

The Negative Consequences of Growing Cotton in Uzbekistan and ways to overcome them

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ABSTRACT

After the collapse of the Soviet Union, along with numerous achievements in the field of cotton growing, Uzbekistan faced with a number of complex problems. While Uzbekistan still has a long way to go in transforming the cotton sector, some signs of improvement can be seen today. This article elucidates eligible ways to combat with the problems of growing cotton in Uzbekistan.

Key words: *cotton sector, territory, geographic features, climate, fertile lands, region, industrialization, collectivization, irrigation system, deterioration of soil structure.*

I. Introduction

The history of cotton growing on the territory of present-day Central Asia goes back several thousand years. However, the production of cotton on an industrial scale occurs at the beginning of the 20th century. Favorable geographic and climatic features - hot and dry climate, wide fertile lands, resources of the Aral Sea, along with age-old farming skills among the local population - laid the foundation for the full-scale development of cotton growing in the region, and, particularly, in Uzbekistan.

During the Soviet period, rapid industrialization and collectivization of agriculture began. It was cotton that played the main role in the program of industrialization and collectivization in Central Asia, and, particularly, in Uzbekistan. New varieties of cotton were bred, factories for its processing were opened, irrigation projects were built to expand the cultivated areas, and jobs were created.

The rapid development of infrastructure projects, in particular sophisticated irrigation systems, have made it possible to transform desert lands into cropland and increase yields. For irrigation of crops, the Kattakurgan reservoir (full capacity 0.9 km³), the Big Fergana (350 km) and Karakum canals (1445 km), the Eskianhor canal (184 km) and many others were built. With the commissioning of the Karakum Canal, the area of land for growing cotton in Uzbekistan alone increased from 1.5 million hectares in 1960 to two million hectares in the 1980s. During the same period, the production of raw cotton almost doubled. In terms of its economic indicators, Uzbekistan was the undisputed leader in cotton production in the Soviet space.

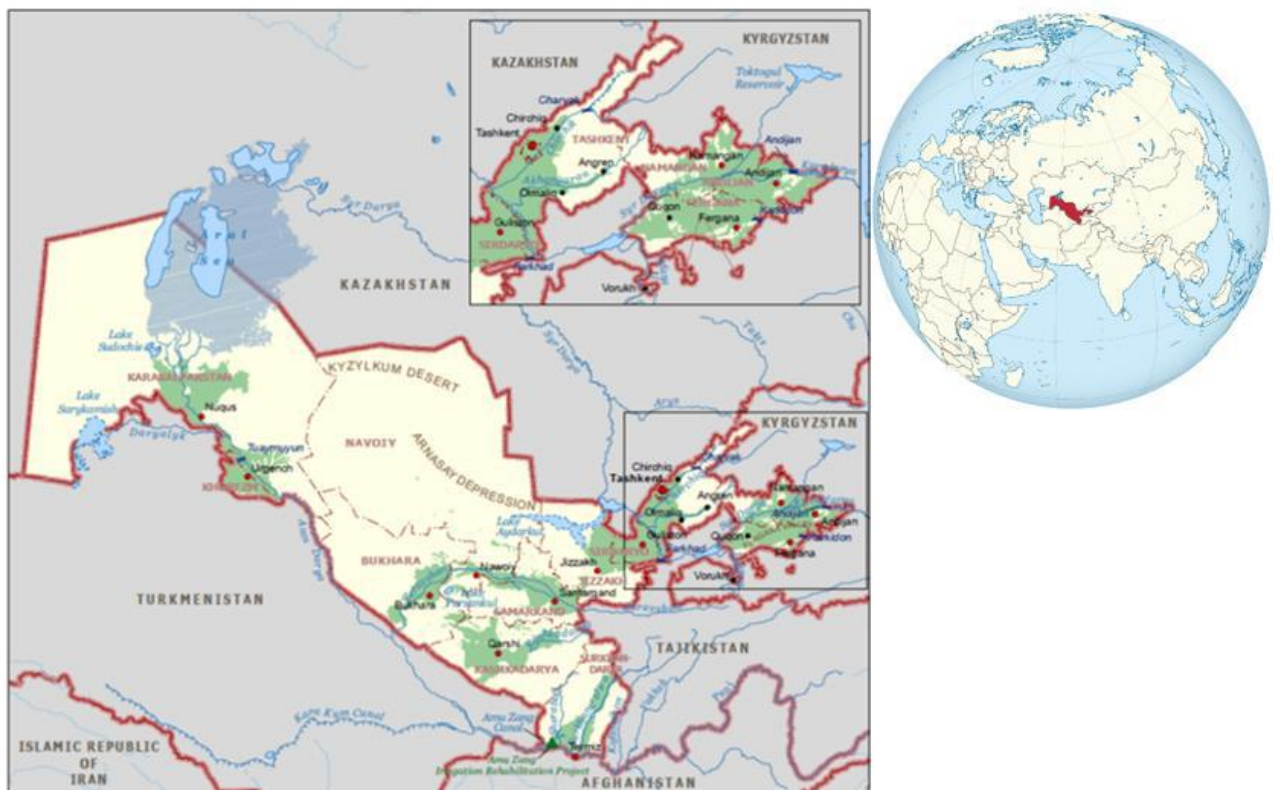


Fig. 1: Map showing the location of the Republic of Uzbekistan (FAO, 2012)

The future of Uzbekistan's water economy is determined by efforts in the field of water resource management and the importance of international cooperation in the use of transboundary rivers. In this case, climate change is an important factor in guaranteeing the supply and security of water in the future.

In this scenario, the decrease in water supply is worrisome due to the reduction in the contributions of rivers and groundwater. Therefore, to meet the economic and environmental needs of water, it is necessary to increase efficiency. The application of integrated water management practices can lead to greater cooperation between different users.

The main source of water resources for irrigation is agriculture, which represents up to 90% of water consumption in the country. Farmers have great potential to increase water use efficiency and on-farm productivity. It is necessary to undertake the improvement and modernization of irrigation infrastructures.

II. Analysis

Efforts to grow cotton on an industrial scale have undoubtedly played a large role in the development of agriculture in Uzbekistan. However, the high performance was based on serious shortcomings.

The increase in the area of sown land and the increased need for irrigation have become the reason for the artificial change in the channel and flow of the main waterways in the region - the Amu Darya and Sir Darya rivers. It is generally accepted that it was the inefficient and excessive use of water resources for cotton cultivation that led to the drying up of the Aral Sea, the volume of whose runoff over several years decreased from 47 km³ / year (1966-1970) to 2 km³ / year (1981-1983). To date, the total volume does not exceed 1.8 km³ / year.

The deterioration of soil structure due to the intensive use of agrochemicals to stimulate cotton growth is a concomitant factor in environmental degradation in the Aral Sea region.

Currently, more than 50% of the irrigated land in Uzbekistan is subject to high salinity, in some places secondary salinity occurs. For Uzbekistan, whose main economic activity is agriculture, the deterioration of soil quality is a serious problem.

In addition, there is an opinion that due to the deterioration of the environmental situation in the Aral Sea region, the number of diseases such as anemia, respiratory diseases have increased, and the number of infant deaths has also increased.

During the Soviet period, the economy of Uzbekistan was based primarily on the cotton industry, as a result of which it suffered colossal losses. Since the degree of utilization of processing facilities did not allow coping with the dynamics of production, a significant share of raw materials was exported at reduced prices to other republics of the union for further processing and, as a result, the added value received remained outside Uzbekistan. Due to the lack of light industry capacity, most of the textile products for domestic consumption were imported from outside.

The first president of Uzbekistan, Islam Karimov said that the economy was losing large profits: "We get 84% of the labor intensity from growing cotton and only 16% of income from its primary processing. In other Republics that receive it, the proportion is inverse: a ready-made shirt, woven and sewn, say, in Russia, brings colossal profits. "While cotton sector reforms have seemed feasible since independence, the transformation process, given such a rich heritage, is not easy.

The importance of reforming the agricultural sector, in particular the need to diversify production, the current President of Uzbekistan Shavkat Mirziyoyev noted while he was prime minister. "By creating new industries and increasing the capacity for processing cotton fiber, the government will continue its policy of reducing exports," he said.

If in 1970-1990 the annual production of raw cotton averaged 5 million tons, then, according to various sources, currently Uzbekistan produces about 3 million tons of raw cotton and about 1 million tons of cotton fiber. However, despite the gradual decline in production, Uzbekistan today remains one of the largest cotton producers in the world market. The republic ranks sixth in world production and fifth in world exports of cotton fiber. Over the past two years, Uzbekistan has consistently maintained its 7 percent share of the global cotton fiber market, exporting approximately 50% of the produced cotton fiber annually.

Nevertheless, Sh.Mirziyoyev continued the reforms initiated by Karimov and proposed a program that provides for a gradual reduction in cotton sowing in favor of other crops. Within the framework of this program in 2017–2020 it is planned to free 18 thousand hectares of cotton fields for the cultivation of less labor-intensive and more productive crops, vegetables and fruits, as well as for the creation of conditions for processing and storing agricultural products. Moreover, a reduction in cotton crops and an increase in areas for other crops will allow Uzbekistan not only to develop new foreign markets, but also, using the example of grain, to self-sufficiency in food.

III. Discussion

This imperial policy, aimed at strengthening the cotton monopoly, had a serious impact on the general state of agriculture in the republic. For example, in the early 1950s, Uzbekistan failed to bring its arable land to pre-war levels. The gross yield of grain crops fell from 615.1 thousand tons in 1940 to 443 thousand tons, grapes from 1302 thousand tons to 840 thousand tons, melons from 331.9 thousand tons to 153 thousand tons. At present, the yield of vegetables is 152 tons per hectare. and 73 t. ha, melons from 84 t to 66 t. etc. A clear manifestation of the policy of achieving an increasing gross yield of cotton was the rapid establishment of cotton farms in the newly developed lands.

The situation was exacerbated by shortcomings in technical policy. As cotton growing is a

priority, the governing bodies have focused on complex mechanization of cotton growing. As a result, the level of mechanization of vegetable growing was only 24%, haymaking - 24%, on livestock farms and cattle breeding complexes - 39%, poultry - 42%, etc.1. During these years, 90% of agricultural workers in Uzbekistan were mainly engaged in physical labor. The scientific and technical potential of the republic was not used enough

It should be noted that in addition to purely economic reasons for reforming the cotton industry, there are other, no less important. Among the main reasons, it is necessary to highlight the acute shortage of water, which in Soviet times was provided thanks to the centralized irrigation system. Another problem is that the areas on which cotton was grown for decades have fallen into disrepair.

Energy, fuel, machinery and equipment, labor resources, finished products and financial resources were used independently. Thus, 9.6% of material costs were about 95% of the cost of raw cotton. As a result of unrealistic production, the cotton farmer worked 12-16 hours a day, on weekends and holidays. Because in the system of remuneration there was no economic correlation between the amount and quality of work performed. For example, experts estimate that in order to meet the daily norm during the cotton harvest, a farmer has to lift and throw a heavy hoe 50,000 times, but only 159 times to earn 1 penny for hoeing. Per capita consumption of food reform has been declining year by year. For example, in 1980-1987, meat and meat products fell from 31 kg to 26 kg, vegetables and melons from 177 kg to 172 kg, potatoes from 29 kg to 26 kg, respectively, and the situation with the production of other consumer goods is even worse. was low. In 1988, the planned production of 51.6 thousand tons of melons, 126.4 thousand tons of fresh fruits and vegetables decreased by 17-23%. In general, Uzbekistan did not deliver 132.9 thousand tons of raw fruits or grapes, or 14th in the former Soviet Union, meeting the needs of its population with fresh fruits and vegetables by 57%. The rural population consumed 2.5 times less cereals and legumes, almost 3 times less potatoes, 3.5 times less milk and dairy products, and 25 kg less vegetables and melons than in urban areas of Uzbekistan. Compared to the former Soviet Union, it consumed 5.6 times less meat, dairy products - 3 times, eggs - 3.5 times, potatoes - 4.7 times, fish - 21.6 times less. In order to justify the violence of the cotton monopoly and ideologically stigmatize the Uzbek people, the Center's politicians recognized the economic and social backwardness of Uzbekistan and other neighboring Republics and stressed the need for its rapid development. However, the interests of the center prevailed in allocating funds from the budget, following the good example of the deceived child.

Using various means of deception and intimidation to influence, they tried to inculcate in the public mind the idea that "cotton is the inter-terminal duty of Uzbekistan", and on this basis the artificially formed cotton monopoly ruined the land of Uzbekistan and deprived its people. For example, per capita income in 1989 in the former Soviet Union was 125 sums, in the Baltic republics - 200 sums, in Uzbekistan - 71 sums. In fact, the per capita income is less than 71 sums. It made up about 40% of the republic's population.

In the Decree of the President of the Republic of Uzbekistan "On measures for the efficient use of land and water resources in agriculture" (NAPM, 2020), approved in 2019 as a future objective the introduction of new irrigation technologies on 253,381 hectares for the period 2019-2022.

Forecast indicators for the introduction of drip irrigation in cotton fields in the districts of Bukhara region in 2019 in hectares

Districts	Total cotton fields	Forecast indicators of drip irrigation
Bukhara	8.558	400
Vobkent	9.560	400
Jondor	11.910	400
Kogon	6.722	500
Karakul	8.758	600
Korovulbozor	4.965	300
Olot	7.851	1.000
Peshku	8.120	500
Romitan	10.845	1.000
Shofirkon	92.47	400
Gijduvon	9.744	500
Bukhara city	12.050	0
Total in region	96.400	6.000

As a result of this program, the area of critical groundwater levels up to 2 meters has been reduced by 364,6 thousand hectares. In the Republic of Karakalpakstan, this figure decreased by 59,1 thousand hectares, 45,6 thousand hectares in the Syrdarya region, 46,2 thousand hectares in the Tashkent region and 34,4 thousand hectares in the Bukhara district (CAWater-IS, 2020). This decrease in water levels has allowed an increase in cotton yields from 2 to 4 quintals per hectare and in cereals from 4 to 6 quintals per hectare (MWR, 2020).

Conclusion

The cotton industry, which has remained under strict government control for a long time, is now undergoing a radical transformation. The further development of the industry will be facilitated by the timely implementation of the undertaken strategic directions. The preconditions for economic liberalization and agricultural diversification could radically change cotton growing in Uzbekistan. Otherwise, there is a high probability of a repetition of the collapse of attempts to reform the industry without any qualitative changes in its features.

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