

Innovative and export potential of the agro-industrial complex of Uzbekistan

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Abstract. The agro-industrial complex (AIC) is becoming one of the main in the economy of Uzbekistan. In recent years, work has been carried out to reform it fundamentally. The normative and legal framework for its functioning has been formed, public administration has been improved. The market mechanism of management is being introduced. Investments are attracted. The structure of acreage is optimized by reducing cotton crops and placing fruit and vegetable crops on them. New intensive gardens and vineyards are being created, innovative greenhouses are being built. Work is carried out on construction and reconstruction of collectors and hydraulic structures, refrigeration chambers for fruit and vegetable products' storage, introduction of new equipment and technologies in it. The processing industry is developing, the volume and range of products is increasing, including innovative and its export. Integration of producers and processors of agricultural products is intensifying. At the same time, there are still significant reserves in the agro-industrial complex of Uzbekistan. The efficiency in natural resources' use is low. The irrigated agricultural land are is small. The technical and digital equipment of personal subsidiary farms and labor productivity in them are low. Uzbekistan is implementing a course for innovative development. The President of the Republic approved the Strategy for the agriculture development of the republic for 2020-2030. It sets the tasks of significant increase in the production and processing of agricultural products, expanding its range due to new types of products and its exports. The strategy is successfully executed. Nevertheless, it is necessary to improve the state management of the agro-industrial complex, the introduction of the market management mechanism, the development of interactions between the complex's branches, strengthening export potential of the complex, introduction of innovations, digitalization of enterprises' activities.

1 Introduction

The agro-industrial complex is becoming one of the main strategically important sectors of the economy of Uzbekistan, ensuring food security and sustainable

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development of the country. Currently, work is being carried out on the root reform of the country's agrarian sector, including improvement of public administration and the market mechanisms' introduction, strengthening legal basics of subjects' relations producing and selling products of the agrarian sector, attracting investments to develop new technologies, the introduction of progressive technology. In 2020, the gross output of agriculture, forestry and fisheries amounted to over 180 trillion soums, or 103% by 2019.

Objectives of the study: definition of promising innovative development directions of agro-industrial complex of Uzbekistan and management of its export potential in the modernization and digitalization conditions.

Research objectives:

- summarizing the results of social and economic changes in the agro-industrial complex of Uzbekistan;
- development of market mechanisms for the agricultural complex development of Uzbekistan;
- development of innovative solutions for the export potential development of the agro-industrial complex and reserves' identification for increasing the supply of products for export;
- development of ways to diversify the production and export of agricultural products and to bring it to new markets.

2 Materials and methods of research

The following research methods were used: formal-logical, system analysis, causal relationships, scientific abstraction, and others.

3 Results of the study

In the conditions of market relations' formation and economy digitalization, the business entities of the agrarian sphere of Uzbekistan are going through a fundamental modernization. The fact is that ensuring the required performance indicators of economic entities is impossible without product, process and organizational innovations that create the basis of necessary changes.

The first stage of the agrarian sector's reforms of Uzbekistan was fundamental social and economic transformations:

- the basis of a completely new economic mechanism was developed, the order of agricultural producers' financing was improved; acceleration of mutual settlements for produced products, increased independence of goods' manufacturers, etc.;
- a legal framework for reforming economic and agrarian relations in the new conditions has been created;
- changes in the structure in the agrarian sphere have been made, the system and principles of AIC management were changed;
- the structure of agricultural production was significantly changed, the production of food was sharply increased due to the reduction of cotton;
- regulation of land relations was improved;
- soil fertility was increased.

In 2020, 72.3% of the gross output of produced agricultural sector's products was accounted for by dehqan farms, 24.7% - farms, 3% - agricultural organizations, as evidenced by the conducted analysis (Fig. 1).

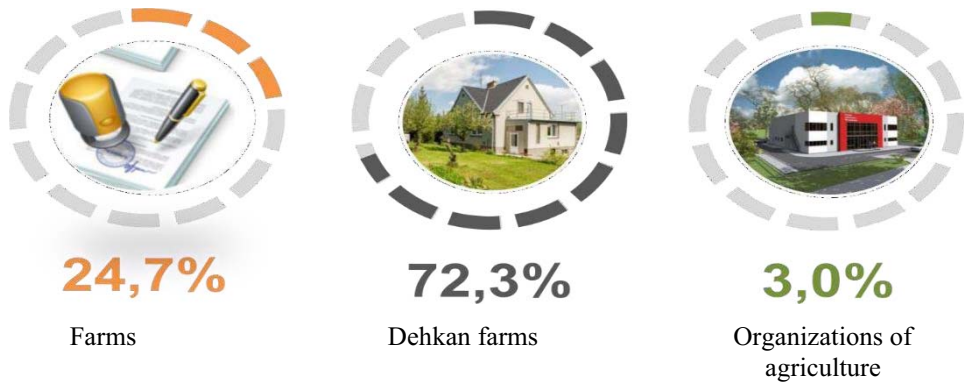


Fig. 1. Production structure by category of farms.

About 90 per cent of all agricultural products produced in Uzbekistan come from private businesses. More than 80 thousand farmers operate in the country, over 3.8 million hectares of land are assigned to them. In this regard, it is important to note that the laws of Uzbekistan “On farms” and “On Dehkan farms” of 1998 are the legal basis for the agrarian economy organization, economic mechanism's creation and relationships of entrepreneurs. At the same time, further development of these farms requires the creation of appropriate conditions, a system of incentives, economic levers and a mechanism for regulating these relations between agricultural subjects. This should certainly be reflected in new legislation that will regulate these processes [1].

In 2016-2020, the measures taken for the development of agricultural production aimed at the growth of crop yields, increase in the area occupied by fruit and vegetable crops, ensured an increase in the agricultural production products' volume, improvement of its structure.

Only in 2016, the structure of the areas was improved by reducing cotton planting by 30.5 thousand hectares, they locate crops very popular in external and domestic markets. Also, intensive gardens are laid on the area of 8.2 thousand hectares, vineyards - on 5.2 thousand hectares. The orchards have been reconstructed on 6 thousand hectares, vineyards - on 3.5 thousand hectares. 9,9 thousand greenhouses are built on 532 hectares.

In order to improve the fertility of agricultural lands in accordance with the state program of land reclamation and rational use of water resources in 2013-2018, works were carried out on creation and modernization of 724.6 km of collectors, 229 km of collector and drainage network, as well as 846 wells and 50 modern hydraulic facilities.

In accordance with the measures to create a modern material and technical base of fruits and vegetables' storage for 2016-2020, enterprises of the Association “Uzbekozikovkatzahira”, farmers and other enterprises built 164 refrigeration chambers for fruit and vegetable products with a total capacity of 64,6 thousand tons of products [2].

The measures taken have positive results. A good harvest was produced despite of severe natural conditions, including 8.2 million tons of vegetables, over 2.3 million tons of potatoes, 1.5 million tons of melons, more than 1.2 million tons of grapes and about 2 million tons of fruits and berries.

3.1 Grain production

From the 90s to this day, the area occupied by cotton has decreased from 1900 thousand hectares to 1400, and wheat (with irrigation) increased by 5.5 times. It should be noted that the country gained its grain independence and became one of the exporters of this crop. The

yield growth was influenced not only by the increase in crop areas, but also by increased yields. Currently the yield of these crops (average) in the republic has reached 45.2 cwt/ha. This is almost 2 times more than in 1991.

According to the Ministry of Agriculture, farms of all categories grew more than 5 100 thousand tons of grain in the first half of 2020, which is 2.3% more than the same period in 2019. It is important to note that more than 82% of gross grain production in the Republic in 2020 was accounted for by farms [3].

3.2 Fruit and vegetable growing

Over the past 10 years, the production volume of fruit and vegetable products and grapes has increased by 2.4 times. The share of these products' processing exceeded 20 per cent of its total output.

This industry has become the leading sector of the country' food security, it is increasingly implementing innovative technologies. Only in 2021, 740 new innovative greenhouses with a total area of 2330 hectares will be introduced. An important direction of the industry's development is the creation of intensive horticulture, the use of special types of dwarf fruit trees of high yield and their short-term (within 5 years) usage.

According to the State Committee for Statistics of the Republic of Uzbekistan, the gross volume of fruit and vegetable products' exports amounted to 1485,0 thousand tons in 2020, in value terms it exceeded 1,008.6 M US. dollars [4]. At the same time, the republic exported 402 thousand tons of fruits and berries for 353 million dollars and 768.3 thousand tons of vegetables for 400.0 million dollars.

According to the Ministry of agriculture of Republic of Uzbekistan, the largest importer and consumer of Uzbek fruits and vegetables is the Russian Federation. In 2020, over 355 thousand tons of agricultural products worth 255.4 million dollars was exported to Russia.

The main and strategically important markets for the sale of fruit and vegetable products of the country are the markets of the Russian Federation, the Republic of Kazakhstan, Kyrgyzstan, and Pakistan. New markets are being developed - the states of the Eurasian Economic Union and the European Union.

In recent years, Uzbekistan has become a major exporter of more than 150 types of fresh and processed fruit and vegetable products. The annual export potential of the Republic is estimated at more than \$5 billion.

3.3 Processing of fruit and vegetable products

The country has recently been increasing the volume of agricultural products' processing, the gradual development of the processing industry, equipping it with new modern equipment and innovative technologies, as well as the expansion of the agricultural products' range due to the development of new types of agricultural products. At the same time, the integration of producers and processors of agricultural products increases, the relationship between them is improving.

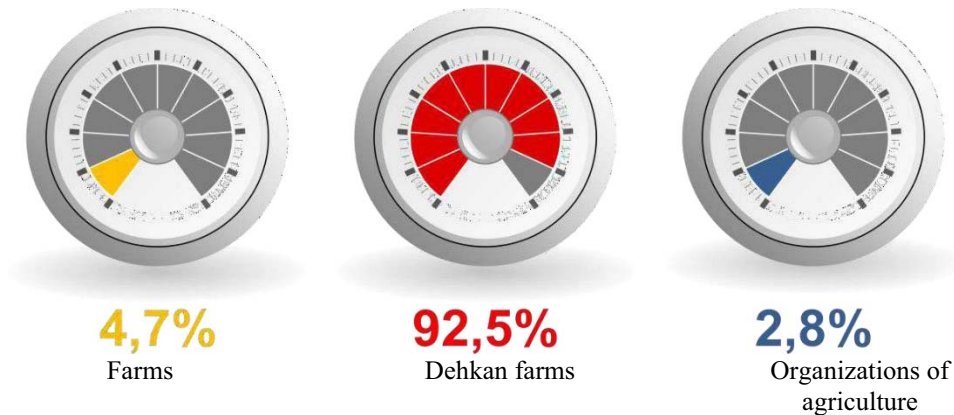


Fig.2. Share of farms (by category) in livestock production.

As a result of the measures taken over the past 10 years, the volume of fruit and vegetable products and grapes processing has increased by 3.5 times, including the production of canned fruits and vegetables by 2.5 times, dried fruits - 4 times, natural juices - 7 times.

3.4 Animal husbandry

With Uzbekistan's independence, animal husbandry has not lost its sustainability. The fact is that a significant number of cattle were in the personal farms of citizens. According to data of the Committee for Veterinary and Livestock Development of the Republic, production of livestock products in January-September of last year reached 89.7 trillion soums (102.3% compared to the same period in 2019). The share of the industry in the total volume of agricultural production reached 51.6% [5].

Persistent implementation of measures to steadily increase the export potential of this industry, systematic state support affected the growth of livestock, including through the introduction of new highly productive breeds, filling the consumer market of the republic with products on this basis and increasing the supply of products for export.

From January to September of last year, farms of all categories produced 1,839,5 thousand tons of meat in live weight (2.2% more than in January-September of the previous year), 7,958.2 thousand tons of milk (2.9%), 30.1 thousand tons of wool (0.3%), 5,458.7 million eggs (0.8%), 1,003,6 thousand astrakhan skins (0.1%), 59,851 tons of fish caught (9.8%). The structure of farms (by category) carrying out the production of livestock products is improved, the data on it is shown in Figure 2.

3.5 Poultry farming

Currently, more than 48.7 million birds are cultivated in the country, some of them are of new breeds. This is 1.1 times more than at the beginning of 2020. About 530 new projects are planned to develop the industry and increase production this year. To increase the number of birds, the government of the Republic granted tax and customs benefits to producers. As a result, the Republic experienced a significant increase in egg production in 2020 (Fig. 3).

The growth of agricultural production in Uzbekistan makes it possible to meet the needs of the population, increase its supply for export. This was well shown by the International Trade Fair of Food Industry, Horticulture, Agriculture and Forestry "Green Week 2016" in Berlin. In the process of this forum, the participants got acquainted with the socio-economic development of the country, with measures to improve activities and with the enterprises' re-

equipment in the republic, and above all agrarian sector; with measures to increase the volume of investments in the AIC, with the implementation of the state program of infrastructure improvement. At the same time, real innovative and investment projects were announced, which were prepared by the Association of Food Industry Enterprises, the companies “Uzdonmahsulot” and “Uzvinprom-Holding” [6].

Speaking to the audience, the Chairman of the Board of the Eastern European Association of German Economy M. Felsner well appreciated the development of the Republic, noted the positive investment climate already well formed in the country. He pointed to Germany's increasing interest in developing ties with Uzbekistan, including from small and medium-sized enterprises. One of the main association tasks indicated by M. Felsner was assistance to the organizations of Germany in establishing long ties with colleagues from Uzbekistan for the implementation of investment projects, including in the agricultural sector. He highlighted that now the German organizations face a rapidly growing market, which can become a leader in the production of high-quality fruits, vegetables, and food products.

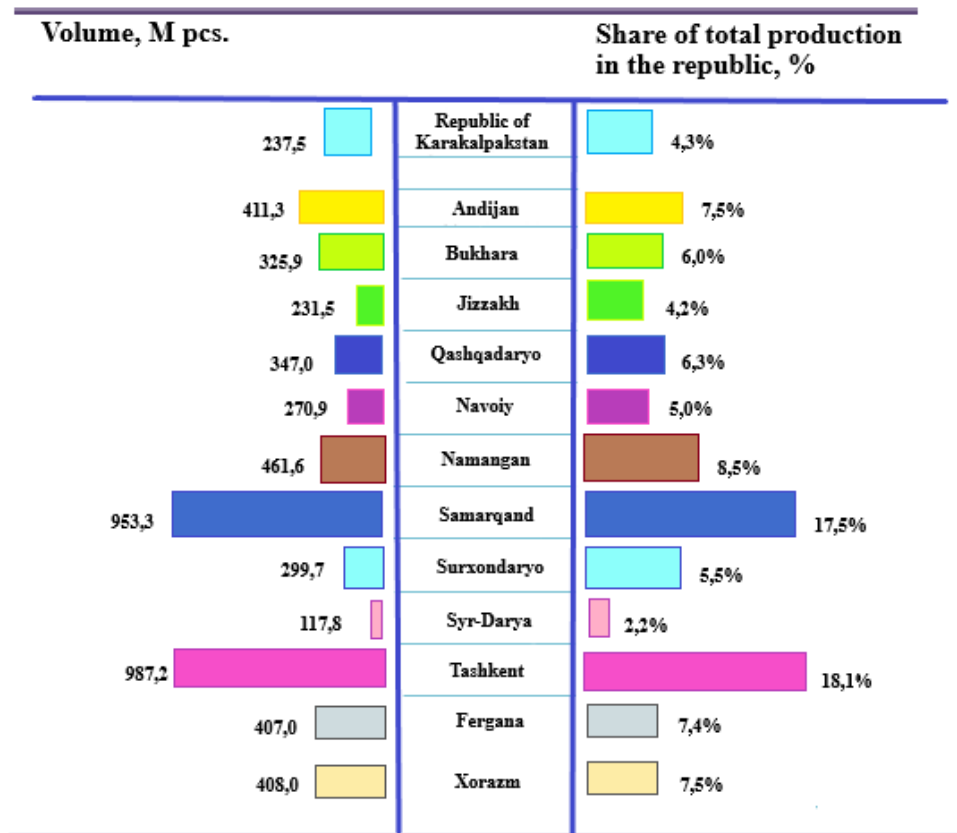


Fig. 3. Egg production volume in the regions of Uzbekistan.

The heads of German enterprises Lemken, Claas and Berliner Sparkasac already operating in the republic invited participants to take advantage of the opportunities of coming to the rapidly growing and developing market of Uzbekistan, take part in the implementation of specific innovative and investment projects in the territory of the country.

Some of the participants in the event shared their impressions. Thus, the representative of the German company MARWIKO AG Andreas Jopt positively assessed the economic

development of Uzbekistan and noted the following: “Today's presentation made a strong impression on me, enriching my knowledge of Uzbekistan, its modern development and agro-industrial potential of your country. We are very pleased that Uzbekistan regularly and widely participates in the international agricultural exhibition “Green Week” in Berlin. Having visited your stand, I made sure that the whole palette of the agro-industrial complex of the republic is represented here. Today's presentation also gave us a good opportunity to get acquainted with the positive experience of well-known German companies operating in the Uzbekistan market, so we had a desire to establish a partnership with interested Uzbek companies” [7].

The manager of SZ Consulting Roland Zimmerman highly appreciated the achievements of the republic in the banking and financial sphere. He noted that, according to information from the World Bank, Uzbekistan was recently included in the top ten countries that achieved good results in the year in terms of creating a favorable business environment. This, of course, attracts entrepreneurs from Germany. Germany is interested in establishing cooperation. Representatives from Germany became aware of the significant opportunities of the Uzbek market, about the benefits in terms of investors' taxation from other countries. The event became a good platform for further cooperation expansion between Uzbekistan and Germany in the economic sphere [9].

At the same time, there are still significant reserves in the agro-industrial complex of Uzbekistan. The efficiency in natural resources' use is low. The irrigated agricultural land area is small. Unfavorable condition of irrigation facilities. Low technical equipment of dehqan (personal subsidiary) farms and labor productivity in them.

In this regard, an important innovative development direction of some branches of the republic's agriculture is their transfer from small-scale production (in dehqan farms) to industrial basis (in large farms). It is, above all, a lemon industry.

Uzbekistan developed and adopted the Strategy for the development of agriculture for 2020-2030, it outlined the priorities of the industry's development and the most important strategic indicators, the mechanism of its implementation. The fundamental objectives of the strategy are to develop a stable and competitive agro-industrial sector oriented on both domestic and foreign market, increase agricultural producers' income, creation of new jobs, improving food security and ensuring the effective use of natural resources [11].

As a result of these measures, the growth of added value in the agrarian sector (including forestry and fish farming) according to the strategy, will amount to 3-5 per cent per year, with the share of farmers in the total GDP will drop from 32 to 20 per cent. Job growth in the food industry will amount to 3-5 percent, textile industry - 3-4 percent a year [12].

4 Conclusions

Uzbekistan confidently took a course on innovative economy's development based on the wide use of advanced technologies and creation of investment attractiveness for foreign investors. In recent years, the country has become a major exporter of more than 150 types of fresh and processed fruit and vegetable products, its annual export potential is estimated at more than \$5 billion US dollars. The development strategy of agriculture of the Republic of Uzbekistan for 2020-2030 set the task of increasing the volume of agricultural products' processing by 30% due to the introduction of new equipment and innovative technologies by 2030, expansion of its range through the introduction of new types, increase of products' exports up to 20 billion US dollars. At the same time, it is planned to develop new markets for products - the states of the Eurasian Economic Union and the European Union. The results of 2017-2020 give confidence in the achievement of the goals set by the Strategy. Nevertheless, persistent work is required to further increase the export potential of the agro-

industrial complex of the Republic, improvement of the complex's state management, implementation of market management mechanism, improvement of interactions between sectors of the complex, introduction of innovations, digitalization of enterprises' activities. At the same time, an important innovative development direction of some agricultural branches of the republic is their transfer from small-scale production (dehkan farms) to industrial basis (large farms).

References

1. N. Yuldashev et al., *International Scientific and Practical Conference "Digital agriculture-development strategy"* (ISPC 2019), 334-337 (2019)
2. 2.Y. Nuritdin, T. Bobir, *Bulletin of Science and Practice*, **4 (4)** (2018)
3. N.Ya. Kovalenko, *Agricultural economics with the basics of agrarian markets. Lectures Course*, 448 (1998)
4. N.Ya. Kovalenko, *Agricultural economics*, 384 (2004)
5. V.A. Kundius, *Economics of agro-industrial complex: Textbook*, 544 (2010)
6. M.N. Malysh, *Economics of Agriculture: Workshop*, 224 (2004)
7. 7.G. Shanazarova, *Archive of Scientific Research* (2019)
8. I.A. Minakova, N.I. Kulikov, O.V. Sokolov, *Economics of AIC industries: Textbook*, 464 (2004)
9. V.Ya. Pozdnyakov, S.V. Kazakov, *Industry Economics: work book*, 309 (2010)
10. 10.O. Djurabaev, *Research Archive*, 11, (2020)
11. V.I. Nabokov, K.V. Nekrasov, N.V. Ziablitskaia, E.A. Skvortsov, G.A. Iovlev, V.M. Sharapova, *International Journal of Advanced Biotechnology and Research (IJBR)* ISSN 0976-2612, Online ISSN 2278-599X, **9(3)**, 174-177 (2018)
12. N.K. Yuldashev, V.I. Nabokov, K.V. Nekrasov, *Moscow economic journal*, **4**, 31 (2018)