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## Old Farming Habits Leave Uzbekistan a Legacy of Salt

By [SABRINA TAVERNISE](#)

KHUJAYLI, [Uzbekistan](#) — Salt crunches underfoot like frosty soil on this bare stretch of land in western Uzbekistan.

“Thirty years ago, this was a cotton field,” said a 61-year-old farmer who has lived near this city all his life. “Now it’s a salt flat.”

Uzbekistan, a land-locked country that was once part of the Soviet Union, is home to one of the biggest man-made disasters in history. For decades its rivers were diverted to grow cotton on arid land, causing the Aral Sea, a large saltwater lake, to lose more than half of its surface area in 40 years.

But old habits are hard to break, and 17 years after the Soviet Union collapsed, cotton is still king and the environmental destruction continues unabated, cutting into crop yields. Uzbekistan is the world’s second-largest cotton exporter after the United States, drawing a third of its foreign currency earnings from the crop, but that status seems increasingly threatened by corruption, poor planning and the degradation of cropland.

Far less money is spent now on maintaining the vast networks of water drainage and irrigation that crisscross the country than was expended under Communism. Authorities spend about \$12 per hectare on maintenance (a hectare is around two and a half acres), down from \$120 per hectare in Soviet times, according to the International Water Management Institute. Blocked drainage pipes push salt levels up, damaging the land and dragging crop yields ever lower.

A [United Nations](#) report in 2001 estimated that 46 percent of Uzbekistan’s irrigated lands have been damaged by salinity, up from 38 percent in 1982 and 42 percent in 1995.

“The delivery system is dilapidated, the drainage system is failing,” said one foreign expert, who asked that his name not be used because he has to work with Uzbek officials. “It is a big problem.”

How that has affected cotton production is a difficult question. Cotton and its production are ensnared in politics, so national statistics on it are scarce. But a pattern of decline in the industry was evident in three regions based on local figures provided to The New York Times.

In Karakalpakstan, the region that contains what is left of the Aral Sea, the total area of land under cultivation has dropped by 14 percent since 1991, according to local statistics. In the Bukhara region in the south, land planted with cotton has declined by 15 percent in the past eight years, and in Jizzax, a region in central Uzbekistan, 15 percent of the cultivated land has become too salty to farm.

In Manghit, a small city near Khujayli, an early sign of saltiness came in the 1980s when mushrooms that had grown along the banks of the mighty Amu Darya River began to disappear, a local farmer recalled. Soil that used to grow 4.5 tons of raw cotton, measured with seeds and stems, per hectare now produces 2.5 tons, and in some places as little as 1.3 tons, said the farmer, who asked that his name not be used because Uzbek authorities frown on people speaking to foreign journalists.

“When you see this salt, sad, dark thoughts take you,” he said, explaining that the salt is what is left when water evaporates after intense irrigation. “Nothing grows on salty land. It’s like standing on a graveyard.”

Uzbekistan’s environmental problems date from the 1950s, when [Nikita S. Khrushchev](#) ramped up industrial agriculture, diverting river flows into a vast new maze of industrial-size canals. Slowly, the land began to change.

The farmer in Khujayli recalled a car trip with his father in the winter of 1954 near the city of Muynoq that began with a crossing of miles of Aral Sea ice. Now the shore is more than 50 miles away from the city. In the 1970s, his grandfather’s apricot trees died. Salt eats away at shoes here and turns bricks white. “For so many years we raped the land,” said the farmer. “This is the result.”

Sharing dwindling water resources is a maddening post-Soviet puzzle. Central Asia, once a single part in the Soviet machine, is now five countries with competing interests. Uzbekistan, the most populous, depends on its neighbor Kyrgyzstan for water. This year will be dry, Uzbek farmers and officials said, because Kyrgyzstan used more of its water than usual to generate electricity for heat last winter, which was unseasonably cold.

Environmental woes, however, are only part of the problem. Uzbekistan's farming industry is still largely frozen in its Soviet past. Though the industry was rearranged several years ago to break the Soviet-era collective farms into private plots, the price paid for cotton is still set by the government, as are the quotas for how much to grow. The state price is set at less than one quarter of the world market price.

As yields decline and government prices remain low, farmers say that profits are increasingly elusive, and in some areas farmers have begun to abandon their fields. One farmer in Jizzax said he had stopped farming one parcel that had grown too salty, and he drove with a reporter past abandoned fields that stretched as far as the eye could see, more than 700 acres, he said.

As in Soviet times, production plans are not closely coordinated with the realities on the ground, and in Jizzax the local authorities, whose jobs depend on fulfilling quotas, have started to force bad fields — about a third of the cultivated land area in the region, according to local statistics — onto state institutions such as the post office, the state pension fund and schools, three farmers there said. Those, in turn, are forced to farm the land or to pay cash to satisfy the quota.

"Jizzax is an experiment," said one of the farmers, who asked that his name not be published to avoid trouble with local officials. He provided a document for a plot of land that had been abandoned by a farmer and was now the responsibility of a local school. Farmers who did not meet quotas were fined and even taken to court, as was the case in April with 89 farmers.

"Farmers have no rights," he said. "They are just ordered around by the government."

The farmers who are fined must pay with cash, which forms the heart of a cycle of corruption that has enriched officials for generations. Those officials, envied and vulnerable to charges of corruption, change with the seasons: In Jizzax, there have been five heads of the main cotton processing factory since 2000, the farmers said.

Some farmers violate the government's rules and plant crops other than cotton, a practice that has been encouraged by foreign experts who say that crop rotation will allow the land to rest. But the government has often prohibited other crops, not wanting to suffer declines in cotton, and farmers grow other things at their own risk. This spring in Tajikistan, a neighboring country that also relies on cotton, farmers were growing watermelons on the sly, as though they were crops of illicit opium poppies.

"We are destroying ourselves," said the 61-year-old farmer in Khujayli. "Why are we planting cotton, and what are we getting from it? We never ask those questions."

The government is starting to acknowledge the problem, and last year it issued an order that will set up a fund for drainage improvements. The [World Bank](#) is also financing a program to improve drainage.

Some experts argue that if irrigation is managed properly, the soil in most of the country can still be productive. Wheat yields, they say, have increased sharply in the past decade, which is evidence of soil fertility. In a study of 12 farmers in the Khorezm region over four years, Kirsten Kienzler, a doctoral student at the Center for Development Research of the University of Bonn, said their cotton and wheat harvests were not declining.

She argued that farmers were still steeped in the Soviet system, in which the state did everything, and while it is true that they do not receive world prices for cotton, they are also not paying world prices for fuel, fertilizer or water, which are subsidized by the state.

Even so, the state still owns the land, and farmers said they were leery of committing to large projects while they remained renters. A farmer in the Bukhara region said that he was no longer breaking even, since fuel prices jumped in the past few years, and that he secretly hoarded cotton to sell on the black market to pay his bills.

"I am stealing from myself," he said, gesturing at a storage room piled high with illicit cotton. "Soon I'll have to sell these," he added, snapping the waistband of his sweat pants.

*David L. Stern contributed reporting from Tajikistan.*

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