**Changing attitudes raise hopes for Azerbaijan toxic pollution clean-up**

*The just released* Lancet Planetary Health, Pollution and health: a progress report*, found*

*that all forms of pollution cause more than 9 million deaths annually, a figure that has not changed since 2015. It notes that only a few low-income and middle-income countries have been able to make pollution a priority, devoted resources to pollution control, or made progress. This seems to be the case in Azerbaijan, a former Soviet industrial centre that manufactured industrial and agricultural chemicals whose legacy is hundreds of toxic chemical waste dumps. However, many sites have now been identified and some clean-up efforts are taking place.*

Rovshan Abbasov takes pollution personally. A native of Azerbaijan he grew up privy to two worlds: daily life in his village in the former Soviet Union state, which included the drudgery — even as a child — of farming cotton that was heavily treated with pesticides, and summer holidays in the mountains, breathing fresh air and drinking milk and cream produced by the nearby flocks of sheep.

“The pastures where I spent my summers were endless grasslands filled with different types of flowers,” Rovshan [writes in a blog post](https://www.pureearth.org/polluted-clean-personal-tour-azerbaijan/). “Every day we drank high quality milk, and ate yogurt, cheese and lived in an absolutely pristine environment. Every afternoon I helped adults milk our sheep. After that, my mother cooked the milk and emptied it into a very large pot and covered it. The next morning we had very nice crème… I am sure I will never have that wonderful flavour again.”

**Deceptive ‘white gold’**

Ironically, it was cotton harvesting that was valued above all. Known as ‘white gold,’ one million tons of the crop were produced annually in Azerbaijan, work that trumped attending school. But that experience meant more than missing classes, Rovshan writes. “Something I remember very vividly was the small planes we always saw flying over us at a height of no more than 4-5 meters. Many children my age and older stayed near the field and looked at the planes with interest. I always saw a white powder with terrible odour spill from the planes. Sometimes I had a headache after smelling the powder. Later, I learned that it was poisonous DDT.”

“Almost every village in Azerbaijan has a distribution point for pesticides, for DDT, because the Soviets needed cotton,” Rovshan says in a recent Zoom call. “DDT was banned worldwide in 1978. In 1981 it was banned in the Soviet Union but it was still in use in Azerbaijan. It was the last country in the world to stop using it.”

Adds Rovshan: “The Soviets liked to develop hazardous industries in provincial states, like Azerbaijan, which was a major producer of POPs (persistent organic pollutants) pesticides.”

It’s no surprise then that in 2007 one Azerbaijan city on the Caspian Sea coast, Sumgayit, was named to the list of The World’s Worst Polluted Places. [According to the report](https://www.worstpolluted.org/reports/file/2007%20Report%20updated%202009.pdf), by the Blacksmith Institute (later Pure Earth), the city housed more than 40 factories manufacturing industrial and agricultural chemicals, which were linked to major health impacts.

The 2007 report notes that, “A study jointly conducted by the UNDP, WHO, Azerbaijan Republic Ministry of Health and the University of Alberta demonstrated that residents of Sumgayit experience intensely high levels of both cancer morbidity and mortality. Cancer rates in Sumgayit are 22-51% higher than average incidence rates in the rest of the former Soviet Union. Mortality rates from cancer are 8% higher... A high percentage of babies are born premature, stillborn, and with genetic defects like Mongolism, anencephaly, spina bifida, hydrocephalus, bone disease, and mutations such as club feet, cleft palate, and four or six fingers or toes.”

**Food contamination**

The 2021 Health Pollution Action Plan (HPAP) for Azerbaijan notes: “High levels of carcinogenic chemicals have been detected in products such as bread, pastries, milk, eggs and fish products. High concentrations of PAH (Polycyclic Aromatic Hydrocarbons) were also found in fish and other types of water species. However, to date, there are no comprehensive action plans in place to detect toxic contaminants in food.” (Several types of PAHs and some specific mixtures of PAHs are considered to be [cancer-causing chemicals](https://www.epa.gov/sites/default/files/2014-03/documents/pahs_factsheet_cdc_2013.pdf).)

The HPAP, a program of the Global Alliance for Health and Pollution (GAHP), which brings together government ministries, academics, the private sector and civil society to form a working group that chooses a country’s top environmental issues to focus on and how to tackle them was developed in Azerbaijan.

Besides DDT, Azerbaijan was one of the main producers, and users, of other persistent organic pollutants (POPs), such as HCH, aldrin and dieldrin, says Pure Earth. “Assessments and inventories confirm that during the Soviet period, approximately 25,000 tons of DDT were used in Azerbaijan yearly. POPs pollution is one of the main pollution problems of Azerbaijan. Despite countless efforts, legacy POPs sites in Azerbaijan still pose danger to human health.”

By the mid-2000s, Rovshan had graduated with a geography degree and, obsessed with understanding why people would choose to pollute the earth, had established the Environmental Science Centre at the University of Khazar. He later became country coordinator in Azerbaijan for Pure Earth before working with GAHP.

**Identifying toxic sites**

In 2012 the NGO Pure Earth launched the Azerbaijan version of the global Toxic Sites Identification Programme (TSIP) training 15 people, 8 of whom became investigators for the NGO. Since then, says Rovshan, the project has identified more than 130 sites contaminated by pesticides and other pollutants. “I’m very satisfied with the TSIP programme. If not for it, we would never have this pollution database. However, while the programme has ended there is still much more work to do. We would continue if there was funding. We have so many hidden pollution hotspots in Azerbaijan, which contain a broad range of hazardous substances — DDTs POPs, pesticides.”

While more can be done to unearth toxic sites, major steps have been taken to remediate existing ones, as a follow-up to the TSIP. This started with the notorious city of Sumgayit, in 2015. Its beach had become one of the most polluted areas, because a chemical plant had built what is called an industrial settling pond nearby.

“The factory pumped all their industrial waste into this pond, let it settle, and then moved the wastewater onto a treatment facility. This is quite a common practice,” explains Petr Sharov, Pure Earth’s regional director for the Former Soviet Union, [in a blog post](https://www.pureearth.org/a-toxic-beach-in-azerbaijan-gets-cleaned-up-solar-baths-become-safer/). “But when the toxic sediment left behind began to fill the “pond,” the workers simply scooped it out, and mixed it with limestone in an attempt to neutralize it.”

Led by Pure Earth and site owner Azerikimya Joint Stock Company the project removed 804 m³ of contaminated soil, disposing it in a hazardous waste landfill. Average pollution levels in the upper 0.5 metre of the soil fell by an average of 97%. Next, more than 13,000 m³ of clean soil and organic fertilizer were spread over the area, about 1,200 native tree species were planted, and a drip irrigation system was installed. The area is now a park close to the beach.

**Former storage facility rehabilitated**

The work didn’t stop at Sumgayit. Clean-up of Salyan, a former storage facility for pesticides and fertilizers, took place in 2017-18. The site included about 600 badly damaged metal drums containing liquid pesticide and about 50 kg of Granozan, a highly toxic mercury-based pesticide. Torn bags filled with DDT were also unearthed. More than 500 m3 of contaminated material was removed from the site in the collaboration, which included Pure Earth, various Azerbaijan government ministries, the European Commission and the private sector.

A similar broad-based approach was taken to establish the HPAP working group in 2019. It has 19 members from 18 organizations, including government representatives, academia and NGOs. In 2021, when the HPAP was finalized, 8 out of 19 members of the working group were women. Rovshan says priority one is a study of lead levels in children’s blood. Next, should be a multimillion-dollar project to remediate sites contaminated by POPs and clean-up of oil-polluted lakes. Air pollution also requires urgent attention, he adds.

Despite that long pollution To-Do list, Rovshan is optimistic. “We have a much bigger community of environmentalists than we had 10-15 years ago. Many people are getting interested in environmental problems. When people are educated they start to pay attention to these issues, and then politicians start to take care. I’m very happy that policymakers have become more and more sensitive to this kind of issue.”