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Innovative development of agricultural production in Uzbekistan: condition and prospects

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Abstract. The article analyzes the current state of development of agricultural production in Uzbekistan for the period of agrarian reforms, which resulted in the formation of a class of owners in the field of agro-industrial complex, developed farmer and dekhkan farms, agrofirms, processing enterprises. For the further development of the agrarian market, it is necessary to form economic incentives for the development of production. The solution of this problem will allow to ensure the efficiency of the system of distribution of agricultural products, to make agricultural production a technological and competitive, stable exporter of agricultural products. In recent years, there have been positive changes in the growth of production and consumption of basic foodstuffs, their assortment is expanding, and the quality of products is improving. However, there are many factors hindering the development of the industry: the insecurity of enterprises with raw materials, the imperfection of the system of mutual settlements between enterprises of the agro-industrial complex, the increase in energy prices and transportation tariffs, etc. The agro-industrial complex of Uzbekistan has been tasked not only to consolidate the progress achieved, but also to ensure the growth of agricultural production and increase its competitiveness.

1. Introduction

The total land area of Uzbekistan is 44.8 million hectares, of which 20.4 million hectares of agricultural land, including 4.3 million hectares of irrigated land. The lands of the forest fund are 11.1 million hectares, and the lands of the water fund are 833.3 thousand hectares. 98.5 percent of the land used for agricultural purposes is in the use of farms and dekhkan farms.

Over the years of independence, all sectors of the agrarian sector have experienced high growth rates, significantly increased the production of melons, fruit and vegetables, and livestock products. As a result, along with the full provision of the needs of a growing population, the volume of exports increases every year. Today, more than 180 types of fresh and processed agricultural products produced in Uzbekistan are exported to more than 120 countries of the world.

The international community highly appreciates the fact that along with ensuring its own food security, Uzbekistan makes a worthy contribution to the food supply of foreign countries. At the ceremony of awarding countries that had reached the Millennium Development Goals, at the 39th Conference of the Food and Agriculture Organization of the United Nations (FAO), held in the Italian city of Rome in June 2015, for their incomparable progress in ensuring food security, along with 14 countries, Uzbekistan was awarded a special prize. Favorable soil and climatic conditions, the culture of agriculture formed over the centuries, and the attention of the state to the development of the industry as a priority, agriculture is becoming one of the most important, sustainably developing



sectors of the economy of Uzbekistan. Over the past 10 years, the pace of gross agricultural production has averaged 6%, and the industry's share in gross domestic product is almost 17%. In Uzbekistan in 1991, the area of grain crops amounted to 870 thousand hectares, and the average yield was 6-7%. At that time, over 5 million tons of grain and grain products were imported into the country for the needs of the population.

2. Methods

In the conduct of the study, general scientific and special methods and techniques of research characteristic of economics were used, i.e. a set of scientific methods of the abstract-logical method, monographic, economic and statistical methods; institutional analysis; behavioral economics methods.

3. Results

As a result of the gradual expansion of the area and increase of grain yield, today Uzbekistan occupies a strong position among the countries exporting grain and grain products. If in 1990 Uzbekistan produced about 1 million tons of grain harvest, in 2016 the area of grain amounted to 1 million 132 thousand hectares, and in 2017 1 million 122 thousand hectares, the volume of production averaged 8 million tons and the yield per hectare on irrigated areas is 55.0 centners.

Today Uzbekistan takes the 6th place in production and the 5th place in the export of cotton. As a result of the measures taken to diversify agricultural production in 1990-2018, cotton crops decreased from 1 million 830 thousand hectares to 1 million 70 thousand hectares or 1.7 times. In recent years, the focus has been on the processing of raw cotton produced in modern enterprises. Uzbekistan produces an average of 3 million tons of raw cotton annually and about 1 million tons of cotton fiber from it. If in the first years of independence, an average of 3-5 % of the produced fiber was processed in the country, now this figure exceeds 50 %. In accordance with the Program for the Development of Agriculture for the period 2016–2020, by 2021, it is planned to reduce cotton crops by 284.9 thousand hectares, to place vegetables and potatoes, oilseeds, fodder and other crops on the released areas, to create gardens and vineyards. By 2021, the area of cotton crops will be 1 million hectares, due to the widespread use of intensive technologies in cotton growing, the average yield will increase by 5-6 centners.

In 1991-2017, in Uzbekistan, the area of crops of vegetables and melons was expanded from 165.6 thousand hectares to 241 thousand hectares, potatoes from 40.0 thousand hectares to 94 thousand hectares. At the end of 2017, the volume of vegetable production amounted to 11.4 million tons (compared to 1991 by 3.4 times), melon products - 2.1 million tons (2.2 times), potatoes - 3 million tons (8.3 times). Over the years of independence, 69 new varieties of vegetables, 20 varieties of melons and 10 varieties of potatoes have been created and put into practice. As a result of the reduction of cotton and grain crops in 2020, the area of vegetables will be 283 thousand hectares, potatoes 116 thousand hectares, compared with 2017, an increase in the production of vegetables, potatoes and melons and gourds is 30-35 %.

In 1991-2017, in Uzbekistan, the garden areas were expanded from 138.6 thousand hectares to 272.7 thousand hectares, vineyards from 94.5 thousand hectares to 148.6 thousand hectares. As a result, in 2016, more than 3 million tons of fruits were produced (by 5.3 times more than in 1991) and 1.7 million tons of grape (by 3.2 times more than in 1991) products. In 2010-2017, in the republic on the area of more than 50 thousand hectares, dwarf and semi-dwarf intensive gardens were created on the basis of modern agricultural technologies.

As a result of providing special attention to the expansion of orchards and vineyards, the timely implementation of agrotechnical measures and the planting of high-quality seedlings in the last 10 years alone, the yield of orchards increased to 61.6 centners and vineyards to 62.1 centners.

In 2017, 4625 thousand tons of fruit and grape products were produced, of which more than 900 thousand tons were processed and exported 440 thousand tons of products.

Until 2021, creation of 280 thousand hectares of gardens and 155 thousand hectares of vineyards is envisaged. Due to the expansion of orchards and vineyards, increased yields, in 2020 compared to 2016, the production of fruit and grape products will increase by 20-25 %.

In the country, the share of livestock in gross agricultural production is more than 40 %. The number of livestock, as well as the production of meat and milk are steadily increasing. Over the years of independence, steady growth in livestock production has been achieved. Including a steady increase in meat production was 2.6 times, milk 2.7 times, eggs 4.8 times, wool 2.3 times, astrakhan skins 1.4 times, fish 37 times, honey 4.4 times. According to the results of 2017, sheep and goats in the country amounted to 20 million heads of sheep and goat breeding, in the last 10 years the number of sheep has increased 1.7 times. By the number of Karakul sheep, Uzbekistan occupies one of the leading places in the world, and their number is 6.7 million heads. Astrakhan sheep are grazed on 17.5 million hectares of pastures. An increase in the livestock of sheep and goats is expected by 2020 to 23 million heads.

At the end of 2017 in Uzbekistan, the livestock of birds was 71 million heads, compared with 1991, this figure is more than 36 million heads. Also, in 1991-2017, egg production increased from 2.3 billion to 6.6 billion. The government has determined measures to increase the livestock of over 100 million heads by 2020, the annual volume of egg production to 10 billion pieces. In Uzbekistan, fish is grown on only 307 thousand hectares, including 25 thousand hectares of artificial and 282 thousand hectares of natural water bodies. At the end of 2017, the volume of fish production amounted to 82 thousand tons, by 2020 the volume of fish caught in the country will reach 150 thousand tons. According to the results of 2017, there are 568.1 thousand functioning beekeeping farms in the country; there are more than 12 thousand tons of honey and honey products annually, including bee milk, bee venom, beeswax, propolis. The government has identified measures for the integrated development of the beekeeping industry until 2020, which provides for an increase in the number of bee colonies - up to 1 million units, honey production up to 25 thousand tons.

As a result of the reforms implemented in animal husbandry in 2000–2017, the number of horses in all categories of farms increased from 148.4 thousand heads to 227 thousand heads.

Horses of Karabayir breed, the true birthplace of which is Uzbekistan, are included in the golden fund of world horse breeding.

A program of measures was developed for the further development of horse breeding, the widespread introduction of advanced scientific and technical achievements, and the active attraction of foreign investment for the years 2017-2021.

The government has defined tasks to increase the livestock of horses until 2021 by 30 %, due to the establishment of breeding and breeding work in horse breeding, a further increase in the livestock of purebred Karabaire breed horses, training pedigree stallions.

In Uzbekistan, an average of more than 18 thousand tons of mulberry raw material is produced annually, among the countries producing mulberry raw materials, ranks third after China and India.

By 2021, the volume of cocoon production will increase to 27.5 thousand tons, and the share of its processing will increase to 50 %.

In the country, 90.6 % of water resources is spent in agriculture, 4.4 % in household services, 1.4 % in industry, 1.2 % in fish farming, 0.4 % in energy, and 2.0 % in other areas. In 2013-2016, drip irrigation systems on an area of more than 20.2 thousand hectares, irrigation using portable flexible pipes on an area of more than 119.7 thousand hectares, cotton irrigation technology with foaming furrows over an area of more than 31, 4 thousand hectares. As part of the adopted state programs to improve the ameliorative state of the land in 2008-2016, Uzbekistan has improved the ameliorative status of over 2 million hectares of irrigated land.

Today, there are 7 agricultural universities that train personnel for agriculture, the Tashkent State Agrarian University, its Andijan, Nukus, Termez branch, the Institute of Irrigation and Agricultural Mechanization Engineers, its Bukhara branch, the Samarkand Institute of Veterinary Medicine. At the same time, personnel in some areas of education and specialties for agriculture are also being prepared

at the Uzbek National University, Tashkent State Technical University, Tashkent Institute of Chemical Technology, Bukhara State University, At the same time, personnel in some areas of education and specialties for agriculture are also being prepared at Gulistan State University, Djizzak Polytechnic Institute, Karshi Engineering and Economics Institute, Namangan Engineering Technological Institute, Fergana Polytechnic Institute, Urgench State University.

More than 20 research institutes and centers function in the direction of the agrarian sphere. The number of scientific personnel working in these research institutions is 661 people, of which 68 people. doctors of science, 172 people candidates of science.

In recent years, scientists and breeders of the sphere created 20 varieties of cotton, 30 varieties of wheat, 10 varieties of barley and triticale, 5 varieties of corn, 10 varieties of rice, 10 varieties of oilseeds, 25 varieties of fruit trees, 10 varieties of grapes, 10 varieties of fodder crops, 40 varieties of potatoes and vegetables, 15 varieties of melons and gourds, 5 factory types of Karakul sheep, 5 crosses of birds, 6 breeds of silkworm.

The use of biotechnology in agriculture is expanding every year.

In order to further develop the agricultural sector, expand the activities of agricultural enterprises, improve infrastructure facilities in the system of the Ministry of Agriculture of the Republic of Uzbekistan, projects are guaranteed by the Government with the participation of funds from the World Bank, Asian Development Bank, International Fund for Agricultural Development, as well as a number of other international financial institutions and foreign countries. In addition, there are projects of free technical assistance (grants) with the participation of donor communities and direct investments jointly with foreign enterprises.

The Ministry of Agriculture of the Republic of Uzbekistan has established large-scale, mutually beneficial and comprehensively strong cooperation with a dozen countries like China, South Korea, Japan, Germany, France, Italy, Belgium, Holland, Latvia, Lithuania, Czech Republic, Poland, Turkey, USA, Brazil, Vietnam, Thailand, Malaysia, India, Iran, Pakistan, Bulgaria, Belarus, Israel, as well as with the World Bank, Asian Development Bank, USA Agency for International Development (USAID), Japan International Cooperation Agency (JICA), German Technical Cooperation Society (GIZ), Korea International Cooperation Agency (KOICA), Food and Agriculture Organization of the United Nations (FAO), International Fund for Agricultural Development (IFAD), Turkish Cooperation and Coordination Agency (TICA), International Center for Agricultural Research in the Dry Areas (ICARDA), as well as with other major international organizations and financial institutions. Also, agreements, memorandums and protocols of agreement were signed with more than 100 relevant departments and companies.

170.5 thousand hectares of cotton and 50 thousand hectares of grain crops will be reduced, potatoes on 36 thousand hectares, vegetables on 91 thousand hectares, forage crops by 50.3 thousand hectares, oil crops by 14 thousand hectares, vineyards on 11 thousand hectares and intensive gardens on 18 thousand hectares.

4. Conclusions

As a result of the widespread introduction of modern agricultural technologies in the sphere of grain production will be 16.4 percent (gross yield 8 million 500 thousand tons), potatoes 35 percent, vegetables 30 percent, fruits and grapes 21.5 percent, meat 26.2 percent, milk, 47.3 percent; eggs, 74.5 percent; fishing will increase 2.5 times. The number of cattle will reach 14 million 800 thousand heads, small ruminants 23 million 127 thousand heads, birds 92 million heads; due to the use of modern intensive agricultural technologies, the average yield will reach 26.9 in cotton growing, 66.4 grain growing, 230.5 potato growing, 294 vegetable growing, 140.4 gardening, 137.1 growing of grapes, and in the production of oilseeds 22 centners; livestock production in the country, including meat (in live weight) will reach 2 million 500 thousand tons, milk 13 million tons, eggs 9 billion 600 million pieces, fish 150 thousand tons, honey 23 thousand tons.

References

- [1] Pravda Vostoka 2018 *Message from the President of the Republic of Uzbekistan Shavkat Mirziyoyev to Oliy Majlis*
- [2] Office of the President of Uzbekistan 2017 *Decree of the President of the Republic of Uzbekistan "On the strategy of action in the five priority areas of development of the Republic of Uzbekistan in 2017-2021"* (Tashkent, Uzbekistan)
- [3] Office of the President of Uzbekistan 2018 *Decree of the President of the Republic of Uzbekistan "On Additional Measures for Accelerated Development of Fruit and Vegetable Growing in the Republic of Uzbekistan"* of March 29, 2018, N UP-5388
- [4] Dodoboev Yu T, Homidov B S 2017 *Innovative development of the Republic of Uzbekistan: state and prospects* (Tashkent, Uzbekistan) p 280
- [5] 2018 *Scientific collection "Formation of clustering and modernization of the economy, the Republic of Uzbekistan"* (Andijan, Uzbekistan) pp 3-35
- [6] Goskomstat of the Republic of Uzbekistan 2017 *Statistical compendium of agriculture of the Republic of Uzbekistan for 1991-2017* (Tashkent, Uzbekistan)
- [7] Journal "Agriculture of Uzbekistan" for the years 2005-2017
- [8] Newspaper "People's Word" for the years 2005-2018.
- [9] The newspaper "Pravda Vostoka" for the years 2005-2018.