The role of industrial enterprises in ensuring food security

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Abstract. This article highlights the role of industrial enterprises in ensuring food security. The main features of the agro-industrial cluster based on production cooperation and the distribution of land allocated for total oilseeds in Kashkadarya region were analyzed. The analysis of the yield of oilseeds in the Republic of Uzbekistan and Kashkadarya region and the efficiency of cultivation of raw cotton on farms in Kashkadarya region were analyzed. The analysis of the efficiency of the crop grown on the farm "Kholyor Bobo ogli Kholmomin" Yakkabag district of Kashkadarya region and the efficiency of the sunflower grown on the farm "Kuvatov Shakhrboz Shukhratovich" Shahrisabz district of Kashkadarya region. In addition, conclusions and recommendations on ways to develop production cooperation between enterprises of agriculture and processing industry were developed.

1. Introduction

World experience shows that increasing the efficiency of agricultural producers depends not only on cooperation based on the principles of internal division of labor on farms, but also on intersectoral cooperation and integration of storage, processing and sale of products. In this regard, the development of domestic economic cooperation of farms specializing in the production of agricultural and livestock products in our country, especially in its regions, and their cooperation with large processing enterprises is the main way to produce quality products in an innovative economy. Another advantage of this is that the parties to the cooperation provide each other with a guaranteed order, which is a guarantee that their financial activities will be stable.

The scientific, theoretical and practical problems of the organization of cooperation, including agricultural and industrial cooperation, have been widely studied in the research of foreign countries and domestic scientists[1].

Among the economic factors for the development of cooperative relations in rural areas are the interaction and interdependence of agricultural producers and their processors, as well as the resulting imbalance in prices for industrial and agricultural products. First of all, in the field of processing of agricultural products and raw materials to get rid of the intermediaries of cooperation of small agricultural producers, reduce the cost of production, strengthen the competitive position in the food market and add the proceeds from the sale of finished products to their finished products. allows you to find more equitable ways of distribution according to your real share [2].

At the same time, various forms of cooperation can be introduced in procurement, trade, transport and other services. This will provide more favorable conditions for combining financial resources and accelerating the export of the product to profitable markets. At the same time, the involvement of the
population's personal assistants and dehkan farms in these processes of cooperation is of great importance.

Cooperation between agricultural commodity producers and manufacturing enterprises operating in interrelated sectors represents vertical cooperation. Vertical cooperation means "inter-sectoral cooperation and combination of enterprises and industries of different sectors of the economy, which provides optimal transition from one stage of production to another in a single technological process, reducing costs, increasing production efficiency, product quality and competitiveness." Vertical cooperation in food production should include: processing of agricultural raw materials (cotton), which are directed to the consumption of agricultural products (vegetables, fruits, grapes, potatoes, etc.) or come to the processing industry for food production, grain, oilseeds) and food production and transport enterprises; enterprises specializing in the storage and sale of food products. Relatively independent parts can be distinguished: meat (cattle, enterprises specializing in the cultivation and feeding of sheep, poultry farms, refrigerators); milk-butter-cheese production (enterprises producing milk and dairy products); mills, feed mills (grain farms, elevators); oil refineries (farms growing vegetable oil raw materials, elevators), etc [3].

Of course, in the issue of socio-economic incentives for the organization of joint production cooperation of agricultural and industrial enterprises, the dual nature of economic entities determines its following main features (Figure 1). One of the main principles in the introduction of cooperative relations is the voluntary participation of joint ventures in cooperation [4].

![Figure 1. Socio-economic motives of production cooperation of agricultural and industrial enterprises.](image_url)

2. Analysis of the relevant literature
At present, the involvement of these established farms in production cooperation with other farms within the sector is of great organizational and economic importance in improving the efficiency of the agricultural sector.

The scientific methodological and practical principles and mechanisms of this process are widely substantiated in the research of Professor K.A. Choriev. The author identifies the main priorities for the development of cooperation in the agricultural sector of the country. The author also stressed the expediency of the formation of agricultural cooperatives in the sheep joint of vertical integration. Based
on this, the author in his research developed the organizational structure of agricultural cooperation and the composition of its divisions. On this basis, the stages of formation of the cooperative, the mechanisms of organization and regulation of economic and financial relations of its divisions, as well as the sources of their effectiveness are indicated [5].

In our opinion, on the basis of the principles and methods justified by Professor Q.A. Choriev, the consolidation of mutually beneficial cooperation between farmers and other agricultural producers and service farms and the organization of their management structure at the district, regional and national levels, as well as accelerates the introduction of production cooperation with infrastructure enterprises [6].

As noted above, the participation of farms in industrial cooperation as small business entities largely depends on their production specialization. For example, it specializes in the sale and purchase of raw materials (at the district level) with the existing cotton industry and grain processing enterprises, which exist in the areas of farms specializing in the production of cotton and grain. However, they do not enter into cooperation in the production of mutually beneficial, voluntary end products. In this regard, the scientific work of B.B. Berkinov, M.A. Aynakulov, O.T. Jumaev has a methodological significance in the organization and evaluation of the effectiveness of agro-industrial cooperation. The research of B.B. Berkinov and M.A. Aynakulov is based on the main factors that form the basis of cooperation between small and large processing enterprises in the region, its legal norms and criteria for the distribution of income (profit) among members of the cooperative. The work of these authors is based on a system of indicators for evaluating the effectiveness of vertical cooperation and integration of networks and ways to improve it [7].

O.T. Jumaev's research in this area is devoted to the problems of organization and development of cooperation processes in the fruit and vegetable complex. The author's research work is based on the mechanism of organization and conduct of mutual cooperation of enterprises of the fruit and vegetable complex. The need to expand cooperation in the field and the prospects for the development of horizontal cooperation in the fruit and vegetable complex were proposed [8]. Thus, in the context of market relations, the correct choice of direct and indirect types of cooperation is expedient to develop direct forms of agro-industrial cooperation in the effective solution of the problem of further development of enterprises. It is important to fully meet the needs of the population of the republic in oil and fat products on the basis of the organization and development of cooperative relations between agricultural and industrial enterprises.

3. Research methodology
There are specific principles and criteria for cluster organization. In particular, the principles of cluster formation include initiative, purposefulness, specialization, voluntariness, interest, socio-economic importance. The cluster contains not only internal relations, but also external relations, i.e. indirect relations (with entities operating in the service and related sectors) in the activities of the cluster. The following principles are followed: pure competition, cooperation, a single system [9]. Based on these principles, cluster development is conditioned by criteria, i.e. cluster development is based on the aspiration of the participants for continuous development, the interest of the participants, the active participation of all participants in this process and the pursuit of innovation. It should be noted that the cluster in the agro-industrial complex as another form of merger of legal entities is characterized by the following main features (Table 1).

| №  | Property name                                                                 | Contents                                                                                                                                                  |
|----|-------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | State or property owners are holding participants                              | Formation of the cluster is carried out on the initiative and generalized decision of the cluster participants. The agro-industrial cluster is established by the decision of the governing body (property owner) |
2. Horizontal connections
The predominance of horizontal relationships between cluster participants means that they are independent of each other and the coordinating structure, unlike a holding based on vertical relationships between the property owner and participants.

3. Coordinating structure of the cluster
The creation of the coordinating structure of the cluster is carried out directly by the cluster participants at a time when the property owner already exists.

4. Territorial centralization
Territorial centralization of cluster participants. The geographical location of the cluster participants does not matter.

5. Interactions in the cluster
The cluster can be attended and interact with legal entities belonging to different areas of activity and agencies.

It should also be noted that clusters are not an organizational and legal form, and unlike agroholding (in which the independence of the participants in the holding is completely and partially lost), the participants in the cluster retain economic and legal independence. Clusters are a special form of business environment, which is characterized by a new cooperative approach, rather than formal relations with business entities and other areas of the production process [10].

Agro-industrial clusters should be organized in the following interrelated ways, in particular, on an objective basis - taking into account the systems of agricultural development and interaction in this sector of the economy and in accordance with the targeted interaction of state and territorial authorities, businesses or public organizations.

World experience shows that a complete cluster should have a clearly defined specialization. Therefore, first of all, it is necessary to identify areas with a high volume of production and processing of certain types of agricultural products that can supply a number of neighboring areas. One of the main criteria for determining specialization is the competitiveness of agricultural production, which in turn is determined by the coefficient of specialization and the coefficient of production per capita, it is expedient to consider its dynamics over the past 3-5 years [11].

Based on the data obtained and the above criteria for selection, it is possible to make a comparative assessment of the organization and specialization of agro-industrial clusters in the regions and their potential. This allows all stakeholders to form real clusters using resources. At the same time, the following initiatives can be implemented: projects to stimulate demand for domestic industrial products through budget subsidies; establishment of competence and engineering centers; development of infrastructure for storage and marketing of products; development of new educational programs and targeted training of specialists; establishment of counseling centers, etc. This allows to eliminate inequalities in the development of cooperative relations between cluster participants.

In this way, enterprises that unite in cooperation will have the opportunity to produce competitive products. From this point of view, in our opinion, in this direction it is important to improve the ways of establishing production cooperation between agricultural enterprises growing oilseeds in the country and industrial enterprises processing oilseeds for the production and sale of vegetable oil.

4. Analysis and results
This situation can be explained by the high yield of this crop. If the average yield of molasses in the region was 12.1 t/ha, the average yield of molasses in farms was 21.7 t/ha, i.e., the average yield of molasses in farms in 2015-2019 was about 2 times higher. It should be noted that the highest yield of sesame was observed in agricultural enterprises, i.e., 47.8 t/ha. This is much higher than the average yield of these crops in the region.
Figure 2. Yield of oilseeds by economic categories in Kashkadarya region (t/ha).

Table 2. Dynamics of cultivation of basic oilseeds in Kashkadarya region, (by farms, tons)

| Years | Sesame | Mashar | Sunflower | Soy |
|-------|--------|--------|-----------|-----|
|       | Farm   | Farm   | Farm      | Farm|
|       | Farming| Farming| Farming   | Farm|
|       | Agriculture enterprises | Agriculture enterprises | Agriculture enterprises | Agriculture enterprises|
| 2015  | 0**    | 373    | 0         | 543 |
|       | 8      | 1622   | 135       | 72  |
|       | 155    | 13     | 0         | 0   |
| 2016  | 0      | 377    | 0         | 591 |
|       | 2      | 1848   | 165       | 0   |
|       | 9      | 0      | 0         | 0   |
| 2017  | 0      | 382    | 0         | 571 |
|       | 8      | 1638   | 24        | 0   |
|       | 217    | 0      | 0         | 27  |
| 2018  | 364    | 482    | 45        | 228 |
|       | 3      | 2022   | 82        | 86  |
|       | 232    | 17     | 420       | 0   |
|       | 20     | 318    | 0         | 20  |
| 2019  | 370    | 500    | 40        | 665 |
|       | 4      | 3142   | 168       | 100 |
|       | 880    | 20     | 318       | 0   |
|       | 20     | 20     | 20        | 0   |

In 2019, compared to 2015, the volume of cultivation of major oilseeds (except for mockery, in the years of analysis of farms here, this figure was 12.2%, respectively) is growing. At the same time, given that vegetable oil is also produced along with vegetable oil, we found it appropriate to analyze the cultivation of raw cotton. As we analyzed above, most of the raw cotton is produced by farms. We analyzed the efficiency of growing raw cotton on farms located in different regions of the region[12].

From the data in Table 8 below, it can be seen that there are various differences in the cultivation of cotton on the farms “Asirov Jovliddin Asirovich” and “Yoriev Shohrukh” and its end result. In
particular, the yield of cotton at the farm "Asirov Jovliddin Asirovich" in 2019 amounted to 30.0 quintals, which is 1.8 times more than in 2018, respectively, at the farm "Yoriev Shohrukh" during the analysis period increased by 1.1 times. There are also differences in the cost of growing 1 kg of raw cotton, in 2019, the farm "Asirov Jovliddin Asirovich" spent 3712 soums for the production of 1 kg of raw cotton, in the farm "Yoriev Shohrukh" this cost was 2567.1 soums. The difference is primarily due to the disproportionate cost of growing 1 kg of raw cotton on the farms under analysis. If we look at the profit from 1 kg of raw cotton on farms, we can see that this figure is better at the farm "Yoriev Shohrukh". The main reason for this was that Asirov Jovliddin Asirovich spent more on growing raw cotton on the farm [13].

| № | Name of indicators          | Asirov Jovliddin Asirovich farm | "Yoriev Shoxrux" farm |
|---|-----------------------------|---------------------------------|-----------------------|
|   |                             | 2016 | 2017 | 2018 | 2019 | 2016 | 2017 | 2018 | 2019 |
| 1 | Crop area (t/ha)            | 26   | 21   | 40.8 | 33.5 | 36   | 40   | 43   | 45   |
| 2 | Productivity (t/ha)         | 33.1 | 32.4 | 16.7 | 30.1 | 35.8 | 38.3 | 37.4 | 40.7 |
| 3 | Gross yield (tons)          | 86   | 68   | 68.1 | 101  | 128.9| 153.2| 160.8| 183.2 |
| 4 | Cost of 1 kg of raw cotton (sum) | 1099 | 1560 | 2296 | 3712 | 1081.3| 1327.9| 1731.2| 2567.1 |
| 5 | Sales price of 1 kg of raw cotton (sum) | 1333 | 2085 | 3555 | 4300 | 1337.0| 2066.0| 3583.0| 4450.0 |
| 6 | Profit from 1 kg of raw cotton (sum) | 234 | 525 | 1259 | 588 | 255.7| 738.1| 1851.8| 1882.9 |
| 7 | Total expenditures for gross crop production (thousand soums) | 75894 | 91749 | 218565.6 | 247062.5 | 99910.3| 142995.0| 190370.5 | 262983.3 |
| 8 | Gross product value (thousand soums) | 114638 | 141780 | 242095.5 | 434300 | 172312.6 | 316511.2 | 576218.1 | 815017.5 |
| 9 | Profit (loss) from cotton growing (thousand soums) | 38744 | 50031 | 23529.9 | 187237.5 | 72402.2 | 173516.2 | 385847.5 | 552034.2 |

In general, the above-mentioned indicators on these two farms have an upward trend, especially the increase in cash receipts from the sale of raw cotton and the total expenditure on raw cotton [14-15].

Thus, Kashkadarya region is a leader in the production of vegetable oil. This is directly related to the cultivation of raw materials. The analysis showed that the yield of oilseeds in the region is higher than the national average.

5. Conclusion
We have developed the following proposals as ways to develop production cooperation of enterprises of agriculture and processing industry:

1. The enterprises involved in the cooperation of agriculture and processing industry should have a step-by-step production of raw materials, processing and other features, combined with the development and improvement of its regulatory framework.
2. Development of the Law on Agricultural and Industrial Cooperation and its by-laws as an independent legal segment of the specific conditions for the formation of agricultural cooperation and the development of agro-clusters with specific features of agricultural production and processing and socio-economic environment and improve existing ones.

3. The main producers of oilseeds in Kashkadarya region are farms. However, the yield of oilseeds varies by business entity. For example, farmers are more productive on molasses, soybeans on farms, sesame and other oilseeds on agricultural enterprises.

4. The analysis shows that the oilseed processing enterprises in the region are not working at full capacity, ie JSC "Kasan Oil Extraction" is working at 57.6%, and JSC "Karshi Oil Extraction" is working at 55.7%. This indicates irrational use of available opportunities (potential). It should be noted that the above-mentioned enterprises only purchase raw materials by concluding contracts with farms. However, farms and other agricultural enterprises are also engaged in the cultivation of oilseeds. Therefore, it is expedient for these enterprises to purchase raw materials from farms growing oilseeds. This can be done by merging into production cooperatives. In addition, as mentioned above, the efficiency of production of some oilseeds is higher in farms and agricultural enterprises than in farms.

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