

# Sectoral and Regional Characteristics of the Chemical Industry in Uzbekistan

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**ABSTRACT:** The article examines the branch and regional structure of the chemical industry of the Republic of Uzbekistan. In it, scientific conclusions, proposals and recommendations were developed based on the economic geographical analysis of the main changes in the chemical industry sector and territorial structure of the republic in 2016-2020.

**KEYWORD:** chemical industry, industry and regional composition, chemical industry product volume, product share.

**Introduction.** In recent years, special attention has been paid to the rapid development of the chemical industry among the industrial sectors in Uzbekistan. In particular, in the further development of this network, taking into account the natural, socio-economic capabilities and local characteristics of the regions, many reforms are being implemented to improve the territorial structure by locating chemical enterprises and significant positive results are being achieved. For example, the Decree of the President of the Republic of Uzbekistan dated January 28, 2022 No. PF-60 "On the Development Strategy of New Uzbekistan for 2022-2026" aims at "Development of the chemical and gas-chemical industries and increasing the level of natural gas processing from 8% to 20%" important tasks such as producing products worth 2 billion US dollars in the chemical industry" [1]. In this regard, research aimed at studying the main changes by observing the changes in the branch and regional structure of the chemical industry of Uzbekistan is of great importance.

**The level of the topic's research.** A number of studies have been carried out and studied on a large scale by scientists of Uzbekistan, the CIS and abroad, with the problems of the development of industrial sectors and the improvement of the territorial structure. Formation and development of industrial nodes in Uzbekistan, industrial production, its territorial organization, theoretical and practical issues related to its specific problems K.N. Bedrintsev, N.N. Sultonov, S.K. Ziyodullayev, T. Tajimov, A.N. Ro'ziyev, A.S. Soliev, E.K. Umarov, O. Abdullayev, S. Xaydarov, L. N. Erdanov, H.S. Mirzaakhmedov, H.M. Abdunazarov, D.R. Rozmetov, A.J. Siddikov, Sh.S. Jorayev [2, 3, 4, 7, 11, 12, 15]. In particular, significant work was carried out on issues of territorial organization of industry after independence. In particular, the research conducted by S. Xaydarov is also of great importance. He tried to explain the formation and development of industrial nodes in Uzbekistan using the example of Fergana economic region. In his work, the scientist determined the limits of the formation and development of industrial nodes in the conditions of the densely populated Fergana

Valley of the region. In the study, he identified the main socio-economic, demographic, geoeological problems of the development of industrial nodes and evaluated the development of cities with points. As a result of his studies, he suggests improving specialization in the formation of industrial centers, taking into account the local conditions and the transition of the republic to market relations, mentions the need to unite enterprises of different sizes, including "small industry" [15].

H.M. Abdunazarov studied the issue of territorial organization of agricultural products processing industry on the example of Surkhandarya region. In the research, the development of industrial sectors processing agricultural products in the Surkhandarya region, which has a low industrial potential and at the same time is specialized in agrarian economy and whose population is growing relatively fast, is expressed in the conditions of market relations. Also, for the first time in economic and social geography, he studied the consumption factor based on the agroclimatic conditions, demographic situation, economic geographical location and geopolitical position of the region [5].

The problems of the development of the textile industry of Uzbekistan and the improvement of the territorial structure carried out by D.R. Rozmetov are also significant in that they are studied in the context of the transition of the national economy to market relations. In it, among other things, the world experience of the textile industry and the characteristics of development in Uzbekistan, sectors and territorial structure, and the level of specialization are researched. The textile industry of the republic is studied in terms of energy production cycles. At the same time, the main problems in the country's textile industry were identified through sociological research, and future directions of development were determined [12].

Sh.S. Joraev, focusing on the regional characteristics of the development of Uzbekistan's industry, studied its problems based on the analysis of the changes in the branches and territorial structure of the industry in the context of the diversification of the national economy of the republic. The scientist justified the improvement of the regional structure of the republic's industry by taking into account the economic resource potential of the regional organization of the republic's industries and the local factors affecting the development of the industry [6, 7].

Thus, without denying the contributions of the above-mentioned scientists to the development of the industrial sector, it can be said separately that in their studies, the issues of developing the current digital economy of the Republic of Uzbekistan and the development of the chemical industry in the production of competitive products and improving the territorial structure were not sufficiently studied. In the conducted research, special attention is mainly paid to these cases.

**Purpose of the research.** The aim is to develop scientific conclusions on improving the territorial structure of the chemical industry of Uzbekistan by studying branch and regional changes.

**Main part.** It is known that the chemical industry is a branch that includes the process of producing various products from hydrocarbon, mineral and other raw materials through chemical and physical processing [3, 6, 8, 9, 10]. It contains everything from saturated and unsaturated hydrocarbons, alcohol and their various derivatives, amino acids, organo-sulphate and other organic and inorganic compounds, caustic soda, lacquers, food additives, polymer products, vitamins, provitamins, perfumery and perfume soap, skin care many chemical industrial products such as cosmetic preparations and detergents, rubber and plastic products, mineral fertilizers are created. It is one of the sub-sectors that produce semi-finished products and finished products, characterized by a diverse set of products with value chains, that is, chemical products go through many stages of processing and or processing before moving to other sectors or reaching the final consumer. For example, as a result of pyrolysis of petroleum fractions and catalytic dehydrogenation of propane, propylene is produced, and then it is converted into a polypropylene product during the polymerization process [13, 14].

In recent years, the chemical industry has played an important role in the development of the national economy of Uzbekistan. For this reason, in a historically short period of time since independence, a lot of changes have taken place in the chemical industry. In particular, during 2016-2020 [16, 17], the branch and territorial composition of the main types of chemical products, production of rubber and plastic products, coke and oil processing, main pharmaceutical products and preparations in the republic's chemical industry changed from year to year. This can also be seen by observing the data presented in Table 1-2-3. Currently, the fertilizer production industry is well developed in Uzbekistan as part of the production of the main types of chemical products.

**Table 1. Sectoral and regional structure of the production of the main types of chemical products, rubber and plastic products in the Republic of Uzbekistan (in billion sums)**

Areas	Production composition	Years			
		2016	2017	2018	2019
Republic of Karakalpakstan	Polyethylene	327,1	377,9	352,6	362,1
Bukhara	synthetic detergent	15,6	15,9	18,1	21
Jizzakh	synthetic detergent	1	0,6	0,8	0,4
Kashkadarya	mineral fertilizers	138	168	182,4	199,1
	Polyethylene	138,1	136,4	135,1	134,7
Navoi	sulfuric acid	508,5	514,1	530,3	517,7
	synthetic ammonia	427,5	382,8	409,6	458,1
	mineral fertilizers	259,8	226,8	234,5	251,4
	техник туз	43,9	42,5	61,5	87,6
Samarkand	mineral fertilizers	17,8	8,9	7,4	5,5
	техник туз	0,1	0,2	0,05	0,1
Tashkent	sulfuric acid	1009,6	905,8	999,9	1047,8
	synthetic ammonia	506,9	522,9	528,4	492,8
	mineral fertilizers	452,1	430,1	461,9	431,2
	synthetic detergent	10,9	11,6	14	14
Fergana	synthetic ammonia	452,5	384,3	337,8	408
	mineral fertilizers	358	308,1	284,6	329,7
Tashkent city	synthetic detergent	17,1	13,8	12,6	14,6

Note-1: Non-producing regions are not included in the table. The table was compiled by the author based on the information of the State Statistics Committee of Uzbekistan.

In particular, if we pay attention to the regional structure of this industry (sulfuric acid, synthetic ammonia, mineral fertilizers and technical salt), it can be observed that they are developing mainly in Tashkent, Fergana, Navoi, Kashkadarya and Samarkand regions. The regions of Karakalpakstan and Kashkadarya are the developed areas of production of rubber and plastic products, especially polyethylene industry. Production of synthetic detergents is developing in Tashkent city, Tashkent, Jizzakh, Bukhara regions (Table 1).

We can see that the sectoral and regional composition of the production of coke and oil refining products, presented in Table 2 below, is also developing in its own way (Table 2). In particular, liquefied propane and butane are sold in Kashkadarya, Bukhara and Surkhandarya regions, diesel fuel in Bukhara and Fergana provinces, oil bitumen in Fergana and Surkhandarya provinces, other motor fuel (except gasoline and aviation gasoline) and liquid petroleum fuel (fuel oil) not included in other groups in Bukhara and Fergana provinces. is being produced.

**Table 2. Industry and regional structure of production of coke and oil refining products in the Republic of Uzbekistan (in billion sums)**

Areas	Production composition	Yaers			
		2016	2017	2018	2019
Bukhara	liquefied propane and butane	7,5	8,7	8,6	12,3
	diesel fuel	543,4	589,2	594,5	725,4
	other motor fuel (except gasoline and aviation gasoline)	821,5	794,1	710	751,2
	liquid petroleum fuel (fuel oil) not included in other groups	75,8	77,9	91	80,8
Kashkadarya	liquefied propane and butane	618,3	607,1	626,5	634,8
Surkhandarya	petroleum bitumen	56,3	51,6	53,2	55
Fergana	liquefied propane and butane	7,0	10,7	12,4	6,3
	petroleum bitumen	95,7	87,8	95,4	69,1
	diesel fuel	427,1	340,9	473,5	292,6
	other motor fuel (except gasoline and aviation gasoline)	312,8	310,2	437	265
	liquid petroleum fuel (fuel oil) not included in other groups	16,9	11,3	31,2	15,9

Note-2: Non-producing regions are not included in the table. The table was compiled by the author based on the information of the State Statistics Committee of Uzbekistan.

If we pay attention to the industry and regional structure of the production of the main pharmaceutical products and preparations in the Republic of Uzbekistan presented in Table 3 below, this industry is considered one of the youngest and currently rapidly developing chemical industries in our republic. The most developed centers of this network currently correspond mainly to Syrdarya, Namangan and Tashkent regions (Table 3). At the same time, it is developing in Tashkent city, Fergana, Andijan and Navoi regions.

**3-жадвал. Ўзбекистон Республикасида асосий фармацевтика маҳсулотлари ва препаратлари ишлаб чиқаришининг тармоқ ва ҳудудий таркиби (млрд. сўмда)**

Areas	Production composition	2016	2017	2018	2019
Andijan	medications that do not contain hormones or antibiotics	106,1	116	117,2	74,6
Navoi	medications that do not contain hormones or antibiotics	134,5	125,7	116	42,4
Namangan	medications that do not contain hormones or antibiotics	2090,8	2222,4	3118,4	7250,4
Syrdarya	medications that do not contain hormones or antibiotics	3808	2075,8	6091,8	9917,8
Tashkent	medications that do not contain hormones or antibiotics	1694,4	3367,6	3488,3	656,7
	medications containing corticosteroid hormones	20,7	13	13,7	46,6
Ferghana	medications that do not contain hormones or antibiotics	32,0	32,3	57,8	132,4
	medications containing	3,8	4,3	4,2	5,8

	corticosteroid hormones				
Tashkent city	provitamins, vitamins and their derivatives	176,3	164,1	116,3	211,8
	medications that do not contain hormones or antibiotics	14237,2	13347,9	16407,2	18878,9
	medications containing corticosteroid hormones	2,1	3,6	2,9	29,2

Note-3: Non-producing regions are not included in the table. The table was compiled by the author based on the information of the State Statistics Committee of Uzbekistan.

**Summary.** Based on the studies, it can be concluded that in recent years the branch and regional structure of the chemical industry has changed and improved in our republic. Including:

- If we pay attention to the regional composition of the production of sulfuric acid, synthetic ammonia, mineral fertilizers and technical salt in the production of the main types of chemical products, it can be observed that they are developing mainly in Tashkent, Fergana, Navoi, Kashkadarya and Samarkand regions;
- In the production of rubber and plastic products, in particular, the polyethylene industry was established in Uzbekistan after independence. Its most developed regions are Karakalpakstan and Kashkadarya regions.
- In the next 10 years, as the youngest industry, among the chemical industries, the pharmaceutical industry also grew rapidly, and the regions of Syrdarya, Namangan and Tashkent are of special importance in its territorial structure.

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