STATE AND PROSPECTS OF MEAT PRODUCTION GROWTH

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Abstract: World meat production is increasing annually under the influence of demand for this type of food. The study of the meat production prospects is based on meat production data represented by Russian agricultural companies. It was revealed that poultry meat (45%) occupies the largest share in the production structure. Large-scale industrial production is developing most actively in the form of integrated companies that dominate the remaining categories of farms. Farming is developing dynamically, but its share remains low. An analysis of the food balance shows that there has been a tendency to increase the production of meat and meat products while reducing production consumption and increasing export volumes. Along with the announced course to substitution of import food, a priority project on state support of exports is being implemented. Correction of existing economic mechanisms is required. Promising directions and recommendations in the field of state support for livestock production are identified.

Keywords: livestock, production, meat, state support, prospects, consumption.

1 Introduction

World meat production and consumption is growing rapidly. In general, according to forecasts of OECD-FAO, an increase in demand for animal protein is expected in the next decade. By 2028, consumption will be: 140.3 million tons for poultry meat, 128.8 million tons for pork, 77.6 million tons for beef and veal. In 2018, global meat production increased to 327 million tons.

In the future, poultry meat will continue to account for the largest share of additional per capita consumption globally. At the same time, it is expected that many consumers will diversify their meat consumption by adding beef as income rises.

The largest increase in meat production was provided by Australia, the EU, Russia, the USA, to a certain extent Argentina, India and Mexico. A slight decrease occurred in China due to the outbreak of African swine fever and the loss of export markets.

Modern research actively discusses issues related to factors such as the choice of the type of production (industrial or organic), the specific structure of meat production, the form of state support and stimulation of production and consumption growth, and the assessment of the consequences and risks of production growth.

For example, a negative impact of the meat industry development on the environment, public health, and also on the economy as a whole is noted in studies. Industrialized countries consume a growing amount of meat, almost twice as much as in developing countries.

Danielle Nierenberg, Worldwatch senior researcher and director of Nourishing the Planet, notes that a significant increase in meat production is due to an increase in industrial livestock production (Meat production, 2012.).

Bill Winders and David Nibert study the effects of two factors in expanding meat consumption: market and state. Orientation of agricultural policies to support prices and control production stimulates the development of intensive and industrial methods that lead to the overproduction of corn, wheat and soybeans. As a result, farmer organizations and the state are promoting the production and consumption of meat as a way to reduce surplus (Winders & Nibert, 2004).

The growth in meat production is prompting producers to expand the geography of their markets. The export orientation of producing countries is due to the oversaturation of their domestic markets with products, and availability of significant competitive advantages compared with other countries.

Issues of assessing export competitiveness are dealt with in this direction by Baiardi, D., Bianchi, C.& Lorenzini E., Bojnec, S., Dlamini, B.P., Kirsten, J. F., & Masuku, M. B., Frohberg, K., Hartmann, Sharma. R., E. Calvo, G., Seema Narayan, Poulomi Bhattachaiya, Tie Wu, Hongxin Zhao et al. (Baiardi et al., 2015; Calvo, 2008; Dlamini et al., 2014; Frohberg & Hartmann, 1997; Narayan & Bhattacharya, 2019; Sharma, 2011; Wu & Zhao, 2015).

It is noted that an important role is played by political and diplomatic channels between countries to increase the volume of cross-border trade (Munir & Sultan, 2019).

A study of manufacturers' motivation to introduce organic meat production technologies and recommendations for its production are presented in Morven G. McEachern and Joyce Willock (McEachern & Willock, 2004).

Problems and prospects for the growth of meat production are addressed in the works of Russian scientists V.I. Chinarov, N.I. Strekozov, A.I. Tikhomirov, N.M. Morozov, V.D. Goncharov, S.G. Salnikov, et al. (Chinarov, 2019; Chinarov et al., 2017; Tikhomirov, 2018; Tikhomirov, 2019; Morozov, 2018; Goncharov & Salnikov, 2017).

2 Materials And Methods

The object of the study is meat producers of various legal forms: agricultural organizations, farms, private households. The study is based on data obtained in Russia from 2010 to 2018. To study the prospects of meat production, monographic, abstract-logical, dialectic and balance methods were used.

3 Results

Livestock is one of the leading sectors of agriculture in Russia, which accounts for 48.5%. During the study period, the cattle stock decreased by 8.3%, while the poultry stock increased by 20.4%, and the pig stock by 37.5%.

An analysis of the organizational forms of meat producers indicates that 52.4% of the livestock is concentrated in agricultural organizations, and 20.9% falls on peasant (farmer) households and individual entrepreneurs (Table 1).

Meanwhile, there is a significant differentiation by types of livestock.

Largest part of the livestock cattle is accounted for agricultural organizations (44.8%) and households (40.8%).

Table 1. Livestock, million heads

Livestock	Year								
	2010	2011	2012	2013	2014	2015	2016	2017	2018
Cattle: -farm enterprises	1.48	1.70	1.93	2.05	2.14	2.24	2.42	2.54	2.61
-agricultural enterprises	9.26	9.17	9.06	8.80	8.52	8.45	8.36	8.25	8.14

-households	9.06	9.04	8.69	8.43	8.26	7.93	7.57	7.50	7.40
Poultry: -farm enterprises	4.83	5.82	6.36	8.11	8.54	9.91	10.25	9.85	9.09
-agricultural enterprises	348.0	371.1	395.9	395. 4	425, 4	445. 1	451.5	460.1	449. 3
-households	96.84	96.29	93.23	90.48	90.34	88.95	88.38	85.87	83.12
Pig:									
-agricultural enterprises	0.80	0.67	0.56	0.47	0.43	0.47	0.45	0.43	0.38
-households	10.82	11.43	13.68	14.71	15,59	17.60	18.39	19.84	20.83
-agricultural enterprises	5.63	5.16	4.54	3.83	3.43	3.34	3.08	2.81	2.52

Source: compiled by the author based on data [20].

The dominant position in the poultry stock (83%) and pig stock (87.8%) is retained by agricultural organizations (Fig.1). At the same time, peasant farms (farm enterprises), as well as farms of individual entrepreneurs, in which the maximum growth rates of livestock and poultry stock, are recorded, continue to develop dynamically.

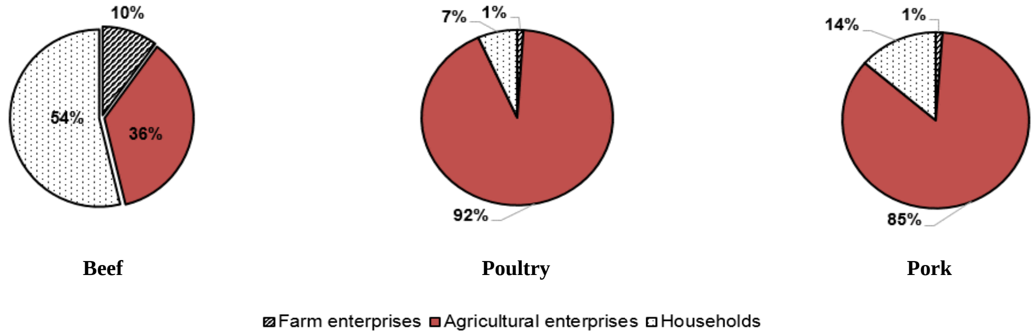

Figure 1. Structure of meat production by farm categories in 2018

Source: compiled by the author based on data

In 2018, cattle meat production amounted to 1.6 million tons, poultry meat - 5 million tons and pig meat - 3.7 million tons.

The accelerated development of poultry and pig farming led to a change in the structure of meat production. Over the past five years, the share of poultry for slaughter has increased from 42.3% to 44.7%, pigs - from 29.6% to 32.3%, and the proportion of cattle decreased from 23.5% to 18.9%, respectively.

In general, the outlined prospects for the growth of meat production testify to the situation on the world market when the share of consumption of white meat is increasing.

However, according to the results of 2018, a slowdown in poultry meat production should be noted. The increase in poultry production for slaughter in farms of all categories relative to 2017 amounted to 46.6 thousand tons (in live weight), or 0.7%.

The growth rate of pig production for slaughter increased in regions where integrated formations exist.

The main increase in the production of pigs for slaughter was obtained at newly built and modernized complexes and pig farms. Despite the decrease in the number of new and modernized facilities in pig farming, meat production is increasing due to increased pig productivity. The additional production of pig meat over the past five years amounted to 586.2 thousand tons.

In 2018, cattle production for slaughter increased in 44 regions of Russia, and decreased in 18 regions. The leaders in increasing cattle production for slaughter are the Bryansk region - 5.2 thousand tons (12%), Oryol region - 2.7 thousand tons (10.2%), the Republic of Bashkortostan - 2.7 thousand tons (19, 1%), the Republic of Kalmykia - 1.9 thousand tons (2.8%), Krasnodar Territory - 1.9 thousand tons (44.5%), Voronezh Region - 1.8 thousand tons (10.9%) (National report on the progress and results of the implementation in 2018 of the state program for the development of agriculture and regulation of agricultural products, raw materials and food markets, 2019).

An analysis of profitability, excluding subsidies for 2018, indicates that pork production is the most profitable - 35-40%, the production of cattle meat remains traditionally unprofitable for Russia (Fig. 2).

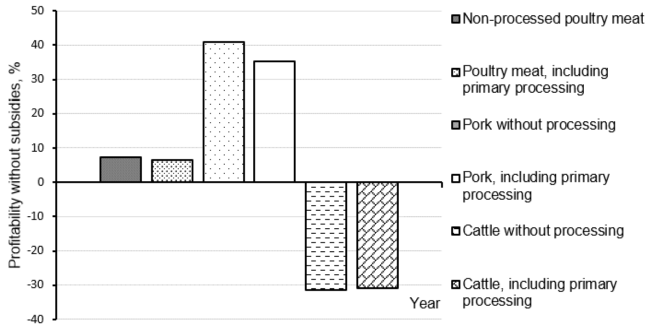

Figure 2. Meat profitability excluding subsidies 2018

Source: compiled by the author based on data

In general, the production of meat and meat products in Russia has a positive trend: an increase over the study period amounted to 36.2%. Meanwhile, production consumption decreased by 14.4%, and imports decreased by 61.2%.

In 2018, the average per capita consumption of meat and meat products amounted to 75 kg per person. The level of consumption is comparable with the EU countries and Canada, but significantly lower than in the USA, Argentina and Australia.

In the context of the annual fall in real incomes of the population, the diet is being adjusted to reduce its cost. There is a transition to cheaper types of meat and their replacement with plant foods, i.e. cereals.

So, for example, in 1990, the largest share in the diet of the population of the Russian Federation was accounted for beef - 43.3%, and in 2016 only 16.5%, which does not meet the criteria of national food security (at least 27.4%) (Khairullina, 2019; Khairullina, 2019).

At the same time, there is an active increase in exports of this type of product; its 3 fold growth is noted (tab. 2).

Table 2. Balance of production and consumption of meat and meat products

Indicators	Year		
	2010-2012	2013-2015	2016-2018
Stocks at the beginning of the reporting period, thous. tons	798.70	838.43	826.10
Production of meat and meat products, thous. tons	7324.92	8751.46	9974.89
Import, including imports, thousand tons	2757.87	1930,57	1070,23
Total resources, thous.tons	10881.49	11520.46	11871.22
Domestic needs:			
- production consumption, thous.tons	43.37	49.63	37.13
- personal consumption, thous.tons	10168.97	10763.27	10951.17
Losses, thous/tons	19.73	18.17	16.97
Export, including export, thous. tons	100.40	131.93	299.33
Reserves at the end of the reporting period, thous. tons	810.13	827.70	859.43
The average per capita consumption of meat products , kg	71.33	74.00	74.67

Source: compiled by the author based on data Rosstat [Electronic resource] // Federal State Statistics Service. Access mode: https://www.gks.ru/folder/14036.

However, the share of the country in world meat exports is still insignificant - 0.5%; however, there is potential for its growth.

In 2018, in-kind export of poultry meat amounted to 183.8 thousand tons (a 3-fold increase compared to 2014), pork - 33.7 thousand tons (an 84-fold increase), frozen cattle meat - 4.1 thousand tons (a 2.9 times increase), fresh or chilled cattle meat - 228 tons (a 1.9 times increase).

A study of the meat and meat products export structure from 2013 to 2018 indicates the presence of the following structural changes:

- fresh or chilled cattle meat (code 01 0201) - from 0.2% to 0.5%;
- frozen cattle meat (code 01 0202) - from 8.0% to 4%;
- pork (code 01 0203) - from 7.6% to 16.4%;
- lamb (code 01 0204) - from 0.2% to 14.4%;
- offal (code 01 0206) - from 8.1% to 4%;
- poultry meat (code 01 0207) - from 65.4% to 47.0%;
- other meat and offal (code 01 0208) - from 15.5% to 15.8%;
- salted or smoked meat and offal in brine, (code 01 0210) - from 2.3% to 0.9% [10, 11, 12]. (Khairullina, 2019; Khairullina, 2017; Khairullina, 2018).

Thus, in 2018, the largest share in exports was accounted for by poultry meat, pork, lamb, and offal.

In 2018, the geography of exports continued to expand, but Belarus, Kazakhstan, Ukraine and China remain the key consumers.

In recent years, along with import substitution, the implementation of an export-oriented strategy has been discussed at the state level, where special attention was paid to food exports. Institutions and mechanisms for supporting the production and export of products are actively developing. In particular, the State Program for the Development of Agriculture and the Regulation of Agricultural Products, Raw Materials and Food Markets dated 07.07.2019 is being implemented. In 2018, this program was realized using the principles of project management, according to which the design and process parts are singled out. So, for example, since 2019 the priority project “Export of agricultural products” has been included in the design part.

At the same time, state support for the development of animal husbandry is contained in the departmental project "Development of the agro-industrial sectors providing accelerated import substitution of the main types of agricultural products, raw materials and food."

The program uses a “single” subsidy in the following areas:

- Support for livestock breeding;
- Build-up of the breeding stock of sheep and goats;
- Increase in commodity stock of cows of specialized meat breeds.

The regions of Russia independently determine the directions and volumes of expenditure of funds, taking into account the need to achieve the targets established by the agreement on the provision of subsidies concluded between the highest executive public authority of a constituent entity of the Russian Federation and the Ministry of Agriculture of Russia.

The range of government support measures aimed at export development includes preferential lending, insurance, provision of state guarantees, simplification of cargo clearance procedures and information support for business.

At the same time, existing state support mechanisms remain more attractive and accessible for large industrial meat producers.

Over the course of ten years, the meat business has been consolidated through the purchase by the largest companies of the smaller ones. Therefore, among the main exporting enterprises are AIH Miratorg, Cherkizovo, Prioskolye, SAE Resurs, Belgrankorm , Agrocomplex named after N. I. Tkachev, etc.

The main volume of export deliveries of poultry meat falls on Vietnam - 31.92%, Ukraine - 27.98% and Kazakhstan - 16.67%. Promising developing areas in this segment are Azerbaijan, Armenia, Kyrgyzstan, the United Arab Emirates, Saudi Arabia, and Tajikistan.

There are opportunities to increase exports of pork to Angola, Armenia, Kazakhstan, Kyrgyzstan, China, Liberia, Korea and Japan.

Azerbaijan, Armenia and Iran should be noted as potential consumers for fresh or chilled cattle meat.

The data from a survey of meat producers also indicate that information on the possibilities of financial support for exports from the state remains not quite transparent. There is an opinion that there are certain preferences for "selected" companies.

It is noteworthy that today only about 1% of agricultural enterprises are covered by export support.

According to the REC, in 2017 more than $ 1.2 billion was allocated, in the first half of 2018 - about $ 850 million (Bulatov, 2018).

4 Conclusion

Further growth of meat production in Russia will be focused on the needs of domestic and foreign markets. Priority remains for poultry and pork. It is impossible to ensure intensive growth in production volumes without state support for the production of meat, especially beef and veal.

It is necessary to strengthen the role and importance of sectoral unions, it is necessary to formulate programs to conquer certain market segments and the country's active participation in the conclusion of trade agreements and unions that will allow certain preferences to receive. The mechanism of domestic food aid to the low-income population of Russia has not yet been introduced, which in the future may create social tension.

An effective export support system should be created in the form of financial and non-financial instruments, a system of indicators should be defined that can evaluate the effectiveness of measures taken and budget expenditures, as well as the feasibility of creating and operating a separate export institution - the Russian Export Centre.

Promising areas of support for meat production are national programs focused on the domestic market (the priority is to increase in the intensive production forms over the extensive), encouraging producers to improve the quality and standardization of products, creating trade and industrial infrastructure for promoting products to foreign markets.

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