## Activities Of Industrial Enterprises In Uzbekistan.

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Annotation: The article highlights the negligence and irresponsibility of the industrial enterprises built in Uzbekistan in 1940-1980, which led to environmental problems. Lack of technical equipment in the chemical, petroleum, mining and construction industries built in the country, low allocation of funds for material and technical bases have led to a sharp increase in environmental damage at enterprises. Atmospheric air, soil, water and nearby populations suffered from industrial waste. Over the years, the environmental situation in Uzbekistan has worsened due to the fact that industrial enterprises are in need of repair. Since the former union was the sole owner of these industrial enterprises, local leaders could not solve even the simplest problems in industrial enterprises on their own. Activities in industrial enterprises were managed by the center. The appeals of the local population were not taken into account, and no measures were taken to prevent diseases and environmental tragedies among the population. As a result, the pollution of the Amudarya and Syrdarya rivers, the main water sources of Central Asian countries, has created economic and social problems. Historical and research sources provide information on the catastrophic impact of the waste from the chemical aluminum plant in Tajikistan on the environmental situation in the transboundary regions of Uzbekistan, including Surkhandarya.

## Key words: Industrial enterprises, Surkhandarya, The Aral Sea, Karakalpakstan, Khorezm, Navoi

The proliferation of various types of disease in the world, changes in new genotypes and mutations in humans is a tragic manifestation of the ecological environment. At present, the catastrophic environmental problem is the pollution of the natural environment with industrial production, household waste, especially hazardous radioactive waste. The world's accumulating wastes are the main sources of air pollution, groundwater and surface water, soil and plant pollution. The main sources of environmental pollution and damage to it are industrial enterprises.

The economy of the Republic of Uzbekistan consists of a multi-sectoral territorial-industrial complex, the basis of which are specialized industries. In 1940-1980, Uzbekistan had many industrial enterprises, such as the gas industry, non-ferrous and ferrous metallurgy, machinery (mainly agricultural machinery), cotton ginning, textiles[1,p.32], canning and chemicals. Many industrial enterprises located in the territory of the republic were directly subordinated to the Center, and in practice the republic did not manage them, but was engaged in the extraction and primary processing of raw materials, production of semi-finished products,

defense products. Most of the enterprises reproduced the goods not for the domestic market of the republic, but for transportation. In most industries, there were many productions with an unfinished technological cycle. Even in the leading industries, technological equipment is already obsolete, out of order and in need of renewal [2,p.80]. Therefore, it became clear that in Uzbekistan, due to technical failures, errors and shortcomings in the activities of industrial enterprises, which soon caused damage to the environment, their production waste is not transported to specific areas and their work to prevent waste is not effectively organized.

Due to the negative impact of industrial enterprises on the environment, only 27% of the territory of Uzbekistan met the requirements of national environmental standards for air, water and land quality. While environmental problems are present in the territories of any state where there is more concern about the social situation, they have been taken to a certain extent with sufficient force. However, in the former Soviet Union, Uzbekistan, the Republic of Karakalpakstan, Khorezm, Navoi and Fergana regions were under considerable pressure on the environment and the natural resource base[3,p.9]. As a result, during the years of independence, it became clear that the ecological situation in these areas is very bad.

A lot of research work can be done on environmental protection. In particular, I.Lantev, T.Millier, B.Nebel, N.Rodzevich, B.Rozanovich, F.Reymers, T.Akimov, V.Haskin and others published monographs on environmental protection[4]. Well-known French ecologist F. Ramad states that "pollution is an unfavorable change in the environment, which is entirely or partly the result of human activities[5,p.81]" . In particular, waste pollution has had a significant impact on the state of surface and groundwater, air and soil in Tashkent, Samarkand and the Fergana Valley in Uzbekistan, the chemical industry, machinery and other sectors of the economy.

The development of industry in Uzbekistan in 1946-1965 consisted of combining the focus of industrial enterprises on the production of machinery, equipment and consumer goods with the formation of a diversified industry. During this period, the energy, fuel, metallurgy, chemical, mechanical engineering, its adaptation to agriculture and irrigation systems, electrical engineering industries have developed well[6]. In the post-1940 period, the number of technical enterprises in Uzbekistan, such as heavy industry, chemical, ferrous metal processing, metal repair, has increased[7,p.10]. The difference in the growth of industrial enterprises built in 1950 compared to industrial enterprises built in 1971 increased by 3.2 times in light industry and 19.9 times in heavy industry[8,p.14]. Production ratios have also increased in the same way as industrial enterprises. The overall work rate of production in industrial enterprises was 4.2 in 1966-1970[9], 0.74 in 1981-1985[10,p.7], and 0.55 in 1986-1989[11,p.9].

Analysis of inspections during 1966-1970 showed that in Uzbekistan, despite the fact that 92 enterprises are planned to build sewage systems, 102 enterprises are connected to 13 sewage systems and 14 sewer systems in the country[12]. It was not controlled where the funds allocated for industrial enterprises were used to provide the material and technical base of the enterprise. The untimely termination of the planned tasks, the impact of harmful chemical and metal wastes in the industrial enterprise has had a negative impact not only on the environment but also on the health of workers.

Residents living close to the industrial plant were connected to the sewage system, which caused the contamination of drinking water. The supply of such wastewater and dust treatment facilities is available at industrial enterprises in Tashkent and Andijan regions, but the supply of treatment facilities at industrial enterprises located in the suburbs of Fergana region was very low or non-existent[13]. As a result, the increasing damage to the environment by industrial enterprises has led to the emergence of health problems for the

population. In addition, the natural resources and ecological environment of the republic have been severely, and in many cases irreparably damaged[14,p.80].

The center focused on the export of manufactured products. However, no measures have been taken for the material and technical condition of industrial enterprises, which have become the basis of production. For example, at the XXV Congress of the CPSU on the export of manufactured goods, a decision was made on measures to "develop the economic and social spheres in the USSR from 1981-1985 to the 1990s" to further develop the issues of intensive cooperation of the USSR with foreign socialist countries[15,p.146]. Exports of industrial enterprises in Uzbekistan reached a high level in 1979[16,p.18]. Although the production of industrial enterprises has been increasing year by year, the condition of its material and technical bases has been deteriorating. Only 4/1 of the production was allocated for technical repairs from the allocated capital funds of industrial enterprises [17]. In 1980, there were more than 1,500 industrial enterprises in the country, of which 900 were in poor condition and in need of repair[18]. Therefore, some defects in the production process would affect the quality of the products, leading to low production efficiency. In some heavy industry enterprises, work is organized in two shifts, and wastewater treatment and filtration techniques are released in one shift. The technical equipment used in two shifts at the enterprise was in a state of disrepair or completely out of order. Therefore, the implementation of the tasks set in the five-year plan for the development of science and technology in the country has become a problem. In 1978, 102 industrial enterprises in Uzbekistan, 25 heavy industrial enterprises, 4 scientific and technical enterprises, 31 light industrial enterprises became indebted [19].

Inventions in science and technology related to industrial enterprises were often entrusted to the industrial enterprise. But due to the large number of obligations in industrial enterprises, there was not enough time, material resources for scientific research, inventions and technical changes. The lack of organization of work on market demand, in turn, led to a sharp decline in demand for the product, the poor quality of products of industrial enterprises. As a result, it was possible to see the reduction of jobs in industrial enterprises in 1985 and the economic deficit in industrial enterprises.

In 1987, the amount of emissions into the atmosphere by industrial enterprises in Uzbekistan amounted to 150-211 kg per capita[20,p.64]. There are many industrial enterprises and many industrial enterprises are located in Tashkent, Kashkadarya, Bukhara, Fergana and Navoi regions. More than 150 harmful substances have been released into the atmosphere in Uzbekistan. 84% of them are in Tashkent (300 thousand tons), Kashkadarya (214 thousand tons), Bukhara (99 thousand tons), Fergana (57 thousand tons) and Navoi (47 thousand tons) regions [21,p.64].

Ten percent of people worldwide are exposed to allergens. Cancer has become a new disease of the twentieth century. These diseases are associated with the presence of large amounts of carcinogenic, mutagenic, and terotogenic substances in the atmosphere. There is an inextricable link between the pollution of the atmosphere with carcinogenic hydrocarbons and the development of industrial enterprises, transport, urban planning. Therefore, the incidence of cancer in rural areas with clean air is much lower than in urban areas, especially in large cities. The probability of lung disease is higher in the population living in urban centers than in the rural population[22, p.72]. Atmospheric air pollution has also caused the death of animals, birds and plants. Wastewater and waste dust from manufacturing industries had led to the spread of the disease to bees, sheep, livestock, and domestic animals in the state.

With the launch of the aluminum plant in neighboring Tajikistan in the early 1980s, the ecological crisis in many districts of Uzbekistan's Surkhandarya region led to tragic diseases of the population, the environment and wildlife. The aluminum plant in Tajikistan has

released large amounts of hydrogen fluoride, carbon monoxide, sulfur dioxide and nitrogen oxides into the atmosphere. Due to the fact that Sariosiya, Uzun, Denov and Altynsay districts of Surkhandarya region border with Tajikistan, the strong winds in these areas and the mountainous nature of the area, the chemical dust of the aluminum plant has aggravated the environmental situation in these areas[23].

Environmental tragedies, in turn, have affected economic processes. In Surkhandarya region, plant diseases have led to a decline in crop yields. In addition, as a result of diseases of mulberry trees, the poor growth of mulberry leaves, which feed on cocoons, led to a crisis in the silkworm industry. In addition, the decline in productivity in fruit and horticulture, the deterioration of food quality, and changes in the ecological quality of natural resources have had a significant impact on the health of the population.

Uzbekistan's oil fields and oil refining industry, in turn, have begun to affect the environment with their waste[24,p.78]. At the same time, the Bukhara oil refinery emits a lot of chemical dust and waste into the atmosphere. Sometimes the temporary cessation of wind movements had led to an increase in the amount of air pollutants in the oil industry working areas. As a result, the ecological situation in the districts and villages close to the Bukhara oil refinery has begun to change. Implementation of measures to protect the atmosphere was delayed. In the 1980s, Uzbekistan faced some difficulties in purchasing industrial equipment for environmental protection. As a result of the breakdown of the old cooperative relations, it became difficult to receive spare parts and orders from other republics[25,p.41]. The policy of industrial development of the former Soviet Union in Uzbekistan was related to socio-economic issues, employment, weakening the dependence of production needs on foreign markets, self-sufficiency in industrial consumer goods. As the work of industrial enterprises continues, the problems in the treatment of industrial waste have become more acute due to the lack of technical equipment and the expiration of the shelf life.

The increase in economic growth in the country was due to more heavy industry enterprises. In 1985, the production of mineral fertilizers in chemical and forestry complexes increased by 25.5 percent, acids - by 48.4 percent, chemical fibers - by 52.1 percent, synthetic and plastic masses - by 3.4 percent. Therefore, the share of heavy industry in fixed assets in 1985 was 73.0%. The negative impact of the chemical industry on nature is also reflected in the changes in the water quality of the two main rivers in the country[26,p.41].

In the study, the waters of the Amudarya and Syrdarya, which flow into the Aral Sea, flow into the Caspian Sea. Later, when the Nurata and Tomdi mountains were erected, the Syrdarya road was blocked and turned north at the exit from the Fergana Valley, opening a different route from the south-west to the Ustyurt along the Karatag system[27,p.116]. One of Central Asia's main water resources, the Amudarya, which produces 78 cubic meters of water a year, and the Syrdarya[28,p.513], which produces 36 cubic meters of water a year, are currently experiencing a catastrophic period. In the 1960s, the unplanned use of water resources for irrigation of agricultural lands and the development of industrial enterprises, the location of many different reservoirs and streams in the streams of the Amudarya and Syrdarya rivers, which supplied water, prevented water from reaching the Aral Sea. All the republics of Central Asia have used these rivers. This means that the ecological share of water has affected not only Uzbekistan, but also the economy and social life of neighboring countries. The discovery of new lands and the large-scale use of river water by industrial enterprises have affected the water level.

Dynamics of changes in the indicators of the Aral Sea waters during 1960-1990 [29,p.117].

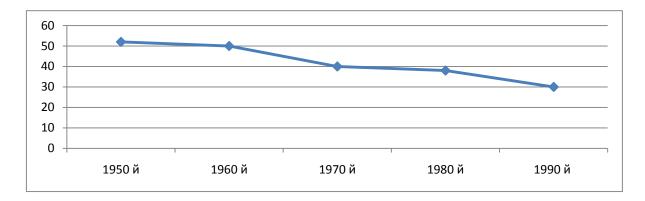
Years	Water level, meters	Water volume, km <sup>3</sup>	The dried area of the

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			sea
1960	53.00	1062.00	-
1989	39.33	354.00	27.03
1990	38.51	323.00	29.04

The drying up of the Aral Sea had led to the spread of underwater salt dust. Naturally, salt storms lead to the extinction of any plants. Dust storms on the bottom of the Aral Sea were discovered as early as 1975 as a result of space research[30,p.516]. When salt dust storms cover the territory of the Aral Sea from the territory of Karakalpakstan and affect one of its neighboring regions, Khorezm.

We know that Uzbekistan was transformed into an agrarian country that supplied cotton to the Soviet Union. In 1988, the irrigated cotton fields and arable lands of Uzbekistan reached 4.1 million hectares [31,p.117]. As a result, the opening of many areas of cotton fields, the infiltration of waters of the Aral Sea into the lands have led to the aggravation of environmental problems in Uzbekistan and the deplorable state of health of the population in the transboundary areas. In addition, the second reason for the lack of water in the Aral Sea was the Karakum Canal in Turkmenistan, built in 1959-1967. Three large reservoirs were built along the Karakum Canal, which received 300 meters 3 of water per second from the Amudarya[32,p.119]. As a result, the waters of the Aral Sea were sharply reduced. It is estimated that 5 million meters of water remain in the canal each year as water evaporates into the air and seeps into the ground[33,p.119]. Changes in the perennial level of the Aral Sea and the degree of salinity[34,p.120]



Another reason for the problem of the Aral Sea is that the reservoirs are built in inconvenient places. There are more than 50 reservoirs in Central Asia. In 1985-1990, the dried bottom of the Aral Sea stretched to 26,000 km<sup>2</sup>. Two-thirds of this area has been turned into saline, saline, sandy, and saline soils. Atmospheric air pollution in the Aral Sea region was 5 times higher than normal. The increase in morbidity in the population, especially among women and children, was a sharp increase in lung disease, anemia, and calcium deficiency. Sadly, the number of births and deaths with disabilities among children has risen sharply. The environmental problems of the Aral Sea are also caused by the development and location of water-intensive production facilities, water-intensive crops in agriculture, such as cotton, technical failures in irrigation systems and poor performance in the operation system. The failure to address these problems in a timely manner has led to an increase in pollution of water, soil and atmospheric air. The use of various beneficial properties and properties of water creates conflicts not only between the ecological needs of human society for economic

and environmental sustainability, but also between the interests of individual consumers and countries[35,p.92].

It is known that the Aral Sea flows from transboundary areas along the stream. It should have been very important for industrial enterprises to pay attention to the water protection system in order to ensure the normal use and quality of water bodies in other countries. In this regard, when various measures were taken, a number of errors in the drying up of the Aral Sea would now be avoided. Insignificant funds have been allocated for water conservation measures taken by the former union. These funds were just a drop in the ocean in solving environmental problems.

Water protection in Uzbekistan [36.p.311].

N⁰	Water distribution	1982y	1985y	1986y	1987y
3.	The need for water in agriculture	3	3	4	3
4.	Demand in industry	12	12	14	14
5.	The need for land irrigation in agriculture	85	85	82	84

In the years before independence, several projects were developed to save the Aral Sea. However, no funds were allocated for the implementation of any project. The opening of the salts in the arid dry lands of the Aral Sea has caused an ecological catastrophe in the marine environment.

In the aggravation of environmental problems, it is necessary to take into account that changes in water and atmospheric air quality are affected not only by industrial enterprises, but also by the extraction of natural fuels and fuels in nature. The former alliance was not indifferent to the country's natural resources either. He used modern techniques in their mining, but did not take sufficient measures to protect them. Excessive extraction of oil, coal and gas in Uzbekistan has led to an increase in the environmental impact of natural resources in these areas.

ITTF the Soviet period, fuel and fuels some of t he production [37,p.29].

Years	Oil (with gas	Gas (mlrd.m <sup>3</sup> )	Coal (thousand tons)
	condensate). A		
	thousand tons		
1970	1805.0	32.1	3 747
1980	1329.4	34.8	5682
1985	1978 34.6 5250		5250
1990	2810.0	40.8	6477

Industrial reserves of fossil fuels and fuels are located in the Angren, Shargun and Boysun fields, and almost all of the mined coal - 96.5% - lignite and the rest - coal. The role of coal products in nature is considered to be very large. Some of the minerals in the soil were coal, which also served as a means of fertilizing the soil and protecting crops from pests. 87% of coal mining in Uzbekistan is open pit. The spread of dust from coal deposits during open pit mining has led to changes in the composition of atmospheric air. It is known that man cannot live without air. The spread of many diseases through the air. In the social protection of the population, first of all, it is necessary to protect the atmosphere. However, the allocation of funds by the former Soviet Union to protect the republic's atmosphere has been declining over the years. Protection of atmospheric air pollution in Uzbekistan[38,p.312].

Protection	1980y	1985 yi	1986 y	1987 у
	72.9	65.1	67.4	73.1

During 1940-1980, the former Soviet Union caused great damage to all the resources and flora of the republic due to a number of reasons, such as ensuring the independence of cotton, extensive development of production, disregard for the laws of nature, unilateral use of natural resources only for economic "efficiency"[39,p.178]. Extensive plant-rich valleys, and the location of fragmented production enterprises in the oases, the construction of large facilities of environmentally unscientific chemical industry enterprises have damaged many areas of the green world in the republic. It has led to a shortage of water and an increase in diseases related to the human genotype in the environment. In our country, natural plants have lost a number of important functions in terms of type, quantity and quality. The breakdown of chains in the circulating movement of water and the deterioration of the natural drinking water level have led to poor quality. Plants also play an important role in the escalation of diseases such as soil erosion and deflation. As a result, the problems of the ecological balance in Uzbekistan, such as problems in the Aral Sea, water shortages, environmental pollution, have become more acute.

The main reason for the negative changes caused by anthropogenic impact on the flora is the environmental imperfections of production technologies used in the national economy. For example, only 53% of a single timber harvested from the forest is converted into industrial raw materials, and the remaining 47% is converted into sawdust, sawdust, sawdust, sawdust, sawdust, and moisture[40,p.179].

Scientific studies show that in the immediate vicinity of industrial complexes, plant yields have decreased by up to 30%. In addition, the negative impact of chemical waste dust in water, soil and atmospheric air on the plant world has led to the extinction of plant species[41,p.179].

The decline of many plants has had a serious impact on the economic and social sectors of the states. Therefore, it is very important to use plants wisely and take measures to protect them.

Nº	Lands	1980 y	1985 y	1986 y	1987 y	
1.	Forest land area	2.3	2.4	2.3	2.3	

Lands created for forest protection in Uzbekistan[42.p.309].

In short, economic development in Uzbekistan was not evenly distributed. The republic's industrial enterprises were only in the footsteps of the former Soviet Union, and the activities of industrial enterprises were in line with its plans. There was a mechanism to provide the industries with products and their technical support, and the inter-republican industries were closely interconnected. Therefore, by the end of the 1980s, the technical condition of industrial enterprises in Uzbekistan showed a high level of dependence on technical equipment in the former Soviet republics. As a result, industrial enterprises have experienced cases of spontaneous breakage and non-compliance with technical requirements. At large industrial enterprises established in Uzbekistan, qualified personnel were brought in to provide local workers. This created problems for industrial enterprises to adapt to market conditions in all conditions. When qualified specialists are composed of local staff, the industrial enterprise would be able to solve some technical problems and allow modern

equipment to enter Uzbekistan. Our local staff, trained in Uzbekistan, is trained only in textiles, car repair and similar light plumbing, and not in the products of a competitive industrial enterprise in a market economy. For example, a shortage of personnel in industries such as metallurgy, machinery, chemical engineering, chemical technology, ecology, working with petroleum products would have prevented problems in industrial enterprises.

In the former Soviet Union, the construction of industrial enterprises in Uzbekistan, which is densely populated and does not take into account changes in the ecological balance, has caused social problems.

- Carrying out the system of ecological education in all spheres;

- Carrying out measures to prevent natural disasters in the so-called ecologically dangerous areas;

- assessment of natural resources and approval of natural resources of state importance as reserves.

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