

**FORMATION AND EFFECTIVENESS OF SANITARY-EPIDEMIOLOGICAL  
SERVICES IN THE UZBEK SSR DURING THE 1970s–1980s**

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**Keywords:** Uzbek SSR, rural population, infectious diseases, healthcare, prevention, organizational measures, sanitation, medical services, anti-epidemic measures, historical experience.

**Abstract:** This article analyzes the organizational foundations and practical outcomes of measures taken to protect the rural population of the Uzbek SSR from infectious diseases. It explores the establishment of medical services in rural areas, the implementation of preventive actions, and the development of the sanitary-epidemiological system based on historical sources and archival materials. The article also discusses the positive impact of these efforts on rural health and considers the relevance of this historical experience for the present day.

At the time of the establishment of the Uzbek SSR, the rural population constituted the majority of the country's inhabitants, making the protection of their health one of the key directions of state policy. In particular, infectious diseases were widespread in rural areas, prompting the need for effective countermeasures. The Soviet government implemented various organizational initiatives to improve public health, including the creation of medical institutions, the enforcement of sanitation and hygiene regulations, and the launch of preventive programs. This study examines the organizational framework and results of anti-epidemic efforts among the rural population in the Uzbek SSR.

In February 1979, the Central Committee of the Communist Party of Uzbekistan and the Council of Ministers of the Uzbek SSR developed a program of measures for the efficient use of natural resources and the protection of the environment. According to these measures, improving sanitation and green infrastructure in settlements, providing drinking water through pipelines, and gasification of rural areas were set as key objectives. However, out of the 198 tasks outlined in the resolution on environmental protection, only 47 were fully implemented.

In the 1980s, Uzbekistan ranked among the highest in the Soviet Union in terms of air pollution of the environment, with only 1.4% of industrial enterprises meeting ecological and hygienic standards [1]. In conditions of a growing population, the regulation and improvement of natural resource use, as well as the strengthening of environmental control, are considered among the most important measures for preventing various infectious diseases. In Uzbekistan, the State Committee for Environmental Protection was established in 1988 [2]. Until the establishment of the State Committee, various agencies had been responsible for environmental protection, which hindered the effective and coordinated implementation of environmental measures. On June 20, 1990, the Supreme Council of the Uzbek SSR adopted the Law "On Sanitary Supervision".

During the Soviet era, industrial enterprises emitting toxic substances were at times constructed in close proximity to populated areas. Factories of the electrochemical plant type exist in only

three locations worldwide. One is situated in the Sahara Desert, approximately 110–140 kilometers away from the nearest inhabited settlement; another belongs to France and is located on the island of Bechu in Oceania. These facilities are used for the production of chemical weapons and pharmaceutical substances [3]. The third such plant is located in the Navoi region of Uzbekistan. Due to severe toxic exposure, factory workers developed green discoloration of their hair and nails. Until 1989, the production of the “isophen insecticide” involved the use of a hazardous substance known as “dinoseb,” which led to an increased incidence of liver diseases among the workers [4].

Toxic substances in the air of major cities contaminated land and water resources, leading to a deterioration of the ecological situation and negatively impacting human health. In 1988 alone, industrial enterprises located on the territory of the Uzbek SSR released approximately 1.3 million tons of harmful substances into the atmosphere. In Uzbekistan, the level of air pollution in cities such as Tashkent, Angren, Almalyk, Andijan, Kokand, Navoi, Fergana, and Chirchik did not meet established sanitary standards [5].

The level of atmospheric pollution was particularly high in the Navoi region. Industrial enterprises such as the Mining and Metallurgical Combine, Navoi Azot, Electrochemical, and Cement Plants were among the major sources of environmental contamination. Emissions from the nitrogen fertilizer plant in the region were a significant factor contributing to environmental degradation and the spread of various diseases among the population. On average, the Navoi Azot Combine released around 1,900 tons of toxic dust into the atmosphere annually [6].

One of the main causes of the adverse socio-ecological conditions in Uzbekistan was the excessive use of toxic chemicals in agriculture, the lack of technological discipline, and the insufficient control over the use of hazardous substances harmful to human health.

In 1963–1964, the Central Committee of the Communist Party of the Uzbek SSR and the Council of Ministers adopted a number of resolutions concerning the use of toxic chemicals. On January 15, 1965, this issue was discussed at the board meeting of the Ministry of Health of the Uzbek SSR. In March–April 1967, upon the instruction of the Central Committee of the Communist Party of Uzbekistan, the Republican Committee for Public Oversight carried out inspections of the storage conditions of toxic chemicals in “Uzselkhoztekhnika” warehouses, as well as their application practices in collective and state farms [7].

As a result, administrative and local authorities implemented a series of measures on this issue. Instructions were distributed among the population regarding the aerial application of chemical agents to agricultural lands. However, at the April 1967 meeting of the Central Committee of the Communist Party of Uzbekistan and the Council of Ministers of the Uzbek SSR, it was concluded that the efforts to protect public health in connection with the increasing use of toxic chemicals in agricultural areas were unsatisfactory.

When this issue was investigated by the Committee of People’s Control of the USSR, numerous violations were identified. It was revealed that during aerial chemical treatments of agricultural lands, technical regulations were consistently violated. For instance, when applying chemicals, pilots were required to fly at an altitude of 5–10 meters, but in practice, they operated at heights of 25–30 meters [8].

In 1971, the Council of Ministers of the Uzbek SSR developed a set of measures aimed at improving the use and storage of toxic chemical substances [9]. According to this policy, by 1975, 67% of the cotton fields in the republic were treated using agricultural aviation, but by

1980 this figure had been reduced to 30%. Each year, farms across the republic used approximately 1.3–1.4 million tons of mineral fertilizers and 80–85 thousand tons of various pesticides. On average, 300–350 kilograms of mineral fertilizers and 20–25 kilograms of pesticides were applied per hectare. In comparison, the average across the Soviet Union was 1.5 kilograms of pesticides per hectare, while in economically developed countries this figure was only 0.5 kilograms per hectare.

Violations of chemical usage regulations in agriculture led to numerous cases of poisoning every year in the republic. For example, in 1970 alone, 11 cases of poisoning due to agricultural chemical use were recorded in Surkhandarya region.

In many areas, mineral fertilizers and toxic pesticides were stored in open air conditions. Out of the 993 warehouses designated for the storage of mineral fertilizers and toxic pesticides in the republic, only 336 met sanitary standards [10].

The amount of chemical substances applied to agricultural lands in the republic increased year by year. Between 1963 and 1970, the use of chemical treatments and various toxic substances on farmlands grew by 1.5 times. In 1950, Uzbekistan was allocated 0.9 million tons of mineral fertilizers, while by 1980 this number had exceeded 5 million tons. Excessive quantities of chemical substances were produced, and large sums were spent annually on their neutralization.

By 1990, 12,000 tons of expired chemical agents had accumulated in the republic. That same year, the Ministry of Health of the Uzbek SSR recorded 13 cases of severe poisoning caused by pesticides. As a result, 245 individuals were affected, with 13 fatalities. Each year, between 35 and 50 cases of chronic occupational poisoning were identified.

For many years, a large portion of the rural population in Uzbekistan was exposed to the harmful effects of toxic chemicals. This situation led to public discontent, especially among those directly involved in cotton defoliation operations. The centralized directive from Moscow enforcing cotton monoculture and related policies had a devastating impact on the health of thousands, particularly children, and caused widespread dissatisfaction among the population [11].

At times, due to the indifference of higher authorities, funds allocated for providing the rural population with clean drinking water were not fully utilized. For instance, in 1967, only 60 percent of the funds allocated for constructing water supply systems in state and collective farms of the Surkhandarya region were actually used [12]. In fact, in some districts, the population had no access to piped water at all. For example, until the late 1960s, residents of the Jarkurgan district in the region were forced to rely on irrigation ditch water for their daily needs [13]. Such situations could also be observed in other districts of the republic's regions. For example, in 1973, only 40 percent of the population in the Kashkadarya region had access to piped water, while the remainder relied on irrigation ditches and well water for consumption [14].

The provision of clean drinking water to the population of Samarkand region was in a poor state. In 1971, only 31 percent of the rural population in the region consumed water through pipelines. Throughout that year, no water supply infrastructure was developed in the districts of Gallaorol, Ishtikhon, Kattakurgan, and Khatirchi. As a result, the incidence of infectious diseases in these districts was particularly high. For example, 50 to 75 percent of typhoid fever cases in the region were reported in these areas. The issue of providing clean drinking water was especially acute among the kolkhoz (collective farm) population. That year, only 4 out of 15 kolkhozes in Ishtikhon district, 8 out of 17 in Narpay, 7 out of 13 in Payarik, and 4 out of 10 in Khatirchi had

access to piped water [15]. In the region, the incidence of typhoid fever increased from 1.6 to 2.4 cases per 10,000 people between 1971 and 1972 [16].

At the beginning of the 1980s, several measures were taken across various regions of the republic to improve access to clean drinking water. For example, in 1982, the Urgench–Khiva–Yangiariq, Zarafshan–Bukhara, Qoyimozor–Bukhara, and Chim–Karshi main water pipelines were commissioned in Uzbekistan. Additionally, 316.4 km of water pipelines were laid in the republic’s kolkhozes and sovkhozes. Moreover, 46 km of sewer systems were installed in urban and district centers, and 40 km in rural areas [17].

Starting from 1988, laboratory inspections were conducted on water reservoirs located in areas where the population consumed drinking water. As a result, it was revealed that 14.1% of Uzbekistan’s water sources did not meet sanitary-hygienic standards. Groundwater pollution was especially high in the Republic of Karakalpakstan and Kashkadarya region.

In conclusion, the organizational measures implemented in the Uzbek SSR to protect the rural population from infectious diseases proved effective. The expansion of medical services, the strengthening of sanitary and hygienic requirements, and the implementation of preventive measures significantly reduced the incidence of infectious diseases in rural areas. This, in turn, contributed to improving public health, increasing labor productivity, and positively influenced socio-economic development. Moreover, this historical experience remains relevant today and can be utilized to further improve the healthcare system.

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