Volume 18 Issue 19
Originally issued as E4



Global Journal of HUMAN-SOCIAL SCIENCE: E
Economics
Volume 18 Issue 4 Version 1.0 Year 2018
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals
Online ISSN: 2249-460x & Print ISSN: 0975-587X

Excerpts on the History of Development of Agricultural Machinery in Uzbekistan

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Abstract- At the beginning of the last century, Uzbekistan's engineering industry was concentrated in the handicraft industry. As it is known, after conquest of the territory of Central Asia by the Russian Empire, including the territory of the present-day Uzbekistan, in the country in parallel with the agricultural industry, the plan on construction of railroads for the export of cotton began to be implemented, as the territory of Uzbekistan was the main supplier of raw cotton.

GJHSS-E Classification: *FOR Code: 349999*



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Excerpts on the History of Development of Agricultural Machinery in Uzbekistan

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Abstract- **At the beginning of the last century, Uzbekistan's engineering industry was concentrated in the handicraft industry. As it is known, after conquest of the territory of Central Asia by the Russian Empire, including the territory of the present-day Uzbekistan, in the country in parallel with the agricultural industry, the plan on construction of railroads for the export of cotton began to be implemented, as the territory of Uzbekistan was the main supplier of raw cotton.**

I. Introduction

Existence of agricultural machinery in Uzbekistan and establishing of joint ventures in the agricultural sector after independence, as well as design bureaus for developments in the scientific and technical sectors, does not retain the activities of this industry and giving an impetus to development of the machine-building complex. Along with other structures and branches of the Republic, it is planned to improve and modernize agriculture according to "Strategy of Actions 2017-2021", thus, much attention is paid to the agricultural machinery of the Republic.

At the beginning of the last century, Uzbekistan's engineering industry was concentrated in the handicraft industry. The need for Railroads and their laying from Orenburg to Tashkent was expressed by a special railway commission of the Russian Empire in 1874. For strategic reasons it was decided to build a railway from the eastern coast of the Caspian Sea deep into the Central Asian desert to the cities of Kizil-Arvat, Ashgabat and beyond [1].

The first railroad on the territory of the republic was laid in 1888 from Farab station to the city of Samarkand, as the extension of the line of Turkmenbashi (former Krasnovodsk) - Chardzhou. Then this road was continued to be laid to the cities of Andijan and Tashkent and was completed in 1899.

Six years after completion of construction of this road in 1905, railway movement was opened between Tashkent and Orenburg. [2].

It was the railroad in the form of transport that was needed to transport cotton to the territory of Russia and with beginning of its construction the plan of operation of the planned road was clearly outlined. Using common calculation it is possible to determine that 1/3 of the imperial budget was spent for construction of the railway in the Central Asian region.

Workshops that repair wagons located in the proper territories were considered the first workshops of the machine building complex. These workshops are the postulate of foundation and development of machine building in the Central Asia.

The first enterprises of the machine-building complex in the territory of the Central Asia appeared at the beginning of the X Xthcentury. The beginning of the work was construction of 14 small repair shops. In them, basically, the repair work of railways, cleaning cotton and fat-and-oil plants were conducted. The total volume of industrial product in heavy engineering and metal processing was 1.3%. Being founded in 1900 in the city of Tashkent the workshops, processing metals and the Main Railway Workshop were among the largest enterprises of that time. In connection with the need for development of industry and transport, repair shops were expanded and in the course of time new were built. [3]

After the revolution (1917), when the fate of the machine-building region was also determined, the time has come to pay much attention to this complex. Constructive workshops were founded on a phased basis, where future masters for this branch were trained, and later engineers after establishing of higher educational institutions in the Central Asian region were taught. By decision of the councils, the plant produced its first product on May 1, 1931, being named "Tashselmash" because it was the first manufacturer of tractors and its components.

According to the above information, it can be determined that in the XXth century construction of the machine building industry was the main part of total production and this indicator did not change till the 1990s.

The importance of the formation and development of machine building in the Central Asia and territory of the present-day Uzbekistan has no analog in formation of the world machine-building network. Its significance is noted in facilitation of labor in the branches of the national economy, where automation and mechanization of the production process serves as an indicator of development.

Machine industry is a rock-solid part of the state. Because, without being provided with machines and without using them, it is not possible to develop any

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sphere of the economy. To assemble a modern machine, the materials such as: metal, plastic, manufactory rubber, wood are required, and the machines are made from a variety of parts, therefore production of such a variety of these parts in one plant is unacceptable. In the machine industry there must exist a branched system for manufacturing of engineering products. For example, for production of car parts and parts of a tractor, at least several specialized factories for supply of spare parts and components are needed. This process requires the link developed between plants and, together with this, it requires manufacturers from other industries producing and processing such materials as rubber, plastic, etc. However, such a production requires transportation and it is impossible to implement the planned action without this. Therefore, in location of the machine-building complex, the existence of a transport main should be taken into account.

In November 1927 "Bospahtasanoat" mechanical plant was founded and started its production in Tashkent. On the basis of this plant in 1931, accessories for agricultural machinery were made, and later this enterprise began to repair these assemblies.

In 1931, the first production line was commissioned by “Toskshlokmash” plant. Being established in 1942 "Uzbekkishlokmash" plant for today produces for harvester and suspension equipment for TTZ-30tractor, and at "Chirchikkishlokmash" plant (1942) the equipment such as cultivators, chisel cultivators, fertilizer spreaders, diggers of irrigation ditches, collectors of cotton buds, plows, chasers of cotton, rippers of crusts, etc. are produced [13]. All the tractors produced in the above-mentioned plants were produced for agricultural activities, mainly for cultivation of cotton.

In 1932, repairing of excavators were started at "Irmash"plant, located in Andijan, which by 1959 had its own design office. Parallel to this plant, in the same year, in Samarkand, “Kolkhozchi plant” was opened, in Kokand “Bolshevik” plant was found supplying such products as seeders, harrows and cultivators intended for agricultural work.Since the 1960s, its design bureau has had a number of several machine-building plants, such as “Turkiston”, “Tekhnolog” and “Tashkent Tractor Plant”. [4] It should be noted that, in 1920-1976 foundation of a number of machine-building plants in Uzbekistan and design bureaus had a special significance among the institutions founded at that time. Since 1976 "Tekhnolog" company has become known as a production association. [5] It was a large agricultural machinery enterprise of the USSR producing cotton-picking machines, where rapid growth of the plant's production capacity took place during the Great Patriotic War of 1941-1945 and in the post-war period, especially in 1946-1952 large shops were built - assembly, mechanical, instrumental shops and others. The labor-intensive production processes became mechanized, continuous production and conveyor lineswere organized. [6].

«Tashkent Tractor Plant» was founded in 1942, the purpose of which was production of cotton harvesting tractors and tractors for hoe and tilled work. The plant specialized in production of equipment and spare parts for them. The plant was organized during the Great Patriotic War on the basis of the enterprise evacuated to Tashkent. Untilthemid-60-iesoftheX Xcentury the plant was called "Tashavtomash”.[7] Since commencement of work and production occurred during wartime (1941-1945), production of tractors was temporarily suspended and the plant was re-equipped for production of military ammunition (mines, shells and bombs). After the end of the war, or rather, in 1960, preparations began to start production of T-28X4 tractor. By the 1970-80'sthe plant was reconstructed and production of the TTZ-80X tractor started. At Tashkent tractor plant there was "Agregat "foundry, which produced trailed sprayers, plows, common sprayers, cotton harvesters, forage collectors, rotary harrows, cotton picking and simple tractors, reducers and potato seeders. This plant was founded in the form of a machine-building plant and in 1957 it was turned into an irrigation machine-building plant, and in 1972, in "Uzbek assembly tractor plant" and in the same year it was renamed into “Tashkent Aggregate Plant”. 60-70 years in machine building growth and improvement of quality, capacity of production became noticeable, several types and mechanisms were developed in production. In 1970 share of machine building reached 15.9% in the total volume of productivity. This position has been preserved or another 40 year suntil 2010.

In an extensive variety of machine building a volume of metal is not applied, as they have different scales of production. If one type of engineering industry requires many varieties of metal, it is called - machine building requiring a variety of metals. The example is the equipment of mine metallurgy and this example can be spread to production of railroad cars. For this reason, when the machine building complex is located, proximity of a consumer to the metallurgical base should be taken into account.[8]

The economy of countries and regions, development of the national economy,generally, are determined by the degree of development of machine building. We can see this if we pay attention to production of the world engineering industry. According to the data of 1999, 36-38% of the world production accounted for the share of the machine-building complex.[9]

After independence, Uzbekistan could not independently form an engineering complex, since foundation and ancillary part of this industry was located

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on the territory of other countries that also proclaimed their independence in 1991.

In 1992 the country underwent a difficult period in the sphere of economy and production. From this year it was decided to attract investors and foreign capital, which led to the growth of the machine building complex by 11.2%. By 1996 Uzbekistan occupied the first place among the CIS republics in production of the industrial products. [10]

Referring to the foregoing, it can be determined that, in the post-independence period, Uzbekistan's engineering industry was malfunctioned in many fields, as its production was connected with the engineering industry of the entire former Union. It should be noted that the attracted foreign investment attention in time did not lead to the complete decline of the country's industry as a whole.

The Laws adopted in 1998 by the first President of the Republic, Islam Abduganievich Karimov "On introduction of foreign investment" and "On guarantees for foreign investors and their investments," on protection of their private property interests and measures for development of entrepreneurship, which was the basis for further development of economic reforms in the Republic demonstrated beginning of a new level of development of the country.[11]

Uzbekistan is the main cotton base in the Central Asia. The republic grows about 2/3 of the cotton produced in the countries of the whole Central Asia, and among the most important cotton-growing countries of the world it takes the fifth place, behind China, United States of America, India and Pakistan. [12]

It should be noted that Uzbekistan in the second half of the XX century stood third in terms of growing raw cotton after such states as China, United States of America and Israel. With attainment of independence, the volume of planted fields has sharply decreased, as the attention of the managers taking top leadership posts shiftedfrom the quantity and to the quality of cotton. Since mainly the quality of cotton gave a good harvest with a small land area.

In 1967 "Horticultural Machine Building Plant of Uzbekistan" was established for gardening, wine growing, forestry, melon growing and other industries, where machines and equipment for the works in these industries began to be produced. It was located in the city of Namangan and was renamed to "Namangan kishlokmash", where later the same machines and equipment were manufactured. [14] The production of these machines helped to develop horticulture and wine growing in Namangan region and in other areas, which served to create new jobs in the region.

On the way to development of cattle-breeding and livestock, when preparing of a forage base in 1987, Bukhara Specialized Experimental Plant began production of equipment for emptying works on cotton, the components for the same machine were started to produce in the “Specialized Plant" and "Intermash" plant also located in Yukory - Chirchik Territory is the producer of machines for reclamation works. Machines are sold and given in service for the local agricultural work. "Urgench Excavator Plant" produces, mainly since 1990, excavators EO-411. In addition to reclamation work, the excavator performs work on construction needs. Since 2001, the plant began to develop production of MTET-400/20dredgers. [15]

On the territory of the Central Asia Uzbekistan is a leading country in production of tractors of all kinds, from seeders to tractors, intended for reclamation works. It was in the years of independence that the land policy changed and together with this the policy of reclamation works changed.

From 1997 to 2001 with the use of the latest technologies joint ventures for production of agricultural machines began to be formed, on the basis of which there was attained a high level of fruit growing in agriculture. In cooperation with Case Corporation (USA), a joint enterprise for production of cotton harvesting machines was established, “UzKeysmash” enterprise, whose products were cotton harvesters, seeders for cotton seeds and excavators for agricultural work. Since the beginning of 1997, the company began to produce tractors and plows, and in 1998 the plant began to provide a service for agricultural machinery.

Along with "Case Corporation" JV, such enterprises as Agrikhim (spraying machines and devices), Uz Rosedizel (2001, engines and spare parts) and “Favvora” company (1997, water pumps) were founded. And as the branch of "Technologist "specialized enterprise, which fulfills individual orders for special machines for all types of production, the head office "BMBB-Agromash" was opened, which also develops technical products and carries out experiments with technical samples. [16]

It should be noted that existence of agricultural machinery in Uzbekistan and establishing of joint ventures in the agricultural sector after independence, as well as design bureaus for developments in the scientific and technical sectors, does not retain the activities of this industry and giving an impetus to development of the machine-building complex. Along with other structures and branches of the republic, it is planned to develop and modernize agriculture in accordance with the "Strategy of Actions 2017-2021", therefore, much attention is paid to the agricultural machinery of the republic.

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