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## The Agricultural Industry in Belarus

Yesterday, Today, and Tomorrow

*This article presents the features of development dynamics in the Belarusian agricultural sector since the creation of the sovereign state. The article analyzes the stages in the country's agribusiness development as implemented through targeted state programs and considers the prospects for further development of the agricultural sector.*

**Keywords:** Belarus, agriculture, development of the agricultural sector

By the beginning of the 1990s, Belarus ranked highest in production of agricultural products not only among the former Soviet states but also among many developed European countries. The country produced more milk and meat per capita than Germany, France, and the United Kingdom, and a third more grain than the European Union (EU) average. Belarus was the global leader in potato and flax fiber. One worker employed in agriculture provided food products for more than twenty people. In 1985–90 the country exported up to a million tons of potatoes, 300,000 tons of meat, and more than 2 million tons of dairy products.

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During the initial stage of building a sovereign state and establishing a new agricultural system, agricultural production dropped sharply. The destruction of the Soviet Union's unified economic space deprived the country of raw materials for the production of nitrogen and phosphorous fertilizers, the necessary supply of 3–4 million tons of grain per year, a whole range of tools for protecting plants and animals, and most types of agricultural machinery. Political mistakes made by the country's leadership at the time, particularly the dismantling of collective and state farms, led to serious consequences. It was not for a lack of qualified leaders and experts. During 1992–94 fixed assets fell by a factor of 1.8, and revolving assets by more than half. The country introduced a ration card system for food products. Therefore, in 1994 the president of Belarus faced the urgent task of filling the domestic market with food, and by 2000 the Belarusian food markets had drawn closer to the European markets and agricultural exports had developed. At present Belarus largely leads countries of the Commonwealth of Independent States (CIS) in agricultural production per capita.

### **Stages of establishing agriculture in Belarus**

Belarusian agribusiness passed through three stages during its development, each of which was implemented through targeted state programs. The first State Program for Reforming Agribusiness in the Republic of Belarus (General Strategies) was estimated for 1996–2000. The market economy was established by reforming the entities of agribusiness management: new organizational and legal forms were created on the basis of collective and state farms. By 2000, some 212 collective farms were reorganized into collective share agricultural enterprises, joint-stock companies, agricultural firms, and other formations, while 105 low-profit farms were absorbed into other legal entities or leased to private entities. This led to a productivity increase in the sector. By 2000 the volume of mineral fertilizers introduced had nearly doubled in comparison to 1995, the acreage of intensive crops (wheat and triticale) had expanded, and milk production and sales volumes of pork and poultry had increased.

The implementation of measures from the second Program for Improving the Agricultural Industry in the Republic of Belarus for 2001–2005 allowed the country to achieve significant positive results in development of the agricultural sector. Large commodity production developed even further, along with modern agricultural engineering: more

than 100 types of new machines and equipment were developed, another 86 kinds of existing technologies were put into production, and more than 300 dairy farms were reconstructed and technologically reequipped with installation of the latest machinery. During 2001–4, agricultural organizations used long-term leases to purchase about 1,000 tractors, more than 1,600 combine harvesters, and another 5,000 units of other equipment. New technological systems with intensive technologies for crop and livestock production allowed them to reduce the energy and material intensity of production by a factor of 1.4–1.7 and to improve productivity by a factor of nearly 1.5. On January 1, 2005, 1,885 agricultural organizations were transformed into new forms of management.

In 2003 a national fund was established to support producers of agricultural products and agricultural science; its funding drew 1.5 percent of revenues from all domestic production. Similar funds have been established in regional budgets, as well.

As a result of implementing these program provisions in 2001–4, the country's food security was fully achieved and the domestic market was flush with crop and livestock products (except for some types of cereal cultures, fruits, and vegetables that do not grow in Belarusian conditions). In 2004, the export of goods by companies under the aegis of the Ministry of Agriculture came to around \$600 million, more than double the exports in 2000.

The organizational measures and innovation processes implemented through the State Program for Rural Revitalization and Development for 2005–2010 have created a modern infrastructure for the industry. The program was to offer comprehensive solutions to social problems in rural areas and to ensure a decent life for agricultural workers. This involved renovating and reequipping 1,117 dairy farms, 186 facilities for the breeding and fattening of pigs and cattle, and 60 poultry farms.

Measures to strengthen agribusiness technology were created to meet the total demand for an auto and tractor fleet for agricultural organizations: in 2010 the countryside was supplied more than 2,200 tractors, 1,771 combine harvesters, 368 forage harvesters, and over 12,000 units of other agricultural machinery, for a total sum of 3.57 trillion rubles, which renewed half the fleet of combine harvesters and 75 percent of forage harvesters. A powerful domestic combine complex of next-generation agricultural machines arrived in the fields; these machines are able to perform all the processes of preparing the soil, introducing the fertilizers, and seeding in a single run.

Total production volume in agricultural organizations and rural farms increased by 52.7 percent. In 2010 Belarusian agricultural exports exceeded \$2 billion. The program's goals in the social sphere were also successfully met: by 2010 1,481 agricultural towns were created in rural areas, offering a bundle of social benefits near that of urban areas.

### **The goals of Belarusian agribusiness**

The State Program for Sustainable Rural Development for 2011–2015 formulated the basic goals of the agricultural sector:

- increasing production of agricultural products to fully meet the country's domestic demand and economically worthwhile export;
- expanding the range of food products and improving their quality to the strictest international standards;
- adjusting management mechanisms to improve the sector's organization and to introduce the latest technical tools and innovative technologies; and
- increasing the attractiveness of rural jobs and lifestyle.

The program plans to achieve the following indicators by 2015: 12 million tons of grain produced, 5.5 million tons of sugar beets, 7.75 million tons of potatoes, 2.16 million tons of vegetables, 10.65 million tons of milk, and 1.99 million tons of meat (all types).

To improve the economic and legal frameworks for the industry, a "Roadmap of State Agricultural Policy for the Republic of Belarus" was adopted.<sup>1</sup> It includes two main blocs: the creation of economic frameworks for increasing the efficiency of agricultural production and the implementation of technological policy in the fields of farming and livestock. To meet these goals, the president of Belarus issued four basic decrees on June 17, 2014:

- First, "On State Agricultural Policy" defines the main strategies for agricultural policy and state support of the industry;
- Second, "On Measures to Improve the Work Efficiency of Agricultural Organizations" creates the conditions for increasing the industry's efficiency and speeding up the process of integration involving less-efficient agricultural organizations;

- Third, “On Reorganization of Collective Farms (Agricultural Production Cooperatives)” brings their legal form in line with the Civil Code of Belarus and establishes procedures for determining land rights and so forth; and
- Fourth, “On the Characteristics of Supplying Agricultural Products for State Government Needs” determines the conditions in which agricultural products are supplied to the state.

An innovative path for developing the country’s agribusiness requires active, technical strengthening of the agricultural sector. For instance, plans for the years 2011–15 include stationing 7,650 combine harvesters and 2,056 forage harvesters, 10,980 tractors, 3,900 combined tillage machines, and other machinery in the countryside. Grain farms will see another 796 grain cleaning and drying systems and silos with a total capacity of 1,838,000 tons.

In 2015, industry revenue is expected to grow by a factor of 2.3 compared to revenue in 2010, and average monthly wages by a factor of 2.7. Export of agricultural products to Russia will increase by a factor of 1.4 compared to exports in 2014; this includes exports of dairy products exceeding 4 million tons and more than 300,000 tons of meat products. By 2020 the number of cattle is expected to reach up to 100 per hundred hectares of farmland, and up to 30 head of cows; the country’s average productivity of dairy cattle should be at least 6,500 kilograms, with average daily weight increases of 1 kilogram.

### **Development prospects**

Further development of the agricultural sector is envisioned through the creation of large cooperative and integrated groups that unite the production and processing of agricultural raw materials with the marketing of their products. Improving the location of agricultural production by zone and region, taking into account soil and climatic conditions, would provide for further enhancement of the efficiency of Belarusian agribusiness.

We should note that the country’s crop breeding is carried out at a sufficiently high level: regional Belarusian and foreign varieties are practically equal in terms of productivity, but the latter are less resistant to adverse climatic conditions. Scientists’ calculations show that when the potential of modern crop varieties is fully exploited and the structure

of sown areas optimized, the real volume of grain production in 2015 is 12 million tons, and the total yield of potatoes and sugar beets doubles.

Today, the priority is new forms of fertilizer with a high rate of nutrient assimilation by plants. Gomel Chemical Plant has organized the production of more than thirty types of comprehensive fertilizers aimed at specific crops. Also promising is the creation of more effective bacterial preparations that will increase the availability of soil nutrients for plants.

A full transition to integrated plant protection technologies is in the works. In recent years chemical methods have been explicitly prioritized, but there is no domestic production of plant protection resources in Belarus. The prices of preparations purchased abroad grow annually. Therefore, Belarusian scientists are tasked with developing their own substances for the production of pesticides based on domestic raw materials.

The agricultural industry is planning to prioritize livestock, primarily cattle, given the country's high potential of grass reserves. Calculations show that the possible volume of forage grass in meadows and other arable lands, even at their lowest level of productivity, is 15 million tons, and if grass farming is optimized, a possible 20 million feed units. This is the necessary basis for obtaining around 10 million tons of milk and 1 million tons of beef. Given the prospects for intensifying dairy and beef cattle breeding, the following strategies are relevant to the country:

- selecting and breeding to create a Belarusian dairy cow that, at 100 kilograms of live weight, can give 1,500 kilograms of milk at a cost per liter of 0.8–0.9 feed units, with a feed to product return 25–30 percent higher than for the currently used Belarusian black-motley breed;
- concentrating on production of all types of beef at large facilities for the breeding and fattening of cattle and on farms that obtain average monthly gains of at least 700 grams;
- maintaining the rate of infrastructure renovation in the sector (for 2010–13, 268 new commercial dairy farms and facilities built, and another 878 renovated or brought up-to-date);
- focusing on international practice, where corn silage and legume haylage appear in the same volume in the diet (and thus the excess protein in the legumes can compensate for that deficiency in the

corn component by maintaining the correct ratio of acreage for perennial legumes and corn silage);

- ensuring the same type of feeding everywhere and throughout the year through high-grade mixed diets; and
- establishing a dictatorship of technology in livestock breeding (this primarily applies to dairy production, where the complexity of technological processes and the measuring of their biological effect on the animals is constantly increasing). The functional responsibilities of each employee, along with incentives and accountability for the quality of technological processes executed, need to be specified.

To increase the production of pork and to improve its quality, livestock science is now working on the creation of a Belarusian breed of pigs that would be at least one and a half times more productive, and would require no more than three full feed units per kilogram of weight gain. Calculations show that the production output of this new breed would bring in about another 100,000 tons of meat without increasing the number of livestock. The poultry industry is focusing particularly on improving its breeding base, which will allow the creation of crossbreeds with genetic production potential of 320–40 eggs per year per hen, and for broilers an average daily live weight gain of 60–65 kilograms.

Implementing these development strategies in the agricultural sector requires improving its economic mechanisms. Most of all, the criteria for assessing the performance of agricultural organizations and regions needs change via basing it not on total indicators but on profit per point-hectare of cadastral value of agricultural land, subject to the conditions of its formation. This would allow agricultural producers to focus on using the most cost-effective organizational and technological approaches and on lowering costs in the industry. A point score for soil would allow us to account for the objective agricultural conditions in different regions. An incentive system for salaries based solely on economic indicators is already in the works.

## Note

1. The map was produced by an Interagency Working Group created by the head of state and led by the prime minister of Belarus.

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