ORGANIZATIONAL AND ECONOMIC ACTUAL STRATEGIES FOR THE FURTHER DEVELOPMENT OF SILK INDUSTRY IN THE REPUBLIC OF UZBEKISTAN

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Abstract: The article is stated that the important role of the sericulture in the agriculture sector of the Republic of Uzbekistan. Outline the reforms in the development of sericulture and actual strategies for the effective management of the sericulture. Analyzed questions of the essential problems that occurred in the silk industry in the country, as well as the current position of the global silk industry in the world. In addition, studied foreign expert's experiences by clustering in the region and organization. Given recommendation for the further improvement of cluster system in sericulture and methods of ensuring necessary conditions to create clusters in the silk industry.

Key words: sericulture, silk industry, actual strategies, reforming sericulture, global silk market, silk production, clusters, geographic territory, group of firms, method of Warde.

1.Introduction.

Silk is considered one of the most valuable natural textile fibers besides cotton and wool. Historical evidence shows that silk was discovered more than 3,000 years ago in China and then in India, from where silkworm rearing spread from there to other parts of the world [1]. From a standard for royalty and special gifts in the old times, nowadays silk is successfully used for producing luxury textiles and fabrics.

Therefore, silk has been found to be effective as impenetrable clothing against insect bites. Traditional uses for silk, ranging from royal wardrobes to silk bedding, have branched out further into many brand new commercial and industrial applications today. Some of these uses are in the electronic industry as insulation coils for wireless receivers and telephones. For instance, medical uses include suture materials and medical dressings. In the automotive industry, silk is also used as component for tires. Military use includes parachutes and artillery gunpowder bags [2].

The sericulture development of the Republic of Uzbekistan has a long history. There is information on existence of sericulture and silk-weaving on the territory of the Republic in the Fergana valley, on sources of the Zaravshan river, and also in the south of the Republic [3]. For 1500 years existed the Great Silk Road form western China to Europe, going through the countries of all Asia and including territory of modern Uzbekistan, especially ancient cities like Samarkand and Bukhara. In territory of Central Asia, especially on a line of the Great Silk Road - Samarkand, Shahrisabz, Bukhara, Turkestan and Fergana valley was widely advanced sericulture, silk-reeling and silk-weaving with application of gold embroidery elements.

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In the beginning of 20st century silkworm eggs were delivered from the countries of Europe, manufacture of cocoons and their processing were carried out by a handicraft way, and the silk fabrics, basically, were bought by foreign firms of the European countries. In our country was absent cocoon-reeling and silk-weaving industries. But, in 1923, after establishment of "Turksilk" company manufacture of own silkworm eggs and after creation of silk-reeling factories manufacture of raw-silk had begun. In 1922, the first scientific station of sericulture in Tashkent was created and later in 1927 the station was transformed into the Central Asian Research Institute of Sericulture (CARIS). Nowadays renamed to the Uzbek Research Institute of Sericulture (URIS).

2.Literature Review. Nowadays**,** the prospect of the clustering process highly appreciated by scientists and researchers in Uzbekistan. Over the last years, the cultivation and processing of cotton was clustering, and it gained popularity. In a future, the clusters are planned in the certain sectors, such as science, textile industry, pharmaceutics, sericulture, computer science, design, ecology, logistic and as well. So, clustering of the economy is becoming a modern trend in the country.

During the last decades, scholars and business people have started paying more attention to the clusters. Companies all over the world have started to recognize the benefits of clusters. Clusters have been used on a national level. While the role of clusters in promoting industrial development has been increasingly recognized in the literature, the locational choice of clusters has rarely been analyzed.

In 1890, Alfred Marshall (1925) claimed that firms cluster to economize on the transport of goods, people and ideas. Adapted to today's world, these three reason for economic agglomeration can be seen as: availability of intermediate/final goods, labor market pooling, and technology spillovers [4]. (Duranton, 2001)

Michael Porter (2000), who has been credited with popularizing the term cluster, defines cluster as" geographic concentrations of interconnected companies, specialized suppliers, service providers, firms in related industries, and associated institutions (for example, universities, standards agencies, and trade associations) in particular fields that compete but also cooperate" [5].

Many authors have presented different ideas about clusters. Martin and Sunley (2003) present ten different ways of defining clusters. One typical alternative definition sees a cluster as "a spatially limited critical mass (that is sufficient to attract specialized services, resources, and suppliers) or companies that have some systematic relationships to one another based on complementarities and similarities."(Rosenfeld, 2002) Doeringer and Terkla (1995) define clusters as a "geographical concentration of industries that gain performance advantages through co-location." [6].

A way to understand clusters would be to follow Jacobs and DeMan's idea, and accept the fact that there are multiple dimensions to cluster relationships, including geography, social distance, technology and production flows. Corthright (2006) argues that clustering is about proximity meaning that business that are closer to one another have advantages that are unavailable to businesses that are farther away [7].

Michael Enright (2002) looks at the question of what dimensions influence when firms should choose to either compete or cooperate. Levels of competition and cooperation vary by industry and region, but in general cluster firms can benefit from cooperation on industry-specific activities while competing on company-specific levels [8]. Michael Enright uses eleven dimensions and characteristics to analyze clusters, while in presenting the evolution or development of a cluster, he five categories which indicate where efforts should be directed in the cluster promotion process.

With all these definitions and dimension of clusters, and given the widely different uses of clusters, confusion is unavoidable in the literature that looks at clusters. It is impossible to

agree on one definition that can be considered universal. However, there is a very good possibility to gather and agree on a range of characteristics that describe and classify clusters.

3.Research methodology. The article is used on the laws of the Republic of Uzbekistan, the resolution of the President of the Republic of Uzbekistan. Analyzed scientific works and publications. The study covered theoretical foundations of the clusters and its features as well as economic, comparative, analytical and statistical analysis, method of Warde.

4.Analisys and Results.

Global silk industry in the world. Silk demand is continuously increasing for producing fabrics and clothes so much desired to be worn both by women and men due to its special fineness, pleasant and delicate touch, resistance, unique shining and elegant appearance. Silk is a luxury natural fiber which can't be compared to synthetic fibers such as polyester and viscose which have become more and more used for textile and clothes due to their lower production cost.

Also, silk is in competition with cotton which at present represents 90 % of the global natural fibers production, while silk represents only 0.2 %. This was caused by the extend of cotton production, the unbalanced demand/supply ratio, the fail of silk industry in Europe and the high growth rate of silk industry in China [9].

The silk market continues to be in a strong competition with the market of super fine synthetic fibers and of other natural fibers whose quality has been substantially improved. After a long period when silk price was low, at present silk price has recovered being higher than USD 55/kg, stimulating the revival of silk cocoon and raw silk production in many countries.

According to ISC statistic's, nowadays, silk is produced in more than 60 countries in the world, most of them being developing countries. The major silk producing countries in the world are: China, India, Uzbekistan, Thailand, Brazil, Vietnam and DPR Korea. The most of the silk products belong to China and India. The remaining 10% of the industry includes sericulture sectors that are found in Uzbekistan, Thailand, Brazil, Vietnam, and North Korea. For instance, China produces over 500,000 fresh cocoons each year, followed by India at 126,000, Uzbekistan at 20,200, and Brazil at 14,000. The global average for silk production when historical numbers are factored into the data is 80,000 tons per year, of which approximately 70% is produced in China [17].

The Asian area is in the top with 90 % of the world mulberry silk and 100 % of non-mulberry silk production. A few other producers are in the Latin America, mainly Brazil, Africa mainly Egypt and Madagascar and in Europe only Bulgaria.

Silk industry is an important branch of agriculture and even of economy in some countries. Also, sericulture can help keeping the rural population employed and to prevent migration to big cities. The silkworm rearing and silk obtaining require simple operations which could be easily made by women and old people.

Actually, silk industry is a job supplier for millions of people preventing and limiting migration to cities. For instance, about 1 million workers are employed in the silk sector in China. Silk industry provides employment to 7.9 million people in India, and 20,000 weaving families in Thailand. In Uzbekistan, about 18, 000 permanent workers are employed in the silk factories as well as seasonal jobs increases by 640,000 people in this sector [20].

If we analysis, there are top 12 producers in the world, in the descending order of silk production performed in the year 2018 and also in the previous years, are the following ones: China, India, Uzbekistan, Thailand, Brazil, Vietnam, North Korea, Philippines, Iran, Bangladesh, Japan and Bulgaria. The market shares of these countries in the world production in 2018 was: China 82.20 %, India 15.74 %, Uzbekistan 0.65 %, Thailand 0.36 %, Brazil 0.33 %, Vietnam 0.27 %, North Korea 0.19 %, Philippines 0.09 %, Iran 0.06 %, Bangladesh 0.02 %, Japan 0.02 % and Bulgaria 0.0046 %.

Therefore, the main silk producer in the world is China, followed by India, and the both countries together produced 97.94 % of the global silk production. In 2018, China leads at

120,000 metric tons of silk produced annually. This is much more than the rest of the world combined producing 78% of the world's silk. Second, only India has a comparably large industry that produces about 35,261 metric tons in annual silk production. Third is Uzbekistan at 1,800 metric tons of silk produced annually. Fourth is Thailand at 680 metric tons of annual silk production. Fifth is Brazil at 650 metric tons of annual silk production. Sixth is Vietnam at 680 metric tons of silk produced yearly. Seventh is North Korea at 320 metric tons of annual silk produced. Eighth is Turkey at 30 metric tons in annual silk production. (see table.1.)

Table-1. The world silk production in the top producing countries in the period 2014-2018 (in metric tonnes)

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№	Countries	2014	2015	2016	2017	2018	2018/2014, %
1	Chine	146,000	170,000	158,400	142,000	120,000	82,2
2	India	28,708	28,523	30,348	31,906	35,261	122,8
3	Uzbekistan	1,100	1,200	1,256	1,200	1,800	163,6
4	Tailand	692	698	712	680	680	98,3
5	Brazil	560	600	650	600	650	116,1
6	Vietnam	420	450	523	520	680	161,9
7	North Korea	320	350	365	365	350	109,4
8	Iran	110	120	125	120	110	100,0
9	Bangladesh	44,5	44	44	41	41	92,1
10	Japan	30	30	32	20	20	66,7
11	Turkey	32	30	32	30	30	93,8
12	Indonesia	10	8	9	10	2,5	25,0
13	Bolgary	8	8	9	10	10	125,0
14	Madacascar	15	5	6	7	7	46,7
15	South Korea	1,1	1	1	1	1	90,9
16	Colombia	0,5	0,5	-	-	-	0,0
17	Egypt	0,8	0,8	1,2	1,1	1,25	156,3
18	Philippines	1,1	1,2	1,82	1,5	2	181,8
19	Syria	0,5	0,3	0,25	0,25	0,25	50,0
20	Tunisia	4	3	2	2	2	50,0

Source: The table is prepared on the basic of International Sericulture Commission materials.

Global annual silk production sits at around 202,000 metric tonnes per year and makes up about 0.24% of total fibre use. However, as a predominately luxury item, silk commands a per unit price of around US$15 per kilo, making the value of production around $3.03 billion per year. The total value of international trade in silk was around $ 1,5 billion in 2018 [19].

Few other countries are also engaged in the production of cocoons and raw silk in negligible quantities; Kenya, Botswana, Nigeria, Zambia, Zimbabwe, Bangladesh, Colombia, Egypt, Japan, Nepal, Bulgaria, Turkey, Uganda, Malaysia, Tunisia, Syria, Romania, Bolivia. The main silk consumers are USA, Italy, Japan, France, China, United Kingdom, Switzerland, Germany, United Arab Emirates, Korea and Vietnam.

USA is not a silk producer, but it is one of the largest silk importers and consumers of silk goods (garments, interior decoration fabrics and accessories). As silk has not the aura like in European countries, the USA is well known for "easy-care" fabrics, its main supplier being China.

Italy is one of the most important importer and processor of silk and also an exporter of silk products in Europe. It imports raw silk and silk yarn, but also blouses for ladies, silk garments. The Italian processing industry produce mainly high quality scarves and neckties, which are successfully exported. France is also a silk importer, producer and exporter. It produces high quality silk fabrics, of which 70 % are used for clothing and the remaining for interior decorations (curtains, wall covers, bed spreads etc.). Besides the domestic consumption, many of the French silk goods are sold mainly to the USA. Japan is a producer, but also an importer and major consumer of silk. Beside the local production of silk goods, Japan imports various silk products. About 50 % of its raw silk consumption is used for producing "kimonos". Germany is one of the largest importers of silk for textile and clothing of the highest quality to meet the consumers' requirements. Its main suppliers are China, India and Thailand [17].

The main problems of the silk industry in Uzbekistan. Till 1991, Uzbekistan was on the first place on annual silkworm egg manufacture, about 600 thousand boxes (29 g/box) and fresh cocoons in volume 32-35 thousand tons [2]. However, in the beginning of 1991, there had been an another problem in the sericulture which has entailed behind self-infringement of social and economic mutual relations, easing of the control has had a negative effect on silkworm egg manufacture. Distribution of illnesses during feedings, infringement of technology, realization of delayed payment for cocoon production to the manufacturers etc. gradually have resulted in reduction of made cocoons quantity.

Despite many problems of the transitive period from the centralized economy to free market system, the Government of Uzbekistan has managed to save a basis of cocoon and raw-silk manufacture. Today, our country is considered to be the third largest manufacturer in the world after China and India. To the present time 18-20 tons of fresh cocoons are made.

After Uzbekistan became independent republic. In the whole development of silk branch had occurred new problems of cocoon, raw silk and silk products manufacture and selling volume preservation. The main problems consist in the following: [3]

- too poor quality of made cocoons and raw-silk resulting in low cost at the internal and external markets;

- existing material base of science being old and insufficient for decision of arising questions and problems of the branch;

- loss of silkworm eggs production volume and silkworm cocoon crop because of diseases;

- poor harvest of mulberry leaves, accompanying by the large expenses of work at cultivation and operation;

- absence of silkworm breeds, genetically stable against illnesses and climatic conditions of their cultivation, that results in made silkworm eggs quality decrease, not appropriate to the international standards;

- absence of equipment for silkworm larvae cultivation and high labour expenditures in aggregate resulting in a poor harvest of cocoons from each box and as a result in high cost of manufacturing;

- preservation of old technological manufacture process and control system, and also absence of the commercial approach at production;

- insufficient quantity of the qualified training staff, absence of technical council, educational materials and visual aids, training and improvement of professional skills of the staff, marketing study and distribution of the new information;

- weak coordination among sericulture branch and other sectors such as forestry, public health services, environment, with the purpose of additional support reception from the Government, non-governmental organizations and private sector.

The decision of the problem interfering economic development of silk industry is possible by creation of the national silk association support program by the State, directed on strengthening of internal potential of sericulture, strengthening of scientific and technical opportunities of research institutes, improvement of manufacture control system, rise of an economic efficiency, allocation of the additional ground areas for creation of new types of highly productive mulberry tree plantations, maintenance of existing fodder base protection, also protect them from illnesses and pests, correct organization of silkworm larvae feeding realization and preparation of cocoons in the new form of managing factories and farms, realization of silk-processing enterprises modernization, creation of uniform politics of the income obtained distribution between the subjects of branch and attraction of the foreign investments.

Reformation sericulture and creation conditions for the effective management of silk production. Development of silk industry of the Republic of Uzbekistan is priority task in agriculture sector. Today, sixty percent of population resides in rural areas of our country. Sericulture helps to increase seasonal works as well as to earn extra income of people who live in the regions.

As we know, there is no doubt in a rich and powerful country demand for development of silk industry. Year after year, agriculture sector, particularly, silk industry in Uzbekistan changes not only numbers but also introduce new reforms for the branch. In this regard, the state program for the implementation of the Strategy of Action in the five priority areas of the Republic of Uzbekistan for 2017-2021, [10] in the "Year of Active Investment and Social development". Thus, President of the Republic of Uzbekistan Shavkat Mirziyayev pay an attention to increase a silk products and signed a resolution "On Measures to Establish Activity of the Association of "Uzbekipaksanoat" [11]. The main tasks of the Association:

- development of the national concept of digital economy;
- the concept of social - economic development of the country by 2030;
- the priority tasks in sericulture and silk industry in the republic in
- 2018-2025;
- ensure the complex development to silk branch on base of the creation united full-fledged organizing-technological chain;
- technical and technological modernization of the silk fabrics;
- intensively to increase exports of silk products;
- attract foreign capitals and investors to this sector;
- increase level to employment and income of the population in rural terrain;
- also, step by step to proceed on cluster 's method on silk branches and the organizations of manufacture.

During the short period of existence of the association, a significant increase in the export of silk products was achieved, as well as the expansion of its geography. In 2018, the Association "Uzpakipaksanoat" increased the volume of exports of silk products by 165 percent. According to the results of the first quarter of 2018, coconut processing enterprises produced industrial products worth 165 billion sums and consumer goods worth 19.7 billion sums, as well as 683.3 tons of natural silk, 1034 thousand meters. silk fabrics [18].

Therefore, in 2017, Association of the "Uzbekipaksanoat" joined to the International Sericulture Committee, and also to associate with FAO, UNIDO and the OPEC Development Fund will begin work on the creation of a special platform for the development of the export potential of the silk industry in the region, the Central Asian-European Silk Association in Tashkent. In 2018, there were attracted 46 foreign specialists in the regions. In 2018, 46 foreign specialists were attracted to the Association's regional enterprises. The professors from one reputable higher educational institutions of China made a report in the field of mulberry and silkworm varieties in the Association, in the regions and in the Tashkent Institute of Textiles and Light Industry, also Tashkent State Agrarian University.

In an addition, over the past two years President Sh. Mirziyoev adopted a number of resolutions relating to the sericulture and silk industry of our country. Especially, on 4th December in 2018, resolution №. PP-4047 "On Additional Measures to Support the Accelerated Development of the Silk Industry in the Republic of Uzbekistan" and on 31th of July in 2019, resolution №. PP-4441 "The further development of sericulture and deep processing of production" [12-13] were issued.

Nowadays, the activities of the "Uzbekipaksanoat" Association will be gradually transferred to the cluster method of production organization. This is stipulated by the presidential decree on measures for the further development of the silk industry in Uzbekistan. Enterprises belonging to the Association will receive benefits and preferences for the period from 2018 to 2023. Their goal is to modernize production facilities, increase the volume of competitive and export-oriented products, and create a sufficient fodder and raw materials base. Actually, in the present time, Association will be implemented perspective investment projects [14]:

- production of finished processed products at 7 stages (raw silk, silk wool, silk yarn, sewing, dyeing, weaving, dyeing, finished products, silk carpets) by upgrading existing silk processing enterprises in 2018-2019;
- organization of new silk-processing enterprises on the basis of creating a single full organizational-technological chain in 2018-2020;
- modernization of existing enterprises for the production of silkworm seeds, as well as the organization of new enterprises in 2018-2019;
- organization of production of plastic fastenings in 2018-2019;
- organization of the production of tea from the leaves of a mulberry tree in 2018 – 2020;
- construction of the "theater of silk production" and the "village of artisans" in 2018-2020.

The main financial indicators play an important role in determining economic efficiency of production in the silk industry. The table 1. is presented main indicators of the silk industry in the Republic of Uzbekistan for 2016-2021. [16]

Table-2. Main indicators of the sericulture and silk industry in 2016-2021.

Indicators	2016	2017	2018	2019	2020	2021
Volume living cocoon production (thousand tons)	10,5	12,5	18,0	19,2	24,5	27,5

Cocoon growing season	1 times	2 times	3 times	4 times	4 times	4 times
Productive capacity usage degree (percent)	17,9 %	54 %	84 %	100 %	100 %	100 %
Export volume (million US dollar)	22,1	37,6	48,4	65,2	73,8	86,7
Number of permanent workers (thousand man)	1,8	5,5	14,4	18,3	24,4	32,6
Number of seasonal workers (thousand man)	181,4	214,2	410,9	621,8	736,6	890,0

Source: The table is prepared on the basic of Association "Uzbekipaksanoat" materials.

In the table is shown that the production of cocoon production in 2016 was 10.5 thousand tons, which increased by 2018. In 2017, the cocoon production was 12.5 thousand tons. it reached to 18.0 thousand tons in the following year. Production of cocoon production raised by 1.7% compared to 2016. In 2019, it is planned to produce 19.2 thousand tons of live cocoons in the country. We can see that during 2020-2021, the volume of cocoon production in the branch will increased by average of 26,000 tons.

It is well known that in the past, the term of silkworm breeding was one month, which lasts between May-June. For instance, in 2016, the cocoon season was only 1 time until 2017. But, the yield of cocoons made twice and thrice times in the country. The current 2019, it is planned to cultivate cocoons four times a year. As a result, the capacity of the existing cocoon industry was 17.9% in 2016, and the full capacity of the existing cocoon processing companies got to 54% in 2017, also reached 84% by 2018. This indicator will be expected to increase by 100% over the next three years.

We should mention that the essential tasks are to develop the silk industry in our country, to expand the range of products, as well as to support the export and investment activities of the sericulture and silk production enterprises. Certainly, export processes play important role in the improvement of each sector in the economy, and in achieving economic efficiency of the enterprise. If we analyze export volumes in the table.1. The volume of exports of silk products was 22.1 million USD in 2016, then this figure reached 37.6 million USD by 2017. About 48.4 million USD products were exported in 2018. The following year, it will be planned to the export 65.2 million USD of silk products to the world market. As a result, compared with 2016, exports increased by 2.9 times in three years.

The number of permanent employees in the sericulture arose by 1.8 thousand man in 2016. This amount got to 5.5 thousand man till 2017, also 14.4 thousand man in 2018. Compared with 2016, the yield increased by 3 times. At present, the cocoons production will begin to crop four times seasons in the regions. Thus, according to the government's incentives, the quantity of seasonal workers rises gradually every year.

In accordance with priority tasks of Association "Uzbekipaksanoat" increases the amount of mulberry trees along the roads and fields from 65 million in 2018 up to 150 million in 2021. Also, organization of mulberry trees plantations in 2017-2021 (thousand hectares) in the regions [14]. (see fig.1.)
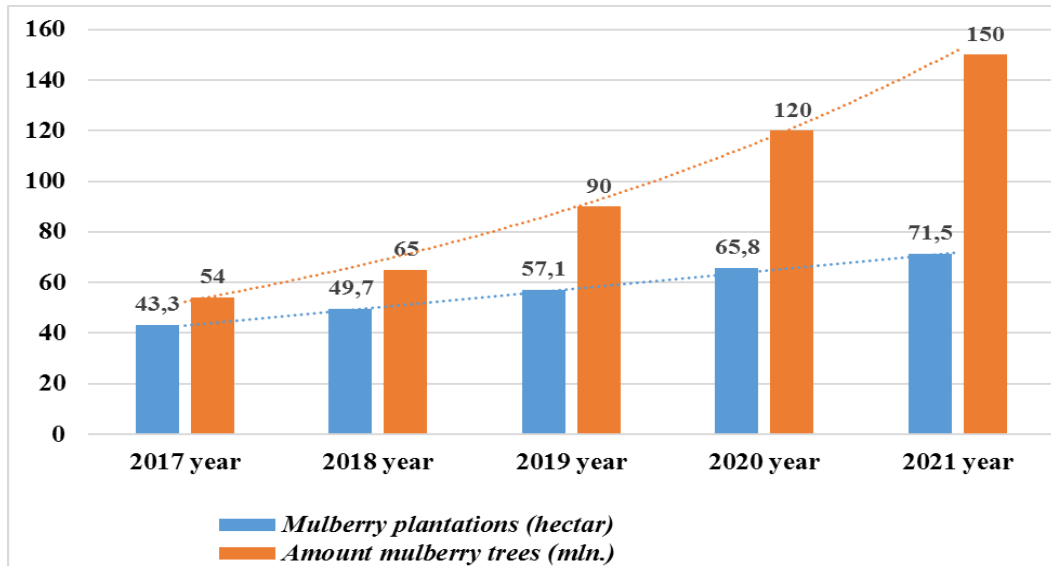
Figure- 1. Organization of mulberry trees plantations and increasing the amount of mulberry trees in 2017-2021.

In 2017, there were 54.0 million mulberry trees, and the total area of mulberry fields was 43.3 thousand ha. in the country. In the autumn period of 2017, 30 million seedlings were planted in the regions of the republic, in addition, 13.3 million mulberry bushes which suitable for the climatic conditions of our republic were brought from China. In 2019, it is going to plant more than 90 million of linear mulberry trees and 57 thousand ha. of mulberry plantations.
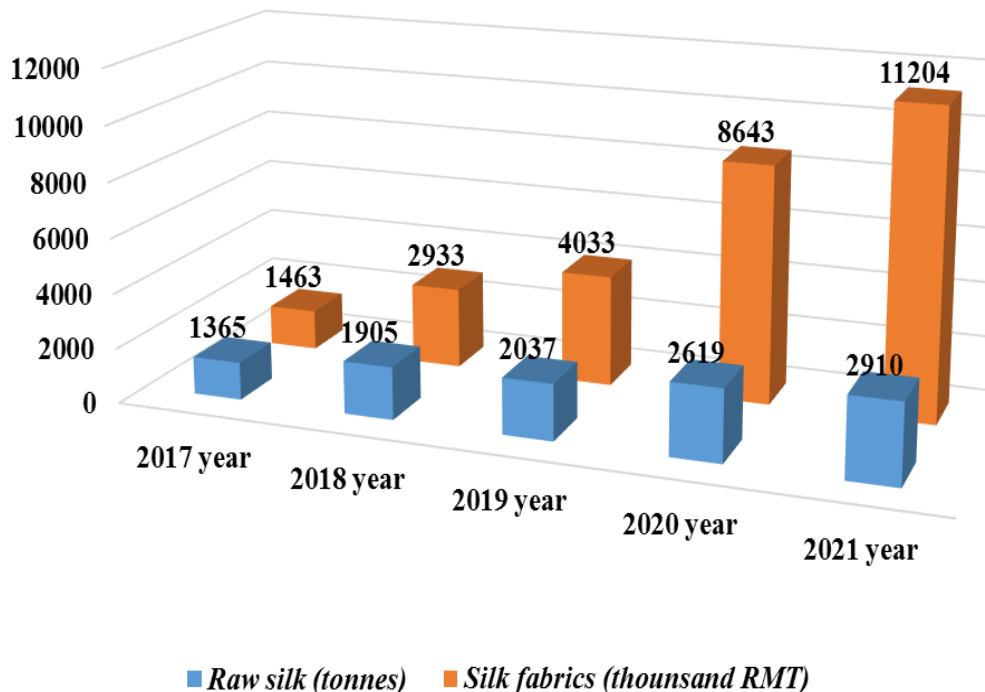
Figure - 2. Manufacture of finished products and semi-finished products in 2017-2021.

The growing demand for silk products in the global market, in turn, necessity a gradual of increase in the volume and quality of cocoon production in the country. Normally, improvement

of silk industry will be shown on the expansion of assortment of manufactured products, Therefore, raw silk and silk fabrics, which are the essential raw materials of cocoons. They include the target of road map and production which is carried out at the enterprises.

The following figure is stated manufacture of finished products and semi-finished products in 2017-2021 in the republic. (see fig.2.) In 2017, the raw silk was 1365 tons, silk fabrics 1463 thousand RMT. In 2018, this volume of production reached to 1905 tons of raw silk and silk fabrics 2933 thousand RMT. The following year, indicator of products will be rise significantly by 105 % of raw silk and 135 % of silk fabrics. Between 2020-2021, the country is going to increase the production of raw silk by almost 2,910 tons, as well as the production of silk fabrics to 11,204 thousand RMT. In a summary, manufacture of finished products and semi-finished products will be increased to 7,6 times in 2017-2021. [14]

Discussion. As we know that active development of cluster is considered an effective direction of innovative enterprise activity in the countries with the advanced economy where basic direction of realization cluster concepts the establishment of interrelations between corporate structures acts, investment, intermediary, scientific, educational, public organizations of region.

In a general, clusters approach to the economic development of countries provides a good tool for regional analysis. The study of modern scientific literature by foreign scientists M. Porter, B. Fezer, K. Ketels, and others suggests that cluster industrial analysis reveals consistent steps to identify which clusters are present in the regional economy, and also makes it possible to evaluate the strong and weak regional clusters compared with the national economy [21].

We suggest that implementation of cluster policy in the country may allow to increase productivity and innovation activity of enterprises in the cluster as well as the intensity of small business development and private entrepreneurship, enhancing the attraction of direct investments, ensuring accelerated socio-economic development of cluster-based region.

Most researches of clustering highlights on geographic features. In economic calculations have four stages of applied task classes which is used for reducible to the application of cluster analysis [15]. They are:
- classification of objects;
- study of various options for grouping objects;
- obtaining hypotheses based on data analysis;
- testing hypothesis for the existence of selected groups of objects.

As usual, the proximity of objects to each other characterized by a measure of similarity which can be measured by:
- coefficient of correlation;
- measurement of distances;
- associative factors
- measurement of probabilities.

The essence of the cluster analysis which based on the concept of proximity composed in the creation of a space description on this way that all points of one set are close to each other. It needs to determine the measure of distance between clusters. In order to create clusters, in this way, method of Warde is possible way to solve. For instance, if there are two clusters S_1 and S_m with elements n_1 and n_m which merges into one S_r. In addition, there is also a cluster S_t . And P_{ij} – distance between i-m and j-m clusters. It is possible to establish a measure of the distance between clusters S_r , S_t, knowing that distance P_{1t} and P_{mt}. (initially, it is suggested that each point is a separated cluster) Then, method Warde is for the nearest groups.

For example:

$$P_{\min(S_r, S_t)} = \min(P_{1t}, P_{mt})$$

, (1)

Euclidean distance is determined by the formula $P_{E(X_I, X_J)}$

$$P_{E(X_I, X_J)} = \sqrt{\sum_{s=1}^{k} (x_{is} - x_{is})}$$

,(2)

The method of Warde calculates the measure of communication $V_{r,}$.

$$V_r = \sum_{i-1}^{n} \sum_{j=1}^{k} (x_{ij} - x_{jr})$$

The method of Warde combines those objects (clusters) give the smallest increment to *Vr,* thereby minimizing dispersion within the cluster. So, method of Warde has a tendency to create clusters. It should note that this method allows to get the correct results,

Conclusion. Intensive development and diversification of the silk industry in the republic of Uzbekistan is not only a priority, but also, the creation of favorable conditions for increasing foreign investment is one of the primary tasks in the wider implementation of cluster methods and improvement of management mechanisms in the regions.

Nowadays, on the agriculture sectors of our country is carried out transition on cluster system. Government pay attention to step by step to proceed on cluster 's method on silk branches and the organizations of manufacture.

However, it is important that the current state of mechanism the development of the branch for the silk industry of industry weakly stimulates the organization and development of enterprises for some reason:

- first of all, the development of the industry is the technical and technological backwardness of the silk production enterprises from their foreign competitors;

- secondly, the strategy of the silk industry in the republic is aimed to restructuring, technical and technological renewal of enterprises, which implies the installation and use of high-performance, modern equipment. However, the process of updating the domestic technical base is not so fast

- thirdly, issue is associated with a low level of innovation and investment, due to the lack of research and development in the industry.

We suppose that in connection with the situation there is a necessity for development of silk branch following next basic directions:

- expansion and improvement of fodder base conditions, such as replacement of low - productive mulberry varieties and hybrids by more productive ones, replacement less productive linear plantings by highly productive mulberry plantations and realization of their protection from the agricultural pests and illegal cutting.

- transfer of sericulture on economically favorable technology of silkworm rearing, allowing manufacture of cocoons during all of the vegetative period of mulberry tree;

- realization of centralized silkworm larvae rearing of younger ages and further rearing of them in specialized sericulture farms;

- creation of complex measures directed on improvement of the financial condition of the economically insolvent enterprises, with reduction of their number and perfection of the silk branch enterprises taxation system, including release of sold to agricultural enterprises silkworm eggs and dry cocoons from the VAT;

- attraction of the direct foreign investments for re-equipment of silk-reeling and silk-weaving manufactures;

- increase quality of ready production up to conformity to the world standards and expansion of production assortment;

- increase of an export potential of branch by expansion of production with added cost share.

Therefore, in order to carried out to the cluster system in the sericulture and silk enterprise:

- consider the essence of the cluster approach, determine its role in the general system of state regulation of the silk industry as well as explore the theoretical foundations of cluster structures;

- analyses the mechanisms and principles of organization, management and functioning of clusters, in addition, the foreign experience of cluster formation in sericulture;

- investigate and study the existing problems of managing the mechanism of organization in silk enterprises

- develop a proposal for improving the mechanism of management and organization of the cluster in sericulture.

World's practice shows that cluster is not only means towards to the goals of the industrial policy, but is a powerful tool for the stimulation of regional development that finally can lead to the improvement of the trade balance of region, reinforcement of the employment and etc. Thus, cluster is process objective, however, great value of industrial policy has a creation. The purpose of stimulation of unifying processes on cluster are attraction of business great value various privileges, acceleration of process on taking credits, a different type of the investment under the cluster projects. This will help to provide steady development and increase competitiveness of the sericulture in the country.

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