Processing of agricultural products in the republic of Kazakhstan: problems and solutions

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Abstract. The article discusses the issues of development of agricultural processing industry, expansion of its production range, the need of justification of increasing the efficiency of processing of agricultural products on the basis of modernization of equipment of processing enterprises, study of market needs , reduction of transport costs and elimination of downtime , definition of rational commodity zones of each enterprise for ensuring the reliability and rhythm of raw material supply, stimulating of integration processes of processing enterprises with farms-producers of agricultural raw products.

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Introduction

In countries with developed market economy, processing industries are represented by large monopolized companies, which position on market of agricultural raw materials is much stronger compared with small fragmented agricultural producers [1]. In addition, many processing companies have the status of corporations, so they don't depend on producers of raw materials [2]. In France, the Netherlands, Denmark, Germany the processing enterprises have organizational status of cooperatives, and multilevel basis, that allows to rationalize the activity of primary cooperatives and conduct a unified marketing strategy. Food industry cooperatives in developed countries have high technical level and high quality production. The stable part of cooperative sector in production of food products shows that in highly competitive environment the cooperatives are constantly improving production basis of their food companies by moving to deep processing of agricultural raw materials using non-waste technology, being responsive to consumer demand and market conditions [3 4]. Therefore, the impact of processing sector on agricultural production is explained not only by monopolization, but also by a coherent overall market economy concept, which links production needs to the needs of consumers. Industrial processing plants due to their position are intermediaries between consumers of food and agricultural commodity producers.

Methodology

Modernization of equipment of processing plants; reduction of wastes and losses of raw materials, cost reduction on heat energy resources, identification of rational raw zones of each enterprise for ensuring reliability and fast rhythmic supply of raw materials, reduction of transport costs, stimulating processes of integration of processing enterprises with farms producing agricultural raw products contribute to the increase in production volumes of processing enterprises, expansion of their product range, costs reduction, improvement of quality and increase of competitiveness.

The main part

Today, one of the priorities of agroindustrial complex of Kazakhstan is the development of processing of agricultural products. Over recent years the volume of the output of the food industry companies have increased, including food products almost twice: from 490.7 billion Tenge in 2007 to 865.5 in 2012, their share in total volume of food production was - 78 %, and in industrial production of the Republic of Kazakhstan - 5.1% [5]. Analysis of production of basic food products in Kazakhstan over the past five years confirms the stable growth of production of meat, flour, cereals, pasta, however production of canned fruits and vegetables, meat products, vegetable oil is not stable.

Despite the positive trends and government support measures the share of processing of agricultural products in total production volume remains low. Thus, in 2012 the share of meat processing was 27.8 %, milk - 23.3, grains - 49.1, fruits and vegetables - 11.3%. Accordingly, imports of processed products is increasing aimed at meeting the needs of population in final product: the share of imports of milk and cream (condensed) in domestic consumption in 2012 was 73.1% , canned fruits and vegetables - 69, sugar (white) - 55, confectionery - 54, 2, sausages - 47.5, cheese and cottage cheese - 46.7% [6].

Grain industry in the country – is export-oriented sector of AIC of Kazakhstan. The main

competitive advantages of grain-processing industry of Kazakhstan are as follows: availability of necessary raw material base; high quality grain which is sent to processing; the proximity of potential export markets (about 90% of the total output of produced flour for export is sold in the CIS countries), high customer's demand in these countries predetermined the development of export potential of the industry; technical equipment, modernization of the enterprises of the industry.

Analysis of the status of grain-processing industry of the country shows that in the structure of grain processing about 80% is production of flour. Dynamics of flour production confirms the stability of its growth during the recent five years. Currently the number of flour mills is 451, of which large and medium - 180, low capacity - 271. The total production capacity of flour mills was 9197.1 thous.tons of raw material and 6435.6 of finished products (flour), for the period 2005-2012 the capacities increased by 61%, cereal companies, respectively by 57%, pasta - 50% [7].

This is due to the fact that the low-capacity enterprises with low-production facilities are withdrawn and enterprise using advanced technologies are introduced.

Flour mills are generally located in the places of production of raw material - in the main grain regions. A significant proportion of production volume of flour is produced by large and medium-sized enterprises - 87.6% and 12.4% - low capacity companies, respectively the share of available capacities is also higher in large and medium-sized enterprises (81%) compared with small businesses (19%). Despite this fact, the trend of increasing the coefficient of using production capacities in non-grain regions, such as South-Kazakhstan region – is 0.7, West Kazakhstan region - 0.8, etc.

Northern regions of the country are characterized by operation of major grain processing enterprises producing export-oriented high-quality wheat, southern regions are characterized by low capacity elevators, producing lower quality flour, oriented to domestic market, i.e. to meet the needs of the region with lower income and large population. Location of such volume of milling capacity in the southern regions is associated with developing export corridor for flour and grain with neighboring Central Asian countries. This factor is conditioned by annual increase in the volume of exports of flour due to the increasing demand for this product from a number of neighboring countries. In 2012 the share of exports of flour was 60.2% of total production (3688 thous.tons).

Flour export in recent years has become comparable with the volume of grain exports, which automatically resulted in competition between exporters of grain and flour. The situation worsened in 2008-2009 when grain traders of Kazakhstan made emphasis on export to the Central Asian countries - traditional flour export markets. A similar trend continued in 2009-2012. Under these circumstances, it is needed to provide a clear export development strategy which takes into account interests of public and private business, both grain and flour exports. Therefore, it is necessary to regulate prices on domestic market, providing trade loans to flour mills. Thus, the conducted analysis of grain processing enterprises and the development of their resource base reveals the problematic issues of the industry, in particular, lack of clear balance of food grain, instable grain market associated with market conditions, inadequate accounting and control system on availability and use of grain, that does not allow to calculate the real need for grain processing volumes for saturation of domestic market and export potential of grain and grain products that would provide work of grain processing businesses on business planning in strategic and tactical aspects.

The priority areas of AIC of Kazakhstan is development of meat and dairy industries. Currently the republic has 325 milk processing companies, including 7 large (with 250 or more employees), 40 medium (50 to 250 employees) and 283 small enterprises (up to 50 employees). The share of small enterprises is 87%, large companies respectively only 2%. For comparison, in the pre-reform period in the country there were 168 large dairy companies. In 2012 production capacity of milk processing enterprises was 2267.8 thous. tons per year. In production of 4851.6 thous. tons of raw materials, 1131.3 thous. tons of milk processed, which confirms the low proportion of processing - 23.3%. In 2008-2012 the analysis of dairy production by types showed slight increase, in particular ice cream - by 4.2%, processed liquid milk and cream - by 40.3%, milk products - by 25.1%, cheese and cottage cheese - by 23.9%, on the rest dairy production there is a decline in production: milk powder- 51.6%, butter - 26.2%. [9]. Current state of dairy industry of the republic shows that the main problem is still undeveloped resource basis. Cattle population dynamics confirms a slight increase over the past five years (2008-2012) - 5.3%, the average annual milk yield in all farm categories was 2219 kg, including agricultural enterprises, has increased and was 3847 kg per cow, in households, respectively 2236 kg, and farms - 1807 kg. In 2012 proportion of households of total milk production volume was high - 85.4%, the share of farms - 10.5%, farms - 4.1%.

Meat industry in the country experienced a deep crisis, major meat plants stopped operation for

several years: until 1991 about 1.4 thous. of meat production plants, 50 large meat processing plants have processed 80% of target raw material. Previous production capacities have been designed to process a significant volume of agricultural raw materials and were equipped with energy-intensive manufacturing equipment, which is now physically worn out. In 2012 in the republic there were 305 meat processing plants, including 8 large, 23 – medium and 277 - small. Grouping of small businesses by number of employees allowed to reveal a significant proportion (52%) of enterprises with 5 employees [8].

The analysis of dairy and meat industries of RK allowed to identified key factors constraining their development:

- Undeveloped resource base, characterized by small-scale production, which suggests its low quality and insufficient production volumes due to low livestock breeding, hand milking, lack of cooling equipment and containers for transportation;
- The lack of quality forage basis, which restricts livestock breeding, balanced diet of livestock and increase of milk yields;
- Underdeveloped mechanism of public support of small and medium enterprises, existing mechanism of public investment and subsidies is mostly focused on large manufacturers, small and medium-sized farms are not covered by government support despite the high proportion of households in total milk and meat production;
- The lack of incentives for agricultural producers to improve product quality due to the huge demand for raw materials;
- Increase of prices for raw material, which facilitated growth of final product value.

In various branches of AIC of RK a steady tendency of establishing small processing companies is observed, which is in most cases the response of agricultural enterprises to the dictates of processing branches on the background of imperfection of interbranch relations in AIC. Development of small processing completely meets the aim and logic of the reforms carried out in the agricultural sector in the last decade. Analysis of existing economic relations between agricultural, processing and trading enterprises shows that farmers strived to get rid of monopoly position of processing enterprises, build their own processing mini-factories, facilities for processing meat, milk, production of sausages, butter, etc. In current economic situation, the primary processing has some positive points: assurance of the survival of agricultural producers in crisis; labor resources are used in rural areas; approaching of raw material base to the place of processing.

Studies on the efficiency of processing of enterprises of AIC of Kazakhstan enable to do the following conclusions [9]:

- In the country there are different forms of enterprises processing agricultural products, which differ in size (large, medium, small), composition (within and outside the integrated entities, functioning independently, as well as specialized by areas and sectors, etc.);
- In grain industry mainly operates large integrated entities in the form of agricultural holdings, agricultural firms with complete technological cycle from production of raw materials to finished products;
- In dairy, meat, fruit and vegetable canning industries the processing enterprises mainly operate independently on contract basis with agricultural producers and trading system if the integrated entities function, then their share is not high;
- Cost-effectiveness of integrated entities is higher than in other economic entities of AIC which operate without unifying processes, which is due to the use of advanced technologies, availability of funds, allowing to invest in production, etc. However, the mechanism of intra-company relations, distribution of profits in large integrated entities such as agri holding does not meet the interests of agricultural producers, which requires further improvement;
- Small-commodity nature of agricultural production, presence of large number of small processing facilities in agricultural enterprises justifies the need of joining them on cooperative basis in the form of processing, sales, procurement and other types of service cooperatives.

Due to the fact that the country oriented towards raw materials, the growth of agricultural production provides preconditions for growth of industrial processing. Therefore, enterprises involved in direct processing of agricultural raw materials will depend on agricultural development.

The above mentioned problems of small processing capacities have resulted in the efficiency of operation of large-scale processing companies of AIC of Kazakhstan. Increase of organization of mini facilities on processing agricultural products within agricultural enterprises has led to decline in production of large processing enterprises of the republic. Thus, economic loss caused by reduction of resource basis of processing enterprises consists of two parts: - in reduction of the load of enterprises the size of conditionally fixed production unit costs increases, i.e. costs that are not dependent or slightly depend on production conditions; - in reduction of production volume and sales there is a change of profit.

Conclusion

Based on the above mentioned we recommend segmentation of large enterprises of meat and dairy industries which are located in big cities and preserve production of final products. It is recommended to focus primary processing at small businesses (mobile and fixed slaughterhouses, motor drive dairy plants, small processing plants for processing fruits and vegetables), which are maximally close to the places of production of raw materials, in small towns, which will reduce loss of production and create additional jobs. This will contribute to the implementation of the Industrialization Map of Kazakhstan, according to which it is planned to build 36 grain processing facilities, 42 meat processing, 30 - milk processing, etc. In these conditions the mobilization of financial resources for the reconstruction of existing enterprises and establishing of new, mainly small processing enterprises, maximally close to the places of production of raw materials.

Primary processing should maximally use the latest technologies, which exclude losses of secondary raw materials (blood, sub-products) which are valuable for the food and processing industries, development of non-waste production. In addition, it will promote the development of small businesses, especially in rural areas. First, it has an appropriate resource basis, secondly - the existing structure of consumption is that 50% of population incomes are spent for food, thirdly, reduction of the share of imports of foodstuffs and raw materials is expected. Therefore, a significant part of agricultural production will be processed in small businesses, mainly in dairy, meat, fruit and vegetable processing companies. [10]. In this regard cooperation between these businesses and agricultural producers and establishing of vertically integrated enterprises is very relevant issue, that will increase their competitiveness.

Findings

The assessment of conformity of production capacities of processing enterprises with their raw material resources in major industries of AIC RK justifies the need to undertake the following measures on optimizing their location:

- Primary processing of perishable fruits and vegetables should be carried out in small processing plants located close to places of production of raw materials, directly in small settlements, which will reduce production losses, and create jobs;

- For successful work in production and marketing of fresh fruit and vegetable products it is needed to provide storages located within the radius of 50 km from the place of growth. Kazakhstan needs storages for 684.2 thous.tons of fruits and vegetables, actually we have facilities for 382.1 thous. tons, and more than half of them need major repair, modernization, many of them do not have modern refrigeration and ventilation equipment, an additionally facilities for 302.1 thous. tons is needed;

- It is needed to develop greenhouse production for supplying the market with fruits and vegetables. The total demand of the republic in greenhouses is about 9 thous. ha, currently in the country there are 128 ha of industrial greenhouses for growing tomatoes and cucumbers. In producing vegetables in greenhouses most production costs (50%) go for heating and ventilation system, therefore it is advisable to organize greenhouses around big cities, which can use waste heat from power station to ensure quality vegetables in the off-season period;

- Meat plants should be located in the livestock production areas. Meat processing enterprises producing sausages and semi products should be placed in the centers of consumption, which will bring meat plants which provide complex processing of livestock and meat production to the areas with high density of livestock production. Creation of new production facilities will require significant financial resources, and therefore the restoration of priority facilities should be provided mainly on the basis of available capacities. Production of canned meat should be a priority in the regions possessing these resources such as Almaty, North Kazakhstan, East Kazakhstan regions, which have respective capacity and raw materials;

- The location of facilities producing milk consumed in fresh form should be in arranged accordance with location and concentration of population;

- Milk for production of butter, cheese, canned milk, i.e. products that can be stored for long-term period and transported over long distances should be produced in the areas most favorable for dairy cattle. Therefore, method of using milk will determine the location of enterprises based on their production. In the first case the production will get closer to consumption places, in the second - processing plants will be placed in the areas producing raw materials for producing cheaper milk. Thus, production of condensed, evaporated milk and powdered milk should focus only in areas with sufficient resources of milk for loading the capacities of these plants.

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