricultural products follow the general trend, accelerating in turbulent times. However, their growth rates are on average higher than consumer prices or industrial producer prices (see Figure 2.8a).

Dynamics of agricultural output prices is determined by the state price regulations. Maximum, minimum, or fixed prices are regularly set for products purchased for the state needs. In 2013, the state applied:

- Maximum purchase prices for such crop products as barley, rye, triticale, wheat, oats, buckwheat, millet, peas, oilseeds rape, sugar beet, grain maize for starch, maize for feed and food;

²³ The section is prepared based on information provided by Natallia Parechyna, Project Coordinator of the Centre for Environmental Solutions, <http://ecoidea.by/>.

- Maximum purchase prices for live swine for slaughter, and meat of swine;
- Fixed purchase prices for milk, live cattle for slaughter, meat of cattle;
- Recommended price level for flax stalk purchase.

Table 2.12. Agricultural output price index, yoy, %

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Crop products	14.0	12.0	13.0	15.0	35.0	-9.1	22.2	117.9	82.7	33.4
Grains	30.0	2.0	4.0	33.0	45.0	-10.8	3.9	133.8	98.6	37.6
Potatoes	-28.0	56.0	26.0	-8.0	30.2	33.4	97.7	81.9	-0.6	72.3
Vegetables	24.0	24.0	24.0	18.0	22.0	-9.5	36.7	109.9	70.9	18.0
fibre flax	49.0	-15.0	-55.0	63.0	188.8	5.4	22.4	59.5	57.8	32.1
sugar beet	11.0	0.0	7.0	-17.0	18.7	0.8	33.8	217.6	100.8	29.8
fruits and berries	7.0	45.0	-15.0	92.0	12.5	-6.3	16.5	130.0	51.8	-0.3
Animals and livestock products	29.0	15.0	9.0	12.0	35.7	6.5	16.8	75.5	93.7	7.0
livestock and poultry	32.0	25.0	10.0	9.0	23.6	12.3	7.3	79.9	101.3	6.6
Milk	27.0	5.0	10.0	16.0	55.5	-3.6	34.3	74.7	86.7	7.3
Eggs	25.0	9.0	1.0	19.0	23.1	10.6	11.1	67.3	79.7	19.6
Agricultural goods	27.0	15.0	8.0	13.0	35.5	3.8	17.6	85.4	91.2	12.9
CPI	18.1	10.3	7.0	8.4	14.8	13.0	7.8	53.2	59.2	18.3
CPI for food products	19.6	11.9	6.1	9.8	17.7	14.0	9.2	62.2	68.0	18.8
Industrial producer price index (IPPI)	23.7	12.1	8.6	21.2	15.2	13.6	13.6	71.4	76.0	13.6

Source: Belarusian Statistical Committee.

Dynamics of crop and animal product prices may differ significantly (see Table 2.12). For example crop prices fell by 9.1% in 2009, while animal product prices grew by 6.5%. In general, animal product price dynamics was less volatile than crop prices. However, the cumulative price change of the output prices of crop and animal products was very close in 2010–2012 (see Figure 2.8a), afterwards crop prices grew much faster than average. Dynamics of crop prices was largely determined by prices of grains, which is a key crop for agricultural enterprises. Prices for other crops, not controlled by the government, grew with the rates different from grain price dynamics. Especially volatile and often opposite to grain prices was dynamics of potato prices. It was determined by market situation and world prices, as the state interventions in this sector were rather limited. Vegetable and fruit prices are not distorted by state regulation as well and were determined by the world market trends. Prices of technical crops, determined by the state, followed various paths different from the average of crop products. Still they were set below market prices (see Annex D), as it was part of the support to sugar and rape oil producing industries.

Dynamics of output prices for animal products is less volatile and more homogeneous. The government regulates prices for pork, beef and milk, which are key animal products. Within key animal products only eggs and poultry prices are determined by the market.

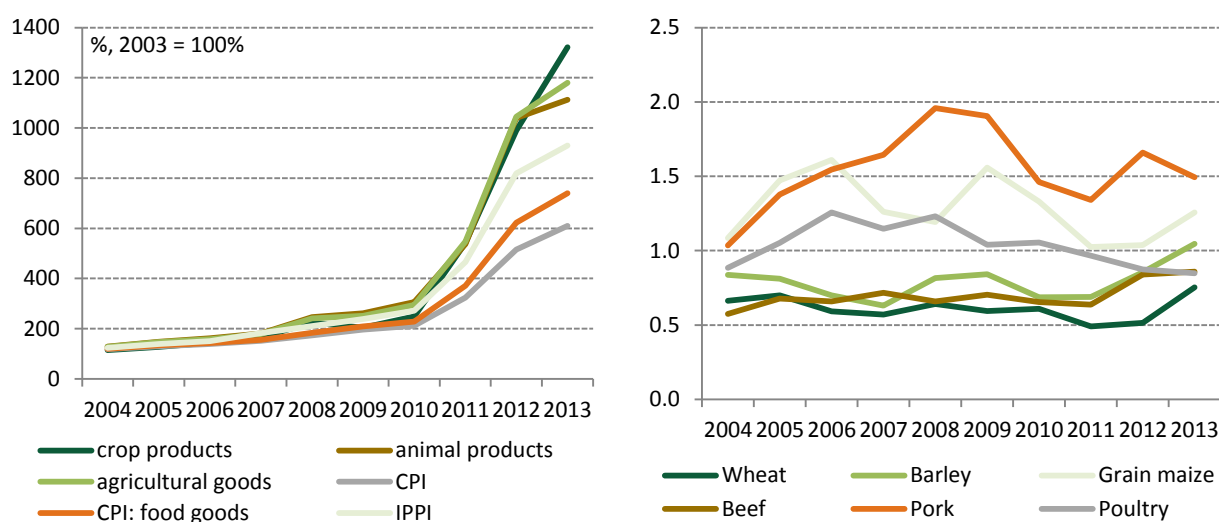
Table 2.13. Average producer (selling) prices for certain agricultural products (BYR thousand/t)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Grains	170	174	181	242	350	313	325	708	1575	1973
Soft wheat	225	230	243	312	446	371	406	718	1344	2089
Rye	146	147	156	189	276	253	258	444	675	1091
Grain maize	262	312	420	442	569	720	737	1381	2583	2889
Barley	179	166	175	233	349	302	324	659	1697	1918
Oats	120	124	128	148	226	217	211	369	1131	1415
Buckwheat	415	419	413	520	750	773	1122	2625	3302	3188
Triticale	na	na	na	na	na	na	266	515	1540	1640
Rape (oilseeds)	384	369	385	412	687	625	777	2097	3089	3457
Sugar beet	73	73	78	64	76	77	99	239	358	377
Fibre flax	682	579	261	427	1233	1300	1591	1939	3264	4098
Potatoes	132	206	260	239	311	415	912	974	1043	1920
Vegetables	715	886	1096	1289	1573	1423	1946	4192	6408	7399
Tomato	1426	1801	1961	2200	2809	2704	3455	6058	9841	10807
Cucumber	1397	1510	1713	2246	2447	2409	3038	5160	9241	10704
Carrots	166	285	340	381	466	488	840	1457	1524	2500
Onions	410	456	na	579	655	485	1429	1801	1732	2111
Cabbage	153	348	370	462	478	493	975	1231	1543	2285
Fruits and berries	335	486	413	795	895	838	977	5905	6488	3952

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Dessert apples	319	480	403	775	832	804	1406	4102	3829	3702
Currants	na	na	na	na	na	na	2448	5646	7662	7995
Strawberry	na	na	na	na	na	Na	4782	9101	11917	22063
Cattle	1507	1861	2065	2383	3148	3671	4525	8556	19031	19726
Pigs	2380	3012	3175	3373	4058	4454	4860	8288	17187	17213
Poultry	2169	2512	2798	2885	3341	3728	4049	5858	10296	11710
Cows milk	316	333	366	424	660	636	846	1545	2876	3055
Eggs (in a shell), per 1000 pieces	113	124	125	149	183	203	242	394	723	845

Note. Belarusian Statistical Committee reported selling prices in 2004–2009, and producer prices starting from 2010.

Source: Belarusian Statistical Committee.



(a) Agricultural prices index, (2003=100%)

(b) Belarus domestic output price to the world price ratio

Note. World prices for wheat is a US Gulf price, barley – Canada (Winnipeg), grain maize – US Gulf, beef – Brazil, pork – US (Iowa), poultry – US (Georgia). Live weight was recalculated into carcass weight using ratios of 63% for beef, 75% – for pork and poultry. Source: estimates based on Belarusian Statistical Committee and IFS data.

Figure 2.8. Dynamics of agricultural product prices

High growth rates of agricultural output prices are rooted in the fact that they are at large extent regulated by the state and used to be set below market prices (see Figure 2.8b for comparison with world market prices). The gap between Belarus output prices and world market prices is especially high for grain prices and wheat in particular (see Figure 2.8b and Annex D). Partially it may be attributed to the quality of wheat, as only soft wheat is produced in Belarus. However, output prices are low even if controlled for the quality²⁴. The gap narrowed only in 2012–2013, when grain output prices grew especially fast in Belarus. Grain maize price in Belarus is higher, as its cultivation is not fully efficient considering Belarus climate. Besides, high output prices provide stimuli for this sector development.

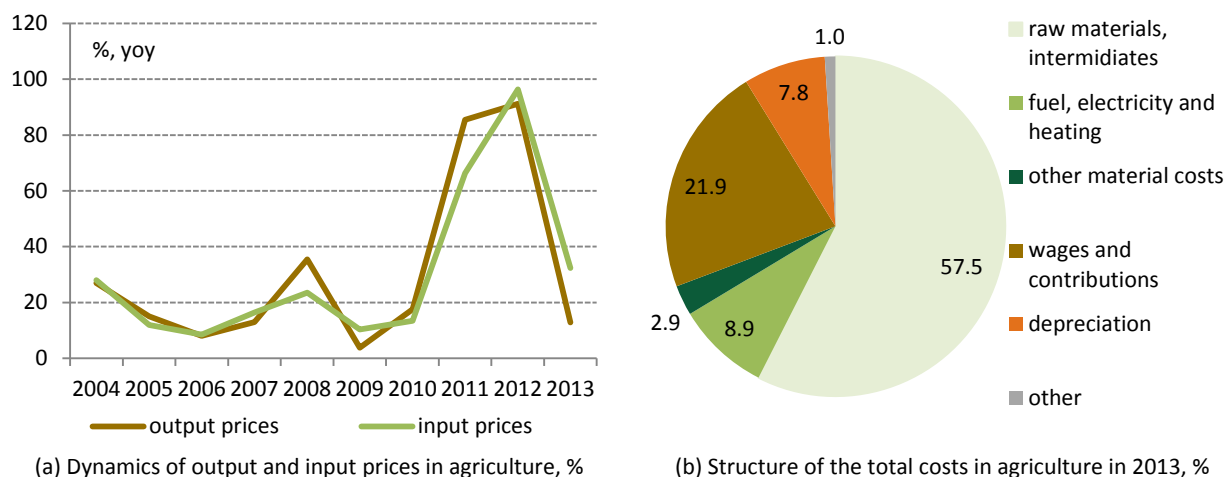
Animal product output prices are close to or are even higher than the world prices. Exclusion is beef: its output price approached the world price only in 2012. The ratio of Belarus output price and world price for pork is volatile, remaining much higher than 1. In 2008–2009, pork output prices were almost twice higher than world market prices, which was possible due to import duties. Some efficiency growth in pork production in recent years led to reduction of this price overshooting. Poultry output prices, not influenced directly by the state, are almost the same as the world prices. Output price for milk, being regulated by the state, was traditionally lower than market price (see comparison with neighbour EU countries in Annex D). However, it has approached average level for Poland and Baltic states in 2013.

In general, Belarus output prices began to converge with the market prices in 2012–2013. Narrowing gap of Belarusian output and world prices can be viewed as a sign of reducing scale of public interventions into the sector which is provoked by tightened fiscal policy, integration within CEA and Russia WTO accession.

²⁴ Dmitry Prikhodko (2010). Comparing agricultural prices: Belarus and international markets, FAO Investment Centre Division (presentation), http://siteresources.worldbank.org/INTBELARUS/Resources/Dmitry_Prikhodko_Minsk_Price_Comparison.ppt.

2.5.2 Costs

Despite the rapid growth of output prices of agricultural products with the rates exceeding inflation, it was not enough to improve financial stance of the sector as production costs grew at similar rate or even faster. The most burdensome was growth of wages in the period of 2004–2013 (see Figure 2.10a). Wages and social contributions constitute more than 20% of the total costs in agriculture (see Figure 2.9b). Growth rates of wages, fuelled by the state policy, exceeded productivity growth rates for most of the period. Moreover, wages in agriculture grew even faster than average in economy (see section 2.1), which affected financial stance of Belarusian agriculture sector.



Note. Input prices represent index of prices of industrial products, works and services consumed by agricultural organisations, i.e. prices of raw materials and intermediates, energy prices, repair and construction costs, transportation costs, etc.
Source: Belarusian Statistical Committee.

Figure 2.9. Cost structure and cost dynamics in agriculture in Belarus

Total costs related to intermediate products and services acquisition followed dynamics of the agricultural output prices (see Figure 2.9a). Some gap was observed in 2011–2012, as input prices grew slower than output prices. However, it was related to different inertia of different prices in reaction to currency crisis of 2011. In 2013 the gap was eliminated.

Fuel, energy and heating costs constituted less than 9% of the total costs of Belarusian agricultural enterprises. Their share was understated as Belarus benefited from low prices of gas and oil imported from Russia. Moreover, energy and fuel prices for agriculture sectors were subsidized. Nevertheless, the price increase of fuel and electricity happened to be the leading factor of the cost increase in agricultural sector (see Figure 2.10a).

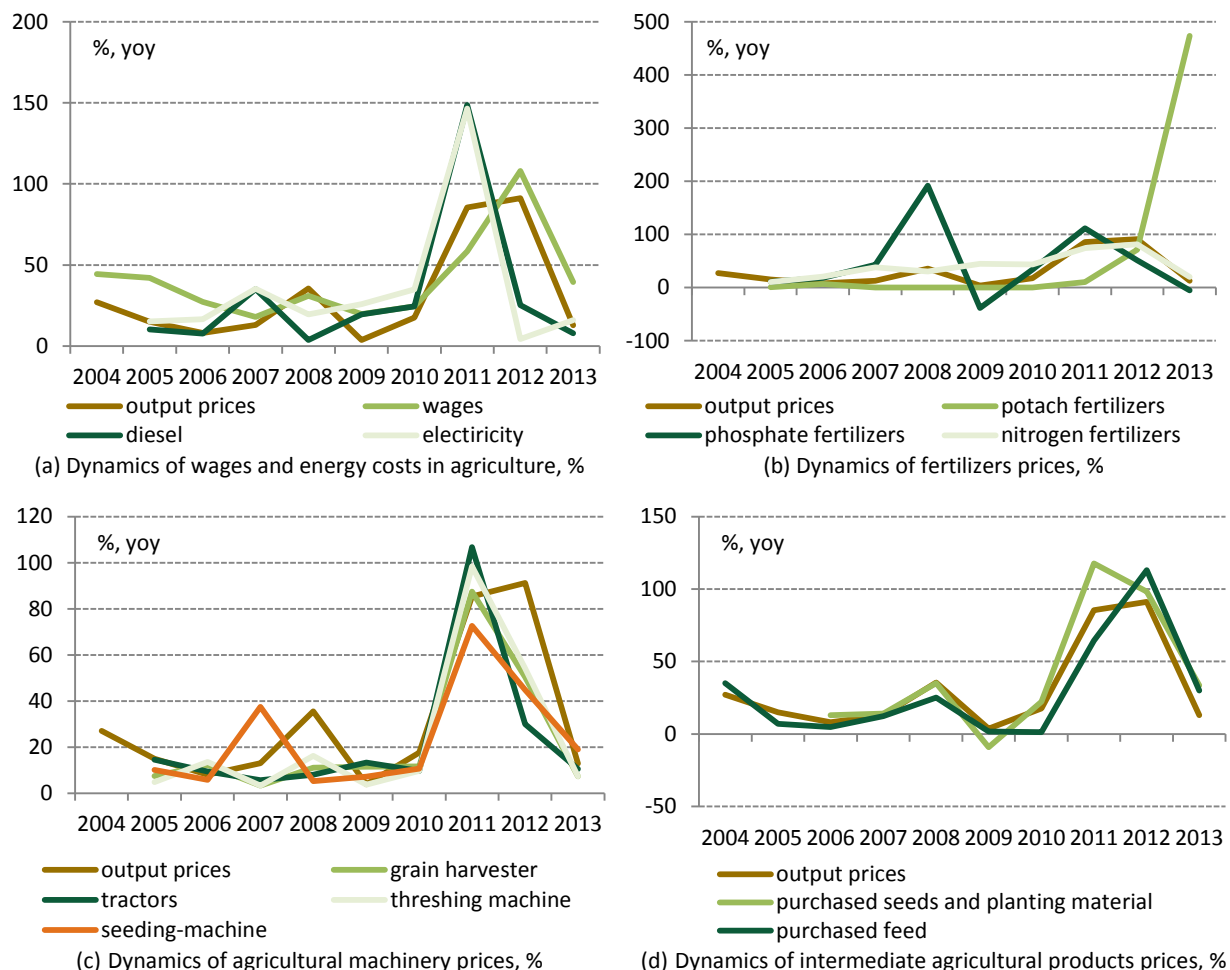
Depreciation accounted for less than 8% of the total costs of the sector. This share is higher than average for Belarus economy, as agriculture enjoyed significant inflow of investments, financed either from state budget or by means of directed lending. However, these costs were constrained by rather slow growth of agricultural machinery prices, compared to agricultural products output prices (see Figure 2.10c). Furthermore, prices for machinery were also subsidized. This state policy instrument was used to reduce stocks of machinery in the periods of low external demand.

Expenditures on raw materials and intermediate goods (other than fuel) constitute the largest share of agricultural sector expenditures (see Figure 2.9b). Most of these expenditures are related to acquisition of agricultural products²⁵. Hence, agricultural output prices increase directly affects the cost increase of the sector (see Figure 2.10d). Another important group of expenses are products of chemical industry, i.e. fertilizers. They accounted for 14.7% of the intermediate consumption in 2012, which is almost two times higher than expenses on products of oil and petroleum industry (7.7% in 2012). Prices on nitrogen and phosphate fertilizers grew faster than output prices of agricultural sector. Prices of potash

²⁵ Agricultural goods constituted 42.7% of the sector total intermediate consumption and capital expenditures, according to input-output tables of 2012, which is around one third of total expenditures.

fertilizers, on the contrary, grew slowly being much lower than world prices (see Figure 2.10b). Changes occurred only in 2013, as fall of export volumes made the government to increase the domestic prices of potash in order to improve the financial stance of “Belaruskali”.

The group “other costs” cover expenditures related to taxes, and financial services. On average its share exceeds 6% of total costs in the economy of Belarus. In agriculture these costs are lower, as it benefits from low taxation (net taxes on goods and services used for production are negative in agriculture).



Note. Prime costs are lower than total costs as they include only costs on goods and services sold. Data on prime costs in agriculture for 2004–2008 is provided based on All-Union Classifier of Economy Branches.

Source: Belarusian Statistical Committee.

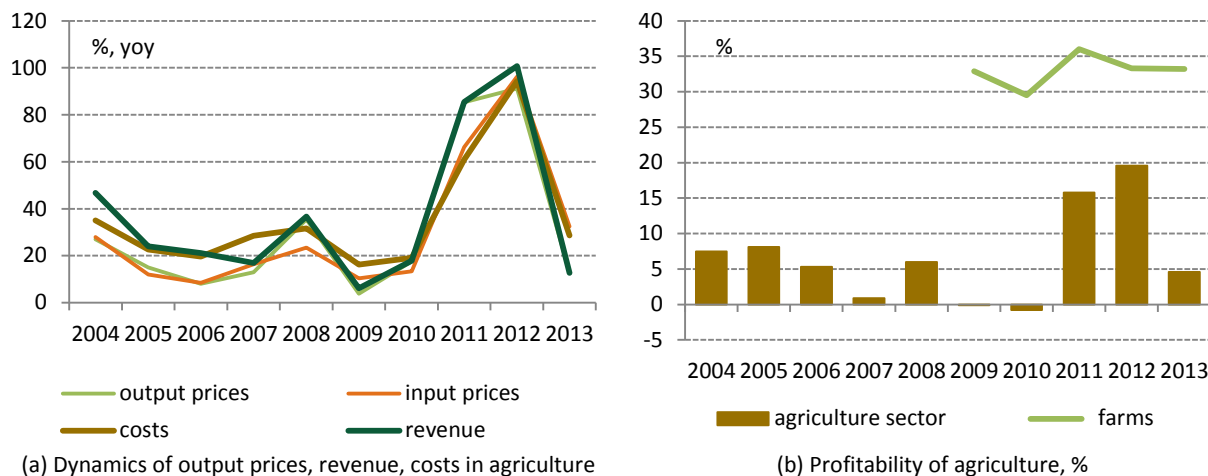
Figure 2.10. Costs structure and dynamics in agriculture

2.5.3 Farm income

The revenue dynamics of agriculture sector is determined by output prices. The gap in the dynamics of revenue and output prices was observed only in 2004–2006 (see Figure 2.11a). The same way input prices determine dynamics of the costs. The difference between costs and revenue dynamics was not huge, but it influenced profitability of the sector greatly. Fast revenue growth of 2011–2012 guaranteed profitability of agricultural production. Prior to 2011, the sector was loss-making for two consecutive years (see Figure 2.11b). Profitability of small farms is much higher than agricultural enterprises, but they do not influence the general level of the profitability of the sector.

Profitability of individual crops and animal products varies significantly (see Table 2.14). Crop profitability is generally higher. Sales of vegetables and sugar beets were profitable for the whole period of 2004–2013. Potato production was also largely profitable, which explains high profitability of farming. Grain production was profitable at lesser extent, guaranteeing stable high profits only in 2011–2013. The only loss-making crop product was flax stalk. Profitability of animal products sales was close to 0 for most of the analysed period. Loss-making were cattle production and sheep production. Sales of poultry

were the most profitable, and level of profitability was stable enough proving low dependence of this sector from economic environment and the state policy. Pig sales were also profitable (except 2013 against a background of African swine fever), but lagging much behind poultry profitability. Milk sales were recorded to be profitable within the whole period with maximum profits in 2011–2012.



Note. Data on prime costs, revenue and profitability in agriculture for 2004–2008 is provided based on All-Union Classifier of Economy Branches.

Source: Belarusian Statistical Committee.

Figure 2.11. Revenues and profitability of agriculture in Belarus

Table 2.14. Profitability of agricultural product sales, %, 2004–2013

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Crop and animal products	4.7	4.0	0.1	0.0	5.5	-0.5	-1.7	14.5	19.0	3.3
Crop products	19.4	6.4	-4.2	4.1	20.6	4.6	-1.9	21.6	23.8	14.9
Grains	25.4	6.6	-12.5	1.5	21.9	0.5	-14.7	15.3	26.2	14.6
Potatoes	-10.6	4.2	2.5	4.6	4.8	15.7	58.6	22.2	-11.6	23.1
Vegetables	0.4	29.0	25.7	19.4	24.1	15.8	23.9	46.4	6.3	21.7
Sugar beet	22.4	3.2	6.0	8.9	16.2	4.8	2.7	36.4	28.0	17.4
Flax stalk	-3.5	-37.0	-37.0	-73.2	-15.3	-37.6	-24.8	-44.8	-37.8	-54.6
Animal products	0.6	3.4	1.2	-1.1	1.9	-2.5	-2.5	14.5	19.2	0.4
Cattle	-25.1	-22.6	-22.6	-25.7	-28.0	-26.2	-32.3	-7.9	12.2	-11.9
Pigs	3.9	14.0	9.1	3.9	5.1	5.1	1.8	13.7	19.4	-6.2
Sheep	-63.6	-62.4	-46.9	-55.1	-48.5	-42.8	-50.0	-32.7	-10.8	-20.7
Poultry	12.1	26.7	25.3	19.9	11.9	19.6	14.0	18.1	18.2	5.0
Milk	16.4	13.8	10.1	10.4	18.4	5.5	12.1	26.3	23.0	9.0
Eggs	7.7	10.5	8.1	8.6	4.0	11.6	11.1	12.6	10.5	7.3

Source: Belarusian Statistical Committee.

However these positive statistics are assured by the state support to the sector. For instance, number of loss-making enterprises in 2013 was reported to be 101. But this figure would increase up to 921 enterprises (61.7% of the enterprises analyzed by statistics) if public support from general government budget were excluded. The indebtedness of the sector is very high, which is partly a result of directed lending by banks. Accounts payable at the end of 2013 were equal to 118.4% of the sectors annual revenue, and 10.8% of them were overdue. Obligations on banking loans were equal to 60.6% of the revenue.

3. SITUATION AND DEVELOPMENT OF UPSTREAM AND DOWNSTREAM SECTORS

3.1 Input production and use

3.1.1 Input production

Structure of the intermediate consumption of agricultural sector stresses the importance of fertilizers and other chemical products as an input factor. Chemical production is one of the core industries of Belarus, as it generated 7.7% of the total industrial output in 2013. In previous years this share was higher (11–12%) due to the re-export of petroleum products statistically reported as solvents, and favourable conditions on world potash market. Key chemical products, produced in Belarus, are fertilizers. Potash fertilizers are produced by Belaruskali; Grodnoazot specializes on nitrogen fertilizers; and Gomel chemical plant produces phosphate fertilizers. Belaruskali is one of the key players in the world market of potash fertilizers. It produced 4.2 million tons of potash fertilizers (pure nutrients, K_2O) in 2013 and 3.4 million tons were exported. Belarus export of potash fertilizers constituted 14.8% of the world export (in quantities), according to UN Comtrade data. Production volume of nitrogen fertilizers was 0.8 million tons (pure nutrients, N) in 2013, and almost half of produced fertilizers were exported (0.4 million tons, which is 1.5% of the world exports). Phosphate fertilizers are produced in sufficient amount to cover most of domestic demand in Belarus (203.4 thousand tons of P_2O_5). Complex fertilizers are also produced in Belarus and exported (0.8 and 0.4 million tons respectively). These fertilizers are produced by Belaruskali and Gomel chemical plant in the form of dry mixtures of potash, phosphate and nitrogen fertilizers. A new plant producing granulated complex fertilizers is under construction by Belaruskali. Capacities of this plant are planned at the level of 1 million tons of fertilizers a year.

Pesticides are produced in Belarus by 4 companies. However, significant part of the demand for these products is satisfied through import. For instance, imported herbicides accounted for 42.8% of domestic consumption in 2013 (see Table 3.1).

Expenditures on machinery by agricultural sector are not very high which is partly explained by subsidized prices on domestic machines. Domestic machinery production is presented by several large enterprises producing different types of machines, and numerous smaller companies producing components, details and accessories to them. Machinery production accounted for 9.7% of the industrial production in Belarus in 2013. Large enterprises are mainly soviet type state owned enterprises with discouraging financial indicators stressing the need for restructuring (World Bank, 2012). They produce lorries (MAZ), tractors (MTZ), harvesters (Gomselmash and Lidselmach). The production has been export oriented, but loss of the competitiveness in Russian market during the last decade has forced the government to stimulate domestic sales. MTZ remains the most competitive as its share in the world export of tractors (HS 870190) is around 4% (in monetary terms). Volume of production in 2013 was 62.6 thousand tractors and 51.5 thousand of them were exported, which is close to the average numbers of the last decade. Production of lorries stagnates, as it decreased by 26.7% yoy in 2013. The volume of production and export decreased to 18.3 thousand and 14.3 thousand machines respectively. Most of the lorries were exported to Russia, where Belarus machines accounted for 10% of the total lorries import in 2013. In 2004, the share of Belarusian lorries at Russian market exceeded 20%.

Harvesting machines production perspectives are rather gloomy in Belarus. Industry is supported by import quotas set within the Customs union for machines from the rest of the world. It allows local producers to sustain production volumes. At the same time, there are significant changes in the structure of the harvesters' production towards fodder and root harvesting machines at the expense of grain harvesting machines. This shift was accelerated by global financial crisis. Falling demand on Russian market made Belarusian producers to focus on domestic demand, where production of potatoes, beet roots and fodder was on a rise (see section 2.4.1).

Production of smaller mechanisms and appliances like balers, haymaking machines, trailers was on a rise (see Table 3.2). A key producer is Bobruysk Agromash. Most of the produced mechanisms are exported to Russia and Kazakhstan. Total number of exported machines and mechanisms was 18.7 thousand

units, while production was 22.2 thousand units. At the same time, a wide range of the harvesting machines and mechanisms is imported.

Table 3.1. Balances of fertilizers and agricultural machines in Belarus, 2013

	Production	Export	Import
Mineral fertilizers (pure nutrients, thousand t)			
N, nitrogen fertilizers (HS 3102)	833	393	59
P ₂ O ₅ , phosphate fertilizers (HS 3103)	203	0	42
K ₂ O, potash fertilizers (HS 3104)	4243	3437	0
Complex fertilizers (HS 3105)	824	385	152
Agricultural machinery, units			
Tractors (HS 870190)	62576	51215	13444
Lorries (HS 8704, HS 870120)	18265	14248	39045
Harvesters (8433)	22157	18699	26412
Herbicides, t (from HS 3808)	10412	3704	5022

Source: Belarusian Statistical Committee (2013). Production, import, export of investment, intermediate and consumption goods in 2013 (preliminary data).

Table 3.2. Production of agricultural machinery, 2005–2013

	2005	2006	2007	2008	2009	2010	2011	2012	2013
Tractors	42868	51332	62334	69210	50981	50949	66803	71030	62591
Haymaking machines	539	787	636	761	626	786	601	326	923
Baling machines	2164	1942	2628	2882	2052	2968	3768	4504	4368
Grain harvesters	1578	1489	2311	2818	1584	2035	1900	864	992
Potato harvesters	245	195	459	480	552	570	1537	1216	983
Fodder harvesters	254	340	295	423	376	441	426	268	377
Trailers	783	1360	1880	2685	3465	3143	2877	2859	2724

Note. Production volume of harvesters differs from reported in table 3.1, as it has been revised. Data for production in 2004 is not available in this classification.

Source: Belarusian Statistical Committee (2013). Industries of Belarus in 2013 (final data).

Important part of the infrastructure supporting agricultural production is a special bank focused on the needs of agriculture. It is state-owned Belagroprombak – the second largest bank in Belarus. It accounts for almost a quarter of all outstanding loans provided to legal entities in Belarus as of the end of 2013. Alongside with Development bank it finances state programs in agricultural sector and provides directed lending on privileged terms for energy products, fertilizers and machines acquisition by agricultural holdings.

3.1.2 Input use

The volume of fertilizer application increased significantly in Belarus in 2004–2013. Its peak was reached in 2011, when agricultural sector used 1.7 million tons of mineral fertilizers and 49.5 million tons of organic fertilizers. In 2012–2013, the placement of fertilizers slightly fell against a background of macroeconomic slowdown and reduced public support to the sector. The growth rates of mineral and organic fertilizer application were similar. Among mineral fertilizers the highest rates were observed for potash, which is generally the most used fertilizer in Belarus. Comparable to potash volume of application was periodically observed for nitrogenous fertilizers. Phosphate fertilizers are the most expensive and therefore are used in smaller volumes. Increase of fertilizer application is reported to contribute to the improvement of crop-producing power of the soil. The optimal level of mineral fertilizer application in Belarusian agriculture is considered to be around 1.6 million tons, including 0.6 million tons of nitrogenous fertilizers, 0.7 million tons of potash fertilizers and 0.3 million tons of phosphates (see Lapa, 2007), which is close to the actual volumes (see Table 3.3).

Growth of fertilizer application was determined both by increase of the fertilized area and fertilizer use rate per ha. The share of fertilized agricultural land amounted to 86% in 2014. The share gradually grew starting from 2005, when mineral and organic fertilizers were applied to 81.3% and 82.3% of the agricultural land respectively. The intensity of fertilizer utilization was maximal in 2011, exceeding 200 kg/ha, which is considered to be optimal, i.e. not leading to accumulation of nitrate above the norm and still providing positive economic effect.

Dynamics of the intensity of fertilizer application was not the same for different types of crops. However, there was a common trend of mineral fertilizer application increase for each crop (see Table 3.3). The highest growth rates were observed for fodder crops, where the level of fertilizer application was the lowest. Increase of the fertilizer application under these crops is explained by lack of fodder for animal production which strengthens need for higher yields. Significant increase of mineral fertilizer utilization also occurred in cultivation of grains used as forage. Organic fertilizer application rates also increased for grains and fodder. Especially significant increase (3.6 times) occurred in grain production. Partly increase of fertilizers application under grains is explained by change in the structure of grains cultivated towards maize removes more elements from soil.

Sugar beet production was already initially characterized by high demand for mineral fertilizers and the related application rate did not increase much, still, being higher compared to other crops. Increase of mineral product application to sugar beet area was interrelated with the reduction of organic fertilizer application which was determined by sanitarian norms. Negative side-effects of organic fertilizers also determined rapid fall of their application in vegetable production and also at lesser extent in potato production.

Table 3.3. Fertilizer use in Belarus, 2004–2013

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Mineral fertilizer (pure nutrients)										
Fertilizer use, total, thousand t	815.1	929.4	1285.1	1205.1	1309.6	1558.5	1497.0	1680.1	1498.6	1425.2
N, total	333.3	406	479.3	447.3	523.5	553.6	529.9	601.1	557.3	534.8
P ₂ O ₅ , total	122.8	129.5	204.7	191.0	181.0	231.7	233.7	292.1	221.3	207.9
K ₂ O, total	565.6	393.9	601.1	566.8	605.1	773.2	733.4	787.0	720.0	682.5
Fertilized area, ha total	7213.3	7376.2	7471.5	7485.1	7569.9	7602.4	7637.8	7636.8	7606.1	7580.9
Fertilizer use, kg/ha	113	126	172	161	173	205	196	220	197	188
Grains and legumes	185	213	259	254	253	287	293	313	271	275
Potatoes	255	279	324	293	314	331	333	356	332	330
Vegetables	208	253	283	258	288	289	299	308	275	272
Sugar beet	401	435	455	422	424	460	468	474	468	454
Fodder	117	130	197	172	201	229	220	242	216	199
Permanent crops	115	179	190	159	138	167	135	143	130	128
Pastures and hayfields	75	79	108	91	101	124	105	119	111	100
Organic fertilizers										
Fertilizer use, total, million t	28.2	28.4	29.0	34.8	38.1	42.3	43.2	49.5	47.7	45.6
Fertilized area, ha total	7230.8	7473.7	7435.9	7565.2	7620.0	7553.6	7578.9	7615.4	7571.4	7600.0
Fertilizer use, t/ha	3.9	3.8	3.9	4.6	5.0	5.6	5.7	6.5	6.3	6.0
Grains and legumes	1.6	2.0	2.1	2.8	3.5	3.7	4.3	5.6	5.4	5.8
Potatoes	60.9	62.2	54.1	54.5	54.8	54.6	54.5	53.9	48.3	44.5
Vegetables	26.8	22.8	18.6	19.3	19.7	18.0	18.1	16.9	14.9	10.3
Sugar beet	48.1	46.3	41.8	44.8	42.8	43.4	42.8	42.3	40.5	39.0
Fodder	7.8	7.6	7.6	10.3	11.4	12.7	12.6	13.1	13.7	12.2

Source: Belarusian Statistical Committee.

Provision of agricultural sector with machinery has deteriorated recently. Number of tractors and lorries at the disposal of agricultural enterprises fell by 18.3% and 31.7% respectively between 2005 and 2013. Number of potato and sugar beet harvesters declined by 31.3% and 50.1%. Growth was registered only in provision of fodder and maize harvesters due to the development of these sectors (see Table 3.4). Reduction of the number of machines is explained, on the one hand, by shrinking finances for investment. State support reduction, high interest rates and traditionally weak financial performance of the agricultural enterprises contribute to the reduction of machinery acquisition. On the other hand, there was a program of machinery park renewal which increased the coverage of land area that can be serviced by machines.

This renewal has been taking place within the program of the agricultural sector modernization, developed for 2006–2010 and 2011–2015. The first program was largely financed through the budget, while the second program relies on directed lending. Both programs are focused on modern grain harvesters, tractors, fodder harvesters, and integrated till-plant equipment acquisition (41.2% of the

program financing in 2011–2015). Grain and fodder production are key beneficiaries of the programs. Improvement of the machinery park can be illustrated through import dynamics. Volume of import of agricultural machinery for soil preparation grew 5.9 times in 2006–2010 compared to 2001–2005, and import of harvesting machinery – 1.9 times. Later, in 2011–2013, volumes of import reduced by 43% and 32% respectively due to the worsened economic situation.

Table 3.4. Availability of agricultural machinery in Belarus, 2005–2013

	2005	2006	2007	2008	2009	2010	2011	2012	2013
Agricultural machinery available, thousand, eop									
Tractors	53.6	52.6	50.4	49.5	48.1	47.3	45.4	44.6	43.8
Lorries	32.5	30.8	28.4	27	26.3	25.1	23.5	22.7	22.2
Grain harvesters	12.8	13.3	13	12.9	12.2	11.4	12	11.9	11.6
Potato harvesters	1.6	1.5	1.3	1.2	1.1	1.2	1.2	1.2	1.1
Sugar beet harvesters	1.0	1.0	1.0	1.0	0.9	0.8	0.7	0.6	0.5
Fodder harvesters	3.2	2.5	2.0	2.0	3.2	2.6	2.8	3.0	3.4
Arable land per machine, ha									
Tractors	161	163	175	178	190	203	194	201	197
Grain harvesters	28	32	34	39	46	43	49	46	38
Potato harvesters	57	58	61	71	65	64	80	83	81
Sugar beet harvesters	99	102	92	92	104	120	146	173	203

Source: Belarusian Statistical Committee.

3.2 Food industry

Food industry has been playing a visible role in the Belarusian economy. The share of food industry in the total industrial output in Belarus is quite significant. The average level of this indicator in 2005–2013 was close to 19%, having increased from 17.6% to 22.4% in the considered period (see Figure 3.1a). Nevertheless, despite the positive dynamic, the average real growth rate in the food industry corresponded largely to the average industrial growth rate in Belarus. In fact, positive effect was determined through stability of growth rates in food industry, while other industries fluctuated seriously, being affected by external factors.

Consequently, contribution of the food industry to the GVA is significant, being around 5%²⁶. The real growth rates of the value added exceeded the average level in economy during 2009–2012 and were sustainable in contrast to other sectors of the economy.

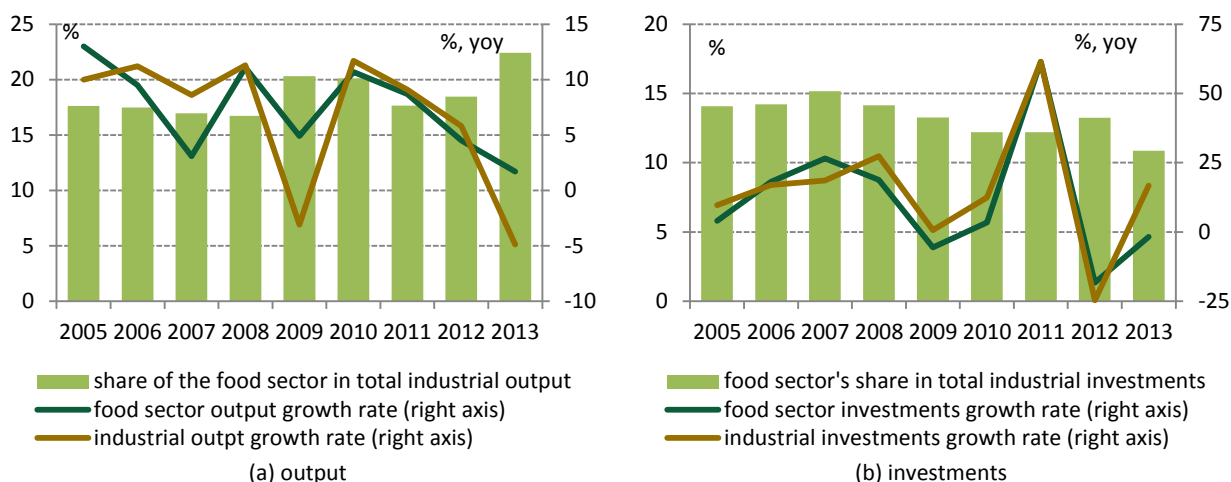
The role of food industry in investment activity is appreciably weaker. The share of food industry in total investments in industrial sector was 10.9% in 2013, and it decreased from 14.1% in 2005. Maximum food industry share of 15.2% in industrial investments was reached in 2007, but it was still lower than the share of food industry in industrial production. The real growth rates of investments in the food sector followed the general trend of investments in the industrial production, but were on average slightly lower (see Figure 3.1b). It is explained by domination of heavy industries in Belarus economy that are more dependent on investment dynamics.

Contribution of the food industry to the employment is also smaller as compared to the output. The food industry accounted only for 14% of the total industrial employment in 2005–2013 (see Figure 3.2a). This rate was stable, as labour market in Belarus in general is not mobile and changes in employment structure has been very gradual (see World Bank, 2014).

Number of enterprises with core activity related to food industry has been around 800 since 2009. It did not grow on contrary to the total number of industrial enterprises. As a result, food enterprises constituted only 6% of the total number of enterprises in 2013. It is remarkable that the share in number of enterprises is significantly lower than the share in employment, investment or output. This fact indicates that the sector is dominated by large enterprises, taking into account weakly developed sector of SME in industrial production in general.

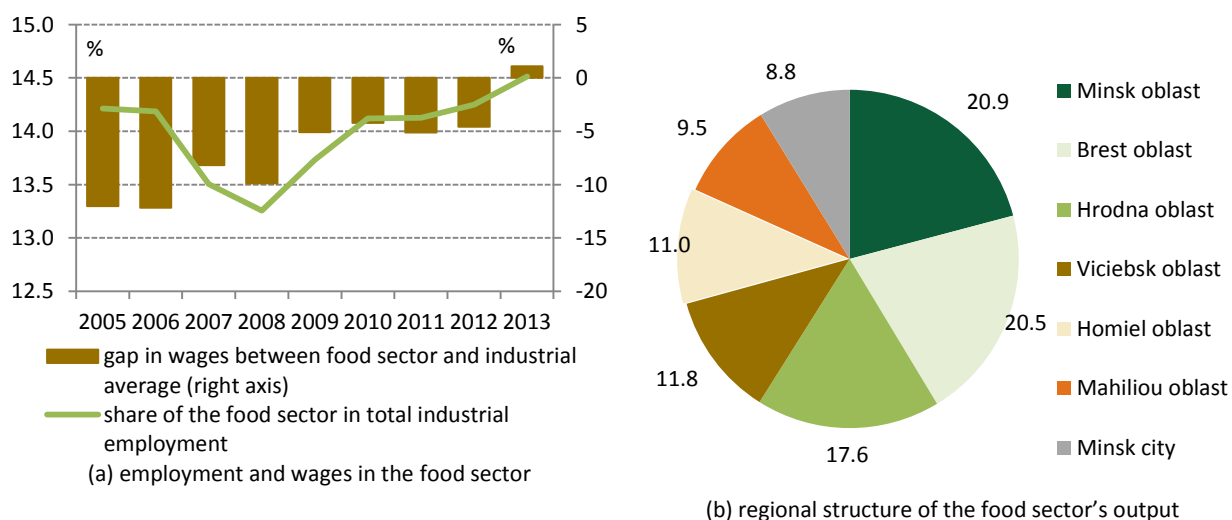
²⁶ Statistics on value added by sector in 2013 has not been published yet. Still, the share of the food industry should have increased in 2013 due to the growth of the sector, while average economic growth came to a standstill.

The food industry is well developed throughout the whole country. Nevertheless, there are three regions (Minsk, Brest, Grodno *oblasts*) which can be considered as leaders in terms of output (see Figure 3.2b). It correlates with higher productivity of agriculture in these regions. Besides, presence of free economic zones on the border with Poland provides additional opportunities for food sector in Brest and Grodno to rely on imported raw materials.



Source: Belarusian Statistical Committee.

Figure 3.1. The role of food sector in industrial output and investment in Belarus



Source: Belarusian Statistical Committee.

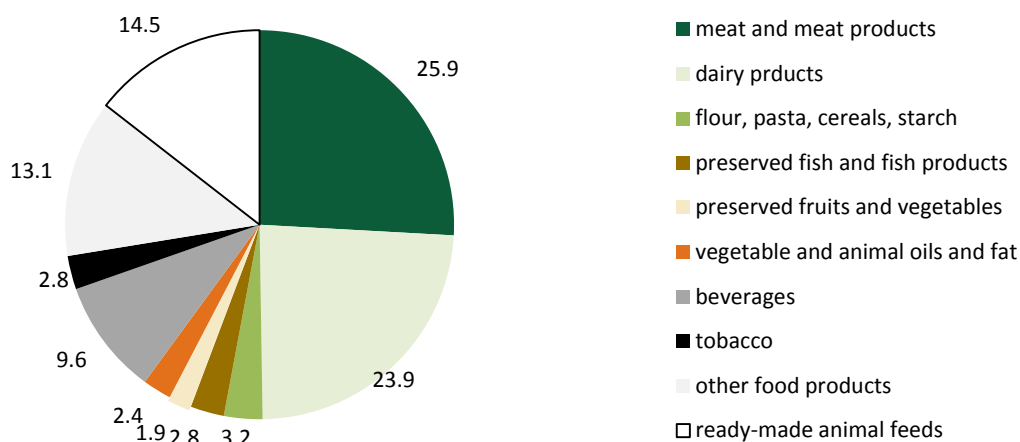
Figure 3.2. The role of food sector in employment and regional structure of the output

Key factors that determine significant role of food sector in Belarus economy are developed agriculture sector, low purchase prices of agricultural products (as a result of agricultural policy), trade barriers for import goods and free access to the growing consumer markets in Russia and Kazakhstan. The food sector will retain high potential for growth in the coming years, as the state thrives to fully utilize export capacities of this sector taking advantage of its privileged conditions on Russian market. However, the same state policy has some drawbacks that may hinder long-term growth of the sector. Plan assignments for the production of unprofitable products, regulated prices for a number of products, lack of funds and investments represent the other side of the coin in the development of food sector in Belarus.

3.2.1 Structure of the food industry

Food industry in Belarus is dominated by production of meat and dairy products. They account for a half of the food industry output (see Figure 3.3). Production of flour, cereal products, starch, preserved vegetables and fruits do not play a significant role in the food industry, representing 5% of the sector's output. On the contrary, ready-made animal feed production had a contribution of 14.5% in food

industry production in 2013. It stresses subordinated role of crop production in agri-food chains. Specialization of Belarus food industry on animal products is also reflected in trade structure (see section 4.1), and policy measures taken to support the sector (section 5), sometimes at expense of crop sector. The most important food product of crop-origin is sugar as there is potential of its export and it is widely used in confectionary industry, developed in Belarus.



Source: <http://aw.belal.by/russian/prof/prof.htm#food>.

Figure 3.3. Structure of the food industry production, 2013

Other important products of the food industry are alcoholic beverages and tobacco that account for around 10% and 3% of food production. First, these industries generate some export revenues (see section 4) which is vital for Belarus economic policy. Second, they contribute much to the tax revenues of the state budget. In 2012, two tobacco and beverages producing companies were among top10 taxpayers in Belarus.

Meat industry²⁷

The market of meat and meat products in Belarus is among the largest segments in the structure of the food sector. Belarus produces more than 1,200 types of meat products, including 800 types of sausages, about 250 names of semi-finished products, more than 150 kinds of canned food. The volume of meat production has been increasing annually by 9–10% on average over the last decade (see Figure 3.4a). High production growth rates are related to the increase of demand for meat products both in Belarus and the world markets. Significant portion of the produced meat and meat products is exported (20%).

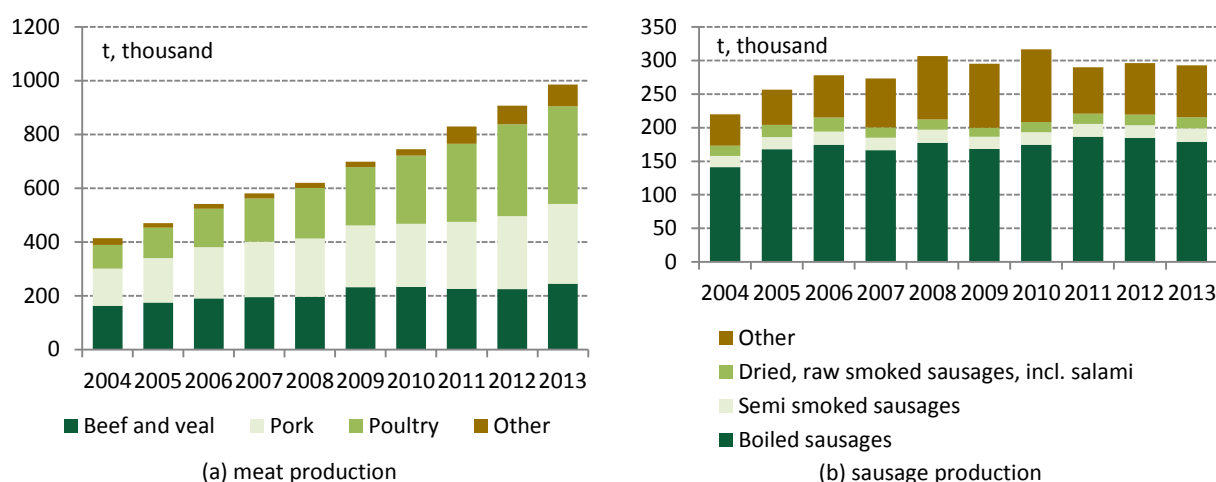
The total volume of meat production reached 986 thousand tons in 2013. Belarus meat industry produces significant volumes of beef, pork and poultry meat (see Figure 3.4b). The leading contributor in 2013 was poultry production. Its volume amounted to about 363 thousand tons. Poultry production grew more than 4 times between 2004 and 2013 and thus guaranteed a half of the total meat production increase in Belarus. The state targets further growth of poultry production setting target of 500 thousand tons for 2015. The predominance of poultry production in the total meat production in Belarus stands in contrast to global trends, and is explained by several factors: high profitability due to shorter production cycle and lower feeding needs compared to other types of meat, and significant domestic demand for this meat due to low prices. The production of poultry is dominated by chicken meat by far. The plans to increase production of duck and turkey were not realized due to profitability concerns, as ducks are not meaty and turkey meat is too expensive.

Pork production also significantly increased in 2004–2013, following trends in agricultural animal production. It almost reached 300 thousand tons in 2013. Beef and veal production grew much slower, losing its leading positions, first to pork, and then to poultry production. Slower growth pace of beef production is rooted in slow domestic resource base growth from the supply side, and low demand for this relatively expensive meat on domestic market. Situation may change after 2014. The consequences

²⁷ Description of food industry subsectors is based on the industry reports of Uniter Investment Company, available at subscription <https://corp-reports.com/categories/industry%20profiles/list>.

of African swine fever epidemic of 2013 in Belarus, import restrictions due to the fever in neighbour countries, as well as export of swine meat to Russia in order to fill gap of this market caused by import restrictions, ban on slaughter of pigs for sale at households²⁸, and abolishment of wholesale prices regulation²⁹ made retail prices of pork skyrocket in 2014 and exceed prices of beef.

In 2013, sausages production in Belarus amounted to 293 thousand tons. It exceeded the level of 2005 by 14.1% (by 33% the level of 2004), stressing low growth rates of sausage production after 2005 (see Figure 3.4b). Moreover, there has been a slight fall in sausage production in recent years. This decline in production can be attributed to the changes in consumption preferences of population. In the structure of sausage production the largest share belongs to boiled sausages which accounts for 62%. The reason for the dominance of the mentioned products is their comparatively low price. The increase in the welfare that took place before global economic crisis did not lead to a significant demand increase for boiled sausages, as people tend to switch either to meat or dried, smoked sausages.



Source: Belarusian Statistical Committee.

Figure 3.4. Meat and sausages production in Belarus, thousand t, 2005–2013

Production of meat and meat products is spread across the whole country. The leading region is Minsk region as the local factories there processed 25.5% of raw meat in Belarus in 2013. The second place with 19% is held by the Grodno region (in 2012, this area was the leader). Currently, meat processing industry in Belarus includes 27 large meat plants, that are at least partly state-owned, and about 200 small production entities with different forms of ownership. Among the main players on the market in terms of revenue as well as processing capacities are Brest MK³⁰, MK Grodno, Berezovsky MMK, Vitebsk MK and Slutsky MK. They control one third of the sector revenue with annual turnover of USD 150–200 million each. However, the most profitable companies are state-owned enterprises AK Dzerzhinsky and Smolevichi Broiler that produce poultry and have production volumes slightly below top-5 players. The largest private companies are ServoluxAgro and INCO-FOOD (Ltd). Capacities of Servolux are estimated at 3000 tons of meat per month, which is close to top-5 producers. The company specializes in poultry production and controls the whole chain of meat production from fodder production to retail. Capacities of INCO-FOOD are planned to reach 200 tons of sausages, 25 tons of semi-finished products and 3 thousand tons per day. It has its own poultry farm, but relies on import products (swine) as well. Hence, import bans seriously affect its production.

Further increase of the production of meat and meat products is envisaged in Belarus, as capacity utilization in the sector was around 70% in 2013. However, further meat production increases demands resource base increase. It implies development of agricultural animal production, which cannot be achieved in the short-run for most of the meat types due to long production cycle. Another factor, constraining development of the sector, are quotas and bans on meat import that are set within

²⁸ Slaughter is possible only at specialized agencies on payable basis, which tremendously increases costs of the meat produced in the households.

²⁹ The mark-up limit of 16% for retail price remains.

³⁰ MK stands for meat processing plant, MMK – meat and milk processing plant, AK – agricultural processing plant.

Customs union. Furthermore, development of beef and pork production is affected by price regulations. The state has been setting prices for a list of 'social' meat products (with low value added) below market prices. As a result, enterprises have suffered losses and tried to switch to meat products with high value added. The situation is expected to improve as the state has begun to minimize price regulations in the food sector. Besides, the government considers termination of the regulations relating to the purchase of raw meat. Output prices of agricultural animal production sector are regulated by the state, and meat enterprises are limited with resource base of the region they are located at. Abolishment of these regulations would enable meat-processing enterprises to buy the raw products in any region of the country.

Dairy industry

The share of the Belarusian dairy products amounts to 1.4% of the world production. Development of the sector has been fuelled by significant subsidies to milk producers through low input prices and public support to agriculture aimed at sustaining and improvement of raw milk supplies.

The output of milk products in 2013 was 1.9 million tons of milk equivalents. The production almost doubled compared to the level of 2004, following the trend of raw milk production. The growth was not steady, as there was a slight decline in production in 2008–2009 due to the administrative barriers set by Russia to limit import of dairy products from Belarus (see Table 3.5). After the conflict was settled and mutual balances were negotiated dairy product output growth accelerated.

The structure of the production of dairy goods in Belarus is quite diverse. The range of products offered on the market in Belarus comprises more than 1,000 titles. Around half of the country's whole milk products are represented by whole drinking milk (see Figure 3.5a). Other important products are kefir, cheese, butter, sour cream. Whole milk production grew with highest pace among dairy products. Most of the growth took place after 2010, when the lack of domestic dairy products for satisfying demand became obvious in Russia. It helped Belarus to negotiate growing volumes of dairy export. At the same time, growth of cheese and butter production came to a standstill in this period. Instead, production growth of milk and cream products in solid form accelerated, which is also related to the agreements with Russia on dairy products trade balances. Besides, there was a significant increase of yogurt, fermented and curdled milk, and cottage cheese production against a background of growing demand of population for these relatively expensive dairy goods associated with healthy diet.

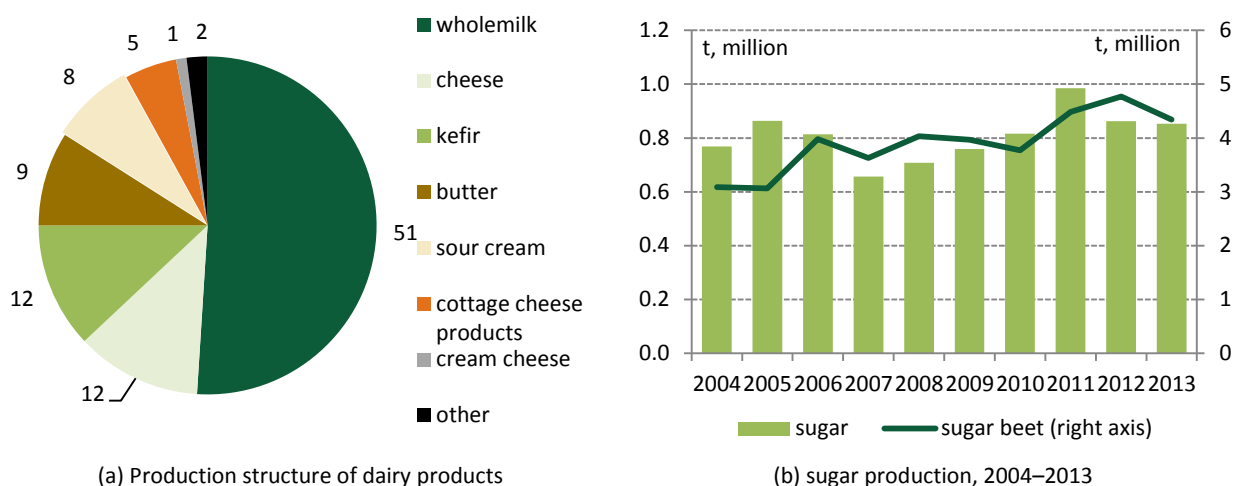
Table 3.5. Production of dairy products, thousand t, 2004–2013

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Dairy products, milk equivalent	992.5	1122.0	1281.7	1326.3	1331.7	1305.7	1494.8	1642.9	1778.8	1859.5
incl. in physical weight										
drinking milk	290.5	368.2	449.2	418.8	438.3	451.2	584.4	699.0	790.4	779.4
yogurt	--	4.5	--	7.5	8.4	7.6	9.0	10.1	8.8	10.4
cream	7.1	8.1	8.5	8.9	9.2	7.3	12.1	14.6	18.4	23.3
sour cream	65.7	69.8	70.1	75	80.1	80.3	84.9	92.0	98.1	99.8
curdled milk	0.3	0.5	0.8	0.7	0.6	0.8	1.3	2.3	3.1	4.4
fermented baked milk	3.5	4.0	5.3	6.8	7.8	6.8	7.7	7.8	5.5	6.0
Low-fat milk products	74.8	73.5	88.6	72.9	90	97.1	94.7	90.8	99.4	92.0
Cottage cheese products	--	67.4	77.4	86.9	88.2	84.5	96.1	96.8	102.0	112.1
Milk and cream products in solid form	--	65.9	79.6	82.4	96.4	119.0	106.9	100.6	122.3	152.1
Preserved milk products	--	56.0	87.8	85.7	100.7	88.3	114.3	124.4	125.3	109.6
Butter	81.6	85.0	87.6	82.3	98.0	116.1	98.6	104.3	112.9	99.1
Cheese	65.1	82.3	101.0	110.0	127.6	134.1	146.1	141.9	147.8	134.1

Source: Belarusian Statistical Committee.

In Belarus, there are about 40 enterprises engaged in the processing of milk. The largest companies in this segment are "Savushkin product", "Babushkina Krynka" "Molochnye produkty", "Bellakt", "Moloko Vitebsk", "Berezovsk cheese-making plant", "Slutsky cheese-making plant", and "Glubokskiy MKK". Turnover of "Savushkin product" and "Slutsky cheese-making plant" reached USD 400 million in 2013, which made them leaders in the sector. These companies are certified for exporting to the EU market.

They are followed by Babushkina Krynka and Molochnye producty with the turnover of USD 300 million and USD 200 million respectively. Another six companies enjoyed revenues beyond USD 100 million.



Source: Uniter (a), Belarusian Statistical Committee (b)

Figure 3.5. Production structure of dairy products and volume of sugar production in Belarus

The market share of the top players in the sector has been growing. It is related not only to capacities and production growth, but also to the process of consolidation, observed in the sector. State-controlled small and unprofitable enterprises join to larger and more efficient entities. Besides, there are ideas of creating holding of the largest milk producers in order to coordinate production and export. Furthermore, the state tries to increase its share in the companies with mixed ownership. This consolidation of assets is often driven by administrative/political considerations and it may not show large efficiency gains (see von Cramon-Taubadel, Nivievskiy, 2011).

Despite the rapid growth, the sector is exposed to the problems related to low efficiency of production due to specific policy measures applied along the dairy value chain. In particular, the state regulated minimum raw milk producer prices, retail prices for basic milk products and dairy export prices, as well as division of raw milk zones among dairy processors do not create incentives for restructuring and modernization. In these circumstances modernization is also administrative driven within dairy industry development program for 2010–2015. Its main goal is to determine serious changes in technical standards of enterprises and increase production of whole milk products up to 2 million tons, 200 thousand tons of cheese and 180 thousand tons of butter.

However, agricultural enterprises are not able to implement technical upgrading due to lack of financing. The authorities have to cut public expenditures due to fiscal policy tightening, and tend either to force agricultural enterprises to use their own funds to implement the reconstruction, or stimulate directed lending by banking sector. However, insufficient own funds and reluctance of banks to provide new loans are reasons why the implementation of the program encounters difficulties.

Nevertheless, prospects of the dairy industry in Belarus in the next 3–4 years look quite good due to the growth of domestic demand as well as bright export prospects within Customs union supported by technical barriers (for the rest of the world) and political bans. The positive effect may be also assured by the state intentions to minimize price regulations and cancel resource zones. It may improve financial stance of the enterprises that have to sell basic dairy products at a loss, and increase competition in the sector.

Sugar industry

Total production of sugar in Belarus in 2013 amounted to 852.4 thousand tons. This volume is slightly below (by 1.2%) the output of the previous year due to lower yields of sugar beet. In the period 2004 to 2013, there were some fluctuations in the sugar production: e.g. in 2012 output sharply declined by 12.5%. However, over the period the average growth rate in the sector amounts to 8% (see Figure 3.5b). Sugar is largely produced from domestic sugar beet. However, seasonal nature of this crop, relatively low yields and low sugar content force sugar producers to rely also on imported raw cane sugar. Around

40% of the sugar produced in Belarus is cane sugar. Decline of sugar production after 2011 is related to raw cane sugar, as its export was restricted by increased import duties for raw cane sugar, lobbied by Russia. Sugar produced from raw cane is supplied to the domestic market and exported to the countries of Central Asia.

There are four plants producing sugar in Belarus with similar production volumes: Gorodejsky Sugar Refinery, Zhabinkovsky Sugar Plant, Skidelsky Sugar Refinery, and Slutsky Sugar Refinery. Turnover of these plants ranged from USD 150 million to USD 200 million in 2013. They are state-owned and their development is determined by the state program of sugar industry development for 2011–2015. It is expected that beet sugar production will reach 720 thousand tons in 2015, implying 20% growth in 2 years. The growth is expected to be achieved without increase of the area cultivated with sugar beet. The focus is expected to be on improvement of agricultural technologies that should guarantee yield increase from 41.2 to 52.4 t/ha and sugar content from 14.7 to 17%. Realization of these plans is doubtful due to low incentives for agricultural sector. The producer prices for sugar beet are set by the state and their dynamics lag behind retail prices for sugar that are also regulated by the state. The problem may disappear in 2015 as the state plans to abolish price regulation in the sector.

Besides, the sector of sugar production is loss-making as only Gorodejsky and Slutsky Sugar Refinery registered some marginal profit in 2013. Their financial stance depends heavily on international markets development and export prices. The decline of prices in 2012–2013 alongside with the state regulations explains conservative financial results of the sector.

Confectionery industry

The structure of confectionery production changed in the last years. At the beginning of the considered period, confectionery production was dominated by sugar and chocolate products with the share of 58.6%. In 2011, sugar confectionery lost leading position to production of pastry confectionery products (see Table 3.6). The reason for this development is a change in consumer preferences due to increasing incomes of the population. In recent years, there has been a significant increase in sales of sweets, chocolate and pastry in the form of butter cookies, biscuits and cakes. At the same time, the demand for candy and other products of cheaper price segments has decreased.

Table 3.6. Confectionery production, thousand t, 2004–2013

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Cocoa, chocolate and sugar confectionery	77.0	75.9	73.8	68.5	70.7	70.9	73.1	71.7	63.5	57.9
Pastry flour products	54.5	54.6	55.5	58.9	67.2	69.1	73.8	82.4	na*	na*

Note. * Not available after 2011 due to changed nomenclature.

Source: Belarusian Statistical Committee.

Belarusian confectionery industry is represented by 20 companies, 8 of them are reporting to the concern "Belgospisheprom": JV OAO Spartac (OJSC), OAO Kommunarka (OJSC), OAO Slodych (OJSC), OAO Krasny Mozyryanin (OJSC), OAO Krasny pischevik (OJSC), OAO Confa (OJSC), JV OAO Ivkon, COOO The First Chocolate Company (Ltd). These companies control 70% of the sector output. The largest companies are Spartac and Kommunarka with the turnover close to USD 100 million (in 2013). Most of the enterprises within the sector are private. However, the state has control in key enterprises. For instance, the state ownership in Kommunarka and Spartac is 57% and 60% respectively, as a result of nationalization of these enterprises in 2014³¹. Besides, Slodych, Krasny Mozyryanin, Krasny pischevik, Confa are also partly state-owned enterprises with the state share of 70.2%, 86.6%, 18% and 25% respectively.

Despite the fact that majority of the confectionery entities in Belarus have been private, a number of core activities are regulated by "Belgospisheprom". This organization sets out targets (production volumes, export deliveries) and monitors their implementation, which does not contribute to the

³¹ The Presidential Decree №107 was applied to these enterprises, providing local authorities a priority to purchase shares of strategically important enterprises.

development of the sector. Besides, creation of the Common Economic Area as well as the entry of Russia into the WTO imply additional challenges to confectionary sector in the long-term.

Alcoholic beverages production

Key alcoholic beverages produced in Belarus are vodka, fruit wine and beer. Besides, there is wine production from imported raw material and bottling of cognac, whisky and other beverages. The sector is oriented both on domestic consumption and export. Local market is huge as Belarus is among the leaders of alcohol consumption per capita. Belarusian beverages dominate on the local market, as the share of local vodka and distilled spirits exceeds 95% of the domestic consumption. In case of beer this share is 70%. Production of alcoholic beverages was rapidly growing in Belarus till 2013 (see Table 3.7). The most significant increase was observed in vodka production (2.7 times in 2004–2012). At the same time, production of fruit wine contracted by 44.9%, as growing income of population promoted switch to more expensive beverages.

Dynamics of the alcoholic beverages production reversed in 2013. The production of the main alcoholic drinks decreased in 2013 as compared to 2012 due to the increase of excise taxes on alcoholic beverages. Vodka production contracted by 12.8%, while production of fruit wines and beer decreased by 5.5% and 1.2% respectively.

Table 3.7. Production of alcoholic beverages, million dal; and cigarettes, billion pieces, 2004–2013

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Vodka	7.3	8.7	10.7	12.6	14.4	14.7	15.2	18.1	19.6	17.1
drinking spiritus*	7.6	7.4	7.4	8.6	9.6	8.6	8.4	9.1	--	--
grape wine	1.6	1.6	1.2	2.0	2.6	2.1	2.5	2.7	2.7	2.8
fruit wine	26.6	22.2	20.8	22.0	20.7	19.1	20.1	18.4	14.6	14.1
Beer	22.7	27.1	33.2	35.6	35.4	33.7	39.9	47.2	43.0	42.5
Cigarettes	12.6	12.0	15.7	18.7	19.5	21.1	25.1	29.6	33.2	34.8

Note. * Not available after 2011 due to changed nomenclature.

Source: Belarusian Statistical Committee.

The main producers of distilled spirits are state-owned companies. The number of producers of alcoholic products increased from 17 to 25 companies during 2005–2012, and 18 of them are under the state control. The key player in the sector is state-owned company "Minsk Kristall". It is the largest manufacturer with the share of 34% of the total distilled spirits production. As a result, it enters the list of top-50 alcohol producers in the world according to the magazine Drinks International. Other large state-owned enterprises are located in the regions: "Pridvinie" in Vitebsk, "Belalco" in Brest, Klimovichy Distillery in Mogilev, "Radamir" in Gomel and "Nemanoff" in Grodno. Their total share is estimated to be about 40–45%. There are also three large producers "Akvadiv", "Armenian standard", and "Bulbash" with private ownership (at least partly) that account for another 17–20% of the market.

The sector is totally regulated by the state. Production of alcohol beverages is licensed activity and volumes of production are prescribed by the quotas that the state sets both for the country and separate regions. Reduction of the quotas for fruit wine production is another reason of its falling production. The state also controls imports employing the mechanism of a special importer - setting the list of companies allowed importing separate beverages.

Control of the beer sector is less strict as there are no quotas for the production. There are licensing requirements for beer import and bans on malt import. The sector is dominated by four companies, three of which are private (private: Lidskoe pivo, Alivaria, Heiniken; state-owned: Krinitza). Each of them controls about 15–20% of the market. Revenue of Lidskoe pivo was close to USD 100 million in 2013. Krinitza was a key producer several years ago, but now it is loss-making and utilizes only half of its capacities. Private companies, being more competitive, still face the risk of nationalization, as they are claimed not to fulfil export obligations.

Tobacco industry

The tobacco production has been growing fast in Belarus. Even crisis periods had limited influence on the sector (see Table 3.7). Production of cigarettes increased 2.8 times in 2004–2013. This increase is not related to the increase of consumption. It was achieved by organizing production of international

brands in the domestic facilities, while banning their import, as well as by limiting the "shadow" markets. Slowdown of the production growth in 2013 can be explained by the increase of excise taxes which influenced prices (regulated by the state).

Tobacco market in Belarus is divided between two producers: tobacco factory "Neman" in Grodno and "Tabak-Invest" in Minsk with market shares of 79.1% and 20.9% respectively. The companies produce both tobacco products under their own brands, as well as have licensed production. With the market saturation, the competition between players has intensified. Minsk and Grodno factories are experiencing a shortage of quotas for production. Both plants are striving to increase their quotas. Due to the state-ownership it appears easier for Grodno to receive an additional quota.

Other food production

Among other sectors of food production vegetable oil production is the most fast-growing. The sector had a quite explosive development. Its average annual growth rate amounted to 30%, so the production volume increased from 28 thousand tons in 2004 to 257 thousand tons in 2013 (see Table 3.8). It was a result of the state program aimed at the rapeseeds and rapeseed oil production development. The oil is used for food, biofuel production and export if domestic demand is satisfied. In 2012–2013, more than half of produced oil was exported, while in 2010 export was almost non-existent due to low yields. Domestic demand of rapeseed oil for food exceeds 100 thousand tons³². There are 4 main producer of rapeseed oil in Belarus: Margarine Plant in Minsk, Oil factory in Gomel, Grodnobioproduct in Grodno (holding "Oil-Food") and Bobruisk plant of rapeseed oil.

Table 3.8. Production of some other food products, thousand t, 2004–2013

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Fish products. incl. tins	--	49.9	57.6	67.2	71.7	64.4	71.1	70.8	71.7	81.2
Plant oils	27.8	42.2	43.7	49.1	82.4	127.0	160.8	181.7	189	256.9
Margarine and similar edible fats	16.1	17.1	14.0	14.0	14.6	17.0	19.5	22.4	17.4	14.6
Flour	689.8	606.3	577	648.5	672.1	674.8	643.3	737.3	772.5	749.5
Pasta	16.1	14.3	12.5	14.1	19.8	21.7	26.0	38.0	39.7	41.9
Starch	14.9	8.7	8.9	15.0	18.5	11.2	9.3	17.0	24.1	15.6

Source: Belarusian Statistical Committee.

3.2.2 Prices, costs and performance indicators

As it was shown before, the food industry plays an important role in the Belarusian economy. Its production accounts for almost one fifth of the industrial output (see Figure 3.1a). However the share of the food industry in the total industrial profit is lower than average. The only exception was 2013, when food production guaranteed 23.2% of total profit of industrial sector. It was partly related to the fall in the production of machinery and chemical industry in 2013. Profitability³³ of food industry is traditionally slightly below the average of industrial sector, which may be explained by price regulations. However, analysis of profit and profitability indicators may be misleading. On the one hand, profit indicators are not adjusted to the volume of the state support that is accounted as a part of revenue. On the other hand, profitable enterprises tend to cut profit in order to reduce tax obligations.

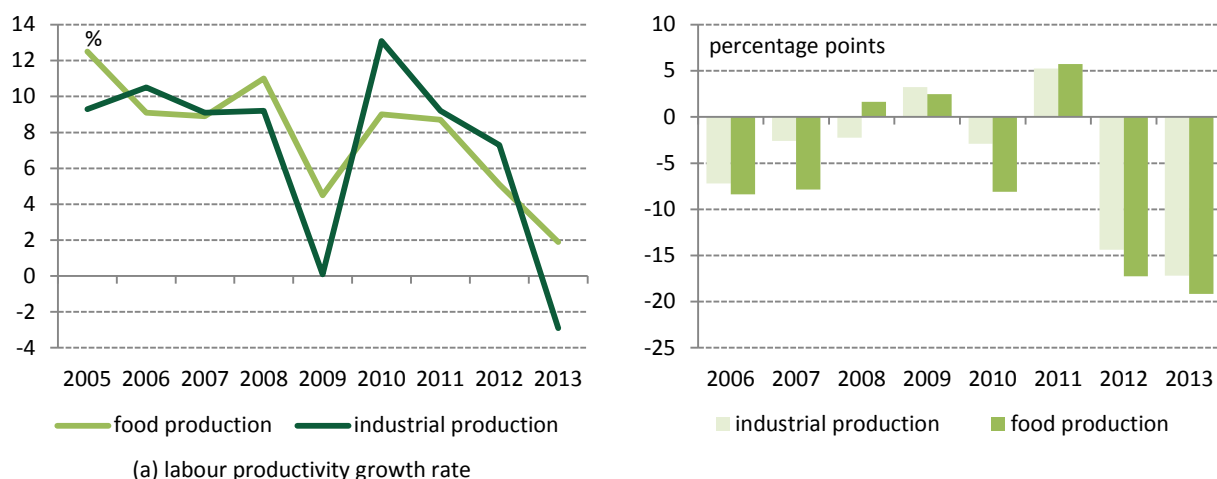
In these circumstances key indicators that may illustrate financial stance of a sector and its competitiveness are export dynamics, production volume and level of inventories. All of them indicate that food sector is relatively competitive, as export and production of key food sectors grow, while inventories remain lower than average for the industrial production (60% vs 70% of the monthly production as of the end of 2013).

Another proxy of competitiveness is labour productivity dynamics. It has been growing with the average annual rate of around 8%. It is slightly higher than the average across all industries. Moreover, the rate

³² In 2010 volume of the rape oil consumption for food purposes was 114.8 thousand tons, <http://www.kp.by/daily/25875/2839228/>.

³³ At the same time, according to the largest meat processing plants, the return on sales of "social" beef on the domestic market is minus 50%, pork - minus 35%. The reason for these figures is the regulation of sale and purchase prices for the "social" meat.

of productivity growth is much more stable than average in the economy, implying sustainable development of the sector (see Figure 3.6a). The negative trend is that growth of wages in the sector was higher than productivity growth which is typical for the whole economy of Belarus (see Figure 3.6b). Still, wages in food sector grew faster than in other sectors (see Figure 3.2a and 3.6b), which might affect its competitiveness. However, influence of this non-proportional wage increase for food sector is limited due to the cost structure of the sector.



Source: Uniter (a), Belarusian Statistical Committee (b)

Figure 3.6. Labour productivity dynamics in food industry

Competitiveness of the sector is at large extent rooted in the cost structure and price regulations. The cost structure of food industry differs greatly from the average for Belarusian economy. Expenditures on capital and labour are rather low, which correlates to the fact that the share of food industry in labour market and investments is lower than it might have been expected based on its output. Total expenditures on wages and social contributions accounted for 11.8% of the total costs of the sector. In Belarusian economy on average the share of these expenditures is twice as high (23.5% in 2013, see Table 3.9). Furthermore, the role of other expenditures that include net taxes and financial expenditures, are also below the average for Belarus economy and industrial production in particular. In fact, key expenditure for food industry is material costs. More precisely, most of the spending of the food industry enterprises is related to the raw materials acquisition. Raw materials accounted for 73.6% of the total costs of the sector in 2013. The share of these expenditures for industrial sector and the economy on average was 57.2% and 47.3% respectively. Other material costs, related to energy goods consumption, are low in food industry. Aggregated expenditures on fuel, heating and electricity constituted less than 5% of the costs of the sector in 2013. On average this share was 13.6% for industrial production, i.e. almost three times higher.

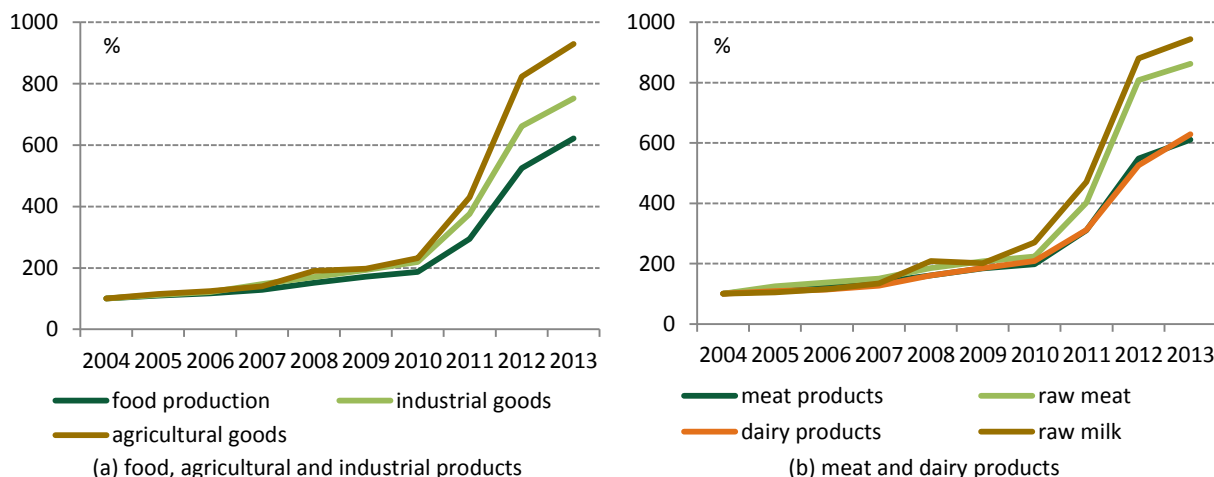
Table 3.9. Structure of the costs in food industry compared to the average in the economy, %, 2013

	Economy	Industrial production	Food production
Material costs	64.0	73.8	80.6
Raw materials, parts	47.3	57.2	73.6
Fuel	7.6	8.6	2.7
Electricity	3.3	3.9	1.9
Heating	0.9	1.2	0.4
Other	4.9	3.0	2.1
Wages	17.7	12.5	8.8
Social contributions	5.8	4.2	3.0
Capital depreciation	6.3	5.2	4.0
Other	6.2	4.3	3.6

Source: Belarusian Statistical Committee.

Accordingly dynamics of prices for raw materials, i.e. for agricultural products, decisively determines the competitiveness of the food industry. Output prices for agricultural products are regulated in Belarus and they are lower than the world prices. Thus, the state channels support to food industry regulating agricultural prices and improving its financial stance and competitiveness on external markets. However,

the scale of this support decreases as prices for agricultural products have been growing faster than the average price level in Belarus, and have been catching up the world prices (see section 2.5.1). Moreover, agricultural prices have been growing much faster than food industry output prices, starting from 2010 (see Figure 3.7). It was determined not only by price increase in agriculture, but also relatively slow price increase in the food sector. Output prices in food production grew slower than average industrial output prices (see Figure 3.7a). It can be attributed to the price regulation that is practiced in some sectors of food production.



Source: Belarusian Statistical Committee.

Figure 3.7. Price dynamics for food and agricultural products, level of 2004 = 100%, 2005–2013

Prices for raw meat, "social" meat products, raw milk and some milk products (without any additives) are regulated by government in Belarus. The adjustments are usually undertaken twice a year – in spring and autumn. In order to avoid price regulation, meat and milk processing plants focus on production of products with higher added value as well as on production for export. However, the authorities can influence production plans by administrative measures and urge to produce also the "social" goods.

The list of food products with state regulated prices has substantially shrunk recently. In addition to some dairy and meat products it includes bread, eggs, baby food, and some vegetables (as of 2014). The state has possibility to regulate prices also for some kinds of cereals, pasta, flour, butter, oil, sugar, and fish for 90-days period once a year.

Current price dynamics implies high risk of deterioration of financial situation of the sector. Narrowing gap between international and domestic agricultural prices, alongside price regulations on domestic market limit subsidy arising from low purchase prices of raw agricultural products and discourages domestic sales. Lack of meat and dairy products in retail is often stated by mass-media. It stresses the need to change price policy towards free pricing in order to eliminate misbalances, which is claimed to be fulfilled in 2015. It implies also reconsideration of the state support policy which is partly based on the price regulations along the value chain, starting from subsidized tariffs for energy goods and fertilizers for agricultural sector.

Another factor that determines performance of the sector is the size of the enterprises. As it was shown earlier in the section 3.2, food enterprises are larger than average in the industrial sector. Moreover, they are often vertically integrated with agricultural enterprises. It may take direct form, as food companies tend to have farms on their balances that supply raw materials, as well as forage producing entities to feed animals and so on. There is also implicit vertical integration as food enterprises are tied with agricultural enterprises, where they are obliged to purchase raw materials by official regulations. Besides, there is tendency of horizontal integration as there are M&A deals in the food sector, usually implying consolidation of state-owned enterprises. Another trend is creation of holdings that coordinate activities of the food producing enterprises. Consolidations within the food sector may lead to efficiency gains. However, they also may undermine competition both on the market of raw agricultural products and final food products. This problem may gain momentum in case the state liberalizes the sector without opening it to external competition.

3.2.3 Food policy framework and laws

The Belarusian government and other public authorities strongly influence the food industry by rules and regulations. There are numerous channels the influence takes place:

State development programs

Belarus regularly decides on programs for the development of different subsectors of the food industry. At the moment, programs for development of the dairy, sugar, poultry and confectionery industry are being implementing in Belarus. Typically, objectives of the programs are the increase of production and production capacities, efficiency gains and competitiveness increase, as well as reduction of imports and increase of exports of Belarusian products. Programs include a number of practical measures with the financing, provided from central or local budgets, and banks under directed lending. The enterprises participating in the programs are chosen on discretionary manner. In case the state financing is lacking, enterprises are expected to finance investments from their own resources. Control over the state programs is strict, but the focus is on the spending side rather than on the results achieved. Situation may improve with introduction of new legislation regulating state programs that focuses on efficiency audit and performance-oriented budgeting (Morgner, Kirchner, Shymanovich, 2015).

Regulations of prices, production and purchasing logistics

Next to price regulations for some types of food products in Belarus (as already mentioned above) access to raw materials (raw milk and meat) for processing enterprises is regulated by the state. Meat processing plants as well as dairy plants are requested to purchase raw materials only from its "raw material zone", i.e. from agricultural organizations located in surrounding areas. The regional executive committees define "the raw material zones" for every company. Plants work with suppliers of raw materials on a prepaid basis, in this way supporting the agricultural enterprises.

In addition to price and supply chain regulations, the state has an influence on production through the concern "Belgospisheprom". The concern sets the targets for companies (output growth, export deliveries) and monitors their implementation.

Moreover, laws are regulating the conditions of certain sub-sectors performance. For example, the production, circulation and consumption of tobacco and tobacco products are regulated by the Presidential Decree №28 from December 17, 2002. Quotas for the production of alcohol and tobacco products are determined by the state.

State control of business

The state in Belarus tends to control the private initiatives in the sector. It seems to be improbable that e.g. in dairy sector it will come to more privatization. Furthermore, the government returned under its control such leading private confectionery factories as "Kommunarka", "Spartac" and "Red pischevik". This procedure was based on Presidential Decree №107, which gives the local authorities the pre-emptive right to purchase the shares from individuals who bought securities with discount or purchased them in exchange to checks "Property" issued within people's privatization of 1993.

Regulations of the Custom Union

Within the Custom Union a number of rules regulating the food industry also exists. Since the 1st of July 2014 seven common technical regulations have come in force regarding

- general food safety
- food products and their labelling
- juice products from fruits and vegetables
- oil and oil products
- food additives, flavourings and processing aid means
- certain types of specialized food products including medical and dietary nutrition
- safety of grain
- specifies requirements for meat and meat products, for process of their production, storage, transportation, sales and labelling

Countries of the Custom Union are also submitted to a number of regulations relating to imports.

Sanitary rules and norms

Sanitary rules and norms are regulated by the decrees of the Ministry of Health:

- Sanitary rules and norms for tobacco products (Decree of the Ministry of Health № 2, January 10, 2003);
- Sanitary rules and norms "Hygienic requirements for drinking water packaged in containers" (Decree of the Ministry of Health № 59, June 29, 2007);
- Sanitary norms, rules and hygienic standards "Hygienic requirements for the food industry," (Decree of the Ministry of Health № 83, July 17, 2009):
- Sanitary norms, rules and hygienic standards, "State Sanitary-hygienic examination of storage of food raw materials and food products...." (Decree of the Ministry of Health № 119, September 1, 2010);
- Sanitary norms, rules and hygienic standards "Hygienic requirements for plants processing and bottling of mineral water" (Decree of the Ministry of Health № 126, December 21, 2011);
- Sanitary norms and rules "Sanitary requirements for production control in the manufacture, sale, storage, transportation of food raw materials and (or) food" (Decree of the Ministry of Health № 32, March 30, 2012);
- Sanitary norms and rules "Sanitary requirements for organizations engaged in the production of wine" (Decree of the Ministry of Health № 51, May 30, 2012);
- Sanitary norms and rules "Sanitary requirements for organizations engaged in the production of ethyl alcohol, vodka and other alcoholic beverages" (Decree of the Ministry of Health № 69, June 12, 2012);
- Sanitary norms and rules "Sanitary requirements for organizations engaged in the production of meat and meat products" (Decree of the Ministry of Health № 73, June 15, 2012);
- Sanitary norms and rules "Sanitary requirements for organizations engaged in the production of oil and oil products" (Decree of the Ministry of Health № 74, June 15, 2012)
- Sanitary norms and rules "Sanitary requirements for organizations engaged in the production of beer and soft drinks" (Decree of the Ministry of Health № 78, June 23, 2012)
- Sanitary norms and rules "Sanitary requirements for organizations engaged in the production of poultry products" (Decree of the Ministry of Health № 113, July 24, 2012);
- Sanitary norms and rules "Sanitary requirements for organizations engaged in the production of milk" (Decree of the Ministry of Health № 119, July 31, 2012);
- Sanitary norms and rules "Sanitary requirements for organizations engaged in the production of tea" (Decree of the Ministry of Health № 121, August 7, 2012);
- Sanitary norms and rules "Sanitary requirements for organizations engaged in the production of ice cream" (Decree of the Ministry of Health № 124, August 9, 2012);
- Sanitary norms and rules "Sanitary requirements for organizations engaged in the fish production" (Decree of the Ministry of Health № 129, August 24, 2012);
- Sanitary norms and rules "Sanitary requirements for organizations engaged in the production of bread, bakery and confectionery products" (Decree of the Ministry of Health № 130, August 24, 2012);
- Sanitary norms and rules "Sanitary requirements for organizations engaged in the production of food concentrates" (Decree of the Ministry of Health № 136, September 6, 2012);
- Sanitary norms and rules "Sanitary requirements for organizations engaged in the pasta production" (Decree of the Ministry of Health № 153, October 1, 2012);
- Sanitary norms and rules "Sanitary requirements for organizations engaged in the production of dairy products" (Decree of the Ministry of Health № 177, November 12, 2012);
- Sanitary norms and rules "Sanitary requirements for organizations engaged in the production of canned fruits and vegetables... " (Decree of the Ministry of Health, March 12, 2013);
- Sanitary norms and rules "Sanitary requirements for organizations engaged in processing and sale of mushrooms" (Decree of the Ministry of Health № 27, April 12, 2013);

- Sanitary norms and rules "Sanitary requirements for organizations engaged in the production of starch..." (Decree of the Ministry of Health № 39, May 7, 2013);
- Sanitary norms and rules "Requirements for organizations engaged in the production of baby food", (Decree of the Ministry of Health № 42, June 3, 2013).

3.3. Bioenergy production

Bioenergy sector³⁴ is underdeveloped in Belarus, as the main source of energy is natural gas that the country obtains from Russia at preferential price. This fact makes bioenergy production less competitive in comparison with energy production from fossil fuel. The share of natural gas exceeds 76% in the total balance of energy resources of Belarus, and more than 93% of electricity is produced from gas in the Belarusian energy system. However, the state policy is aimed at increasing the share of local energy resources in the energy resources. As fossil fuel is limited in Belarus, it implies development of renewable energy sources. Statistics show some progress in this sphere.

The share of local sources reached 26.4% in the total energy resources in 2013, increasing from 17% in 2005. The share renewable sources, in particular, grew from 4.3 to 5.4% within the considered period (see Figure 3.8a). The volume of energy production from renewable energy source was equal to 3.6 million tons of fuel equivalent. It is relatively low compared to the EU countries. For example, the share of renewable source in energy balances in neighbouring Poland or Lithuania is twice as high. One of the reasons is limited possibilities for wind, solar, hydro energy utilizations due to the geographic and climatic factors. Therefore, biomass plays a key role in energy production from renewable sources. In Belarus the following biomass can be used for energy production: wood biomass, wood waste generated during its logging and processing, biomass of fast-growing shrubs and herbaceous plants, lignin, the combustible portion of municipal waste, waste resulting from the reclamation work, land clearing for new construction, crop residues, combustible waste processing and food industries, and animal husbandry.

The key renewable source of energy is wood biomass. Fuel wood, fuel chips and wood waste account for around 95% of the energy produced from renewable sources (see Figure 3.8b). There were 308 plants producing energy from this source at the beginning of 2013. These are usually combined heating and power mini plants and boiler-houses of enterprises of the wood and pulp industry. Their total capacity was around 500 MW. Besides, households in rural area also rely on wood in case there is no access to gas. The land area under forests is growing in Belarus, implying increasing source base for wood fuel. Annual increment in forests is estimated at 30 million m³, while the total growing wood stock is 1.6 billion m³. Significant part of this wood is ripe or overripe (13.6%). So there is potential for wood fuel utilization increase. There have been plans to construct another 199 plants with capacities of 1300 MW within 2011–2015, which were interrelated with the plans of wood-pulp industry modernization. Full-scale realization of these plans might be doubtful due to the tightened fiscal policy and overall gloomy macroeconomic prospects. However, at the beginning of 2014, new capacities of around 500 MW working on biomass were registered, thus doubling total capacities. Moreover, increase of production of pellets is expected as there is demand on external markets. Pellets are not utilized in Belarus due to high costs compared with other sources of energy.

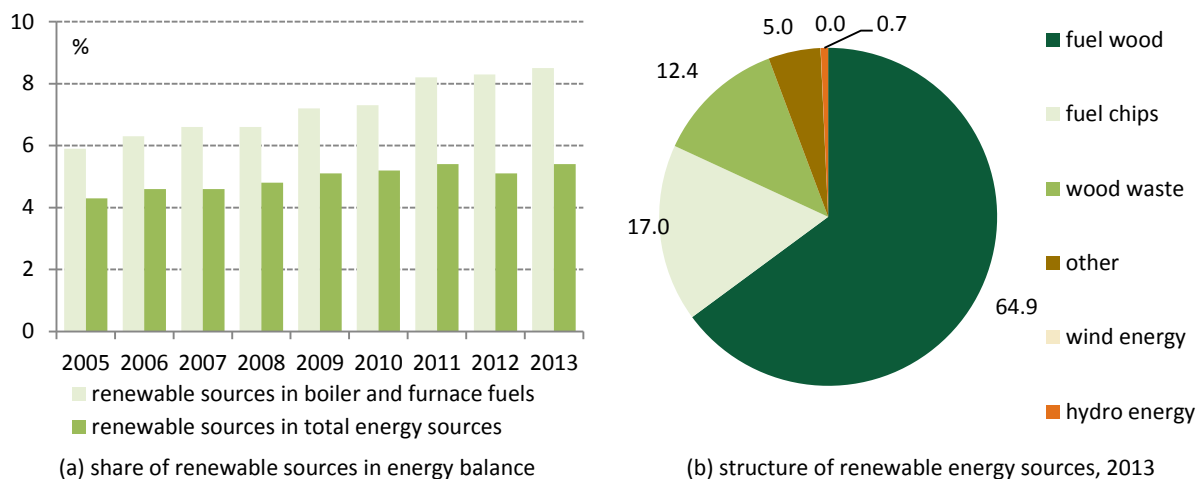
Biogas and landfill gas are another source of bioenergy that is used in Belarus. There are 91 cattle farms (about 400 thousands numbers of heads); 106 pig farms (about 2 million numbers of heads); 35 poultry farms (around 20 million numbers of heads) that meet the technical requirement to operate as biogas plants. However, only less than 10% of them have built a biogas plant. Besides, there are 170 waste landfills part of which can be used for gas extraction. There are only 6 landfill gas extraction plants operating in Belarus, according to the information of Belarusian Association of Renewable Energy.

Total number of biogas and landfill gas plants operating in Belarus was 24 in 2013, and their capacities were limited to 25 MW. So potential for biogas and landfill gas energy production is exploited only fractionally. However, it is planned that 32 biogas plants will come into operation in Belarus till the end of

³⁴ The section is prepared based on the information obtained from the Belarusian Association of Renewable Energy and reports of the Uniter Investment Company.

2015, increasing total capacities up to 60 mW. It is still far beyond the potential volume, considering the total number of farms suitable for biogas production. Furthermore, potential energy contained in the municipal solid waste generated on the territory of Belarus, is equivalent to 470 thousand tons of fuel equivalent, but this waste has not been bioprocessed yet. According to the state plans, 11 additional facilities for utilization of landfill gas with total capacity of 11.3 MW will be built by the end of 2015.

Despite the rape oil production growth, Belarus has not massively expanded production of biodiesel due to almost full utilization of agricultural raw materials as fodder and export of oil.



Note. Boiler and furnace fuels are heating fuels used in the countryside.

Source: Belarusian Association of Renewable Energy (b), Uniter based on State Standardization Committee data (a).

Figure 3.8. Renewable energy sources in Belarus

Development of biofuel energy production is constrained by:

- Lack of preferences and state subsidies for investors and owners of biogas plants for generated heat. Therefore, a capital cost repayment period of these plants is large;
- Restriction to the use at biogas plants most effective components of the raw material (corn silage, sugar beet pulp) as it is important sources of fodder.

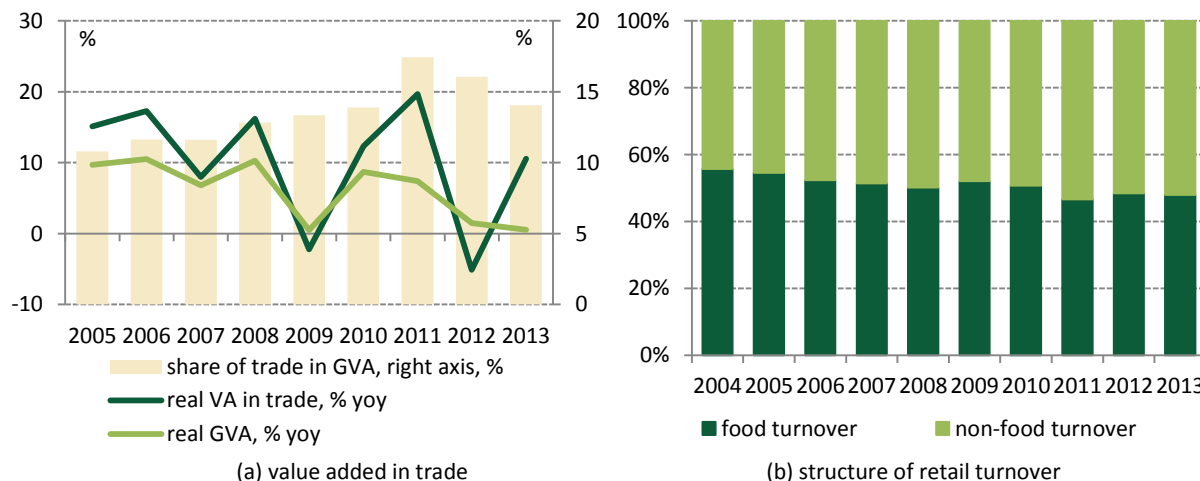
The state guarantees through the law on renewable sources of energy that electricity produced from renewable energy sources will be fully purchased by the state at the tariff rate with significant mark up for 10 years. However, practical implementation of this law is hindered by low incentives for energy companies to purchase electricity at “green tariffs”. Consequently, the state had to reduce the mark-up at the beginning of 2014. The other side of the problem is that energy tariffs for households are very low due to direct subsidies to housing utilities sector and cross-subsidization. Hence, there are limited possibilities to introduce renewable source of energy for households, as they are too expensive compared to traditional sources of energy.

3.4 Food retail and consumption patterns

3.4.1 Food retail sector

Trade (and vehicle repair) sector has been a key driver of economic growth in Belarus in recent years. Its growth rates regularly exceeded 10% in 2005–2013 and even reached 20% in 2011. Exclusions were 2009 and 2012 when Belarus coped with two waves of economic crisis, which led to demand contraction and reduction of value added in trade. Due to these high growth rates, the share of trade in gross value added steadily grew (see Figure 3.9a). It reached maximum of 17.4% in 2011. However, sharp increase of 2011 was secured largely by wholesale trade growth. The share of retail trade in gross valued added equalled to 6.2% in 2011 which was actually lower than in 2010 (6.5%). The wholesale trade was not determined by economic factors, but by the introduction of oil re-export schemes. Hence, the abolishment of these schemes led to reduction of the trade sector’s share in GVA, while retail trade’s share remained constant of around 6%.

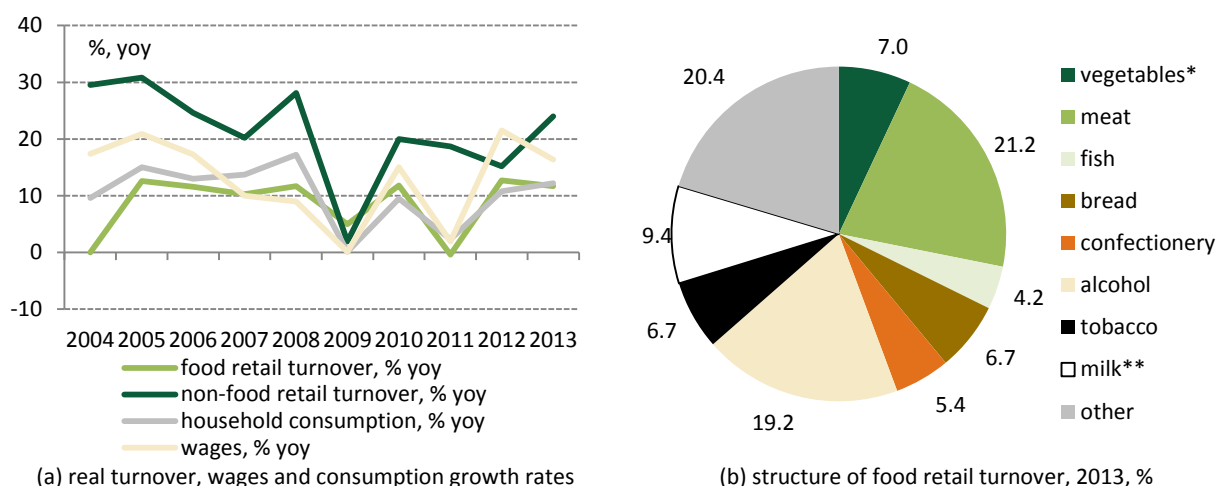
The retail trade is presented in equal parts by food and non-food trade. However, the share of food turnover in the total turnover has been falling in 2004–2013 (see Figure 3.9b). Exceptions were 2009 and 2012, when economic turmoil forced population to reduce non-food consumption, while food consumption was less elastic to changes in income. In general, growth rates of food retail turnover were similar to growth of wages while non-food retail grew much faster.³⁵ Only when real growth rates of wages increased up to 20% mark there was decoupling of food retail turnover and wage dynamics (see figure 3.10a). Rapid income increase switched household expenditure profile in direction of savings.



Source: Belarusian Statistical Committee.

Figure 3.9. Value added in trade (and vehicle repair) and role of food retail turnover in Belarus

The structure of food retail did not experience significant changes in 2004–2013. The highest shares in food retail are observed for meat products and alcohol (see Figure 3.10b). Key alcohol product dominating retail sales is vodka, it is followed by beer and wine (fruit wine largely). A part of vodka sold in Belarus is later smuggled to the EU, which overestimates domestic consumption, especially in Grodno region. This observation is also relevant to tobacco sales, which play important role in the retail turnover. Other products that have significant share in retail turnover are drinking milk, cheese and other dairy products, bread and bakery, confectionery products, fruits and vegetables, fish and seafood. The share of dairy products is much lower than in food production stressing its export orientation. The role of other products, including groats and pasta is marginal.



Note. * vegetables and fruits, ** milk and dairy products incl. cheese.

Source: Belarusian Statistical Committee.

Figure 3.10. Food retail growth rates and structure

³⁵ Rapid growth of non-food retail did not influence the household consumption dynamics. It stresses that non-food retail is determined not only by income, but some external factors as well. Price differential in Belarus and neighbor countries for petroleum products is one of the factors explaining unexpectedly high growth rates of non-food retail. So it can be viewed partly as hidden export.

Retail sales are carried largely through shops. The role of unstructured retail trade facilities (farmers markets, bazaars etc.) reduced substantially in 2004–2013 (see Figure 3.11a). They accounted for 21.5% of the total retail turnover and 13.7% of food retail turnover in 2013. In 2004, the share of unstructured trade was almost twice as high. Its reduction is related to rapid development of structured trade networks. Number of shops increased by 56.7% in 2004–2013. The floor space grew even faster - by 63.5% (see Figure 3.11b). However, the role of unstructured trade remains high in small towns where its share holds at the level of 40%. Consequently, the level of shopping floor space per inhabitant of 0.5 m² is still three times lower than in the EU countries.



Source: Belarusian Statistical Committee.

Figure 3.11. Retail network in Belarus

Growth of the structured trade network was determined by introduction of new types of shops like hypermarkets and discounters, development of retail chains, and entrance of foreign investors. The fastest growing type of shops was discounters. Their number increased 10 times during last 4 years. Number of hypermarkets increased 3 times, while number of supermarkets and neighbourhood stores grew 2 times (Kavalkin, 2013).

There are 15 large retail chains in Belarus that operate 30–50 shops each. The largest retail company is still state-owned Belkopsyuz with more than 10 thousand shops. However, its turnover is comparable to Evroopt, which is the largest private retail company with more than 400 shops in 40 towns of Belarus. It operates as discounter and is popular among population from strata below middle class. Two more chains (Almi and Rodnaya Storona) can also be viewed as country-wide chains, as they are presented in more than 10 rayons. The rest have focus on separate regions. As a result, some chains may have share of up to 20% in food retail in a rayon, but the total share of all chains in the rayon does not exceed 40%. Exception is Minsk where chains accounted for almost half of the turnover among large and middle retail enterprises. However, none of the chains control more than 8% of the total turnover³⁶.

One of the drivers for food retail development is absence of strict state regulations of the sector. The share of state-controlled retail enterprises in total retail turnover fell below 20% in 2013. It assured inflow of foreign investment into the sector (largely from Russia and Lithuania) and regular cases of merges and acquisitions (M&A), not typical for Belarus in general. Retail chains of full or partly foreign ownership controlled 22.9% of the retail turnover (or 26.7% of structured retail turnover) in 2013. The largest chains with foreign ownership are Belmarket, Almi and Sosedi.

Further development of chain retail is expected, as the market is not saturated even in Minsk. The state plans that availability of retail floor space will reach 0.6 m² per capita in 2015. However, dynamics of the retail sector development has slowed down in 2014. The chains shifted their focus from hypermarket construction to the development of neighbourhood stores and supermarket network in the regions. It is explained by gloomy perspectives of income growth and introduction of the law regulating chain retail trade. It limits possibilities of M&A for chains that control more than 20% of the retail turnover in the

³⁶ Data from the report of Uniter Investment company on retail trade.

rayon. Up to now this law affects only growth of Evroopt chain in Minsk rayon (as its largest stores focused on Minsk are located just outside the city).

Another trend is the development of internet sales of food products. The share of online shops in structured retail turnover was 1.5% in 2013. However, these shops are focused on sales of import non-food products, while attempts of online food stores development failed. The situation might change in the future as Evroopt introduced internet sales in Minsk. In case of success, this line of business will be developed by the company and other chains.

3.4.2 Patterns of human consumption

Human consumption profile of 2013 differs significantly from the profile of 2004. Most of the changes took place in 2004–2010, when income of the population grew rapidly. It resulted in increasing consumption of meat, eggs, fruits, vegetables, vegetable oil and slightly falling consumption of potatoes and bread (see Table 3.10). Hence, there was improvement of the food consumption ration of the population. Meat consumption exceeded officially recognized medical norm of 70 kg per capita and came close to the level of consumption in industrial countries. The norm set for vegetables of 145 kg was also reached in this period (2004–2010). The norm still was not met in consumption of fruits and berries, fish and dairy products (99, 36.5 and 355 kg per capita³⁷). Consumption of potatoes exceeded the medical norm of 129 kg significantly, but the scale of its excessive consumption was falling.

Improvement of ration stopped after 2010 as economic growth slowed down. Economic crisis of 2011 determined fall of fish, fruits and vegetable consumption, and increase of bread consumption. Further economic stabilization returned the ration to the pre-crisis profile, but its improvement stopped.

Dynamics of dairy product consumption may suggest that they are inferior goods, which contradicts the claim that the consumption of dairy products is below the medical norm. In fact, increase of dairy product consumption in 2011 is a consequence of cross-border trade fuelled by depreciation of national currency and high demand for Belarusian dairy products in Russia. The same is true for consumption of alcohol and tobacco. So, analysis of human consumption of these products based on retail statistics may be misleading. In case of dairy products household survey data may reveal true dynamics of their consumption³⁸.

Table 3.10. Human consumption of food products per capita, 2009–2013

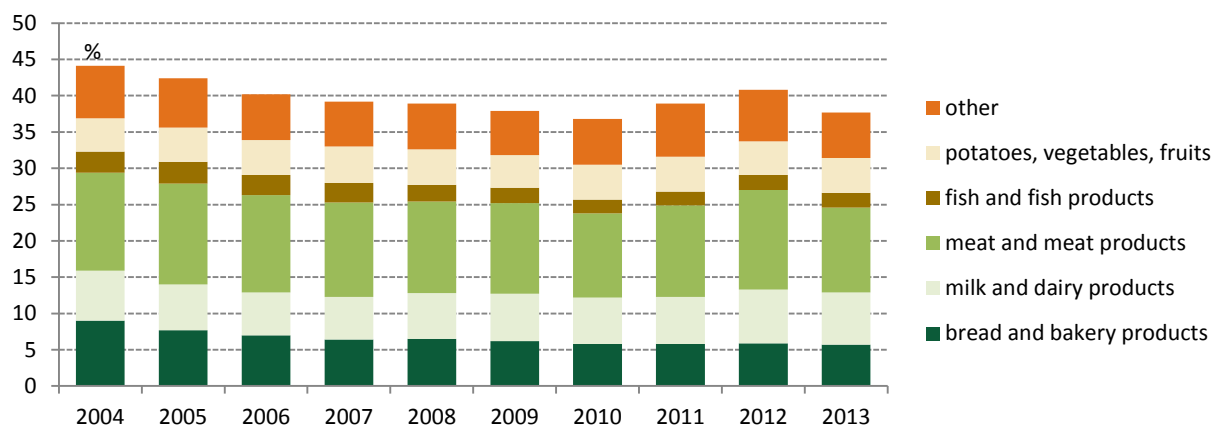
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Meat and meat products, kg of meat equivalent	59	62	68	71	76	78	84	88	88	91
Eggs, pieces	241	259	279	280	283	289	292	301	303	304
Milk and dairy products, kg of milk equivalent	246	262	257	253	237	228	247	294	281	260
Fruits and berries and related products, kg of fresh equivalent	47	47	60	59	60	61	65	58	64	69
Vegetables and products, kg of fresh equivalent	120	128	136	140	145	148	149	144	145	146
Potatoes and potato products, kg of fresh equivalent	187	183	189	191	192	184	183	183	186	179
Vegetable oil, kg	14.5	14.7	14.3	15.9	15.7	13.6	15.9	18.4	17.4	17.7
Bread and bakery products, kg of flour equivalent	100	95	93	92	89	88	86	93	94	85
Fish and fish products, kg	17.6	18.6	17.4	na	16.1	15.4	15.7	12.6	13.1	14.9
Bread and bakery products, kg of flour equivalent	100	95	93	92	89	88	86	93	94	85
Alcohol, l of absolute alcohol	9.4	9.3	10.7	12.0	12.5	12.0	12.3	13.3	12.5	11.1
Tobacco, thousand pieces	1.7	1.7	1.8	2.0	2.2	2.3	2.7	3.0	2.9	2.7

Source: Belarusian Statistical Committee (retail turnover data).

³⁷ Official norm for dairy products in Belarus is significantly above the average level of dairy products consumption for industrial countries (215 kg). It implies that human consumption of dairy products in Belarus is above the average.

³⁸ Data on alcohol and tobacco expenditures in household budget survey is not relevant, as households systematically underreport these expenditures.

Household budget survey stresses that consumption of food product grew slower than non-food expenditures, which is in line with retail statistics. The structure of food consumption, at the same time, was not subjected to significant shifts (see Figure 3.12). Hence, consumption of food products in monetary terms grew at similar rates. Exclusions are bread and bakery products and dairy products. The share of expenditures on bread within food expenditures fell from 20% in 2004 down to 15% in 2013. The share of dairy products on contrary grew. This growth took place in two periods of 2008–2009 and 2012–2013, while 2011 was characterized by the reduction of dairy product share in food expenditures. Growth of dairy products totally contradicts data on human consumption from Table 3.10. Hence, dairy products are not considered inferior goods and there is room for further consumption increase, as official medical norms suggest.



Source: Belarusian Statistical Committee (household budget survey data).

Figure 3.12. Share of food products in the structure of households expenditures, 2004–2013

The fact that increase in income did not result in significant changes of food consumption structure is explained by income distribution in Belarus. The level of inequality is very low in Belarus and consumption structure is almost the same for the whole population. Exclusions are the wealthiest decile, and the poorest, which can be used as a proxy for middle class and absolute poor population. So only significant increase (or reduction) in income may lead to changes in consumption profile. The wealthiest decile tends to spend slightly larger share of its resources on fruits and berries, pork, and vegetables. The poorest decile spends more on bread, drinking milk and cheap meat products³⁹, retrenching expenditures on pork, fruits, vegetables and dairy products (other than drinking milk). However, the differences between 1st and 10th deciles are not large-scale with exception of expenditures on bread.

Future trends of the food consumption depend on the welfare dynamics. In case long-term economic growth recovers in Belarus, there will be further increase of non-preserved meat, dairy products other than drinking milk, vegetables, fruits and berries, and fish consumption. Due to low inequality this increase may be very rapid at some point of time when majority of population will switch to the consumption pattern of the middle class. On the contrary, in case of recession the role of bread, drinking milk, cheap preserved meat products and potatoes will increase. Within stagnation scenario the consumption profile will not change much, slow growth of other dairy products, fruits and berries and non-preserved meat may be expected.

³⁹ Analysis of the consumption structure by 1st and 10th decile based on household budget survey of 2012 is presented in Shymanovich (2013).

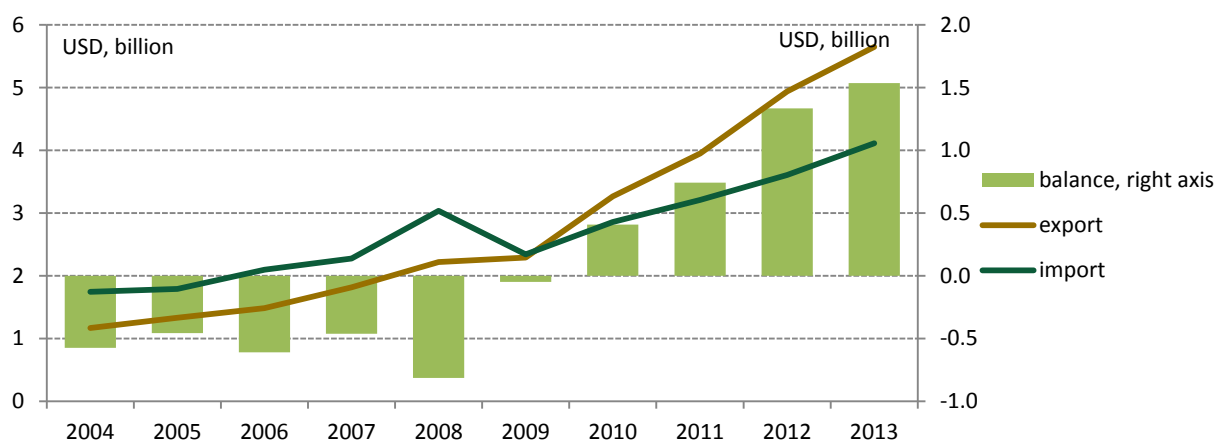
4. AGRI-FOOD TRADE AND TRADE RELATIONS

4.1 Agri-food trade

4.1.1 Overall agri-food trade

Agri-food sector is treated as a key by Belarusian economic policy as it notably influences foreign trade dynamics. Trade in agri-food products generated surplus of USD 1.5 billion in 2013, which was equal to 2.2% of the GDP. It played important role in constraining overall current account deficit of Belarus. The agricultural and food product trade began to generate surplus only in 2010. Before 2009, it was characterized by deficit which amounted on average to USD 0.5 billion (see Figure 4.1). However, world food price increase of 2008 and new arrangements with Russia created incentives for food product export promotion. Alongside import reduction in 2009 against a background of economic crisis it resulted in trade surplus that has been steadily increasing afterwards.

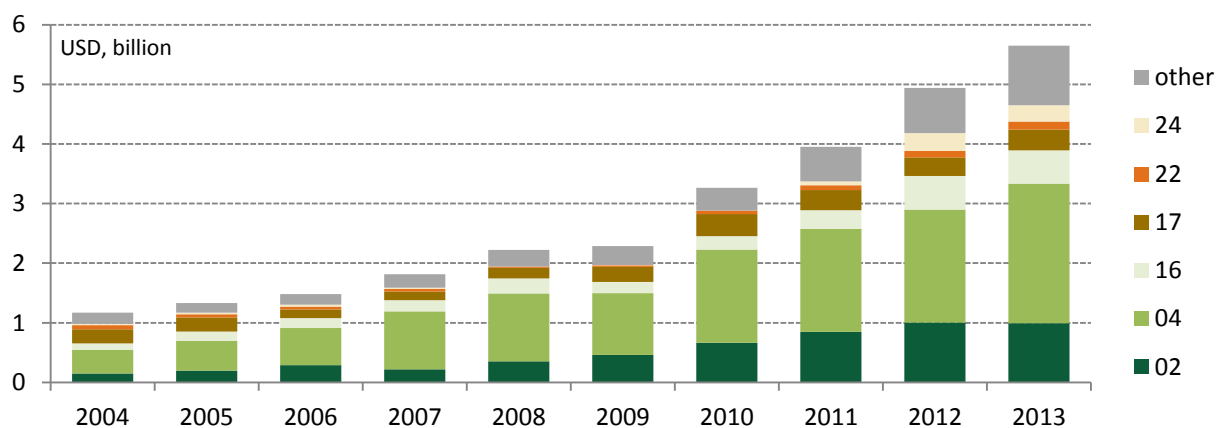
Export of agricultural and food products constituted 15.2% of total export of Belarus in 2013. In 2004, this share was only 8.5%. In 2008, it was even lower as agricultural and food products generated only 6.8% of total export. On the one hand, its increase is explained by steady growth of agri-food export. On the other hand, sharp changes in volume of some industrial product exports related to economic crisis and regular revisions of the terms of energy product trade with Russia also contributed much to the increase of food product share in total Belarus exports.



Note. Agricultural and food products are represented by goods classified within groups 01–24 under HS 2-digits.
Source: UN Comtrade.

Figure 4.1. Total agricultural trade in Belarus, 2004–2013

The growth of agri-food exports started in 2000, but the trend crystallized only in 2010, when growth significantly accelerated. Dairy products contributed greatly to the increase. Total increase of agricultural and food exports in years 2009–2013 was by 146.9% (2.5 times), while contribution of dairy products amounted to 57.1 of percentage points. Meat and meat preparations accounted for another 39.2 percentage point increase. Contribution of other products was much lower. In general, meat and dairy products are key export goods with the shares of around 30% and 40% of total agri-food export. Other important exported goods are sugar, beverages and tobacco. Sugar export reached its maximum in 2010 approaching USD 0.4 billion and constituting 11.5% of total agricultural and food product exports. However, the relative role of sugar exports was much higher in early 2000s before hike in dairy and meat products export. Sugar exports generated around 20% of total agri-food trade in 2004–2005 (see Figure 4.2). Export of beverages and tobacco began to play important role in only in 2012 – 2013, amounting to USD 0.3 and 0.1 billion respectively. However, these volumes are underestimated as there is widespread trans-border trade (smuggling) of these products between Belarus and EU countries, fuelled by low domestic prices. Currency crisis of 2011 made this type of business especially attractive and important coping strategy for households from the regions bordering with Poland and Lithuania.

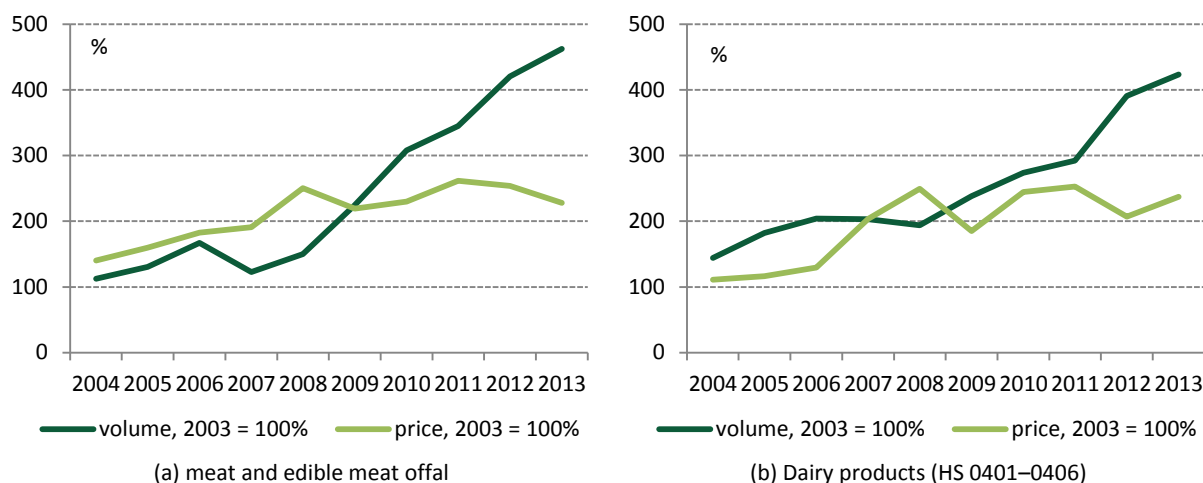


Note. HS codes: 02 – meat and edible meat offal; 04 – dairy, eggs, honey and edible products; 16 - Meat, fish and seafood food preparations; 17 – Sugars and sugar confectionery; 22 – Beverages, spirits and vinegar; 24 – Tobacco and manufactured tobacco substitutes.

Source: UN Comtrade.

Figure 4.2. Agricultural export by commodity groups (HS 2-digits), 2004–2013

Export growth of meat and dairy products was related both to price and volume increase. Price increase can be considered as a basic factor as it took place prior to volume growth. Most of the export price increase occurred in years 2004–2008, while export volume growth accelerated only in 2009 (see Figure 4.3). First, it implies that only world price hike on food products made export of meat and dairy products attractive for Belarus. Second, it shows that changes in the volume of exports occur with a lag, as the level of capacities utilization and technology of the sector do not allow immediate increase of production. For meat production the lag is one year, as price hike of 2008 was followed by rapid volume growth in 2009. In case of dairy products data shows that the lag is two years, as price increase started in 2007, while the volume of exports began to grow only in 2009.



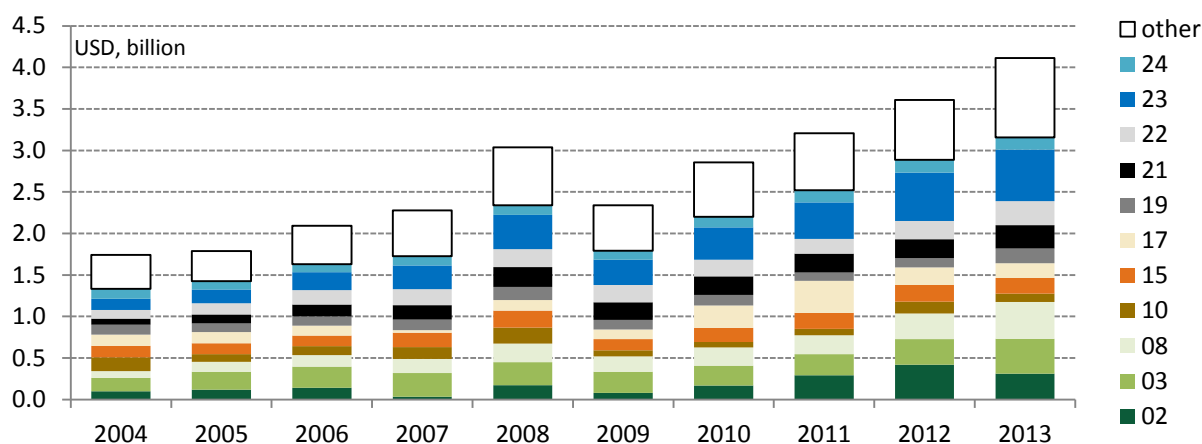
Note. Price is measured in USD/t. Price is export unit price.

Source: Belarusian Statistical Committee.

Figure 4.3. Export prices and export volume increase of meat and dairy products, 2004–2013

Import of agri-food products equalled to 9.6% of the total import in 2013, which is lower than in 2004 (10.7%). Nevertheless, there was increase of agricultural and food product import, but the rates of this increase were lower than the average for Belarus imports. Slight reduction of food imports took place only in 2009 due to consequences of the global economic crisis, including changes in food consumption structure towards cheaper domestic products. Structure of agricultural and food product import is more diversified than exports. Key imported products are fish, fruits, meat, sugar, oil, beverages as well as fodder (see Figure 4.4). Significant part of these goods is imported by food processing industry. Enterprises resident in free economic zones at the border with Poland are provided with privileges allowing them to process fish and meat imported from EU under condition that final products would be

partly exported. Sugar import is explained by necessity to load sugar plants in periods when sugar beets are not available.



Note. HS codes: 02 – meat and edible meat offal; 03 – Fish, crustaceans, molluscs, aquatic invertebrates; 08 – Edible fruit, nuts, peel of citrus fruit, melons; 10 – Cereals; 15 – Animal, vegetable fats and oils, cleavage products; 17 – Sugars and sugar confectionery; 19 – Cereal, flour, starch, milk preparations and products; 21 – Miscellaneous edible preparations; 22 – Beverages, spirits and vinegar; 23 – Residues, wastes of food industry, animal fodder; 24 – Tobacco and manufactured tobacco substitutes.

Source: UN Comtrade.

Figure 4.4. Agricultural import by commodity groups (HS 2-digits), 2004–2013

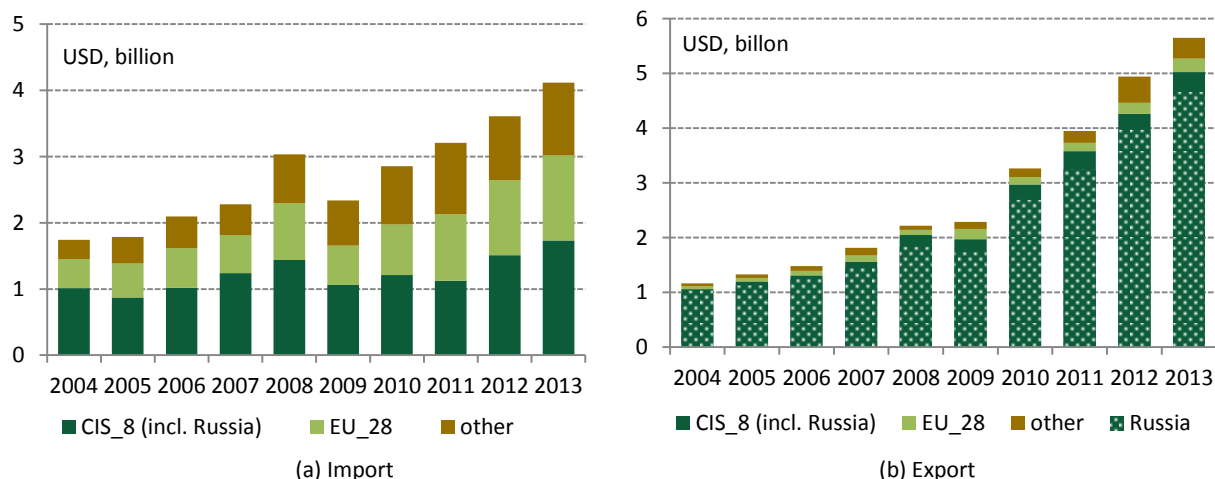
4.1.2 Agri-food trade by trading partner

A key trade partner for Belarus is Russia. Bilateral trade with this country is characterized by two major trends: import of raw materials including energy goods by Belarus and export of industrial products. The second important trade partner is the EU, as Belarus imports investment goods from the EU and exports energy goods, metals, and chemical products (fertilizers). It means that import structure within EU trade is diversified while export is very concentrated. Trade profile with other countries follows the same trend as trade with the EU. In respect to agri-food trade it implies that Russia is a key destination country for Belarus food exports, while import of agri-food products by country of origin is rather diversified.

The share of Russia in total Belarus agri-food export exceeds 80% (82.5% in 2013). Georgia and CIS countries, excluding Central Asia countries, account for 90% of Belarus agri-food export (88.9% in 2013). The share of EU countries does not exceed 5% (4.3% in 2013, see Figure 4.5b). On the one hand, domination of Russia as a sole export destination country is explained by the size of its market. Furthermore, domestic production of meat and dairy products contracted in Russia for a long period which implied growing demand for import goods. Besides, Belarus and Russia have set mutual technical norms in food production which simplified bilateral trade creating competitive advantage for Belarus products compared with the other countries. On the other hand, Belarus does not have access to the EU markets as its food producers are not certified for export to the EU. Only four companies managed to meet strict technical criteria of European commission for food exporters: Savushkin product (dairy products), Berezovsky Syrodельny Kombinat (dairy products), Verhnedvinsky maslosyrzavod (dairy products), Santa Bremor (fish products). However, only two of them (Savushkin product, and Santa Bremor) actively export products to the EU countries, while others prefer to sale products on domestic and Russian market. One of the reasons for low interest in the EU market is a risk of anti-dumping investigations, as state in Belarus actively intervenes into the food sector performance.

Russia is a key destination country for key Belarus food products – dairy and meat products. Only minor part of these products is exported to other countries, such as Kazakhstan and Ukraine (see Figure 4.6). Export of sugar by country of destination is more diversified. Russian market accounts for 70% of total sugar exported by Belarus. The rest is exported to Kazakhstan, Central Asia countries and Moldova. Sugar exported to the countries other than Russia is partly produced from raw cane sugar. Its export to

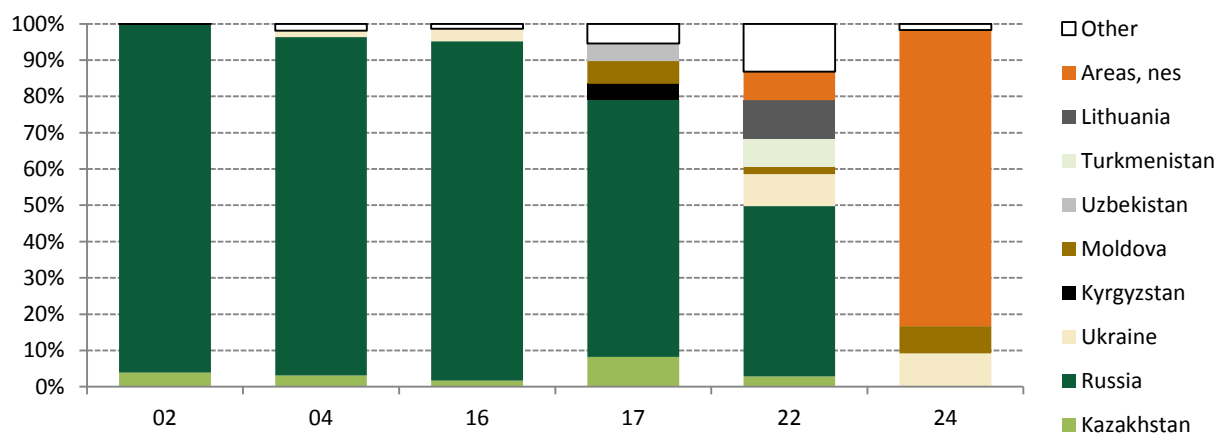
Russia (as well as Ukraine) is hindered by trade barriers⁴⁰. Beverages are exported by Belarus worldwide. The key trade partner is still Russia (48.2% of total exports of beverages). However, significant part of these products is exported to the EU countries (17.4% in 2013). The most important trade partner among EU countries is Lithuania, as 10.9% of Belarus beverage export was destined to this country (see Figure 4.6). However, these shares are underestimated due to smuggling of alcohol production widespread in Belarus–Poland and Belarus–Lithuania cross-border trade. The same is related to tobacco export. In fact, in most cases destination country of tobacco export is not reported, as non-specified areas accounted for 81.7% of Belarus tobacco export in 2013.



Note. CIS_8 denotes for CIS countries, excluding Central Asia countries, and Georgia: Armenia, Azerbaijan, Georgia, Kazakhstan, Moldova, Russia, and Ukraine.

Source: UN Comtrade.

Figure 4.5. Directions of the agri-food trade in Belarus, 2004–2013



Note. HS codes: 02 – Meat and edible meat offal; 04 – dairy, eggs, honey and edible products; 16 - Meat, fish and seafood food preparations; 17 – Sugars and sugar confectionery; 24 – Tobacco and manufactured tobacco substitutes.

Source: UN Comtrade.

Figure 4.6. Export destination by commodity groups in Belarus, 2013

Import structure by origin is more heterogeneous than structure of agri-food import itself. Import from Georgia and CIS countries, excluding Central Asia, constituted 42.2% of total agricultural and food import (see Figure 4.5a). Import from Russia alone accounted for 26.4% of total import, which is much less compared to its role as a destination country for export. Import from the EU countries constituted 31.2% of total agri-food import in 2013. The share of other countries is also rather high, exceeding 25%.

Import from the European Union countries dominates or plays a vital role within the groups “meat and edible meat offal”, “fish, crustaceans, molluscs, aquatic invertebrates”, “edible fruit, nuts, peel of citrus

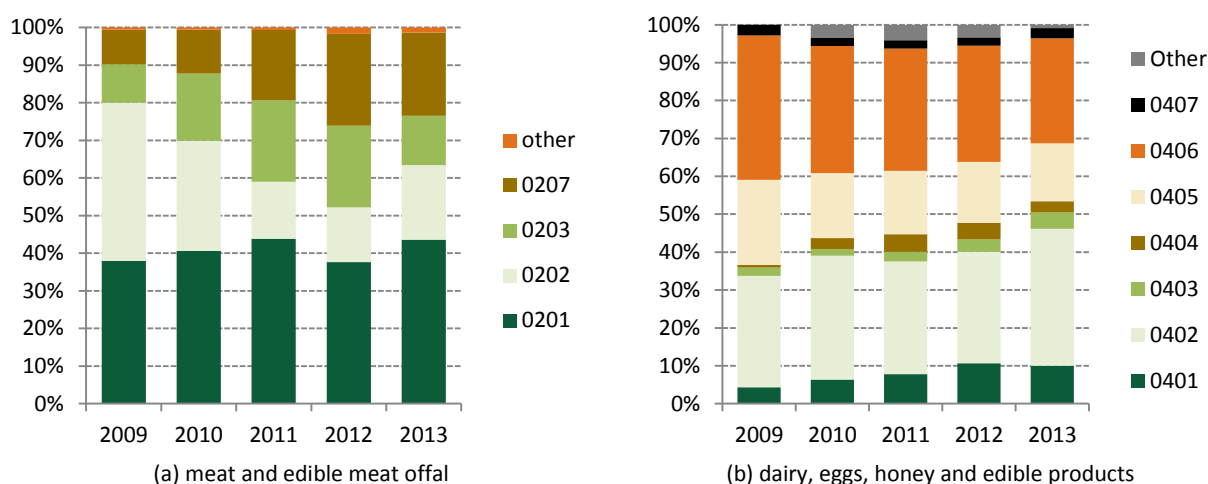
⁴⁰ Nowadays it is high import duties on raw cane sugar, negotiation of supply balances between Belarus and Russia.

fruit, melons” (see Annex A, figures (a)–(c)). These products constitute more than a quarter of Belarus agri-food import (see Figure 4.4). Moreover, they are utilized by food production industry stressing their importance for Belarus economy. Meat is imported from Poland, Germany, Netherlands and Denmark and is used for meat preparations production (in free economic zones). Fish is imported from Norway in significant volumes as there are successful enterprises specialized on fish preparations production (Santa Bremor) in Belarus, being also resident in free economic zones. Fruits and vegetables are imported by retail companies from Poland and Spain.

CIS countries are the key trade partners for Belarus in import of cereals and preparations from cereals, and vegetable oils. These products are imported largely from Russia and Ukraine (see Annex A, figures (d), (e), (g)). Besides, Belarus imports from Russia beverages and tobacco. Import from the rest of the world is typical for such goods as sugar and residues, wastes of food industry, and animal fodder. They are imported from Latin America. Import from this region is also common in trade with fruits and vegetables.

4.1.3 Agri-food trade by products

The most important and the most growing export-oriented agri-food goods are meat and dairy products. The structure of meat products export has significantly changed in recent years, which is interrelated with the changes in the structure of raw meat production. First, there was significant increase of poultry export as this sector began to expand rapidly in Belarus (see Figure 4.7a). The growth of poultry export (5.1 times) within 2009–2013 is fully determined by volumes increase (5.1 times), as export prices returned in 2013 to the level of 2009 (1.5% increase). Second, the share of pork in export of meat products more than doubled before falling in 2013 due to African swine fever. Export growth of 2009–2012 (4.6 times) was fuelled by price increase (by 30.4%) and increasing volume of export (3.5 times). Still, the share of pork in export was lower than in livestock production, as it is broadly used in food industry for production of meat preparations. High degree of competition in pork market in Russia also constrains Belarusian export. Third, the share of bovine meat fell significantly at the expense of frozen bovine meat export. Export of bovine meat is constrained by relatively slow cattle growth due to limited forage base. Still, bovine meat is a key export product, as demand for this meat is high in the Russian market, while domestic sales are loss-making due to price regulations.



Note. 0201 – meat of bovine animals, fresh or chilled, 0202 – meat of bovine animals, frozen, 0203 – meat of swine, fresh, chilled or frozen, 0207 – meat and edible offal, of the poultry of heading 01.05, fresh, chilled or frozen, 0401 – milk and cream, neither concentrated nor sweetened, 0402 – milk and cream, concentrated or sweetened, 0403 – buttermilk, cream, yogurt, 0404 – whey, natural milk products nes, 0405 – butter and other fats and oils derived from milk, 0406 – cheese and curd, 0407 – birds eggs, in shell, fresh, preserved or cooked.

Source: UN Comtrade.

Figure 4.7. Structure of meat and dairy products export in Belarus, 2009–2013

Dairy products exported by Belarus include concentrated milk, butter, cheese as well as non-concentrated milk (see Figure 4.7b). The shares of concentrated and non-concentrated milk grew in the last years, as their production growth was a key driver for the sector. Concentrated milk production and export growth was fuelled by establishment of favourable balances with Russia that allowed for volume

increase. Prices increase also contributed to export growth, as export price for Belarus concentrated milk grew 2.1 times in 2009–2013. For instance, cheese export price grew only by 42.2%, which determined reduction of this product share in dairy products export. The share of butter also decreased. It was caused by export volume reduction (by 22.3% in 2009–2013), while prices rose almost 2 times. Growth of non-concentrated milk, buttermilk, cream, and yoghurt export to Russia is explained by competitive advantage of Belarus due to its geographic location and short transportation time vital for perishable products.

At the level of 6-digits HS codes dairy products occupy most of the top titles. Within 15 most important exported goods nine of them represent dairy products (see Table 4.1). The key titles are other cheese (except fresh, grated, processed or blue-veined), SMP, WMP, and butter. Within meat and meat products comparable volume of export is generated by fresh or chilled bovine cuts as well as sausages and similar products of meat. Within these products Belarus has notable share in the world trade (see Figure 4.8b). Except meat and dairy products, important export titles are other cane or beet sugar and chemically pure sucrose and rape crude oil. The share of beet sugar in Belarus agri-food export has declined, as volume of its production and export fell after 2010. It is related to trade restrictions imposed by Russia and Ukraine in order to prevent re-export of cane sugar. Therefore, Belarus thrives to increase yields of sugar beet in order to load capacities of sugar plants without importing raw cane sugar.

Table 4.1. Key Belarus export goods (HS 6-digits), 2009–2013

HS code	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013
	Export, USD million					Share, %				
020120	158.5	226.8	304.4	309.3	360.5	6.9	6.9	7.7	6.3	6.4
020210	187.0	182.5	108.5	121.6	146.2	8.2	5.6	2.7	2.5	2.6
020711	18.2	42.9	109.6	174.1	151.3	0.8	1.3	2.8	3.5	2.7
040120	41.2	88.9	126.1	180.5	188.8	1.8	2.7	3.2	3.7	3.3
040210	142.6	216.2	214.8	259.4	441.5	6.2	6.6	5.4	5.2	7.8
040221	75.3	149.2	118.1	128.3	223.0	3.3	4.6	3.0	2.6	3.9
040291	34.6	77.1	97.7	87.9	87.9	1.5	2.4	2.5	1.8	1.6
040299	49.0	67.5	83.3	79.9	93.7	2.1	2.1	2.1	1.6	1.7
040510	179.1	204.1	215.2	205.7	271.8	7.8	6.3	5.4	4.2	4.8
040520	53.1	64.3	73.2	98.8	86.1	2.3	2.0	1.9	2.0	1.5
040610	65.5	83.8	103.1	120.5	133.7	2.9	2.6	2.6	2.4	2.4
040690	326.1	437.2	452.4	458.2	514.7	14.2	13.4	11.5	9.3	9.1
151411	42.9	31.0	7.8	82.1	124.0	1.9	0.9	0.2	1.7	2.2
160100	54.5	68.7	100.0	269.1	261.8	2.4	2.1	2.5	5.4	4.6
170199	236.8	358.1	316.2	291.9	319.9	10.3	11.0	8.0	5.9	5.7
Other	624.7	966.5	1520.7	2074.9	2245.8	27.3	29.6	38.5	42.0	39.7

Notes. 020120 – Bovine cuts bone in, fresh or chilled, 020210 – Bovine carcasses and half carcasses, frozen, 020711 – Not cut in pieces, fresh or chilled fowls of the species *Gallus domesticus*, 040120 – Milk not concentrated nor sweetened 1–6% fat, 040210 – Milk powder < 1.5% fat, 040221 – Milk and cream powder unsweetened > 1.5% fat, 040291 – other milk and cream unsweetened, concentrated, 040299 – Milk and cream nes sweetened or concentrated, 040510 – butter, 040520 – Dairy spreads, 040610 – Fresh cheese, unfermented whey cheese, curd, 040690 – Other cheese except fresh, grated, processed or blue-veined, 151411 – low erucic acid rape or colza crude oil, 160100 – Sausages and similar products, of meat, meat offal or blood; food preparations based on these products, 170199 – other cane or beet sugar and chemically pure sucrose, in solid form.

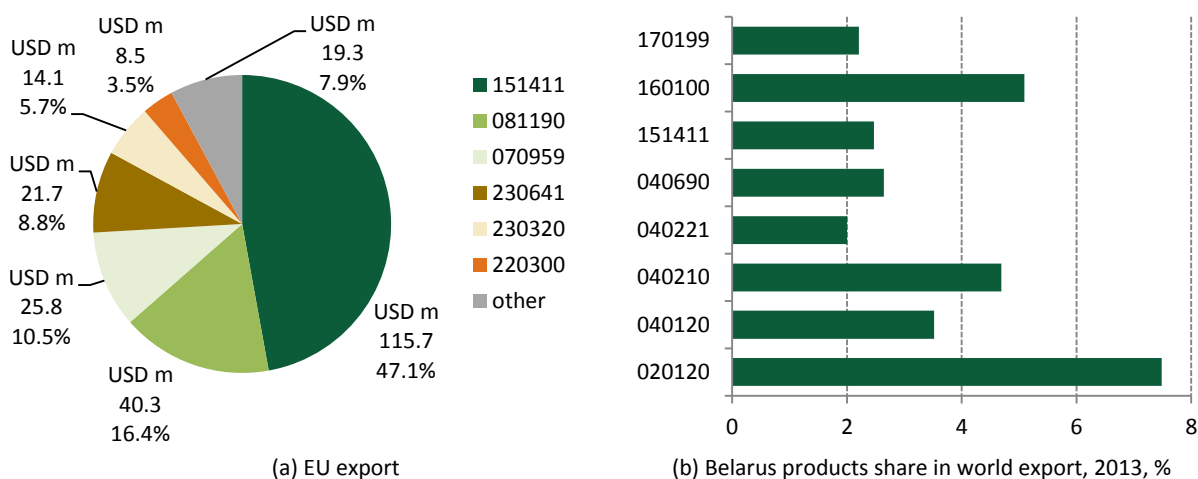
Source: UN Comtrade.

Rape oil is the only product contributing much to the total agri-food export that is traded with the EU countries (93.3% of Belarus export of rape oil HS 151411 was exported to the EU countries in 2013). Increase of exports in 2012–2013 is related to introduction of new capacities for rape oil production and high export duties on rape seeds. However, volume of rape oil export is unstable as rape seeds yields differ each year. Rape oil share in total agri-food export to the EU countries was equal to 47.1% in 2013 (see Figure 4.8a). Other agri-food products exported to the EU countries are berries (081190), mushrooms (070959), oil cake of rape seeds (230641), beet-pulp (230320), and beer (220300)⁴¹. Total

⁴¹ These products are exported largely to the EU countries. Other export destinations account for less than 5% of total exports of these products. Exclusion is beer, as export to the EU constituted 22.1% of total beer export in 2013. The key trade partner is Lithuania.

volume of export of other agri-food goods in 2013 was USD 110.4 million which is equal to 28.6% of Belarus agri-food export to the EU and 2% of total agri-food export.

Belarus export is concentrated as 15 goods cover more than 60% of agri-food export. Furthermore, Russia is a single market for most these products. Therefore, perspective of Belarus agri-food trade depends heavily on the development of Russian market of dairy and meat products. Russia’s WTO accession as well as introduction of programs of domestic milk and meat production development can significantly increase competition on this market. Belarus competitive advantage will remain only in whole milk products, where Belarus holds 7.5% of the world export (see Figure 4.8b). However, these risks are currently minimized by economic sanctions that Russia imposed on the EU and some other developed countries.



Note. 151411 – low erucic acid rape or colza crude oil, 081190 – fruits and nuts, frozen, 070959 – other mushrooms, fresh or chilled, 230641 – oil-cake and other solid residues, whether or not ground or in the form of pellets, resulting from the extraction of low erucic acid rape or colza oil, 230320 – Beet-pulp, bagasse and other waste of sugar manufacture, 220300 – beer made from malt, 020120 – Bovine cuts bone in, fresh or chilled, 040120 – Milk not concentrated nor sweetened 1–6% fat, 040210 – Milk powder < 1.5% fat, 040221 – Milk and cream powder unsweetened > 1.5% fat, 040690 – Other cheese except fresh, grated, processed or blue-veined, 151411 – low erucic acid rape or colza crude oil, 160100 – Sausages and similar products, of meat, meat offal or blood; food preparations based on these products, 170199 – other cane or beet sugar and chemically pure sucrose, in solid form.

Source: UN Comtrade.

Figure 4.8. Structure of Belarus export to the EU and share of Belarus in the world trade of selected goods

Belarus import is much less concentrated than export. Key 15 import products constituted less than 40% of total agri-food import. Cane sugar was the only commodity which share exceeded 10% of Belarus total agri-food import (see Table 4.2). It took place in 2011. However, restrictions on sugar export produced from raw cane sugar made Belarus to reduce its import in 2012–2013. Relative high shares and import volumes are characteristic for different types of oil-cake that are used for animal feeding. These ingredients guarantee necessary level of protein in the fodder. There are also significant volumes of fresh, chilled or frozen swine meat import, as market price for Danish or Polish pork is lower than the domestic. This meat is fully utilized by food industry, while final meat products are exported to Russia. However, volumes of pork import have been falling, as Belarus has to negotiate import quotas for meat import with Russia. The quotas for pork import with lowered import duties have been cut as Russia limits import of meat preparations produced from meat of non-CES origin.

Other agri-food products imported at significant volume are tobacco used in related industry, chocolate used in confectionary, frozen fish (herrings), its livers and roes for fish processing industry. The only imported commodities used primarily for final consumption are apples and sun-flower oil. Hence, Belarus tends to import raw agri-food materials that are further used in food industry or animal agriculture production. As these sectors are oriented on external markets (Russian), volume of Belarus agri-food import happens to depend heavily on the regulations Russia sets to protect domestic market.

Table 4.2. Key Belarus import goods (HS 6-digits), 2009–2013

HS code	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013
	Import, USD million					Share, %				
020311	8.2	68.0	65.5	34.4	3.5	0.4	2.4	2.0	1.0	0.1
020329	31.2	57.4	138.8	222.2	184.6	1.3	2.0	4.3	6.2	4.5
030380/030390	48.7	22.2	48.6	39.9	53.8	2.1	0.8	1.5	1.1	1.3
030429/030486	53.2	45.8	42.0	45.5	47.0	2.3	1.6	1.3	1.3	1.1
080810	24.2	25.4	52.2	66.9	86.4	1.0	0.9	1.6	1.9	2.1
151219	60.1	86.6	98.5	101.0	93.5	2.6	3.0	3.1	2.8	2.3
170111/170114	76.2	221.8	340.2	159.5	107.5	3.3	7.8	10.6	4.4	2.6
180690	30.0	44.3	34.3	53.2	74.2	1.3	1.6	1.1	1.5	1.8
210690	107.1	118.6	131.4	121.8	149.7	4.6	4.2	4.1	3.4	3.6
220300	70.2	71.1	54.0	72.1	91.7	3.0	2.5	1.7	2.0	2.2
230400	122.5	133.9	172.2	219.2	225.3	5.2	4.7	5.4	6.1	5.5
230630	61.8	123.4	122.4	176.4	185.6	2.6	4.3	3.8	4.9	4.5
230990	87.4	93.5	107.5	141.7	155.6	3.7	3.3	3.4	3.9	3.8
240120	34.3	52.2	64.5	72.7	55.7	1.5	1.8	2.0	2.0	1.4
240310/240319	50.0	50.2	49.2	50.3	57.6	2.1	1.8	1.5	1.4	1.4
Other	1474.0	1641.4	1686.2	2030.3	2542.4	63.0	57.5	52.6	56.3	61.8

Notes. 020311 – fresh or chilled swine meat in carcasses and half-carcasses form, 020329 – other fresh, chilled or frozen swine meat, 030380 (030390 in HS12) – livers and roes of fish frozen, 030429 (030486 in HS12) – frozen fillets of other fish (herrings), 080810 – fresh apples, 151219 – other sunflower-seed or safflower oil, 170111 (170114 in HS12) – other cane sugar, 180690 – other food preparations containing cocoa, 210690 – other food preparations not elsewhere specified, 220300 – beer made from malt, 230400 – oil-cake and other solid residues, whether or not ground or in the form of pellets, resulting from the extraction of soyabean oil, 230630 – oil-cake and other solid residues, whether or not ground or in the form of pellets, resulting from the extraction of sunflower seeds oils, 230990 – other preparations of a kind used in animal feeding, 240120 – tobacco, partly or wholly stemmed/stripped, 240310 (240319 in HS12) – other smoking tobacco, whether or not containing tobacco substitutes in any proportion.

Source: UN Comtrade.

4.2 Trade policy and infrastructures

4.2.1 Measures directly affecting trade imports and exports

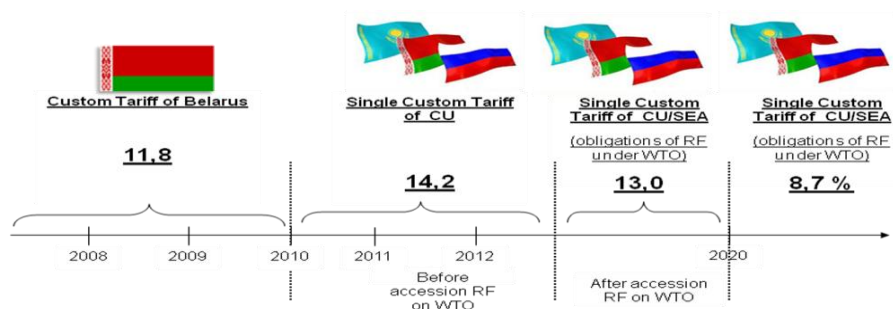
Customs and tariff regulation in Belarus is carried out in accordance with the rules of the Customs Union and the Common Economic Area of Belarus, Kazakhstan and the Russia (hereinafter – CU/CEA) and is based on the unification of international treaties. Since January 1, 2010, as the Customs Union was launched, its Member States apply unified measures of customs and tariff regulation.

Elements of customs and tariff regulations include:

- Common Customs Tariff of the Customs Union;
- Common Harmonized Commodity Description and Coding System of the Customs Union;
- List of sensitive goods. According to the EurAsEC Interstate Council – the Supreme Body of the Customs Union – Decision No. 18 (November 27, 2009), decisions on changing the import customs duties for these goods are to be passed by the EEC Council;
- Customs declaration of goods, transported across the customs border;
- Customs procedures;
- Customs duty exemptions and tariff preferences;
- Tariff quotas, volumes of tariff quotas.

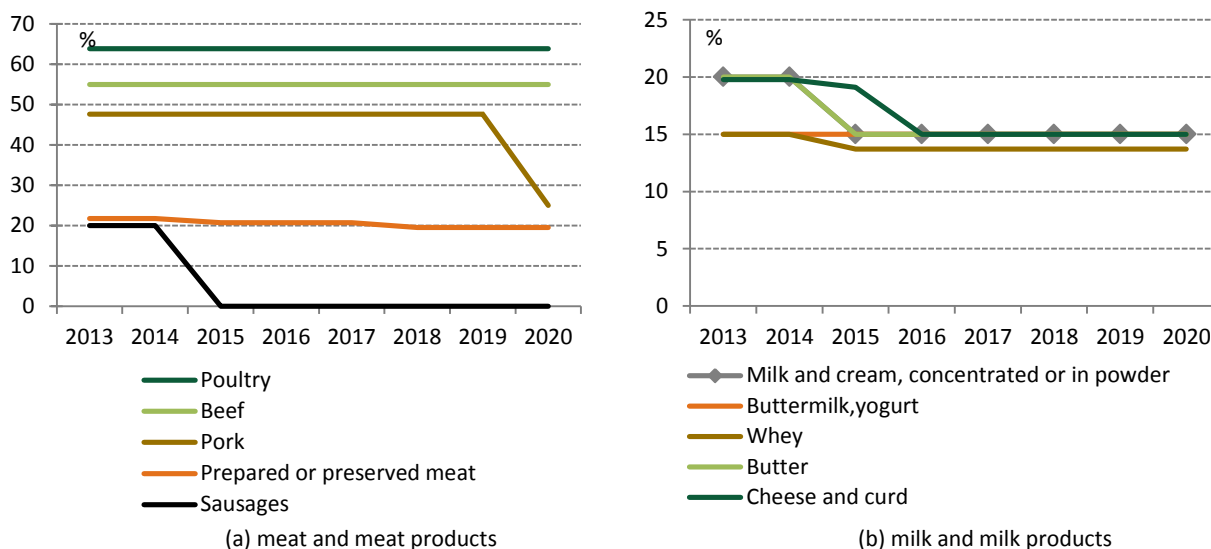
Agreement on the Functioning of the Customs Union within the Multilateral Trade System Framework stipulates that after a member of the Customs Union joins the WTO, the rates of the Common Customs Tariff of the Customs Union shall not exceed the import duty rates that are listed in the Schedule of concessions and commitments on market access for goods, which is annexed to new member's Protocol of Accession to the WTO. Besides, the Agreement establishes the priority of a party's WTO obligations over of its Customs Union obligations (Tochitskaya, 2012). That is why after Russia WTO accession Belarus and Kazakhstan reduced level of tariff protection and applied almost all regulations that Russia adopted within WTO. As for agricultural goods, according to WTO commitments of Russia, tariff protection is to be gradually reduced, and by the end of the implementation period weighted average import tariff should be reduced to 8.7%, which is lower than before tariff unification within the customs

union of Belarus, Kazakhstan and Russia, see Figure 4.9. For some goods (pork, sausages, dairy products) tariff rates will decline quite significant, Figure 4.10. The key impact comes from the necessity to abolish import quotas and application of a flat tariff rate. However, most agricultural commodities are considered as sensitive for CU market, thus, decisions related to their tariffs change are to be passed by the EEC Council.



Source: Karpovich, Akhramovich (2013).

Figure 4.9. Tariff protection of agricultural products in Belarus according to CU/CEA regulations



Note. Average weighted tariff rate.

Source: WTO obligations of Russia, http://www.wto.org/english/thewto_e/acc_e/a1_russie_e.htm/.

Figure 4.10. Tariff protection level of meat, milk and and related products in Belarus

In addition to tariff regulation, the Declaration on the Eurasian Economic Integration (November 18, 2011) confirmed creation of the common system of non-tariff regulations that include veterinary, sanitary and phytosanitary control (see Table 4.3). Introduction of mutual non-tariff regulations creates favourable conditions for Belarusian agricultural enterprises. However, non-tariff barriers are often applied by the CU countries within regional integration agreements as well⁴².

Table 4.3. Legal framework of non-tariff regulation of CU in relation to the rest of the world

Regulatory framework in terms of non-tariff regulation	
–	Agreement on common measures of non-tariff regulation in relation to third countries
–	Agreement on the rules of licensing in the sphere of foreign trade of products
–	Agreement on the procedure of introduction and application of measures, concerning the external trade of products on the single customs territory in relation to third countries

⁴² One can mention several “trade wars” between Belarus and Russia. The most recent and serious happened in the second half of 2014, when Russia prohibited imports from a dozen of Belarusian meet manufacturers, including biggest Belarusian exporters of poultry, due to “sanitary problems”. In the end, when the highest management of both countries interfered, the trade was restored. However, existence of Russian sanctions against European agricultural producers, creates additional ground for further trade conflicts.

Legal Framework of Sanitary, Phytosanitary and Veterinary Measures		
sanitary measures	phytosanitary measures	veterinary measures
<ul style="list-style-type: none"> – The Customs Union Agreement on Sanitary Measures – Joint list of products subject to sanitary and epidemiological supervision (control) at the customs border and in the customs territory of the CU – Uniform Sanitary Epidemiological and Hygienic Requirements for the Goods Subject to Sanitary and Epidemiological Supervision (Control) – The Regulation on the procedure of public sanitary and epidemiological supervision (control) over the persons and vehicles crossing the customs border of the CU, products under control moved across the customs border of the CU and in the customs territory of the CU – Unified form of the document confirming product (goods) safety (Unified form of the state registration certificate) 	<ul style="list-style-type: none"> – Agreement on Phytosanitary Control – The LIST of quarantined products (quarantined freights, quarantined materials, quarantined goods) subject to quarantine phytosanitary control (supervision) at the customs border of the CU and in the customs territory of the CU. – The Regulation on the procedure of quarantine phytosanitary control (supervision) at the customs border of the CU – The Regulation on the procedure of quarantine phytosanitary control (supervision) in the customs territory of the CU – Legislation of the CU Member-States on phytosanitary control 	<ul style="list-style-type: none"> – The Customs Union Agreement on Veterinary and Sanitary Measures – Unified list of goods subject to veterinary control (supervision) – Uniform veterinary (veterinary and sanitary) requirements imposed on the goods subject to veterinary control (supervision) – The Regulation on the uniform procedure of joint inspections of objects and sampling of the goods (products), subject to veterinary control (supervision) – The Regulation on the uniform procedure of veterinary control at the customs border of the CU and in the customs territory of the CU – Unified forms of veterinary certificates – Consolidated list of dangerous and quarantine animal diseases of Member-States – The Regulation on procedure of forming and keeping the register of organizations and persons effecting manufacture, processing and (or) storage of the goods subject to veterinary control (supervision) imported to the customs territory of the CU

4.2.2 Logistics and infrastructure

Although Belarus is a landlocked country, its location between two large markets (the country is crossed by two pan-European transport corridors) creates significant transit potential. Although transport infrastructure in Belarus is rather developed (see e.g. Tochitskaya and Pelipas, 2013), this potential seems to be underexplored. Within Logistics Performance Index by the World Bank, Belarusian logistics performance in 2013 was similar to its CIS neighbours (Russia and Ukraine)⁴³ and slightly improved comparing to the previous survey of 2011. *Domestic Logistics Performance Index* provides additional information on money and time costs related to exports and imports operations. According to this data, Belarusian customs procedures are slower than in Russia and Ukraine but several times cheaper⁴⁴.

System of export delivery of agricultural products in Belarus is based mainly on the direct supply schemes. Belarus exports more than 85% of the agricultural products via direct supplies (see Table 4.4). The most common way is the delivery of goods directly to consumers (about 80% of the total direct supplies) and sales through the companies' own distribution network / external private distribution networks (about 11%), see Table 4.4.

There was significant decline in the share of export implemented through the commodity exchange mechanism (only 2.5 % in 2010). It was a result of rapid export growth distributed through other

⁴³ Index value is 2.62, confidence interval (CI) is [2.42, 2.85]; Russian value and CI are 2.69 [2.60, 2.79], and Ukrainian are 2.98 [2.84, 3.11]. Index components varies between 1 (low performance) and 5 (high performance); sample minimum is Somalia (1.63), maximum is Germany (4.10).

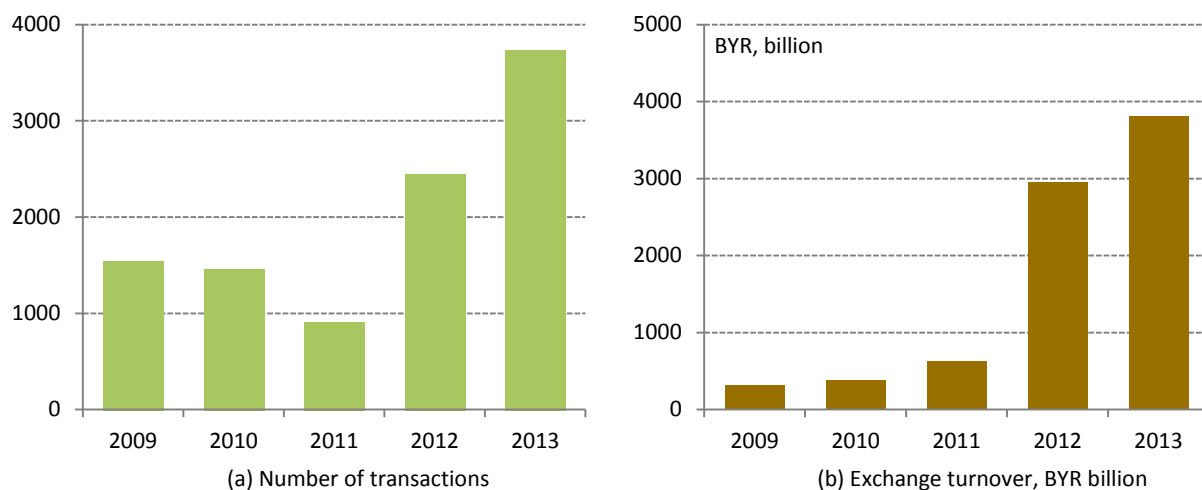
⁴⁴ In addition, one should take into account the fact that only 1.6% of shipments passing through Belarusian borders subject to physical inspection and 4.2% to multiple inspection, while in Russia and especially in Ukraine these indicators are much higher (e.g. in Ukraine physical and multiple inspections are applied to 50 and 35% of shipments respectively, in Russia – 16.5 and 3.1%).

channels, while volumes of trade at commodities exchange were rather stable at that time. There was slight growth of transactions and turnover in agricultural production section of commodity exchange after 2010 (see Figure 4.11), even if controlled for high inflation and devaluation in 2011–2012. However, the trading volume at commodities exchange is rather low as only companies without established trademarks use this instrument.

Table 4.4. Structure of the Belarusian export supplies of agricultural products by distribution channels, %

	2007	2008	2009	2010
Direct supplies, within which	78.8	82.9	85.7	85.3
Production cooperation	1.2	1.0	0.4	0.4
Directly to consumers	63.3	57.1	76.1	79.1
Private distribution network entity	7.6	8.2	4.6	3.8
Corporate distribution network entity	4.4	2.5	5.4	7.1
Distribution network	1.4	0.5	0.6	0.4
Organizations identified in the course of commodity exchange trades	13.3	21.4	4.3	2.5
Distributors	0.1	1.4	0.8	0.7
Dealers	8.7	7.8	7.7	5.9
Other	0.0	0.0	0.0	0.0
Total direct supplies	100.0	100.0	100.0	100.0
Other ways of supply	21.2	17.1	14.3	14.7

Source: Belarusian statistical committee.



Source: Belarusian Universal commodity exchange.

Figure 4.11. Number of transactions and turnover of agricultural production section of commodity exchange

Table 4.5. Main indicators of the Open Joint-stock Company “Belarusian Universal commodity exchange” for agricultural production section in 2013

Indicator	Number of auctions	Number of transactions	Exchange turnover	
			1000 t	BYR billion
Export				
Sugar	1	--	--	--
Meat	98	281	5.6	154.2
Vegetable oil and oilseed	35	5	2.2	19.3
Raw cattle hides	25	216	3.7	80.0
Casein	49	99	1.9	151.4
Milk powder, whey and curd	99	895	24.1	936.9
Butter		459	9.4	455.0
Cheese	97	203	5.2	240.5
Import				
Pork and poultry	9	59	2.7	66.2
Presscakes oilseeds, cereals, flour, feed and Fertilizer	53	1425	330.2	1678.4
Vegetable oil and oilseed		45	2.7	30.1

Source: Belarusian Universal commodity exchange.

The exchange auctions for agricultural production are held in strict conformity with Rules of exchange trade for goods included in the List of commodities, admitted to exchange trade. According to the Rules, the list of products admitted to sale on domestic market includes grain, oilseed meal, sunflower oil, cotton, fruit and vegetable products; on external markets – milk powder, butter, cheese, casein, whey, cottage cheese, butter and canola rapeseed, flour, cereals, hides of cattle, cattle meat, and pork. In 2013, export deals were made with meat, oil seeds and vegetable oils, raw hides and dairy products (see Table 4.5).

4.2.3 Main trade agreements

There are bilateral governmental agreements within Commonwealth of Independent States (CIS) on free trade with Azerbaijan, Armenia, Kyrgyzstan, Tajikistan, Kazakhstan, Moldova, Russia, Uzbekistan, Turkmenistan and Ukraine. Belarus is also a member of the CIS Agreement on free trade area signed on April 15, 1994 (with alterations of April 2, 1999). In accordance with the Agreement, free trade regime also applies to trade with Georgia.

The CIS Treaty on free trade area signed on October 18, 2011 will replace the 1994 Agreement. The main provisions of the new Treaty are based on the rules and principles of the World Trade Organization. Apart from issues of abolition of import and export customs duties and quantitative restrictions, free trade area in accordance with the Treaty provides:

- national treatment in respect of internal taxes and regulation;
- national treatment in respect of government procurement;
- freedom of transit;
- application of technical measures, as well as sanitary and phytosanitary measures, on the basis of the relevant regulations of the World Trade Organization;
- regulation of granting subsidies;
- regulation of application of anti-dumping, countervailing and safeguard measures in mutual trade.

Products are free traded in the customs territory of the states – participants of the Treaty in accordance with section 5 of the Agreement on the rules applied for determining the country of origin of goods in the Commonwealth of Independent States signed on November 20, 2009.

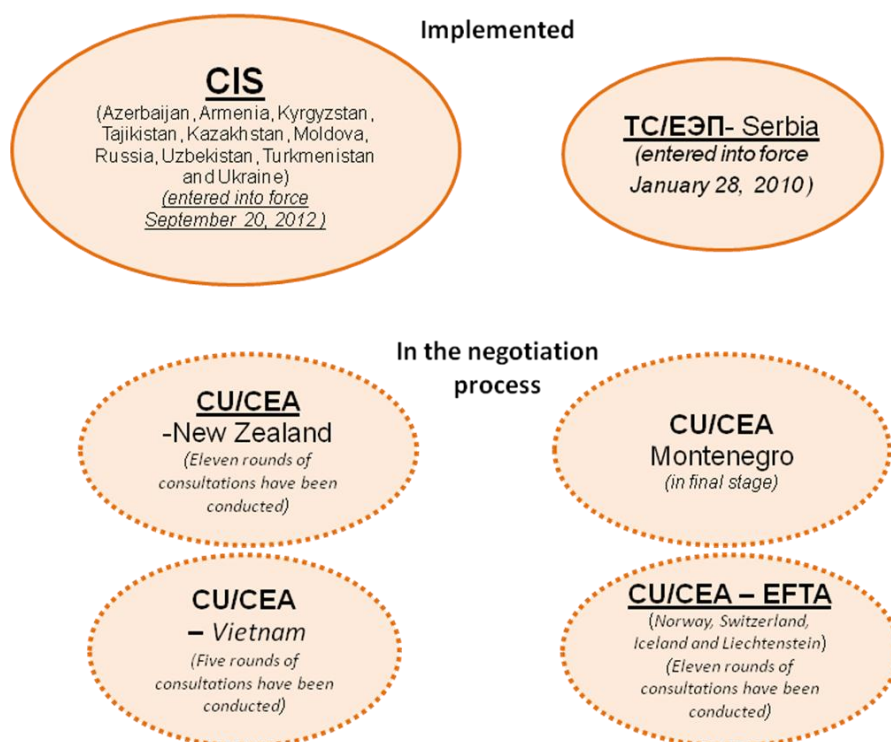


Figure 4.12. Belarus regional trade agreements obligations within CU/CEA

Within the framework of the Customs Union of Belarus, Kazakhstan and Russia, harmonization of trade regimes with third countries began. As of today, unified trade regimes have been agreed with Serbia. Unified trade regime is also almost agreed with Montenegro (Figure 4.12). Some states have expressed their interest in establishing a preferential trade regime (a free trade regime) with the Customs Union, for example, members of the European Free Trade Association (Norway, Switzerland, Iceland and Liechtenstein), New Zealand, Vietnam and other countries.

In November 2010, the negotiations with the EFTA countries were officially launched. Eleven rounds of consultations have been conducted with EFTA and eleven – with New Zealand. The 5th round of negotiations on the conclusion of the free trade agreement between Member States of the Customs Union and the Socialist Republic of Vietnam was held in Alma-Aty (Kazakhstan) on March 31 – April 4, 2014.

5. AGRICULTURAL POLICY AND INSTITUTIONAL ENVIRONMENT

5.1 Agricultural policy framework

5.1.1 Agricultural policy objectives and mechanisms

Agricultural policy of Belarus is a part of the state social-economic policy that targets real GDP growth rates and wage increase. The instruments of this policy are focused on the stimulation of domestic demand, and public support to the agricultural sector is one of its main elements. Focus on agriculture can be largely explained by political reasons and presence of value chains, which allow agricultural support channel to food and machinery industries. The key document outlining agricultural policy objectives in Belarus is the Presidential Edict No 347, (July 17, 2014). The document states several declarative objectives:

- improving the competitiveness of agricultural products, raw materials and food in order to balance the domestic food market and enhance agri-food exports;
- forming of an effective market for agricultural products, raw materials and food with developed infrastructure, which implies gradual transition to free pricing, increase in the efficiency of agricultural production;
- creation of a favourable investment climate and attraction of investments into the agriculture sector;
- assistance to structural changes in the agricultural sector, including changes in property and production relations that would guarantee development of agricultural companies of any ownership form;
- maintaining the parity of price index for industrial products, work (services) used by agricultural producers as input factors and the price index of agricultural products;
- ensuring citizens' rights to adequate food, including provision of domestic food aid to socially vulnerable groups of the population;
- sustainable rural development, rural employment, improvement of quality of life of rural population, including increase of the remuneration of workers employed in agriculture;
- preservation and reproduction of natural resources used in the production of agricultural products, raw materials and food.

According to the Belarusian legislation, agricultural policy declares following principles: the unity of the market for agricultural products, raw materials and food that ensure equal conditions for competition in this market; participation of agricultural enterprises in government programs on the base of free competition; consistency of the policy measures supporting agriculture.

Since 1996, the development of national agriculture has been guided by five-year state programs. Current agricultural policy is implementing within the framework of the State Program for sustainable development of rural areas in 2011–2015. It relies on 18 nationwide, sectoral, and regional programs for agricultural development. A key element of the program is development of agro-towns, constructed within previous program of 2005–2010⁴⁵. Agro-towns were established as rural settlements with improved social infrastructure, aiming at attracting people to the countryside. However, quality of infrastructure constructed and weak employment opportunities hamper attractiveness of the agro-towns, making efficiency of the program disputable (Alyavdina, 2013).

⁴⁵ The program envisaged construction of 1481 agro-towns based on the existing villages.

Agricultural policy in Belarus is implemented through the mechanism of domestic support measures, investment policy, specific pricing, taxation and regulation of foreign trade in agricultural goods (see section 4.2).

5.1.2 Institutional arrangements

Implementation of the state agricultural policy is assigned mainly to the Ministry of Agriculture and Food of Belarus – the main state regulator in agri-food sector. The Ministry participates in the development and implementation of government and sectoral programs, coordinates activities of agricultural organizations, fisheries, food producers and veterinary medical services provides, and runs financial, credit and pricing policies within its competence.

Besides, the state food industry concern “Belgospisheprom” carries out economic, technical and technological policy in the food industry (according to the Resolution of the Council of Ministers №1683, November 2, 2000). Belgospisheprom regulates main food processing industries of Belarus, including meat and dairy production, production of sugar, confectionery, oil and fat, alcohol and brewing, tobacco, food concentrates, and food-canning. These regulations cover the activity of the state-owned enterprises. In some cases, private companies are also subordinated to the concern. On the one hand, it implies additional responsibilities for private companies, but on the other hand, they have higher possibilities of being included into state programs.

Some activities are also regulated by the Ministry of Economics (in the field of price regulation), the Ministry of Foreign Affairs (foreign trade regulation), and the Ministry of Finance (financing of the government programs in agriculture).

The Treaty on the Eurasian Economic Commission (November 18, 2011) Article 3 stipulates that the Commission coordinates activities in various areas, such as macroeconomic, competition, monetary policy. These activities also cover areas related to the agricultural sector: agricultural subsidies, sanitary, veterinary and phytosanitary measures, customs tariff and non-tariff regulation, government procurement, insurance etc.

The Declaration on the Eurasian Economic Integration dated November 18, 2011 induces creation of the common system of veterinary, sanitary and phytosanitary control. The document stipulates that the main objective of further integration is improvement and further development of the contractual legal framework, institutions and practical cooperation in such areas as effective functioning of the common market of commodities, services, capital and labour; development of the common agricultural policy, enhancement of industrial cooperation and enhancement of cooperation aimed at ensuring economic security.

Cooperation within the CU and the CEA in the field of agri-food policy is currently governed by the Agreement on the Unified Rules of State Support of Agriculture concluded on December 9, 2010. The purpose of this Agreement is to restrict application of the state support measures in agriculture that distort trade within the CU and the CEA.

The agri-food sector is governed also by certain mechanisms of coordination and control that have been adopted under the terms of other international agreements constituting the regulatory framework of the CU and CEA, such as the Agreement on Coordinated Macroeconomic Policy, Agreement on the Unified Principles and Rules of Competition, Agreement on the Unified Principles and Rules of Technical Regulation etc.

5.2 Main agricultural policy instruments and measures

5.2.1 Market price support measures

Agricultural prices in Belarus are subject to the state regulation. It is established by the Law on Price Regulation, which stipulates the role of the state in regulating prices and describes the coexistence of free and regulated prices in agriculture and food sector. Prices are generally set at a level that (as it is supposed) allows agricultural enterprises to generate normal profits, taking state subsidies and compensation into consideration, and are largely considered as performing a “social function”. State prices are set for goods provided by “monopolies” and for “socially important” goods and services. Both

the national government and regional authorities can regulate prices. The major tools for price regulation are fixed prices, price ceilings, mark up margins (absolute terms or rates), and fixed price formula and price declaration. Companies violating the state price regulations are subject to confiscation of revenues above the “correct” prices.

So, annually the Ministry of Agriculture states maximum prices of agricultural products (crop), purchased for state needs (list of products is set annually). For example, in 2012, the list included barley (incl. malting barley), rye, triticale, wheat, oats, buckwheat, millet, peas, sugar beet, grain maize for starch, and rape oilseeds. For flax stalk the Ministry states annually recommended level of the purchase price. Maximum prices of agricultural products (livestock), purchased for state needs, are stated also for live swine for slaughter and pork. Fixed prices of agricultural products (livestock), purchased for state needs are set for milk, live cattle for slaughter, beef. Before May 2012, minimum prices were applied for all livestock products.

As a result of these price regulations, the level of producer prices in Belarus has been significantly lower than the world and border prices. Therefore, for almost all types of agricultural production market price support is negative.

Another aspect of price regulation is implementation of import tariff and non-tariff barriers (see Section 4.2). The role of these instruments is very high, as Belarusian agricultural production is sensitive to external competition. Belarus has obligations to reduce the level of tariff protection in accordance with Russia’s commitments within WTO, which may reduce price competitiveness of Belarus agricultural products.

5.2.2 Budgetary and other transfers to agriculture

Agricultural producers in Belarus are supported via several channels. First, they are supported directly from the budget (subsidies and tax exemptions). Second, agricultural producers have lower tariffs for electricity, lower price for fuel, fertilizers, etc., i.e. cross-subsidization is another source of their financing. The last, and probably the most important, is directed lending at privileged interest rates.

Government expenditures on agriculture are distributed between central and local budgets, and local authorities are autonomous in their spending. Most of the funding comes from local budgets (over 40%), while central government budget stands only for 20% of the funding provided. The rest is constituted by support financed from both sources (Figure 5.1). However, the role of local authorities should not be overestimated as expenditure and revenue structure of local budgets is largely determined by central government.



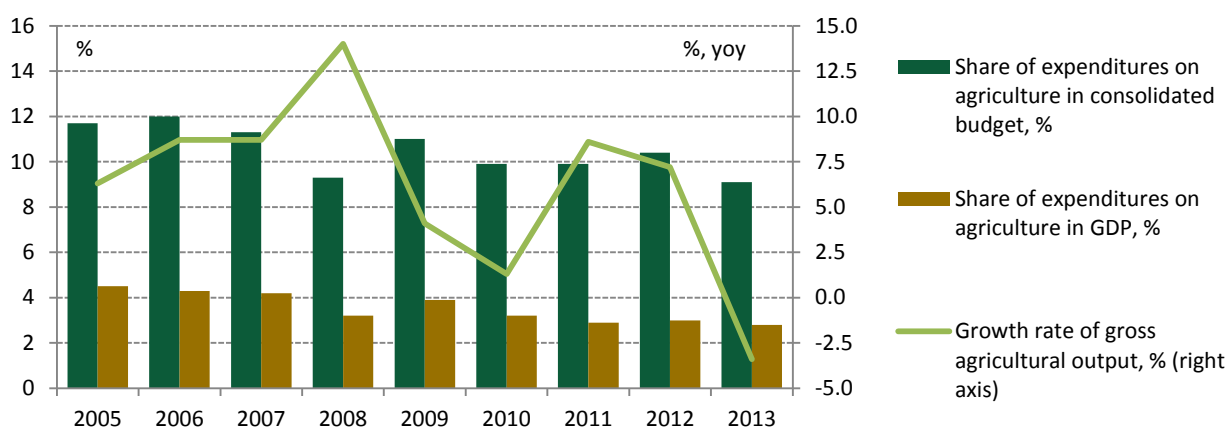
Source: own estimates based on Ministry of Finance data.

Figure 5.1. Breakdown of total budgetary support by source of financing

The budget process is not very transparent for agricultural producers. The main document providing the key objectives of the state agricultural policy is the five-year strategy plan, which describes the budget allocations among various programs, but does not contain detailed mechanisms of funding allocation and distribution within programs.

Domestic support to agriculture constitutes significant part of the state expenditures in Belarus (about 10% of the consolidated budget⁴⁶, see Figure 5.2). It amounts to 3% of the GDP or one third of the gross value added of agricultural sector. If compared to the gross output value of agriculture, the share of consolidated budget expenditures is 14–15%. However, there has been a slight reduction of the state expenditures on agriculture in recent years, as the government has to tighten fiscal policy due to inflation pressure and current account deficit. Furthermore, risk accumulation at the banking sector forces government to reduce directed lending and to make it more transparent.

The main directions of state support to agriculture in Belarus are transfers reducing variable input costs (about USD 660 million in 2012 or 47% of total transfers to producers (PSE BOT)) and transfers reducing the on-farm investment costs (about USD 710 million in 2012 or more than 50% as a share of PSE BOT). Insignificant share of the funding is provided through financing of public services, institutions and infrastructure (about 10–14 % of total budgetary and other transfers, see Table 5.1).



Source: Ministry of Finance.

Figure 5.2. Indicators of domestic support in Belarus

Table 5.1. Budgetary and other transfers arising from policy measures that support agriculture in Belarus, USD million

	2011	2012
Transfers to producers (PSE BOT)	1598.8	1403.1
Subsidies to variable inputs and on-farm services (B1+B3)	790.6	693.3
Transfers reducing the on-farm investment cost (B2)	808.2	709.7
Financing of public services, institutions and infrastructure (GSSE BOT)	179.5	247.5
Agricultural knowledge generation and transfer (H)	19.8	95.2
Food inspection and control (I)	5.9	48.1
Development and maintenance of rural infrastructure (J)	77.6	41.9
Other general support (L+M)	76.3	62.2
Transfers to consumers from taxpayers (TCT BOT)	16.4	12.8
Total budgetary and other transfers (Total BOT)	1794.7	1663.4
Total BOT as a share of value of production at producer prices (%)	14.9	14.3

Note: Abbreviations in brackets correspond to OECD/PSE categories.

Source: own estimates based on Ministry of Finance data.

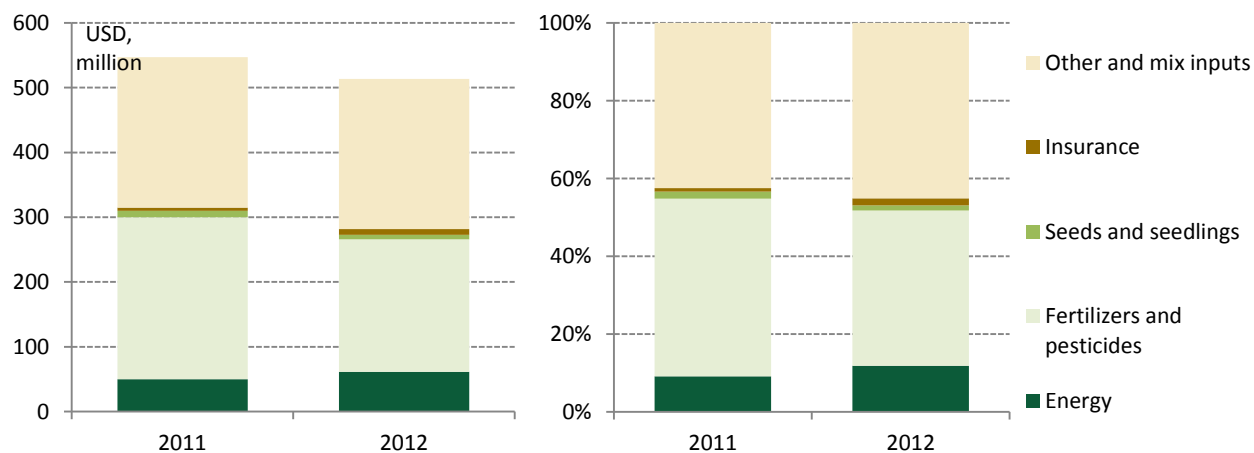
In 2011–2012, transfers reducing variable input costs were intended to finance:

- *Purchase of fertilizers and pesticides* (about 40–45% of related expenditures). The support is provided as compensation of costs of purchased mineral fertilizers and repayment for purchased mineral fertilizers;
- *Purchase of energy* (gas, fuel) that forms about 10% of expenditures on input costs reduction in agriculture. The support is provided as debt repayment for purchased petroleum products and supplies of diesel and gas at reduced prices;

⁴⁶ According to the national definition, consolidated budget includes central government budget and local government budgets. General government budget includes also Social Security Fund.

- *Purchase of seeds and seedlings* (about 1.5–2.0%). The support is provided as compensation of costs related to production or purchase of seeds based on the rates set per ton, provided that selling price does not exceed market price level (eligible recipients are producers of super elite and elite seeds, and seed buyers). Besides, the state may compensate costs of purchasing seeds for sowing for some crops: in 2011 – maize, vegetable peas; in 2012 – garlic, lucerne seeds, Chernushka onion, parental form of maize seeds;
- *Insurance* (about 1%). Compensation of insurance premium payments to producers are provided for following agricultural products: wheat (winter and summer), winter triticale, winter rape, pedigree breeding stock of cattle (for all farms having pedigree cattle), pig and herds of hens. Insurance rates are set annually and depend on the region.

A great share of expenditures aimed at reducing input costs in agriculture is provided as other and mix inputs. These are mainly payments to banks in the form of compensation of losses related to provision of loans and leasing on privileged terms as well as loans repayment (see Figure 5.3). The government provides loans financed from the budget and budget-financed guarantees on bank loans to agricultural enterprises; funds occasional debt write-offs; provides interest rate subsidies; and provides additional support through direct regulation of banks. Selection of enterprises that could receive such support appears to contain a considerable element of discretion for government authorities. Taking into account extremely high level of interest rates on credits in Belarus (about 35% with subsidized part only 11% as of the end of 2014) such structure of state expenditures on agriculture financing cannot be effective.



Source: own estimates based on Ministry of Finance data.

Figure 5.3. Breakdown of producer support aimed at reducing variable input costs in Belarus

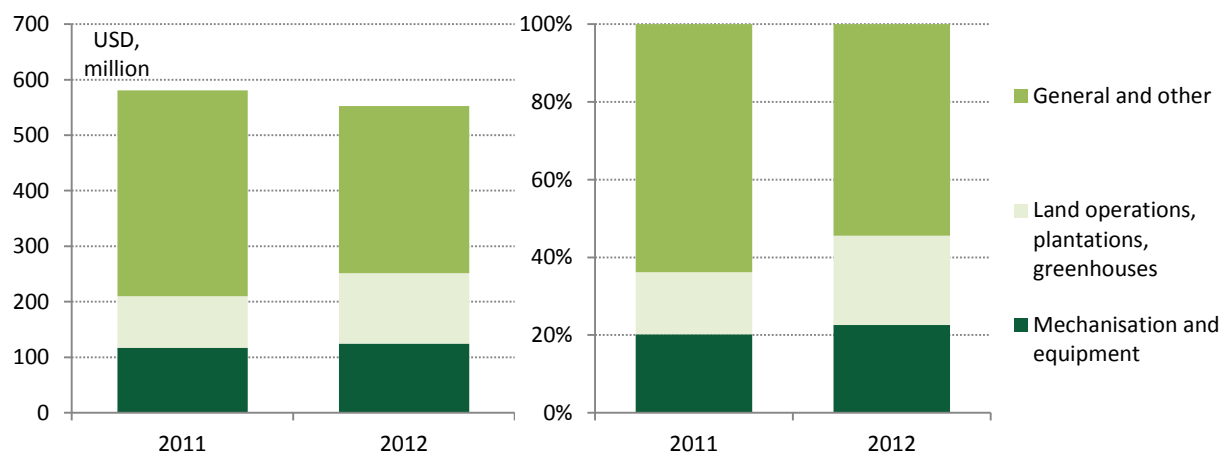
Producer support aimed at reducing on-farm investment is intended to finance mechanization and equipment acquisition (about 20%), land operations, plantations, greenhouses (more than 20%), and general and other measures (about 55–60%, see Figure 5.4).

The support for mechanization and equipment is provided as:

- *machinery leasing subsidy*. It includes transfers arising from reduced leasing fee for machinery. These transfers are estimated as the difference between the average market interest rate and a leasing fee rate charged, multiplied by the estimated value of outstanding leasing credit;
- *subsidy for purchase of agricultural machinery and equipment and debt repayment for purchased agricultural machinery and equipment* in 2011.

The support for land operations, plantations and greenhouses is provided as payments for soil improvement, including financing in accordance with the related state program and subsidy on compensation of the costs associated with repairs and maintenance of the farm drainage system.

The support for general and other measures includes transfers provided in accordance with the state program “Breeding” for 2011–2015, and complex program for the development of potato production, vegetables and fruit growing for 2011–2015. However, most of the support in the form of general and other measures aimed at investment costs reduction is provided through guarantees on banking loans.



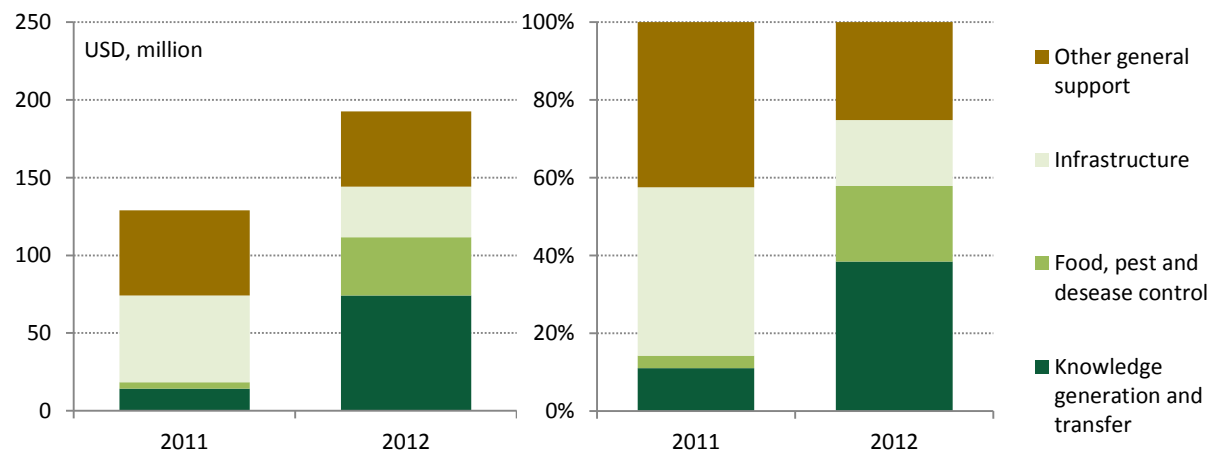
Source: own estimates based on Ministry of Finance data.

Figure 5.4. Breakdown of producer support aimed at reducing on-farm investment costs in Belarus

General services support in Belarus constitutes very small share in total budgetary and other transfers (Figure 5.5). Largely it is provided through measures designed to finance:

- *development and maintenance of rural infrastructure* (about 43% of general service support in 2011 and 17% in 2012). These measures aim improvement of 1) rural infrastructure by financing construction, maintenance or repair of electricity grid, roads and other means of transport, market facilities, water supply facilities, dams and drainage schemes, and infrastructure works associated with environmental programs; 2) institutional infrastructure by financing laboratory analysis and seed quality certification aimed at quality identification of seeds and planting material; 3) *market and other infrastructure* through public investments in construction, reconstruction of grain-cleaning complexes and elevators, mechanized yards, grain storages, and landscaping;
- *agricultural knowledge generation and transfer* (about 11% in 2011 and 38.5% in 2012). Related measures are designed to improve: 1) setting-up of the state agricultural information system; 2) public financing of agricultural research; 3) vocational training, re-training, and overall skills improvement in the sector of agriculture through purchase of modern equipment for educational institutions subordinated to the Ministry of Agriculture and Food; through construction, reconstruction of BSATU, GAP “Belmeliovodhoz” (specializes in irrigation, drainage). Besides, in 2011, the funding was provided for construction, modernization and improvement of scientific organizations which deal with seeds production in accordance with the state complex program for the development of potato production, vegetables and fruit growing for 2011–2015;
- *food inspection and control* (about 3.3% in 2011 and 19.4% in 2012). These expenditures include public financing of all veterinary inspection services and affiliated network, state registration of agricultural equipment (coverage of the costs of services for registration and testing of purchased machinery and equipment), public financing of state crop testing laboratories (in the form of financing of purchase of mineral fertilizers, agricultural chemicals);
- *other general support* (about 42.5% in 2011 and 25.1% in 2012). These measures encompass support to the budget organizations and miscellaneous measures of support within state, regional and sectorial programs.

Such agricultural policy instruments and measures profile implies high level of domestic support measures that distort trade and should be reduced under the rules of Agreement on agriculture of WTO and Agreement on coherent rules of domestic support in member-states of Custom Union and Common Economic Area of Belarus, Kazakhstan and Russia. Therefore, the government recognizes the need to adapt national agricultural policy to principles and directions established in the Concept of coherent (coordinated) agricultural policy of member-states of Custom Union and Common Economic Area. These intentions may result in gradual revision of agricultural policy and consequent reforms in the sector, as current economic situation does not allow for such a generous support to the economy and agriculture in particular that was observed in the last decade.



Source: own estimates based on Ministry of Finance data.

Figure 5.5. Breakdown of general services support by the nature of the service in Belarus

6. FUTURE PERSPECTIVES FOR THE AGRICULTURAL AND FOOD SECTOR

6.1 Strengths and weaknesses of the agricultural and food sector

Performance of the agricultural and food sector in Belarus is determined at large extent by state policy aimed at export promotion and supporting employment in rural areas. It implies that most of strengths and weaknesses of the sector are result of the state agricultural policy.

A key advantage of the agricultural sector is availability of rather cheap input factors. Most of fertilizers are produced in Belarus and are provided to agricultural enterprises at subsidised price level. Agricultural machinery is also broadly produced in Belarus and is often sold on credit to the domestic agricultural enterprises on privileged terms, as part of the state support program to the machine building sector. Agriculture also benefits from low fuel and energy prices, as Belarus imports oil and gas from Russia on privileged terms. Furthermore, acquisition of fuel by agricultural enterprises is subsidised by the state.

Another advantage is guaranteed demand for agricultural products. First, there is massive food industry that is based on domestic resource base, while import of agricultural products is curbed by tariffs and NTB, applied within Customs Union of Belarus, Kazakhstan and Russia. Second, food enterprises are assigned to specific resource zones where they can acquire raw agricultural products. It raises market power of agricultural enterprises.

However, public support to agriculture distorts incentives, which implies inefficient management of the sector. It is aggravated by the very large size of the agricultural enterprises, which makes them inflexible (World Bank, 2011). In general, unwillingness to operate in competitive environment is a key weakness of the agricultural sector of Belarus. Moreover, the state also intervenes into the sector's functioning by regulating output prices that are often set below world market prices and setting targets on crop production. It makes financial stance of agricultural enterprises twice dependent on the public policy: the state regulates both costs and revenues side.

Another problem is lack of specialists in the sector due to human capital outflow as a result of rural-urban migration, and marginalization of rural population (Bobrova, Shahotska, Shymanovich, 2012). Furthermore, number of students of agricultural specialties at specialized secondary educational institutions has been falling, while qualification of the specialists graduated from the universities is reported to be inadequate due to mismatch of the educational programs and needs of the agricultural sector (Nivievskiy, Koester, 2012).

Besides, the overall competitiveness of agricultural sector in Belarus is undermined by natural factors of relatively low average soil productivity and unfavourable climate conditions, which make Belarus an area of risk farming. Significant part of the territory is excluded from utilization due to the contamination after Chernobyl accident.

Competitiveness of the food industry is partly rooted in the state regulations of the agricultural sector. Public policy subordinates interests of the agriculture to the needs of the food industry. State support to the agriculture sustains a resource base for the food industry. Furthermore, price regulations of the agricultural output lower possible costs for food industry.

Another factor determining competitiveness of the food sector is the size and vertical integration of food companies. Control over the chains allows food companies to guarantee quality of the raw materials and ensure efficient work of the agricultural enterprises (see section 6.2). Large size of companies in its turn allows for returns to scale, and provides broader possibilities to finance marketing. As a result, the food industry trademarks dominate in the Belarusian brands rating⁴⁷.

Another advantage of the food industry is its control over significant share of the Russian food market, which is a result of economic integration of Belarus and Russia and fallen self-sufficiency in food

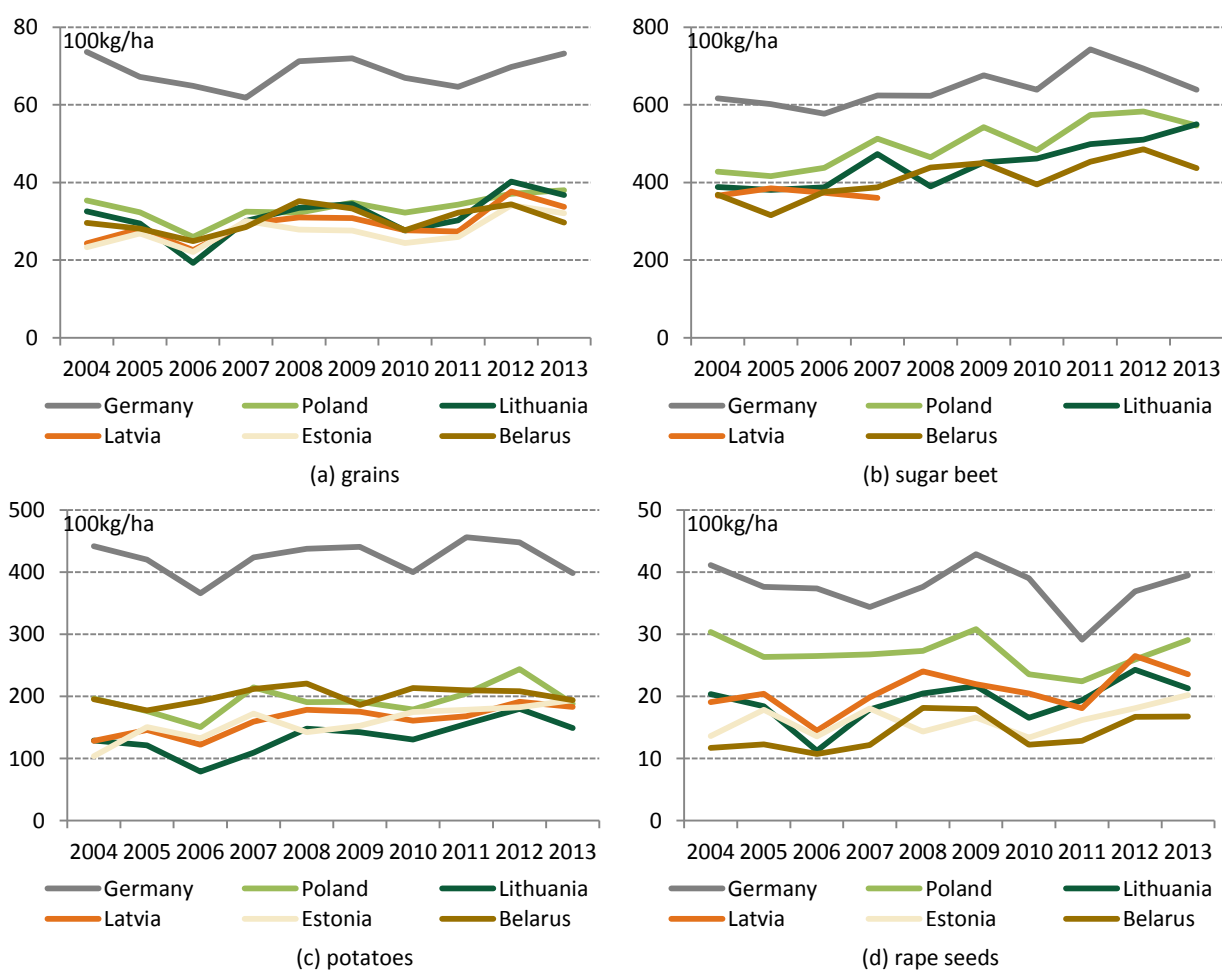
⁴⁷ <http://mppconsulting.com.ua/ukrbrand/belbrand2013.pdf>.

production in Russia. However, export reliance on Russian market can be also viewed as a disadvantage. The size of the Russian market is big enough for Belarusian food producers not to bother about export geographic diversification. So Belarus food export is very sensitive to the developments on Russian market and trade regulations applied by this country.

Important factor constraining development of the food industry is the presence of some barriers limiting access to agricultural products. First, import of agricultural products is restricted by high tariffs and quotas, while quality and price of some imported crops and animal products is higher. Second, there are resource zones where a food enterprise is eligible to purchase raw agricultural products.

6.2 Potential of production and yields by sectors

Agricultural land is almost fully utilized in Belarus. So there is little potential to agricultural production increase through expanding cultivated area. On the contrary, there is trend of agricultural area reduction at the expense of the low-productive land groundlessly included into the agricultural use in the Soviet times. Therefore, potential of production increase is rooted in the yields increase and rationalization of the structure of the cultivated crops.



Source: FAO, Eurostat.

Figure 6.1. Yields in Belarus and neighbouring EU countries, 2004–2013

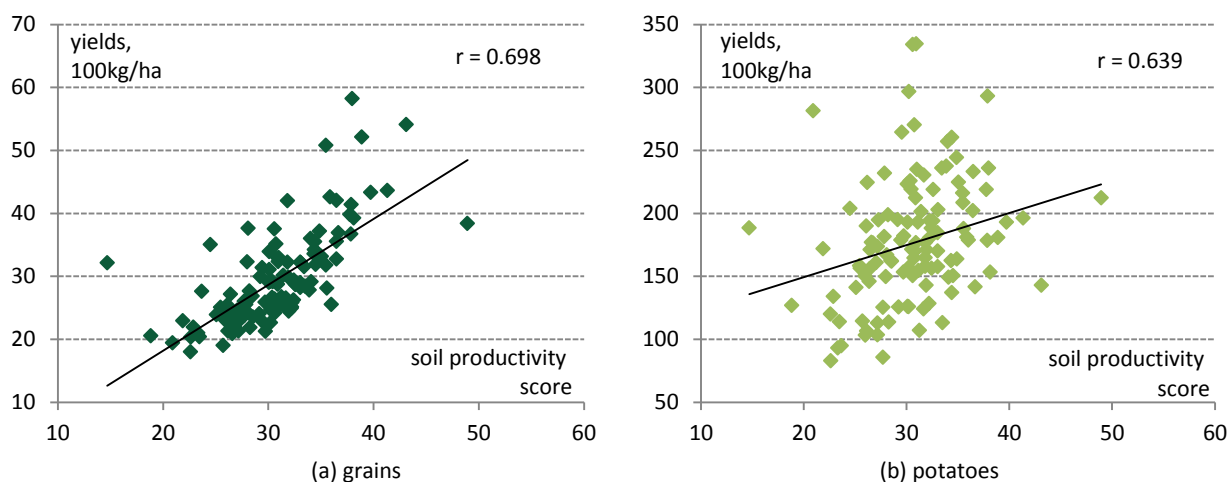
Cross-country comparison shows that there is a gap in yields between Belarus and neighbour EU countries for certain crops cultivated in Belarus (see Figure 6.1). The yields of grains were close to the average of Poland and Baltic states until 2011. In 2012–2013, the average yields of grains fell in Belarus to 3 t/ha, while in Poland and Lithuania they remained close to 4 t/ha (see Figure 6.1a). This gap was determined by yields in wheat, which was lower in Belarus than in other countries (see Annex B). However, the deterioration of 2012–2013 might be short-term and explained by weather conditions. The yields of rye, barley, triticale in Belarus are close to the average and have the same dynamics as in Poland and Baltic states. Still, these yields are much lower than in Germany or average yields in the EU.

Another important food crop cultivated in Belarus is potato, and its yields are stable at 20t/ha, which is similar to the yields in Poland and higher than in Baltic states (see Figure 6.1c).

The yields of technical crops in Belarus are lower than in the neighbour EU countries. In case of sugar beet the yields in Belarus were 20% less than in Poland and Lithuania in 2013 (See Figure 6.1b). This gap has been rather stable, as yields in Belarus have been growing at the same rate as in the other countries of the region. Therefore, there is room for improvement in sugar beet production efficiency. Related goals are stated in official programs of sugar production development. However, possible measures of yield improvement are limited at some extent as sugar beet is cultivated only in special resource zones that are drawn around 4 sugar plants. Therefore, sugar beet production is attached to specific soil and geo-climatic conditions.

The largest gap in yields in Belarus and neighbour countries is observed for rapeseeds (see Figure 6.1d). The yields in Belarus are 40% lower than in Poland and 20% lower than in Lithuania. It may be attributed to the fact that it is rather new crop for Belarus and technologies of its cultivation are not developed in all agricultural enterprises. It is reported by National Academy of Science that there are practical evidence that application of some herbicides, protecting from diseases and preventing from dehiscence, may increase yields of rapeseeds 2 times⁴⁸.

Comparison of yields across the countries is arbitrary and it does not provide information about the scale of the gap between actual and potential yields as climate and soil conditions differ in Belarus and neighbour EU countries. Therefore, analysis of soil quality and yields by rayons of Belarus was undertaken to get some insight into the potential of yields increase. Dependency between soil productivity and yields is straightforward with correlation coefficient of 0.7 for grains and 0.6 for potatoes (see Figure 6.2). Density of distribution of rayons across the trend is quite high (especially for grains), but there are outliers that represent rayons with unpredictably high yields that can present a benchmark for the whole country, and rayons with low yields, which profile should reveal key problems restraining yield growth.



Source: Belarusian Statistical Committee.

Figure 6.2. Average yields of grains and potatoes in 2004–2013 in Belarus in relation to soil productivity scores by rayons

Identification of outliers and their profile analysis was done by means of linear regression analysis. The explanatory variable was the average yield of grains in 2004–2013, which allowed elimination of the weather conditions influence from the analysis. Dependent variables were soil productivity score and dummies for each *oblast*, capturing differences in climate conditions within Belarus. The results revealed that elasticity of grain yields by soil productivity is close to 1. The only region where climate conditions statistically influences yields of grains is Viciebsk oblast (see Annex C). The outliers were defined as rayons where errors exceeded one standard deviation. Number of these outliers was rather low.

⁴⁸ <http://nsh.by/articles/agro/72/73.html>.

Among rayons with the yields above potential are Verhnyadzvinski, Mazyrski, Vaukavyski, Hrodzenski, Dzyarzhynski, Klecki, Minski, Nyasvizhski, Horacki where leading meat and milk factories are placed⁴⁹. Hence, the presence of competitive food industry enterprises in the rayon stimulates efficiency growth of the agriculture. It is explained by vertical integration of food and agricultural enterprises that is achieved via M&As and restrictions on the resource zones for food industry enterprises, which makes them interested in improving efficiency of the agricultural entities. The average positive gap between yields in these rayons and predicted is 40%. It implies that in case all rayons of the country were as productive as the leading, the yields of grains would be equal to the level in Lithuania and Poland. Hence, there is potential for agriculture production increase that is rooted in management improvement, for instance through changes in ownership structure of agricultural enterprises.

There are also a dozen of rayons with the yields statistically below potential. Most of them are relatively low-income rayons within their oblasts⁵⁰ and/or regions suffered most from the Chernobyl disaster. It implies that improvement of overall weak economic conditions of the rayons, including business climate improvement, measures aimed at labour force attraction (see Chubrik, Shappo, 2015), will create incentives for efficiency gains in agriculture and increase demand for agricultural products.

6.3 Bottlenecks for the future development of agri-food sector

A fundamental challenge for agricultural sector development is decrease of rural population, its ageing and marginalization. This implies lack of skilled labour force that will only gain momentum in the future (Akulava, Kirchner, Shymanovich, 2013). The problem is aggravated by the quality of education and research in the field of agriculture that does not meet the demand of the sector (Nivievskiy, Koester, 2012).

Another problem is dependency of the sector on the state support, as subsidies account for 14–15% of the sectors output. The scale of this support is expected to decrease substantially. First, the budget expenditures are falling due to fiscal policy tightening provoked by high inflation pressure and decline of the public revenues. Second, agreements within Customs Union of Belarus, Kazakhstan and Russia, along with the Russian commitments to the WTO, provide that Belarus reduces its support to the agriculture. Therefore, there is high probability of the revision of the policy of public support to the agri-food sector, which can hamper competitiveness of the Belarusian food products.

Dynamics and regulations of the Russian market, what is a key export destination, determine at significant extent financial results of the Belarusian agri-food sector. There is a high risk that Belarusian products may lose their share in the Russian market due to increased competition. On the one hand, Russia runs state programs aimed at domestic meat and dairy production increase, which may reduce demand for import goods. On the other hand, WTO commitments imply tariff reduction for food products, which can lead to increase of import from the rest of the world. This should affect Belarusian production of the goods with extended storage period. Moreover, Russia is prone to use non-tariff measures to reduce import of food products. Belarus has favourable conditions as there are common technical norms within Customs union, but still Russia applied non-tariff barriers to Belarusian products (sanitarian norms). Thus, there is always a risk that Russia may protect its market from Belarusian products.

Reduction of public support to agriculture and risks related to the changes in status of Belarusian products at the Russian market imply need for agricultural policy revision and reforms in the sector. State interventions into the sector in the form of price regulation, limiting access of food industry to raw products by resource zones, privilege treatment of the large scale state-owned enterprises dominating the sector create distortions and hamper efficiency of the agriculture. The problem of efficiency is highlighted by large difference in yields across the country. Revision of the state support in this regard

⁴⁹ Some of these rayons are characterized by high soil productivity scores, which may signal about non-linearity of the function. Moreover there are also several rayons with very low soil productivity scores, but unpredictably high yields if compared to their potential.

⁵⁰ The difference between average wage in the rayon and average wage in related oblast is proved to be correlated with the yields (see Annex C).

has to be accompanied by measures aimed at efficiency increase. It implies changes in ownership and restructuring of agricultural enterprises, which contains high risk of closure of some enterprises and, consequently, increase in unemployment in rural area and reduction of resource base for the food industry.

Summing up, key challenges of the sector development are rooted in the internal factors of state policy in agri-food sector. It is illustrated in Table 6.1, where issues of national agricultural development policy, domestic market, and rural area development are assessed as the most influential factors of agricultural and food sector development in Belarus. Influence of international market is at large extent limited to development of Russian food market, where Belarusian products have preferential treatment. As a result competitiveness of the agri-food production does not play a role it is expected to play in the development of the sector, which may undermine sustainable development of the sector in the long-run.

Table 6.1. Assessment of the influence that domestic and external factors exert on the development of the agricultural and food sector in Belarus

Element	Score (1–5)
Domestic market	5
CIS market	4
International market (outside CIS area)	3
National grants	4
International grants	2
National agricultural development policy	5
Policies of other countries	4
Competitiveness at national level	3
Competitiveness at international level	3
Bureaucracy in the national institutions	4
Corruption in the national institutions	3
Legal frameworks and regulation	4
Knowledge and information	3
Solidarity in society with agriculture/rural areas	2
Development of the rural area (population dynamics, the stance of infrastructure)	5

Note. 1 denotes for low influence, and 5 – high influence.

Source: own elaboration.

6.4 Growth attractiveness for specific commodities

Growth perspectives of Belarus agri-food sector are rooted in potential efficiency increase. Possibilities for intensification of agricultural production are very limited, as agricultural land resources are utilized almost fully. Significant growth of the agri-food sector through changes in structure of cultivated crops is also hardly possible, as intensification of production of any crop cultivated in Belarus is disputable.

The most important crops cultivated in Belarus are spike grains (rye, wheat, triticale, oats, and barley), grain maize, rape and sugar beet. Their production was on a rise in the last decade, but there are factors that limit their further growth potential. Spiked grains production grew against a background of increased area cultivated with these crops and change in structure of grains cultivated. Production of wheat, triticale and barley, generating higher yields grew at the expense of rye and oats. Further changes in the structure are possible but they are risky. First, wheat is more demanding for rich soil than rye (traditional grain for Belarus) and exhausts it, stressing need for crop rotation. Second, wheat depends more on weather conditions than rye, so its cultivation implies higher risks.

Rape production increase was lobbied by officials, as experimental increase of area under this crop was accompanied by high yields of 2008. Infrastructure of rape oil production was created based on the assumption of these high yields. However, further years showed that yields are not stable and there are risks related to soil exhaustion. Still, reduction of the rape cultivation is not expected as there is need to load export oriented oil producing plants, and rapeseeds are important part of poultry feed. Growth can be achieved through agro-technology improvement, as there is significant gap in rapeseeds yields in Belarus and neighbour countries.

Grain maize cultivation in Belarus is limited by a climate factor, as only some southern regions generate high yields of this crop. Temperature growth may contribute to further increase of the area cultivated

with maize. Grain maize is used as a forage crop and its introduction improved feed base of pork and poultry production. Therefore, there is state interest in further grain maize area increase.

Sugar beet production is organized near sugar plants. Potential of the beet processing of the plants is limited, while storage of sugar beet for long period of time is impossible. It implies that increase of sugar beet production is limited by sugar plant capacities. Increase of yields and sugar content up to potential would be enough to fulfil demand of sugar production industry.

Other crops are largely produced by farmers and households for domestic consumption. Volume of their production is determined by market factors. In these circumstances production of vegetables, potatoes, fruits and berries is largely profitable. Their production growth is possible in case farming develops in Belarus. The state sector also stimulates development of these crops through financing infrastructure for fruit and vegetable storage and subsidizing orchard establishment. The support targets state-owned enterprises, but private farmers are also eligible for the support. Prospects of production of vegetables and fruits are currently improved due to Russian embargo on the EU products leading to broadened export opportunities.

Products of animal origin are expected to remain a key agri-food speciality of Belarus. Their production volume will depend on the Russian market and the status of Belarusian goods. Current Russian tensions with the EU create incentives for Belarusian officials to focus on promotion of further animal production increase. Growth dynamics was observed in pork and poultry production in the last decade, as these sectors enjoyed investments and improved forage mixtures. Poultry production has potential for further growth, as it is profitable and enjoys high demand on local and Russian market due to relatively low prices. Private initiative and foreign investments may contribute to the development of turkey meat production which is a market niche as a low fat food thanks to income increase. Pork production perspective is obscured by African swine fever epidemic outbreak in 2013 and low price competitiveness. The government demands pork production recovery even despite high risks of new epidemics.

Milk production is on a hike in Belarus. Its growth is supported by high export prices and improved access to the Russian market as well as establishment of the vertically integrated enterprises in dairy industry. Growth potential is rooted in yields increase, as they are lower than in neighbour countries and have stagnated recently despite public investments into the sector. However, long-term perspectives of further growth are blurred due to possible competition increase. Diversification of dairy products in favour of goods with high value added may allow to secure further growth of the sector. Furthermore, it may provide opportunity to enter the EU market.

Another possible trend is development of organic food production, where Belarus is lagging far behind the EU countries. There are no legislation regulations of organic production and certification centres. However, demand for organic food products is observed in Belarus, as the middle class has begun to emerge against a background of economic growth of the last decade.

Table 6.2. Yields and growth attractiveness for specific commodities in Belarus

Commodity	Yield	Producer price	Growth attractiveness	Potential market
Wheat	Lower than average by 20%	Substantially lower than average	Has growth potential as forage due to higher yields compared to other grains	Domestic
Rye	Close to average	Substantially lower than average	Low: traditional crop, but it loses competition to other grains	Domestic
Triticale	Close to average	Lower than average by 25%	Has growth potential as forage due to higher yields compared to other grains	Domestic
Barley	Slightly lower than average (5–10%)	Lower than average by 25%	Low: dynamics is determined by needs of food industry and animal production	Domestic
Maize	Substantially lower than in Poland	Higher than average by 25%	Low: is demanded as forage, but climate conditions limit growth prospects	Domestic

AGRICISTRADÉ Belarus country report

Commodity	Yield	Producer price	Growth attractiveness	Potential market
Potatoes	Slightly higher than average (5–10%)	Average	Moderate: can become export product, but storage facilities are needed.	Domestic, Russia
Sugar beet	Lower than average (by 15%)	Average	Crop area increase is not feasible: Improved yields and sugar content can fully satisfy needs of the sugar industry	Domestic
Rapeseed	Substantially lower than average	Substantially lower than average	High domestic and external demand provides ground for the sector's growth. Though cultivation technology improvement and control for agro-climate conditions are needed	Domestic, EU
Vegetables: cabbage, carrot, onion, cucumbers	Average	Average	Moderate: can become export products, but storage facilities and development of private farming are needed	Domestic, Russia
Fruits: apples	Substantially lower than in Poland	Average	Moderate: can become export product, but storage facilities are needed.	Domestic, Russia
Berries: Strawberry	Substantially higher than average	Average	There are growth prospects within private farms	Domestic, Russia
Dairy products	Milk yield is lower than average (by 15%)	Slightly higher than average (5–10%)	Growth prospects for products with high value added.	Domestic, Russia, EU
Pork	The yield is slightly lower than average (by 5–10%)	Above average (by 15%)	Growth potential is high due to low base after ASF epidemic and high food industry demand	Domestic
Beef	Below average (by 20%)	Slightly higher than average (5–10%)	Growth potential is minimal due to low yields and low price competitiveness. Focus on dairy cattle.	Domestic, Russia
Poultry: chicken	Below average (by 30%)	Average	High growth potential: High demand by households (incl. Russia), and food industry	Domestic, Russia

Note. Price and yield comparison was done for Estonia, Latvia, Lithuania, and Poland based on data of last 5 year. For detailed price comparison see Annex D, for yields comparison – Annex B and Figure 6.1. Yields related to animal products are not provided in the text: they can be checked at FAOSTAT.

Source: own elaboration.

7. CONCLUSIONS AND RECOMMENDATIONS

Agricultural and food sector plays an important role in the economy of Belarus. Its contribution to the GDP is higher than in the new member states and it generates significant foreign trade surplus. Belarus exports significant volumes of dairy products, meat and meat products to Russia. Other important export goods are sugar, alcohol, tobacco and rape oil. Their export direction is more diversified, as they are also exported to other CIS countries and to the EU. Furthermore, agri-food sector guarantees employment in the rural area, where other employment opportunities are very scarce. These factors determine the level of attention that economic authorities pay to the agri-food sector. Reduction of current account deficit and provision of social assistance through guaranteeing employment opportunities (although low-paid) are considered as important tasks of public policy in Belarus. As a result, agri-food sector stays largely inefficient and benefits from generous state support. Consolidated budget expenditures on agriculture are around 3% of the GDP, and subsidies constitute around 15% of the gross agricultural output.

Most of the state support is provided through the system of subsidies that reduce input factor costs (including input price regulation), and via government financing of investment. However, the system of subsidies and producer price regulation in particular is organized in a way that it benefits companies that produce (export) final product. It implies that most of the support is channelled into downstream industries of food processing, wholesale and retail, while upstream sector of crop production faces negative price support. As key export products are of animal origin, it implies that agricultural crop production interests are subordinated to animal production. The state subsidises costs of agricultural enterprises related to fuel and fertilizers acquisition, but sets maximum output prices for key forage crops below world prices through the system of state purchases. In its turn, output prices for agricultural products of animal origin may also be understated (i.e. raw milk) to increase price competitiveness of the food industry.

The system of the state support to the agriculture was able to guarantee growth of dairy product production, meat production, as well as forage and technical crop production in the last decade. Meat and dairy production grew based on the investments into related facilities and improvement of forage availability, leading to shorter cycle of poultry and pork production, and higher yields of milk, which still has potential for further growth. Production of crops grew largely against a background of changes in the structure of cultivated crops, as yields remained below the average for the region.

Production below potential is another side of the coin of the state interference into the agri-food sector. The sector is dominated by large agricultural enterprises that lack flexibility and do not have enough incentives to increase efficiency in environment, where state support can be viewed as granted. Furthermore, demand for their output is guaranteed through the system of product zones within which food enterprises are eligible to acquire raw agricultural products.

Hence, there is a room for efficiency increase through deregulation of the sector. Abolishment of “product zones” (requirement to purchase agricultural product by food processing companies within certain geographical boundaries), abolishment of price regulations within agri-food value chain, restructuring of the large agricultural enterprises and development of farming may create competitive environment and improve resource allocation. The relative efficiency of private farming is proved by the fact that many private farmers produce vegetables and fruits where state interventions are marginal and at the same time enjoy high profitability. The need for the reforms is stipulated by current fiscal policy situation, which demands fiscal tightening, and obligations of the state support reduction within integration agreements with Kazakhstan and Russia. However, costs of reforms may also be high, including welfare reduction of rural population, which may lead to acceleration of rural-urban migration and thus hamper long-term growth potential of the agri-food sector.

Measures to support rural employment and, more general, human capital, could be built upon the results of previous policies. Thus, between 2005 and 2010, in all regions of Belarus the new type of settlements arose – “agro-towns”. Many of them could become a sort of “gravity centers” for local labor force, providing education, jobs, etc. It is important to support labor mobility via development of local communal (and private) transports. Infrastructure development, including high-speed Internet, is also

important to increase attractiveness of life in rural area. However, the key is to resolve land property issue and to enhance private farming that may absorb excessive labor from state-owned agricultural enterprises.

Although food production is represented mainly by large state-owned enterprises, large private companies also exist in the sector. Along with the export orientation of the industry, it creates competitive environment within the sector. Large size of the companies is attributed to the vertical integration which leads also to improved efficiency of the associated agricultural entities, and horizontal integration that guarantees benefits in the form of return to scale. However, further consolidations in the industry may not be productive, as they are associated with the risk of monopolization of the sector. The largest enterprises within the sector are those producing meat products, dairy products, alcohol, sugar, and confectionary.

Table 7.1. Policy recommendations for improving competitiveness of agri-food sector in Belarus

Problems	Solutions and recommendations
Efficiency losses within the sector due to distorted incentives	<ol style="list-style-type: none"> 1. Elimination of price regulations, 2. Revision of wage and labor regulations, 3. Restructuring of large loss-making state-owned enterprises, 4. Hardening budget constraints, 5. Resource zones abolishment.
Undeveloped sector of private farming	<ol style="list-style-type: none"> 1. Liberalization of administrative regulation, 2. Improved access to the agricultural land.
High public sector expenditures on the sector and its ill accountability	<ol style="list-style-type: none"> 1. Targeted subsidies provision, 2. Transparent structure of subsidies with prevalence of green box measures aimed at infrastructure development, 3. Abolishment of cross-subsidization and transfers of subsidies along the value chain
Deterioration of the human capital within the sector	<ol style="list-style-type: none"> 1. Decentralization as a key precondition for regional development, 2. Improvement of infrastructure in rural areas, 3. Reforms in agricultural education towards improved flexibility.
Dependency on Russian market	<ol style="list-style-type: none"> 1. EU certification of food industry, focus on quality improvement and marketing, 2. Trade agreements with the EU, and WTO accession, 3. FDI attraction.

Source: own elaboration.

References

- Akulava, M., Kirchner, R., Shymanovich, G. (2013). Recent Trends and Challenges in the Labour Market in Belarus, *IPM Research Centre Policy paper*, 13/02.
- Alyavdina, Z. (2013). Socially Oriented Development of Agricultural Camps: Comprehensive Approach, *Economics and management*, 1 (33), 48–50.
- Bobrova, A., Shakhotska, L., Shymanovich, G. (2012). *Belarus Country Report: Social Impact of Emigration and Rural-Urban Migration*, European Commission, DG Employment, Social Affairs and Inclusion.
- Burduk, D. (2013). Legal status of the agricultural production cooperatives, Materials of the 70th scientific conference of students of the Belarusian state university held in May, 15–18, part 2, 387–391.
- Chubrik A., Shappo, M. (2015). Regional private sector development in Belarus: An SME perspective, mimeo.
- Chubrik, A. (2012). The New Old Choice for Economic Policymakers in Belarus, *IPM Research Centre Discussion paper* 12/02.
- Chubrik, A. (2014). What Policy Can The Belarusian Economy Sustain? *IPM Research Centre Discussion paper* 14/01.
- Chubrik, A., Haiduk, K., Pelipas, I., Shymanovich, G., Tochitskaya, I. (2009). *Social Protection and Social Inclusion in Belarus*, European Commission, Directorate-General for Employment, Social Affairs and Equal Opportunities, Unit E2.
- Cuaresmo, J., Oberhofer, H., Vincelette, G. (2012). Firm Growth and Productivity in Belarus: New Empirical Evidence from the Machine Building Industry, *World Bank Policy Research Working Paper*, 6005.
- EBRD (2014). *Transition Report 2014: Innovation in Transition*, European Bank for Reconstruction and Development.
- Favaro, E., Smits, K., Bakanova, M. (2012). Structural Challenges for SOEs in Belarus. A Case Study of the Machine Building Sector, *Policy Research Working Paper* 6010.
- Haiduk, K., Chubrik, A., Parchevskaya, S., Walewski, M. (2006) Labor Market in Belarus: An Overview, *ECOWEST* (2006) 5, 1, 44–93.
- IFC (2013). *Business environment in Belarus 2013. Survey of commercial enterprises and individual entrepreneurs*, Minsk, International Financial Corporation.
- IPM Research Centre (2012). *Poverty and social Inclusion in Belarus*, Yearbook (in Russian).
- IPM Research Centre (2013). *Poverty and social Inclusion in Belarus*, Yearbook (in Russian).
- IPM Research Centre (2014). *Belarus Macroeconomic Forecast*, 2, 9.
- Karpovich, N., Akhramovich, V. (2013). Foreign Trade of Agri-Food Sector of Belarus under the Terms of Common Economic Area, *Economic issues of the agriculture sector development of Belarus*, 41, 68–78 (in Russian).
- Kavalkin, V., Filimonov, A, (2013). Retail Networks: Modern Service or Monopolization of Retail, *BIPART Policy paper* (in Russian).
- Kruk, D., Haiduk, K. (2013) The Outcome of Directed Lending in Belarus: Mitigating Recession or Dampening Long-Run Growth? *BEROC Working Paper* 22.
- Lapa, V., Privalov, F. (2007). Soil fertility and fertilizers application in Belarus, *Soil science and agricultural chemistry*, 2 (39), 7–14 (in Russian).
- Mitrofanova (2014). Agriculture of Belarus: Development, State Support, and Agricultural Exports, mimeo.

Morgner, M., Kirchner, R., Shymanovich, G. (2015). The Role of Fiscal Transparency in Raising the Efficiency of Public Expenditure, *IPM Research Centre Policy paper*, 15/01.

Nivievsky, O., Koester, U. (2012). Agricultural Research and Education System in Belarus: A Need for a Decentralized and Market-Oriented Approach, *Berlin Economics Policy paper*.

Nivievskiy, O., von Cramon-Taubadel, S. (2011). Dairy Supply Chain in Belarus: Bottlenecks and the Scope for Improvements, *Berlin Economics Policy paper*.

Shappo, M., Knuth, A. (2014). Empirical Factors of SME Development in Belarus: Analysis and Recommendations, *IPM Research Centre Discussion paper* 14/04.

Shymanovich, G. (2013). Social Effects of Accession of Belarus to the WTO, *IPM Research Centre Policy discussion paper*, 13/08.

Tochitskaya, I. (2012). Russia's Accession to the WTO: Implications for Belarus' Trade and Industries, *IPM Research Centre Policy paper*, 12/01.

World Bank (2011). Belarus Public Expenditures Review. Fiscal Reforms for Sustainable Economic Recovery, volume.1, *Report* 63566.

World Bank (2012). *Country Economic Memorandum for Belarus: Economic transformation for growth*, report 66614-BY.

World Bank (2013). Belarus Public Expenditures Review. Enhancing Public Services in Times of Austerity, volume 2, *Report* 74148.

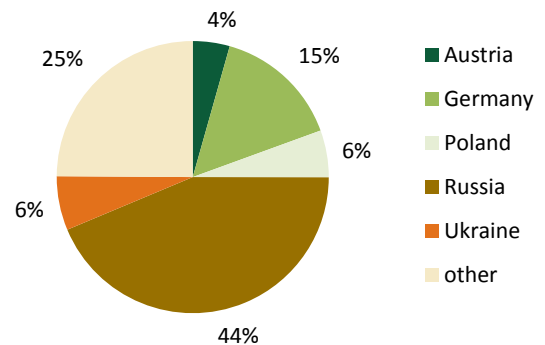
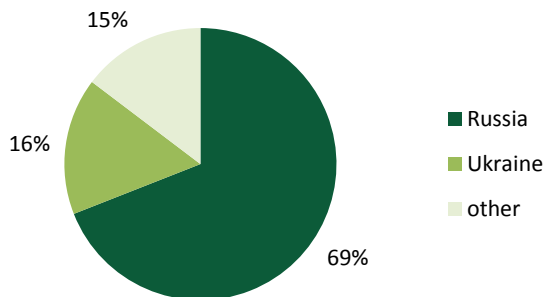
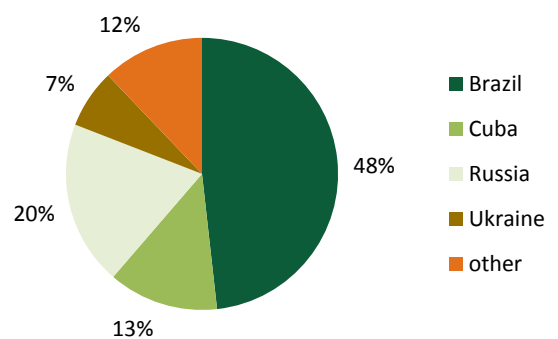
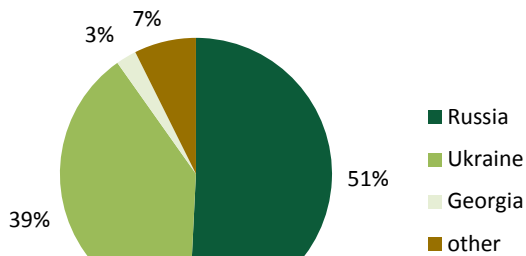
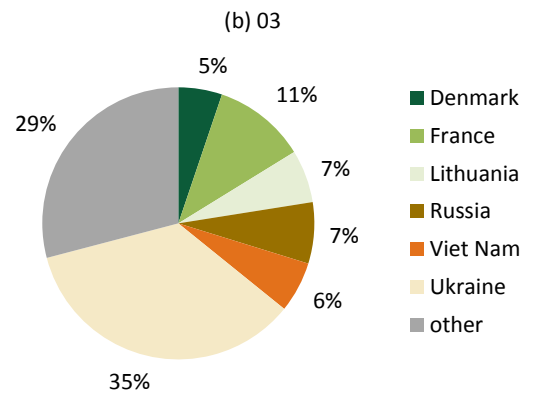
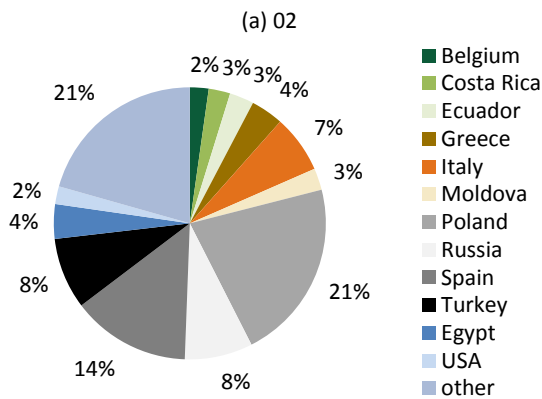
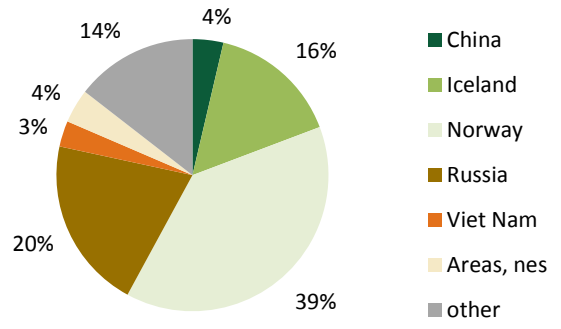
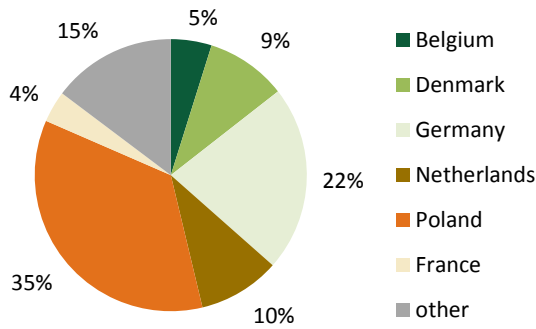
World Bank (2014). Getting Ready for a Dynamic Jobs Market: Enhancing Labor Market Policies to Support Structural Reforms in Belarus, *Report* 86017-BY.

Zaprudskaya, T., Gorbacheva, E. (2013). Influence of qualitative and quantitative indicators of land on the production structure of agricultural organizations, *Agrarian economics*, 12(223), 8–13 (in Russian).

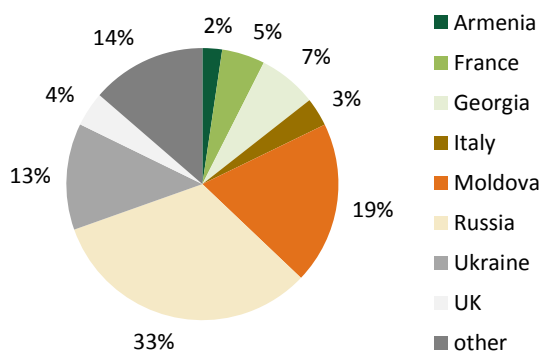
Znak (2013). Top-ten juridical surprises that investor should expect in Belarus, *mimeo*.

Annexes

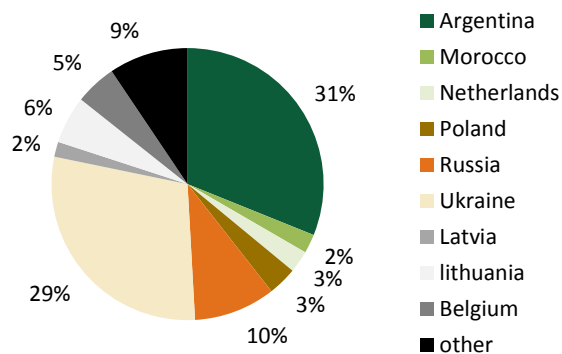
Annex A. Import origin by commodity groups, 2013



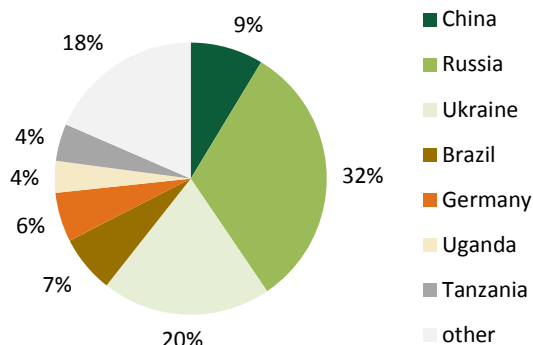
AGRICISTRADE Belarus country report



(i) 22



(j) 23

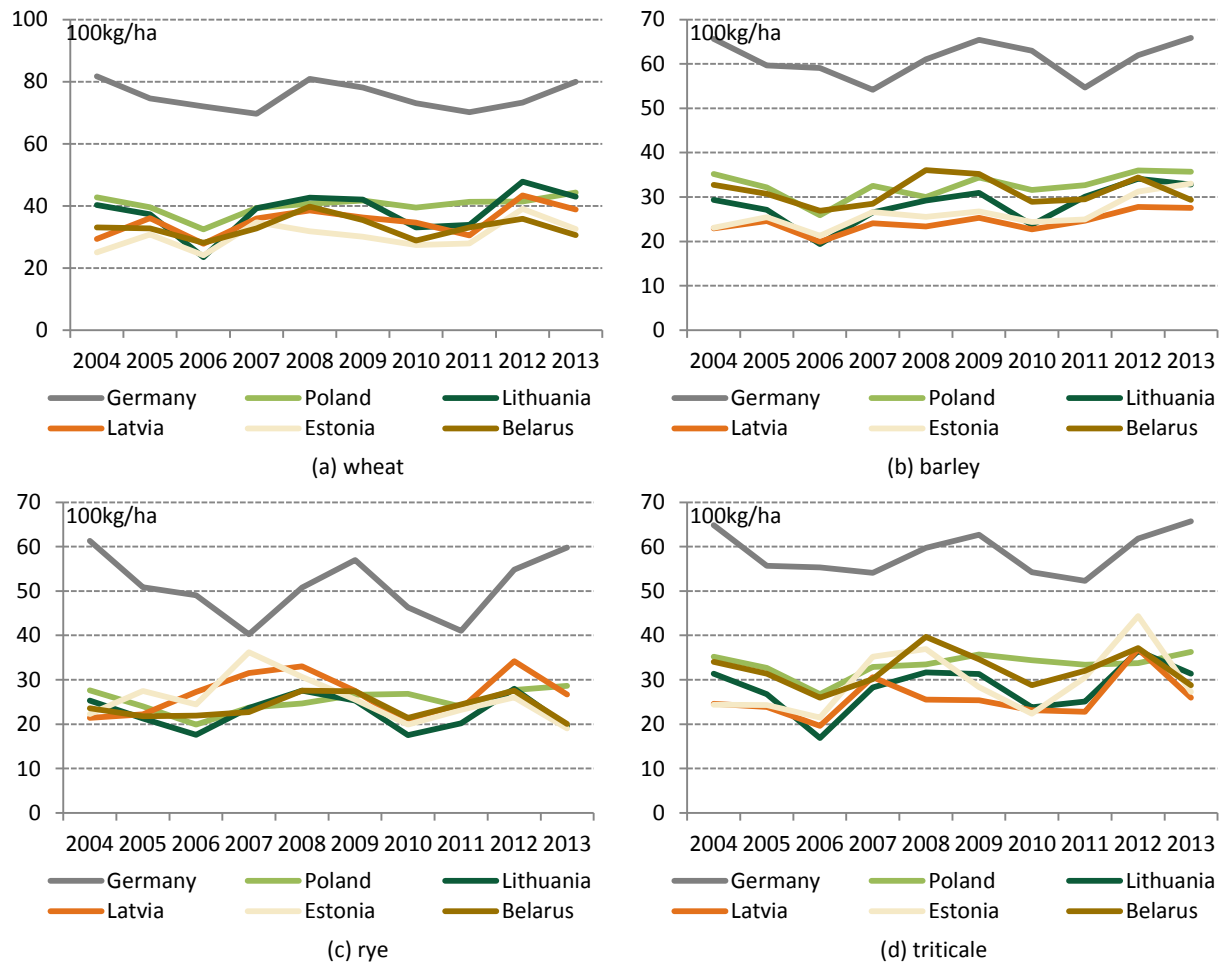


(k) 24

Note. HS codes: 02 – Meat and edible meat offal; 03 – Fish, crustaceans, molluscs, aquatic invertebrates; 08 – Edible fruit, nuts, peel of citrus fruit, melons; 10 – Cereals; 15 – Animal, vegetable fats and oils, cleavage products; 17 – Sugars and sugar confectionery; 19 – Cereal, flour, starch, milk preparations and products; 21 – Miscellaneous edible preparations; 22 – Beverages, spirits and vinegar; 23 – Residues, wastes of food industry, animal fodder; 24 – Tobacco and manufactured tobacco substitutes.

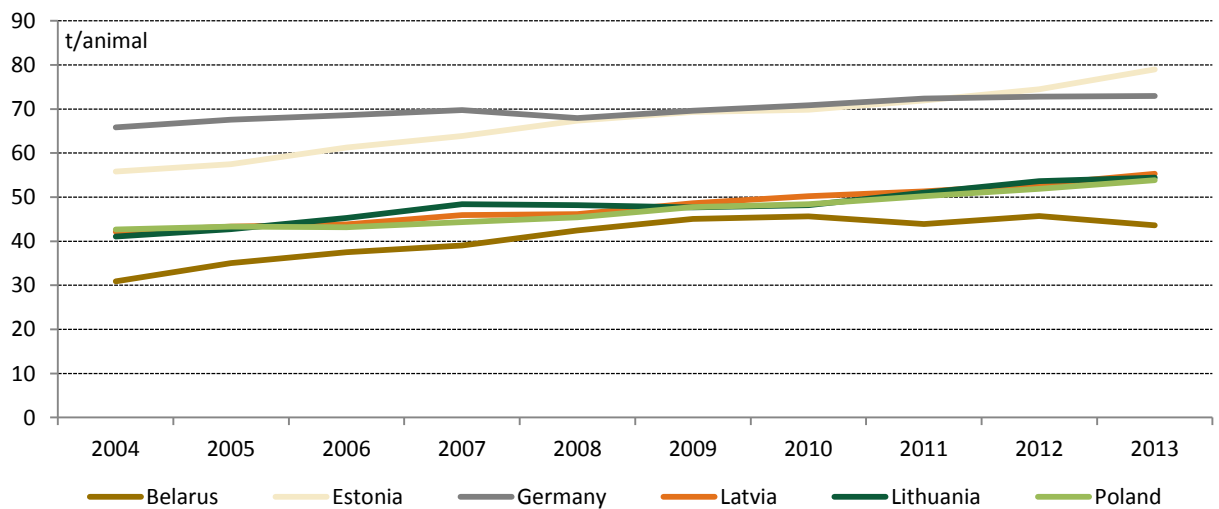
Source: UN Comtrade.

Annex B. Yields of grains and milk in Belarus and selected EU countries



Source: FAO.

Figure B.1. Yields of selected grains in Belarus, Germany, Poland and Baltic states in 2004–2013



Source: FAO.

Figure B.2. Yields of milk in Belarus, Germany, Poland and Baltic states in 2004–2013

Annex C. Specification of the yields equation

Following specification of the relation between soil productivity and yields was estimated:

$$Y_i = \beta_0 + \beta_1 Score_i + \sum_{j=1}^6 \beta_j D_j + \varepsilon_i$$

where, Y_i – logarithm of the average yields of grains in the rayon i in 2004–2013, β – estimated coefficients, β_0 – constant, $Score_i$ – logarithm of the average soil score in the rayon i , D_j – dummy for the oblast j to control for differences in climate and geographical conditions of 6 oblasts of Belarus. Results of the estimation are presented in Table C.1.

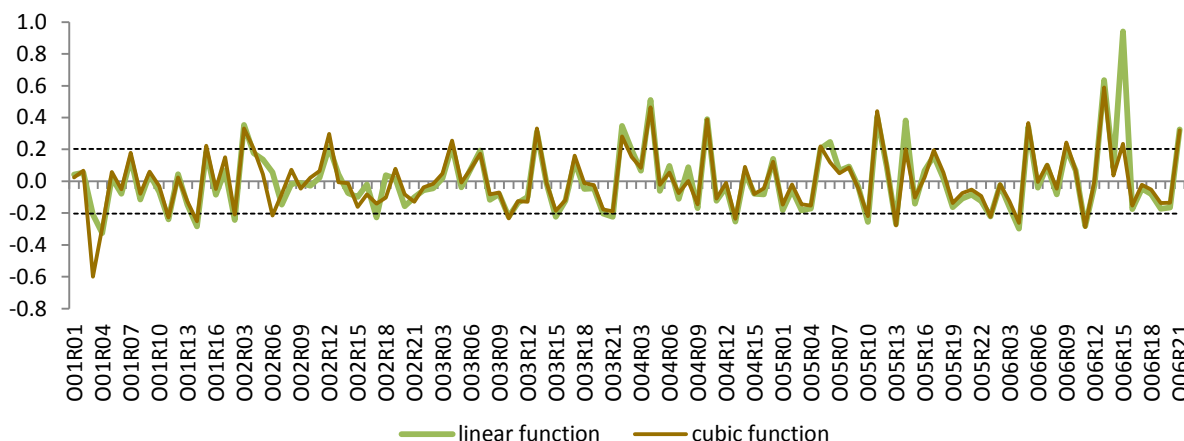
Table C.1. Estimated coefficients

	Coefficient	Standard Error	t-statistic	Probability
Score	0.982	0.006	162.939	0.000
Vicebsk oblast	-0.197	0.037	-5.390	0.000

Notes. Minsk oblast dummy was omitted from the equation, as it is situated in the centre of the country and has climate conditions that can be considered as an average for Belarus. Dummies for Brest, Hrodna, Homel, Mahiliou oblasts appeared to be statistically non-significant and are not presented in the Table. Regression was estimated by LS; t -statistics are heteroskedasticity consistent. Number of observations – 118. Adjusted $R^2 = 0.483$.

Sources: own estimates.

The tests show that residuals of the equation are not distributed normally. It may be related to the specification error. The Ramsey RESET test shows that specification of the equation should be non-linear (F -statistics is equal to 11.3), and cubic function provides better fit within the sample. However, application of cubic function does not change distribution of the residuals. There are still the same outliers with the yields exceeding or falling below predicted level (plus/minus one standard error), identification of which was a key goal of the modelling.

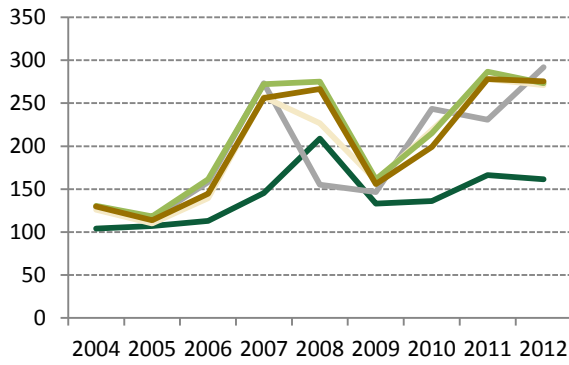


Source: own estimates.

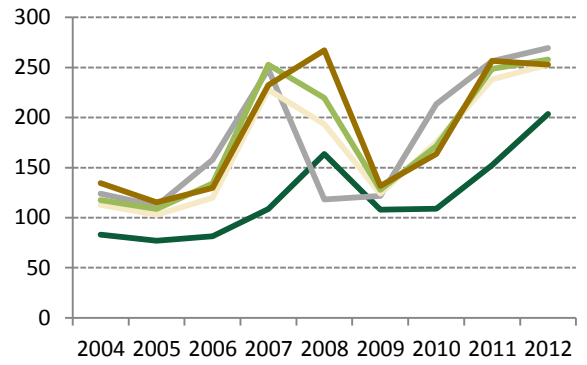
Figure C.1. Residuals of the regression

Variable of the average wage in the rayon was not added into specification due to the problem of causality. The influence should go in both directions. On the one hand, level of wages is a proxy of labour productivity in the rayon, so higher wages imply higher productivity of those employed in agriculture and higher yields. On the other hand, effective agriculture sector in the rayon leads to wages increase in the whole rayon’s economy, taking into account significant role of agriculture in the economy of rural areas. Tests on correlation between wages across the rayons calculated as a ratio to the average wage in oblast and yields of grains show positive relationship with the coefficient of 0.279 (0.331 for Spearman rank correlation).

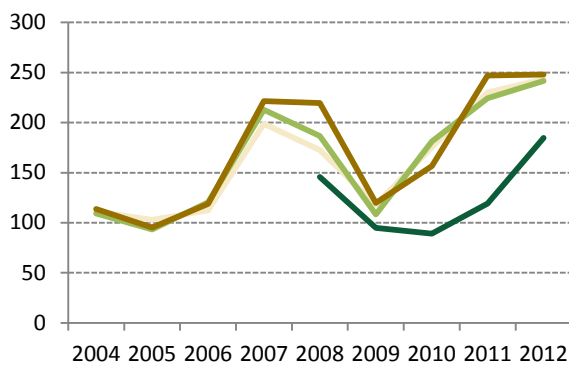
Annex D. Producer prices in Belarus and selected EU countries



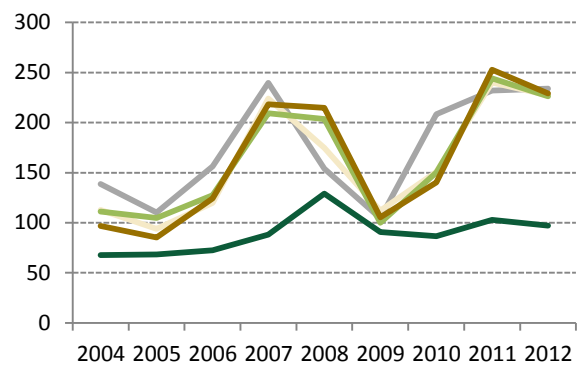
(a) wheat, USD/t



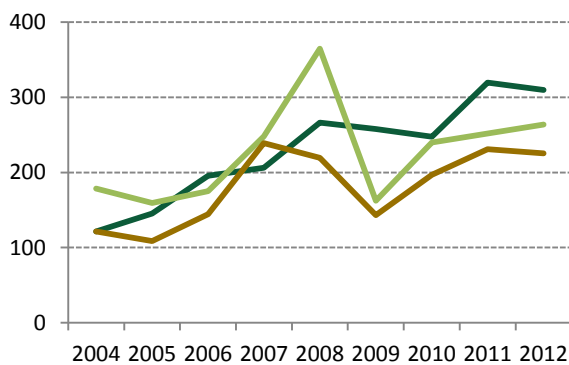
(b) barley, USD/t



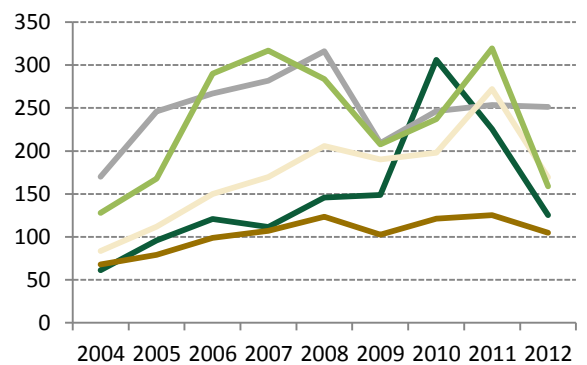
(c) triticale, USD/t



(d) rye, USD/t

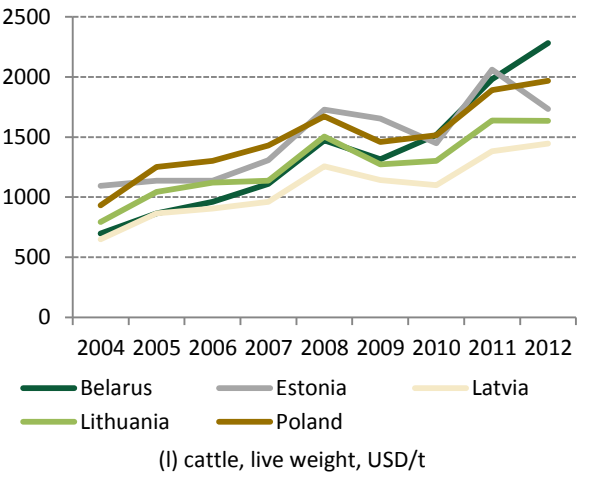
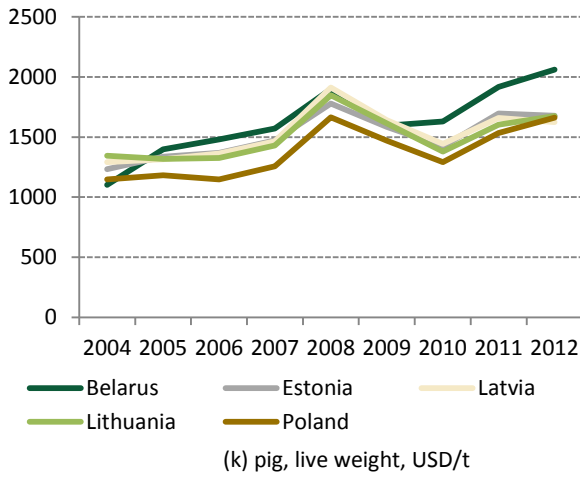
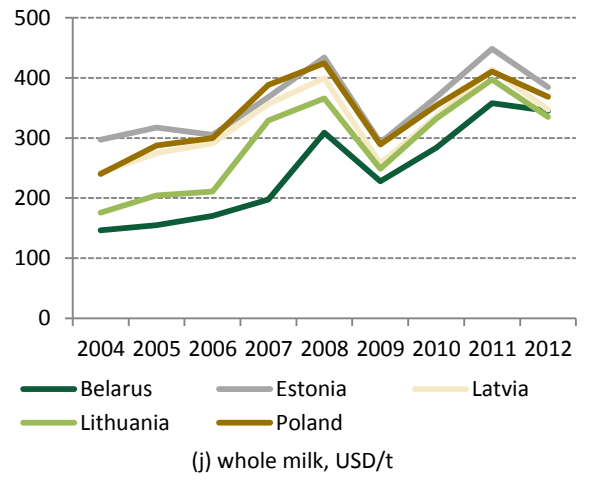
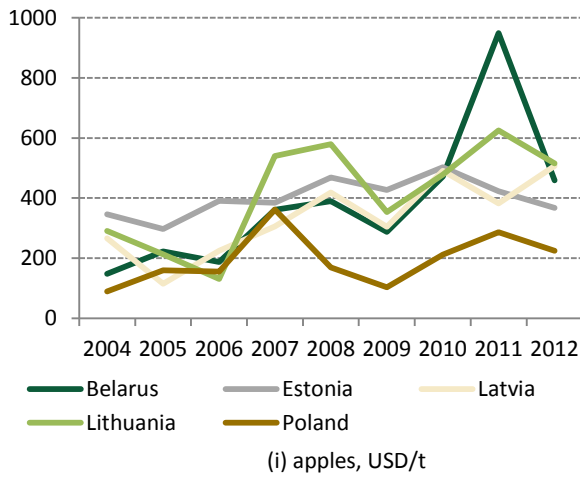
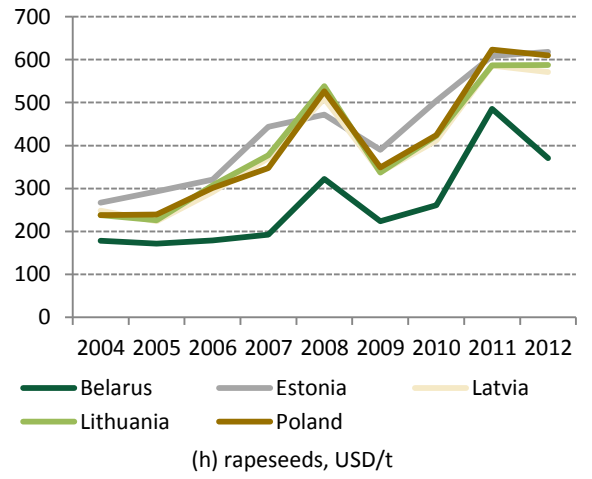
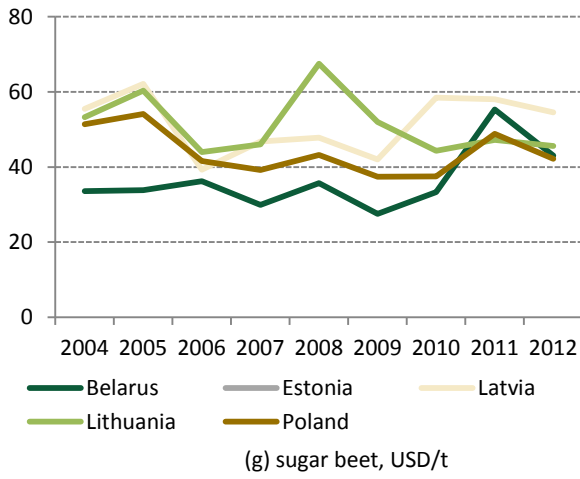


(e) maize, USD/t



(f) potatoes, USD/t

AGRICISTRADE Belarus country report



Source: FAO.