

Cotton textile industry

*Tolibjon Khalikov*¹, *Yurii Prus*^{2*}, *Tetiana Chelombitko*³, *Komil Urazov*⁴, *Uchkun Shirinov*⁵, and *Vadym Ratynskiy*⁵

¹Samarkand Institute of Economics and Service, Department «Accounting and audit in other industries», 9 Amir Temur St, 140100 Samarkand, Uzbekistan

²Dmytro Motorny Tavria State Agrotechnological University, Department of Entrepreneurship, Trade and Stock Exchanges, Bohdana Khmelnytskoho Ave, 18, 72312 Melitopol, Ukraine

³Institute of International Education for Study and Research of V.N. Karazin Kharkiv National University, Kharkiv, Ukraine

⁴Samarkand institute of Economics and service, 9 Amir Temur St, Samarkand 140100, Uzbekistan

⁵Department of "Accounting in other sectors and Auditing", Samarkand institute of Economics and service.

Abstract. The cotton and textile industry is one of the most important sectors of the domestic economy, acting as a locomotive for the development of regions, creating production facilities in rural areas, providing employment for the population, as well as increasing exports. Therefore, at the initiative of the head of our state, at the new stage of reforms, the cotton-textile front was radically updated and a cluster system was introduced. It should be noted that this innovative method, combining agriculture and industry, quickly justified itself. As the production of important industrial raw materials increased and their quality improved, complete processing of the fiber within the country was achieved. At the same time, 134 clusters operating in the system of the Association of Cotton and Textile Clusters of Uzbekistan became the main force. Currently, the clusters are actively engaged in the cultivation, harvesting, primary and deep processing of raw cotton, and the export of cotton.

1 Relevance of the research topic

Indeed, on the basis of the cluster method, about 350 large plants were put into operation. As a result, the yarn recycling rate has been increased by up to 45 percent. This figure is expected to reach 100 percent in the near future. Because the head of our state set the task for the clusters to export finished products with added value, and not semi-finished products. Decree of the President Sh.M.Mirziyoyev "On measures to support the activities of cotton-textile clusters, radical reform of the textile and clothing and knitwear industry, as well as further increase in the export potential of the sphere" dated January 10, 2023, of course, will serve as an important guide to action to achieve this goal.

* Corresponding author: tov.kalliston.dnipro@gmail.com

1.1 The purpose of the study

Is a theoretical substantiation of the conceptual aspects of the formation and development of regional industrial clusters and the development of practical recommendations for the effective functioning of the textile and clothing cluster in a competitive environment.

In accordance with the purpose of the study, the following tasks are defined:

- research and clarification of theoretical approaches to the definition and typology of constructing regional industrial clusters;
- assessment of the prerequisites for the creation of regional industrial clusters in the regions of Uzbekistan, taking into account the analysis of economic potential and determinants of the formation of competitive advantages of the region;
- identification of the main directions of formation and development of the textile and clothing cluster in the region and assessment of the role of the state in this process;
- development of an organizational and economic mechanism for the creation and operation of a textile and clothing cluster in the region;
- determination of the main directions of state support in the process of forming a regional textile and clothing cluster.

The subject of the study is the socio-economic and industrial relations that arise in the process of developing an integration form of cooperation in the context of the formation of a regional textile and clothing cluster.

The object of the study was regional textile and clothing enterprises that can initiate the process of cluster formation.

The theoretical and methodological basis of the study was the works of economists, revealing the patterns of formation and development of regional clusters.

2 Research methodology

In the process of work, general scientific methods and techniques were used, in particular, scientific abstraction, analysis and synthesis, modeling, statistical groupings, comparisons, classifications, expert assessments, questionnaires, etc.

The scientific novelty of the research is as follows:

- clarified the essence of the concept of an industrial cluster as a special type of organization of industrial, technological, scientific and commercial relations between enterprises of the industry, the formation and sustainable development of which is due to the presence of certain prerequisites that are of direct importance when choosing the types and forms of creating future clusters that optimally correspond to the vectorial inertia of the flow of social economic processes originating from the successive signs of production relations formed between the business structures of the region at a certain historical stage;
- the typology of building regional textile and clothing clusters has been systematized on the basis of identifying the basic principles and conditions for their creation and sustainable operation, aimed primarily at activating and improving the innovation environment of the region based on the implementation of the priorities of the innovative economy, contributing to strengthening the competitive advantages of business structures and increasing their export potential, taking into account more efficient use of natural and economic potential;
- the prerequisites for the formation of a regional textile and clothing cluster in Uzbekistan are highlighted, taking into account the analysis of the economic potential and assessment of the competitive advantages of the region;
- the main trends in the development of the textile and clothing industry, which determine the conditions and priorities for the formation of cluster formations in the region;

- indicators of economic, budgetary and social efficiency of the formation of a textile and clothing cluster based on an integral assessment of the efficiency of the scale of production processes in Uzbekistan;
- the main directions of formation and development of the textile and clothing cluster in the region are identified, taking into account the rationale for the main directions of state support for the textile and clothing cluster during its formation and development;
- organizational and economic mechanism for the formation of a regional textile and clothing cluster based on improving the interconnection schemes of basic enterprises in the industry, government bodies and research institutions;
- priorities for creating an institutional environment for cluster development, taking into account the formation of a favorable investment climate, investment support for cluster projects, stimulation of innovation and deepening cooperation within the cluster in the field of research and development work;
- scientific and practical recommendations are proposed for the formation of the organizational structure of the textile and clothing cluster, taking into account the optimal principles of interaction between its participants in creating the necessary conditions for the successful functioning of the subjects of the textile and clothing cluster and organizations serving them.

3 The practical significance of the study

The implementation of the proposals contained in the work on the formation and development of a regional textile and clothing cluster will contribute to the optimization of state policy in the development of cooperative ties between regional enterprises, the development of a state concept for the formation of an effective mechanism for managing the development of industrial clusters in the regional economy. The theoretical provisions and conclusions contained in the work can be used in the educational process when giving lectures on the courses "Regional Economics", "Industrial Economics", "Economics of Enterprises and Industries", "Sustainable Development", etc.

The cotton-textile clusters were created on a first-come, first-serve basis. Textile enterprises initiate the creation of clusters by presenting investment proposals to regional khokims, who review and pre-approve them. Their final approval is taken by the Cabinet of Ministers. Priority is given to investment proposals from textile enterprises in advanced cotton processing, with commitments to invest in supporting farmers to increase yields, improve cotton quality, improve soil fertility, manage water resources and introduce mechanization.

The number of clusters grew exponentially, from 15 in 2018 to 75 in 2019. Most of the clusters were created in the form of "contract farming" - the organization of cotton and textile production. In this form, the textile enterprises that organize the cluster enter into contract agreements with farmers for the production of raw cotton. But many textile enterprises lease part of the land from the state directly, as part of "direct farming" (is a form of cluster where a textile enterprise leases land from the government and grows raw cotton itself, hiring labor), which is 10-20% of the total cultivated area of the cluster. Only 5-6 clusters have organized clusters in the form of "direct farming", but the vast majority of clusters work with farmers. In 2019, cotton-textile clusters worked in 86 districts on 63% of the sown area under cotton.

In addition, in the 40 areas assigned to clusters, average yields were higher than in the last 10 years. This is a great achievement for Uzbekistan, a country with limited land and water resources. According to the Ministry of Agriculture, the average yield of raw cotton was 2.89 tons/ha, which is 0.53 tons/ha higher than outside the clusters and 0.77 tons/ha higher than the average in 2018 (In global comparison, this yield is still low. Cotton

exporting countries like Uzbekistan have higher average yields: 3.1 tons/ha in the US, 4.4 tons/ha in Egypt, 5.3 tons/ha in Turkey, 5.6 tons/ha in Brazil and 5.8 tons/ha in China). In 34 clusters the yield was over 3.0 tons/ha, and in 9 clusters it was over 3.5 tons/ha. The increase in yields was the result of significant private investment in the introduction of modern technologies and adherence to advanced agricultural practices. Many clusters, mostly on land leased for direct farming, have analyzed their soils and updated agrochemical maps on an area of 149,200 ha. Organic fertilizers were used on 138,200 hectares, deep plowing on 167,800 hectares, drip irrigation on 9,400 hectares and laser leveling for more efficient planting and water use on 10,100 hectares. All these modern technologies were introduced thanks to the clusters, although this was still at a slow pace, given that in 2019 the area under cotton in the clusters was 0.6 million hectares.

4 Results of the study and their discussion

Some clusters increased the wages of raw cotton pickers. To motivate pickers and reduce the use of forced labor, some clusters paid additional wages from their own funds.

Clusters invested in the mechanization of cotton production and harvesting. Mechanized harvesting increased from 1% in 2018 to 5% in 2019. This is still a very low figure, especially compared to the Government's plan to increase the share of mechanized cotton harvesting to 30% by 2026.

The clusters helped improve the efficiency of cotton fiber production and reduce raw cotton losses. State-owned cotton gins are transferred to clusters, which eventually privatize them. Much of the equipment in these factories is outdated. Eight clusters have already replaced hardware and many more are planning to do so in the near future. The average yield of cotton fiber at obsolete factories in Uzbekistan is 30-33%. New investments increase it to 40%, reducing the loss of raw cotton by 7-10% points.

Many clusters have invested in cotton processing. Twenty-nine clusters invested in 42 new projects, increasing 180,000 tons of cotton yarn production capacity, 11,300 tons of knitted fabric production capacity, and 32.2 million units of textile and clothing products. These investments helped create 11,000 new jobs, on top of the existing 160,000 jobs in the textile and clothing industry. (According to Uztekstilprom's calculations, every million dollars of investment creates 40 new jobs in the textile industry. This is comparable to the number of jobs that such investment could create in the horticulture sector and far more than in most other sectors of the economy). Cotton textile factories are located throughout the country, creating decent jobs near small towns and rural areas. This pattern is much more sustainable than that prevailing in other developing countries, where the textile industry tends to be concentrated around capitals and major cities, often resulting in long commutes and harsh living conditions.

Private and public investment has led to a significant increase in exports of higher value (higher value added) products. In 2005-2010 exports of cotton fiber exceeded exports of processed cotton products several times. In 2018-2019 the situation has changed dramatically. In 2018, the export of cotton processing products amounted to \$1.54 billion against \$0.22 billion of cotton fiber exports. The textile export target for 2025 is \$7 billion. More importantly, exports have shifted from low-value yarns to higher-value textile products. In 2005-2015 the average share of yarn in total yarn and textile exports was 64%. In 2018, this share decreased to 47%, increasing slightly in 2019. This is another transformational achievement that would not have happened so quickly without clusters.

5 Conclusion

The question of the future of cotton-textile clusters in Uzbekistan remains open. They were indeed important in eliminating the state plan and order in cotton growing, and in maximizing economic benefits along the entire cotton value chain. Clusters are organized to benefit both producers and processors. On the one hand, producers can benefit from guaranteed market access, advisory services and modern technology. On the other hand, textile workers get access to raw cotton in the agreed quantity and quality. If this "contract" is violated, in a situation where the Government is no longer involved in the work of the cotton industry, the cluster model will start to have problems. In this regard, the main risks to be mitigated by:

- a) enhancing the reputation of cluster organizers as responsible investors;
- b) providing better quality and appropriate state support to the sector. The solution of these issues will determine the future of the cluster model in Uzbekistan.

To be responsible investors, it is necessary that cluster organizers work more on the following:

1. Fulfilling their investment and responsible cotton production commitments: Clusters must meet their investment and compliance obligations related to the sustainable production, processing and development of the cotton value chain. The investment plans of many of them are great, and some may be exaggerated. It is important that the Government monitor the implementation of investment plans and, if necessary, make adjustments to the size of the clusters. Some clusters may be too large in size and must be separated. It would also be good for increasing local competition. In general, compliance with investment obligations and responsible cotton production is an important task for the Government to increase confidence in the clusters.
2. Focus on core business: Cotton textile clusters should prioritize investment in their core business of cotton production and processing. They were created to benefit both cotton growers and processors. However, many clusters, often stimulated by proposals from various ministries and departments, have ambitious plans to invest in everything from cotton processing and textile production to grain storage, greenhouses, vegetable oil production and livestock farms. Such extensive investment plans divert clusters from their core cotton and textile business, increasing the risk of failure and facilitating their long-term dependence on the state budget to finance cotton production and purchases.
3. Providing efficient farm services: Farmers expect technical and financial assistance in exchange for their cotton production work, which generates income for many participants in the value chain. Local and foreign agronomists are already working in many clusters to help farmers master new technologies and farming practices. Other clusters should do the same. It is important to note that this assistance should not look like an order from above: the final decision on which means of production and technologies to introduce should be with the farmers. Particular attention should be paid to improving the quality of seeds: clusters should be involved in the production, harvesting, processing, storage and sale of cotton seeds.
4. Paying a Fair Price for Raw Cotton: Without public procurement prices and without a free market pricing mechanism for raw cotton, farmers and textile mills will have to negotiate the price of raw cotton themselves. Expected prices based on production costs and international prices, which are published quarterly, as specified in Presidential Resolution No. PR-4633, will inform these negotiations. Actual farm cotton prices may be lower or higher than export parity prices depending on the service package provided by the clusters. If services are not provided, there is no reason why the actual price should be below the export parity price. If services are provided, the price may be lower, but the cluster organizers must explain and negotiate with the farmers in order to find a solution acceptable to both parties. Determination of the price of raw cotton is one of the biggest risks for the cluster model, because without financial incentives, farmers will not be

motivated to increase the production of raw cotton and improve its quality, which is an urgent task.

Refraining from using old era restrictions: Government and cluster organizers should refrain from imposing mandatory yields on farmers, for example, minimum yields depending on soil quality, since this would be the same as maintaining a government production plan and using this to terminate a land lease. The minimum or optimal yield calculated in Soviet times is not only outdated, but also does not reflect the real economic and social situation in farms. What is technically optimal may not be economically feasible. Estimates of optimal yields use an ideal scenario for the use of inputs, irrigation, and yield response to applied fertilizers and plant protection products. The reality is often different. With high input prices and poor irrigation, farmers may benefit from lower than technically optimal yields. Soil fertility may be below the estimate made by the State Committee for Land Resources several decades ago. And the quality of fertilizers and other resources may be worse than what is written on the bags with these products. Therefore, the yield in contracting agreements should have an informational, and not an obligatory role, for the failure of which the farmer will have to be responsible.

References

1. Speech by the President of the Republic of Uzbekistan Shavkat Mirziyoyev during a visit to the Chust Textile cluster in Namangan region on February 18, 2020. Press service of the President of the Republic of Uzbekistan <http://www.press-service.uz> (Last accessed 13.05.2023)
2. Resolution of the Cabinet of Ministers of the Republic of Uzbekistan No. 397 "On measures for the further development of cotton and textile production" June 22 (2020)
3. Decree of the Cabinet of Ministers "On approval of the Regulations on the procedure for organizing the activities of cotton and textile clusters" No. 733 dated December 4, (2021)
4. Data from the Association of Cotton and Textile Clusters of Uzbekistan.
5. E. A. Abramova, The crisis of the textile industry: self-employment of the unemployed as a "survival strategy", *Technology of the textile industry, Moscow*, **5**, 8-10 (2011)
6. S. E. Ageeva, About the subject of cluster management, *Economics and Entrepreneurship, Moscow*, **12-2**, 595-598 (2013)
7. A. T. Aimen, Zh. Sh. Kydyrova, G. A. Pazilov, Formation of a cotton-textile cluster in Kazakhstan, *Technology of the textile industry, Moscow*, **6(348)**, 5-8 (2015)
8. N. V. Altukhova, Classification of economic clusters: a new combination of features, *International scientific journal "Symbol of Science", Ufa*, **4**, 59-66 (2015)
9. B. D. Babaev, N. V. Borovkova, M. G. Kazakov, M. V. Medvedeva, A. I. Novikov, Cluster approach and regional points of economic growth: theoretical and methodological aspects. Under the general editing of B. D. Babaev. Ivanovo: Ivanovo State University, 312 (2009)
10. N. V. Borovskikh, Cluster model for the development of light industry in the region, *Problems of Economics and Management, Izhevsk*, **7(59)**, 29-31 (2016)
11. E. F. Gainutdinov, Features of the formation of cluster structures in Russia (methodological aspect), *Finance and credit, Moscow*, **20(596)**, 9 -13 (2014)
12. R. A. Gulyaev, A. E. Lugachev, Kh. S. Usmanov, The current state of production, processing, consumption and quality of cotton products in the leading cotton-growing countries of the world. Tashkent: "Paxtasanoat ilmiy markazi" JSC, 171 (2017)

13. Yu. A. Dmitriev, M. M. Omarov, Improving the efficiency of an enterprise in the light and textile industries based on the creation of industrial territorial clusters, *Technology of the textile industry - Ivanovo*, 4(358), 52-56 (2015)
14. G. E. Zakhidov, Efficiency of cluster organization and management in the light industry of Uzbekistan. dissertation for the degree of candidate of economic sciences (2017)
15. L. O. Kakava, Cluster approach in industry management, *Economic sciences, Moscow*, **3(124)**, 58-62 (2015)
16. N. M. Makhmudov, "Modeling of production and economic processing industries". Monograph, Tashkent, Publishing house "Fan", 184 (1994)
17. D. M. Mirzakhililova, Increasing the competitiveness of Uzbekistan's industry based on clustering (on the example of the textile industry). Dissertation for the Candidate of Economic Sciences
18. M. A. Rakhmatov, B. Z. Zaripov, Cluster - integration, innovation and economic growth. Monograph. "Zomin Nashr", Tashkent (2018)
19. Cotton-Textile Clusters in Uzbekistan: Assessment and Forecast. Report of the World Bank for the Support Program for Socially, Environmentally and Economically Sustainable Cotton Production in Uzbekistan. May 2, 2020
<http://documents1.worldbank.org/curated/en/527551601272645417/pdf/Policy-Dialogue-on-Agriculture-Modernization-in-Uzbekistan-Cotton-Textile-Clusters-in-Uzbekistan-Status-and-Outlook.pdf> (Last accessed 18.05.2023)
20. https://uza.uz/ru/posts/hlopkovo-tekstilnaya-promyshlennost-vazhnye-shagi-na-puti-povysheniya-eksportnogo-potenciala_447087 (Last accessed 19.05.2023)
21. <https://uzptk.uz/ru/opredeleny-novye-vozmozhnosti-dlya-razvitiya-hlopkovodstva-i-tekstilnoy-otrasli/> (Last accessed 18.05.2023)