



## **International Conference on Education, Psychology and Humanities**

Hosted Online from Moscow, Russia

Date: 28<sup>th</sup> September, 2026

Website: <https://econferencia.com>

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### **THE EXPANSION OF THE HEALTHCARE SYSTEM IN SURKHANDARYA PROVINCE, THE ECOLOGICAL-MEDICAL CONSEQUENCES OF COTTON MONOCULTURE, AND THE CRISIS OF THE SOVIET SYSTEM (1965–1991)**

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#### **Abstract**

This article examines the development of the healthcare system in Surkhandarya province during the late Soviet period (1965–1991), the ecological and medical consequences of cotton monoculture, and the way these problems became entangled with the wider crisis of the Soviet system. In these decades the region's health network expanded quantitatively — with more hospitals, rural medical points and specialist services — yet suffered from chronic underfunding, a preoccupation with gross indicators, and declining quality, especially in the countryside. At the same time, the intensification of irrigated cotton cultivation and the heavy use of pesticides and defoliants degraded soil, water and air and contributed to rising infant and maternal ill-health across the republic. Under glasnost these consequences, together with the falsification of cotton figures exposed in the “Cotton Affair,” fed a growing critique of Soviet rule that helped shape Uzbekistan's path to independence in 1991.



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**Keywords:** Surkhandarya, late Soviet period, healthcare system, Semashko model, cotton monoculture, pesticides, defoliants, butifos, ecological-medical consequences, Cotton Affair, glasnost.

### Introduction

The quarter-century between the mid-1960s and 1991 was a paradoxical period in the public-health history of Soviet Central Asia. On the surface it was a time of expansion: medical networks grew, the numbers of hospital beds and physicians rose, and health care reached ever more of the rural population. Beneath the surface, however, the same decades brought stagnation, a widening gap between town and countryside, and an accumulating burden of environmentally driven ill-health. Nowhere were these contradictions sharper than in the cotton-growing regions of the Uzbek SSR, among them Surkhandarya, the republic's southernmost province.

This article traces three intertwined developments in Surkhandarya and the wider republic between 1965 and 1991: the quantitative expansion of the healthcare system and its qualitative limits; the ecological and medical consequences of cotton monoculture, above all the intensive use of pesticides and defoliants; and the way these problems, revealed under glasnost and dramatised by the "Cotton Affair," became part of the crisis of the Soviet system itself. It draws on published historical, medical and environmental scholarship, situating the regional experience within the broader Central Asian and Soviet context.

The study is based on a critical synthesis of secondary historical, medical and environmental literature dealing with late-Soviet public health, cotton agriculture and its ecological effects in Uzbekistan and Central Asia, together with geographical descriptions of Surkhandarya. The approach is historical and interpretive: regional developments are read against all-Union policy and



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republican statistics, while acknowledging that a fuller account of provincial health administration will require systematic archival research in both Russian and Uzbek.

By the mid-1960s the framework of the Soviet health service — the centralised, state-funded and preventively oriented model associated with N.A. Semashko — was firmly established across the Uzbek SSR [9]. In the following decades this framework was extended and elaborated in the provinces. In Surkhandarya, as elsewhere, the period saw the construction of new hospitals and polyclinics, the growth of a rural medical network built around central district hospitals, rural outpatient clinics and feldsher-midwife posts, and an increase in the numbers of physicians, mid-level medical staff and hospital beds. Specialised services — maternity and children's care, tuberculosis and infectious-disease control, and sanitary-epidemiological stations — were expanded to serve a growing and overwhelmingly rural population.

This expansion was real, but it was measured above all in quantitative terms — beds per thousand inhabitants, numbers of institutions and personnel — that concealed serious qualitative weaknesses. Health care in the USSR was financed on a “residual” basis, receiving what remained after industrial and agricultural priorities had been met, and by the 1970s and 1980s the system was visibly under-resourced [9]. Rural facilities in particular often lacked modern equipment, reliable supplies of medicines, clean water and sanitation. The gap between the well-equipped urban centres and the villages widened, and in cotton-growing districts the health of the population was increasingly shaped by factors that lay outside the clinic altogether.

Surkhandarya shared fully in this pattern. As a predominantly agricultural, cotton-oriented province with a young and rapidly growing population, it combined a formally comprehensive health network with the characteristic late-



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Soviet problems of underfunding, shortages and uneven quality. The result was a system that had expanded impressively on paper yet struggled to cope with the disease burden generated by the region's own economic model.

The defining feature of the region's economy in this period was cotton. Under sustained pressure from Moscow to maximise output of the crop known as "white gold," irrigated cotton cultivation was expanded and intensified across the Uzbek SSR until, by 1990, cotton accounted for roughly three-quarters of the republic's agriculture [1]. In Surkhandarya the warm climate and the irrigated valleys of the Surkhan and Sherabad rivers made the province a significant cotton producer, and the drive for ever-higher yields brought with it heavy inputs of water, mineral fertiliser and agricultural chemicals.

The ecological costs were severe. Large-scale irrigation drew enormous quantities of water from the rivers of the Amu Darya basin; combined with poor drainage, this led to waterlogging, secondary salinisation of soils and the depletion of water resources — the same processes that, further downstream, produced the desiccation of the Aral Sea, one of the worst ecological disasters of the twentieth century [2; 4]. Still more damaging for human health was the intensive use of pesticides and defoliants. Persistent organochlorine compounds such as DDT and lindane, applied to cotton for decades, accumulated in soil, water and the food chain, while defoliants — including the notorious butifos, sprayed from aircraft to strip the plants before mechanical harvesting — contaminated the rural environment [1; 6].

These exposures had measurable medical consequences. Across the republic, infant mortality rose sharply in the cotton decades: between 1970 and 1986 it increased by nearly half, and by 1990 the rate for the country as a whole approached sixty-five deaths per thousand live births [1]. Anaemia among women of childbearing age, complications of pregnancy, birth defects, and kidney, liver



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and infectious diseases were widely reported in cotton-growing areas and repeatedly linked by contemporary observers to the chemical burden of the cotton economy and to polluted drinking water [3; 5]. Although the most extreme health effects were documented in the Aral basin, the combination of chemical-intensive agriculture, degraded water supplies and an over-stretched rural health service placed comparable pressures on Surkhandarya. The health of the population had, in effect, become hostage to the demands of the cotton plan.

The strains of the cotton economy were not only ecological and medical but also political and moral. The relentless pressure to fulfil ever-rising targets — the five-year plan came to demand some six million tonnes of raw cotton a year — created powerful incentives to falsify results. Under the long leadership of Sharaf Rashidov, First Secretary of the Communist Party of Uzbekistan, official production figures were systematically inflated, and the republic received billions of roubles from the central budget for cotton that did not exist [7; 8].

After Rashidov's death in 1982 this system of fictitious accounting — the *pripiski* — became the object of a vast investigation launched from Moscow. The inquiry led by the prosecutors Telman Gdlyan and Nikolai Ivanov implicated tens of thousands of officials; by some estimates more than fifty thousand people were involved in cotton-related fraud, and around twenty thousand were eventually convicted, amid sweeping purges of the republican elite [7; 8]. The “Cotton Affair,” as it became known, was the largest corruption case of the late Soviet Union and exposed the deep entanglement of local patronage networks with the centralised planning system.

Under Gorbachev's policy of *glasnost* the affair merged with a wider public reckoning. From 1988 the Soviet press began, for the first time, to report openly on the darker side of the cotton economy: the exploitation of child labour in the fields, the use of dangerous defoliants such as butifos, and the spread of illness



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and deformities among children in rural areas [6]. What had been an internal medical and ecological problem became a public indictment of Moscow's management of the republic. Deputies from Uzbekistan condemned the cotton monoculture as a cause of economic stagnation and widespread illness [1], and the combination of ecological catastrophe, damaged health and humiliating scandal fed a growing sense of grievance.

These developments contributed directly to the unravelling of Soviet authority in Central Asia. The Cotton Affair and its associated purges alienated much of the Uzbek elite from the centre, while the ecological and health consequences of cotton monoculture supplied a powerful narrative of exploitation that would underpin claims to national self-determination. As the Soviet system entered its terminal crisis, the leadership of the Uzbek SSR moved from communist orthodoxy towards an assertion of sovereignty, and in 1991 Uzbekistan emerged as an independent state, inheriting both the institutions and the accumulated problems of the late-Soviet decades [6; 7].

### **Conclusion**

The years from 1965 to 1991 left Surkhandarya, like the rest of the Uzbek SSR, with a double inheritance. On one side stood a genuinely expanded healthcare system — a dense network of hospitals, rural clinics and specialist services built on the Semashko model — which brought basic medical care to a largely rural population. On the other stood the accumulated damage of the cotton monoculture: salinised and chemically contaminated land, polluted and depleted water, and a burden of environmentally driven disease that the health service, chronically under-funded, could not contain.

The late-Soviet crisis brought these contradictions into the open. Through the Cotton Affair and the revelations of glasnost, the ecological and medical costs of



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the cotton economy became a public and political question, discrediting Soviet rule and helping to shape the case for independence. The history of these decades thus occupies a pivotal place in the modern development of Surkhandarya: it marks both the high point of the Soviet healthcare model in the region and the moment when the human costs of the system's economic priorities could no longer be concealed. A fuller understanding of the provincial dimension of this story remains an important task for future archival research.

### References

1. Uzbekistan: A Country Study. Washington, D.C.: Federal Research Division, Library of Congress. (Environmental issues; infant-mortality statistics.)
2. Ataniyazova O.A. Health and Ecological Consequences of the Aral Sea Crisis. Paper prepared for the 3rd World Water Forum. Kyoto, 2003.
3. Ataniyazova O.A., Baumann R., Liem A.K.D. et al. Levels of certain metals, organochlorine pesticides and dioxins in cord blood, maternal blood, human milk and some commonly used nutrients in the surroundings of the Aral Sea // *Acta Paediatrica*. 2001. Vol. 90. P. 801–808.
4. Organochlorine Pesticides and Salinity in Karakalpakstan, Uzbekistan: Environmental Health Risks Associated with the Aral Sea Crisis // *International Journal of Environmental Research and Public Health*. 2025. Vol. 22. Art. 1751.
5. Toichuev R.M., Zhilova L.V., Paizildaev T.R. et al. Organochlorine pesticides in placenta in Kyrgyzstan and the effect on pregnancy, childbirth and newborn health // *Environmental Science and Pollution Research*. 2018.
6. Cucciolla R.M. Legitimation through Self-Victimization: the “Uzbek Cotton Affair” and its Repression Narrative (1989–1991). 2017.
7. Cucciolla R.M. The Crisis of Soviet Power in Central Asia: the “Uzbek Cotton Affair” (1975–1991). PhD dissertation. Rome, 2017.



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8. The Uzbek Cotton Affair: falsified cotton production and the late-Soviet purge (the Gdlyan–Ivanov investigation). Overview.
  9. McKee M., Healy J., Falkingham J. (eds.). Health Care in Central Asia. Buckingham; Philadelphia: Open University Press (European Observatory on Health Care Systems), 2002. 378 p.
  10. Surkhandarya (Surxondaryo) Province: geographical and historical survey. Encyclopædia Britannica; Wikidata (Q487537).