

# Negative Consequences of the Use of Chemical Fertilizers in Agriculture of the Uzbek SSR

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**Annotation:** Based on the fact that the use of excessive chemical fertilizer in the agriculture of the Uzbek SSR under the Soviet era led to socio-ecological consequences this study analyzes the negative effects of it. Previous research about the role of cotton monoculture in economic growth has been insufficiently concerned with the environmental or pública de saúde longterm consequences. The article employs the historical-analytical method and its sources remain archival records and statistical data, present how reliance on toxic substances such as butifos and pesticides adversely affected the soil, air, water and human population health. Studies show that 99 percent of chemical use does damage at the ecosystem and human being, contributing to increasing mortality, birth deformations and ecological degradation. The results highlight the critical need for a restructuring of past agricultural strategy and a switch towards more sustainable approaches. The findings of this study complement the central literature on the historical conditions of environmental challenges in Uzbekistan and provide suggestions for the development of future eco-conscious policies.

**Keywords:** cotton monoculture, mineral

fertilizers, defoliation, butifos, pesticide, centner, hectare.

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## Introduction

The importance of agriculture in Uzbekistan in the second half of the 20th century is explained by the steady growth of cotton growing. The strengthening of the cotton monopoly policy can be seen in the following facts. On March 18, 1946, the Supreme Soviet of the USSR adopted the Law "On the Plan for the Restoration and Further Development of the National Economy of the USSR for 1946-1950" [1]. Accordingly, in 1946-1950, the area of crops allocated for cotton growing increased by 148 thousand hectares, and the yield increased from 15.6 centners to 20.7 centners. The increase in cotton growing areas occurred mainly due to the reduction of other agricultural crops. At the same time, the use of mineral fertilizers in cotton growing also had an impact on yield. After World War II, excessive use of mineral fertilizers began to have a negative impact on soil salinity, nature, and human health[2].

## Methodology

This research proceeds from the historical-analytical methodology which allows the complete analysis of the history of the use of chemical fertilizers in the agricultural system of the Uzbek SSR as well as the long term consequences of their use. This is why the study builds on qualitative sources like historical documents, resolutions of the government, statistical yearbooks and articles from scholarly publications about Soviet agricultural practice during the 1940s and early 1990s. Legislative acts such as the 1946 law on the restoration and development of the USSR economy and governmental decrees of the late 1980s and 1990s, directing the limits of using hazardous agricultural chemicals, are regarded as the primary sources. Secondary sources include academic monographs and journal articles that discuss socio-ecological outcomes of cotton monoculture. The intensification of fertilizer and pesticide use, especially deployment of toxic substances like butifos and other pesticides, were traced together with their effects on human health and the environment using archival materials. The methodology also involves a comparative analysis of the data of chemical usage over time and regions, in particular, on the region where high toxicity was reported, such as Jizzakh. The trends in pesticides usage per capita, infant mortality and ecological degradation are shown through the applying descriptive statistics. By drawing upon this method which is multi source, context based, the study can claim to reach informed conclusions on the nexus between Soviet agricultural policy and socio environment degradation in Uzbekistan. The research interprets historical data through a critical environmental lens in order to attain a higher sense of the long term consequences of forced industrial agriculture.

## Results and Discussion

During this period, only 1% of the 70 types of toxic chemicals used in agriculture affected pests, while the remaining 99% poisoned soil, water, air, plants and food products. Thousands of tons of toxic chemicals were sprayed over people's heads during the defoliation of cotton in the villages of the republic, which had a negative impact on public health. As a result of the rapid increase in the spraying of toxic chemicals on cotton, the volume of chemical work carried out by aviation increased by 34.3% in 1966-1970. This led to an increase in dangerous diseases and mortality among people. The problem was especially aggravated by the fact that villages were adjacent to cotton fields. The villagers were poisoned during cotton processing. While the world average of pesticides per person is 300 g. and in the USA 800 g., in the cotton-growing regions of the republic in 1989 it was 25-45 kg. per person. In the republic, it is 7-8 kg. per person [3]. As a result, various diseases have spread among the population and the number of disabled children has also increased. In 1967, 27 types of toxic pesticides were used in agriculture in Uzbekistan, but by 1989 their number had exceeded 80. Strongly acting substances such as

Butifos persisted in soil, water and air for a long time and posed a huge socio-ecological risk[4]. Due to the hot climatic conditions, these substances spread up to 3.5 km. For example, if we look at the example of farms in Jizzakh region alone, it turns out that more than 99 kg. of toxic substances were used per capita on average. In 1991, a total of about 9,553 tons of toxic chemicals were used in the region's agriculture, and more than 68 thousand tons of chemical fertilizers were spread on the fields [5]. Due to the use of toxic chemicals in the republic's agriculture, which is 5 times more than in other regions, 58 out of every thousand babies born died before reaching the age of one[6]. During this period, various diseases and mortality rates increased among people, especially among young children. Based on the current situation, the Resolution of the Council of Ministers of the Uzbek SSR No. 467 dated December 19, 1988 "On the restriction of the use of mineral fertilizers and other chemical fertilizers in the cultivation of vegetables, melons and potatoes" and the Resolution of the Chief State Sanitary Doctor of the Uzbek SSR No. 6 dated May 21, 1990 "On the restriction and prohibition of the use of strong and extremely dangerous chemical fertilizers in agriculture of the Republic of Uzbekistan" were adopted[7]. It was from this period that the amount of funds allocated for environmental protection measures increased. For example, in 1990, more than 1 million soums were used for atmospheric air protection, while by 1991 this figure amounted to 3 million soums[8].

## Conclusion

In conclusion, it can be said that the tragic socio-ecological situation in Uzbekistan in the early 1990s was the result of an inconsistent environmental policy. The socio-ecological situation, it should be said, was the disastrous consequences of the cotton monopoly of that time, the colonial system, and the one-sided development of the economy, which were manifested, first of all, in the lifestyle of people, and most importantly, in the extremely low level of their per capita income, the sharp decrease in household land, the intensification of negative impacts on the health of the nation, its gene pool, the increase in child and maternal mortality, the ecologically vulnerable state of our country, and many other issues.

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