

New Strategic Master Plan to coordinate remediation of uranium legacy sites in Central Asia

By Mariam Arghamanyan

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— Baigabil Tolongutov, Director, Centre for State Regulation of Environmental Protection and Ecological Safety, Kyrgyzstan

Uranium mills produce tailings, a sandy byproduct that contains heavy metals and radium. This image shows tailings in Tajikistan's Degmay uranium legacy site.

(Photo: M. Roberts/IAEA)

A Strategic Master Plan published in May 2018 is set to help accelerate remediation efforts at former uranium mines in Central Asia. With the necessary funding, the highest-priority sites can be remediated in just a few years.

The new plan, developed under the leadership of the IAEA in cooperation with experts from the region and international organizations, creates a framework for carrying out remediation activities in a timely, coordinated, cost-effective and sustainable manner. Building on European-Union-funded environmental impact assessments and feasibility studies and studies completed by the Russian State energy agency, Rosatom, the plan identifies hotspots and remediation priorities in the region. It also provides risk assessments and cost estimates.

The uranium mining legacy sites are located in the Fergana Valley area, home to 14 million people and one of the most fertile and densely populated areas of Central Asia. Its Syr Darya River is one of the principal rivers in the region. Among the aims of the projects highlighted in the Strategic Master Plan is the promotion of regional cooperation and a contribution to greater stability and security in the region.

The document identifies seven former uranium production sites in Kyrgyzstan, Tajikistan and Uzbekistan as highest priority for remediation (see map). About €130 million is still needed to finance the remediation, in addition to the €30 million already raised. The European Commission is planning a high-level pledging conference for late 2018 to attract contributions to the Environmental Remediation Account for Central Asia. This account, managed by the European Bank for Reconstruction and Development, will be used to fund remediation activities at the seven sites.

A small number of local and regional remediation efforts have already taken place, but — due to resource limitations — their aim has been to contain rather than clean up contamination. Preliminary remediation activities overseen by Rosatom have commenced in other sites in the region.

"The plan will act as a roadmap to enable the best use of the limited resources available for remediation at national, regional and international levels by aligning these activities with explicitly stated and agreed goals," said Michelle Roberts, a waste safety specialist at the IAEA in charge of the programme.



The plan will be regularly reviewed, re-evaluated and updated to accurately reflect the progress and priorities of the programme, she said.

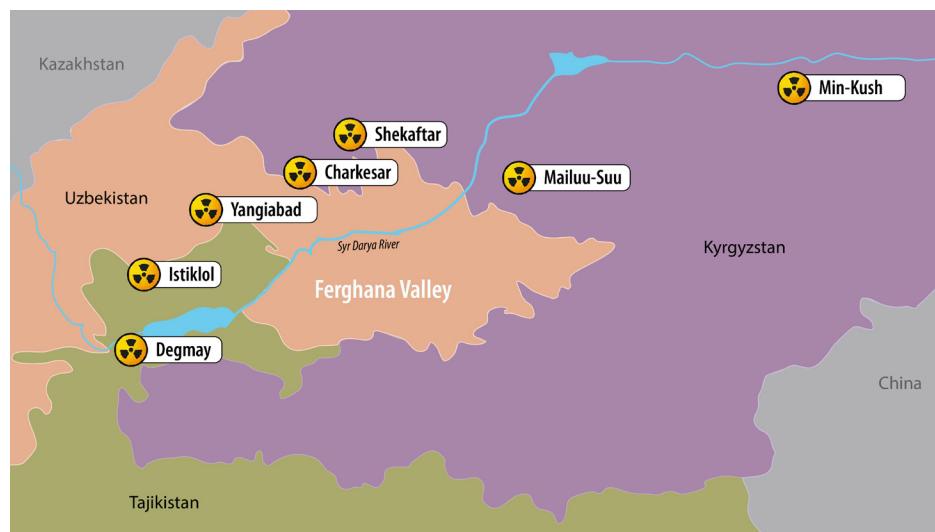
Legacy of mining activities

The uranium mining sites were built in the mid-1940s, at a time when few regulatory provisions were in place for eventual end-of-life management. The sites were used for several decades before being shut down in the 1990s. These mines, and the uranium processing infrastructure on the sites, still contain residues of radioactive and highly toxic chemical contaminants.

Average gamma dose levels at the sites range from 0.30 $\mu\text{Sv/h}$ to 4.0 $\mu\text{Sv/h}$, which equals an exposure of between half an hour and four hours of average global natural background radiation. A number of factors, however, could cause the contamination to accumulate or spread.

"Located in a seismically active region prone to earthquakes, landslides and floods, there will remain a risk of the release of contaminated material into the rivers until the sites are remediated," said Baigabyl Tolongutov, Director of Kyrgyzstan's Centre for State Regulation of Environmental Protection and Ecological Safety.

A release on this scale could result in long-lasting restrictions on the use of water, leading to a major water shortage with consequences for people's health and the economy, he said. It may also affect stability and security in the region, particularly if



radioactive or toxic materials were to be transported across borders.

Uranium mining legacy sites identified for remediation in the Strategic Master Plan

(Source: Strategic Master Plan)

United Nations resolution

The need for a coordinated approach to remediation was recognized in 2013 by a United Nations General Assembly resolution emphasizing the responsibility of the international community in averting the radiation threat in Central Asia. Addressing the legacy of past uranium mines is also instrumental to the achievement of the United Nations Sustainable Development Goals, Tolongutov emphasized. "The remediation programme will contribute to long-term socioeconomic development by developing skills and increasing employment."

The plan has been developed by the Secretariat of the IAEA Coordination Group for Uranium Legacy Sites, which is co-funded by the European Union.

