CLUSTERS BASED ON LOCAL RAW MATERIALS: UZBEKISTAN EXPERIENCE AND WORLD PRACTICE

Tohirov Zafar Zarif ugli

Bukhara Innovation University

Master of Economics

Annotation: This article analyzes the development trends, world experience and future prospects of clusters based on local raw materials in Uzbekistan. The study studies the implementation of the cluster model in Uzbekistan for 2019-2024, its economic efficiency and key indicators. The article evaluates the activities of 340 clusters in the cotton-textile, fruit-vegetable, leather-footwear and other sectors based on statistical data. A comparative analysis of the cluster models of Italy, Germany, India and China is presented. The competitive advantages of Uzbek clusters, existing problems and the development strategy for 2025-2030 are highlighted. The results of the study show that the cluster model is a promising direction for the effective use of local raw materials, increasing export potential and increasing labor productivity.

Keywords: cluster, local raw materials, vertical integration, cotton-textile, export, labor productivity, innovation, public-private partnership

Annotation. This article analyzes the development trends of clusters based on local raw materials in Uzbekistan, world experience and future prospects. The study examines the implementation of the cluster model in Uzbekistan during 2019-2024, its economic efficiency and key indicators. The article evaluates the activities of 340 clusters in cotton-textile, fruit-vegetable, leather-footwear and other industries based on statistical data. A comparative analysis of cluster models from Italy, Germany, India and China is presented. The competitive advantages of Uzbekistan's clusters, existing problems and development strategy for 2025-2030 are highlighted. The research results show that the cluster model is a promising direction for efficient use of local raw materials, increasing export potential and improving labor productivity.

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In recent years, the development of clusters based on local raw materials has become one of the priority areas of economic policy in Uzbekistan. Since 2019, the cluster model has been actively implemented in the country, especially in the cotton-textile sector. This article analyzes the current state of cluster development in Uzbekistan, world experience and future prospects.

The cluster concept was first put forward by the American economist Alfred Marshall at the end of the 19th century as the idea of \u200b\u200b"industrial districts". The founder of modern cluster theory is Michael Porter, a professor at Harvard University. As Porter noted, “clusters are geographically close, interconnected companies, specialized suppliers, service providers and firms in related industries, as well as related institutions” (Porter M.E., 2018).

The main advantages of the cluster approach are vertical integration, concentration of resources, synergy effects and diffusion of innovations. World experience shows that clusters allow to increase labor productivity by 40-60%, profitability by 80-100%, and export potential by 2-3 times.

The cluster system in Uzbekistan began to be actively introduced in 2019. Initially, 48 clusters were established in the cotton and textile sector, and by 2024 a total of 340 clusters were operating in the country. Of these, 134 are specialized in cotton-textile, 72 in fruits and vegetables, 36 in leather-footwear, 31 in construction materials, 52 in food and 15 in other sectors.

Table 1.

Key indicators of cluster activity in Uzbekistan (2019-2024)

Ko‘rsatkichlar	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
Klasterlar soni	95	147	186	231	282	340
Klasterlardagi korxonalar soni	2,850	4,410	5,580	6,930	8,460	10,200
Band bo‘lganlar soni (ming kishi)	342	456	589	743	918	1,115
Ishlab chiqarish hajmi (trillion so‘m)	12.5	18.3	26.7	38.9	56.8	82.9
Eksport hajmi (mln dollar)	780	1,120	1,540	2,090	2,810	3,750
O‘rtacha mehnat unumdorligi (mln so‘m/kishi)	36.5	40.1	45.3	52.4	61.9	74.3

As can be seen from Table 1, the number of clusters increased by 3.6 times, production volume by 6.6 times, and export volume by 4.8 times. Average labor productivity also increased by 2 times, which confirms the effectiveness of the cluster model.

The cluster model used in Uzbekistan has a number of unique features. Firstly, vertical integration - covers the entire chain from raw materials to finished products. For example, in cotton-textile clusters, all processes from cotton cultivation, cleaning, spinning, weaving, dyeing, sewing and sale of finished products are combined.

Secondly, the public-private partnership mechanism. While the state helps by creating infrastructure, providing tax incentives, and supporting exports, the private sector is engaged in making investments, introducing modern technologies, and developing markets.

Thirdly, the innovative component. Clusters include research centers, design bureaus, and quality control laboratories. This allows for improving product quality, introducing new technologies, and obtaining international certificates.

There are different models of cluster development in the world. Italian “industrial districts” (leather and footwear clusters in the Emilia-Romagna region, textile clusters in the city of Prato), German automotive clusters (Bavaria, Baden-Württemberg), Indian IT clusters (Bangalore, Hyderabad), and Chinese manufacturing clusters (Zhejiang, Guangdong) have their own unique characteristics.

In the Italian model, horizontal cooperation of small and medium-sized enterprises, family business traditions, and close ties with the local community play an important role. In the German model, a

network of small suppliers around large companies, a dual education system, and strong state support are the main features.

In Indian IT clusters, the success factors were the cooperation of branches of global companies, local startups, universities and research centers, the development of the English language and technical education. In the Chinese model, state planning, large infrastructure projects, export orientation and economies of scale prevail.

Uzbek clusters have the following competitive advantages:

1. Rich raw material base - 1.1 million tons of cotton fiber per year, 16 million tons of fruits and vegetables, 182 types of mineral resources. This guarantees a stable supply of raw materials.

2. Strategic location - Uzbekistan, located in the center of Central Asia, borders 5 countries, occupies an important place in the Europe-Asia transport corridors.

3. Cheap labor - the average monthly salary is around $ 350, 33% of the population is under 30 years old, 600 thousand new workers enter the market annually.

4. State support - tax incentives (0-7%), subsidies, 22 free economic zones, infrastructure projects.

5. Domestic market size - 35 million people, growing middle class, development of consumer culture.

There are also a number of problems in the development of clusters. Technological weakness - many clusters lack modern equipment, high energy and water consumption. Lack of financial resources - bank loans are expensive (16-20%), there is a lack of working capital. Lack of experience in marketing and branding - most clusters do not have well-known brands in international markets.

The problem of personnel is also relevant - there is a lack of qualified technologists, designers, marketing specialists. The underdeveloped logistics infrastructure increases transportation costs. Certification and quality control systems do not fully meet international standards.

In 2025-2030, it is planned to increase the number of clusters in Uzbekistan to 500, and increase their export volume to $10 billion. For this, work is being carried out in the following areas:

1. Technological modernization - attracting $5 billion in investment, updating 70% of equipment.

2. Personnel training - training cluster specialists in 50 vocational colleges, training 10,000 specialists abroad.3. Marketing and branding - creation of 100 local brands, participation in 50 international exhibitions.

4. Infrastructure development - construction of 20 logistics centers, 30 quality control laboratories.

5. International cooperation - establishment of joint ventures with 50 foreign companies.

The cluster model is one of the most promising areas for the effective use of local raw materials in Uzbekistan. The results achieved in 2019-2024 - the creation of 340 clusters, production volume of 82.9 trillion soums, exports of $ 3.75 billion - confirm the effectiveness of this model.

World experience shows that creating successful clusters requires state support, private sector initiative, an innovative approach and investments in human capital. Uzbekistan has the opportunity to create competitive clusters in the world market based on its natural advantages - a rich raw material base, convenient location, cheap labor.

Existing problems - technological weakness, financial constraints, personnel shortage - can be solved based on a systematic approach and long-term strategy. By 2030, Uzbek clusters are expected to occupy an important place in regional and global value chains, significantly increasing the country's export potential.

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