E-tools of the Aarhus Convention

“Uranium Tailings in Central Asia: Local Problems, Regional Consequences, Local Solution”

Results of the regional electronic discussion forum of CARNet

www.uranium.carnet.kg

Geneva 2009

Uranium tailings in Central Asia: examples of unsanctioned use of uranium tailings by local population

(from the survey at e-discussion forum):

1. ***Vast area of tailing in Sumsar (not far from Shekaftar) is used by local residents as a hippodrome and a field for a national game "Ulak Tartysh" ;***
2. ***Some tailings in Mayluu Suu are used as helicopter or delta plane landing deck;***
3. ***Use of tailings by local population to collect scrap metal , cable and electrical products is widely spread. There have been victims already, for example, 2 men died in Kadzhisay during collecting scrap metal at tailing, and one man died at the tailing N7 in Mayluu Suu;***
4. ***Local people pick up scrap metal even at guarded tailings in Min-Kush doing this at moonlit nights;***
5. ***Flat fields at tailings are well fit for children games such as hopscotch, football and other games;***
6. ***In Mailuu-Suu a local resident living nearby the tailing N6 used its territory to plant corn for sale and poplar nursery;***
7. ***All tailings in Kyrgyzstan and Tajikistan are used for grazing cows, the milk of which then are used for sale or personal consumption;***
8. ***The functioning Kara-Balta tailing is used by local population for grazing livestock, hunting (pheasants, chuckar), fishing in accumulating tanks, picking up metal scraps and cables, and as a dating place at nights;***
9. ***Local population use mine rocks from uranium dump pits and drifts and use these highly radioactive materials for construction of houses.***

The Aarhus Convention
Article 5: Collection and dissemination of environmental information
§3. *Each Party shall ensure that environmental information progressively becomes available in electronic databases which are easily accessible to the public through public telecommunications networks.*

Regional Electronic Discussion of CARNet Network: "Uranium Tailings in Central Asia: Local Problems, Regional Consequences, Global Solution"

Introduction

"Awareness gaps" on the problem of uranium tailings were inherited by Central Asian states from the **uranium industry of the Soviet Union**. This topic has always been a top secret both in official and expert circles and population usually obtained the information about threats, risks and real situation in limited portions or in the form of rumors or guesses.
Today the CA countries – Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan – the territories of which have **more than 800 mln. tons of radioactive mining and processing wastes -** do not have an effective system and sustainable practices of raising public awareness about these problems. And one of the fundamental rights of citizens envisaged in the Aarhus Convention – the right for access to information is still being violated.

Low awareness about real threats leads to that people living in the territories of industrial mining and processing of uranium ores are exposing themselves to the risk of radiation. They open the tailings, enter the conserved uranium mines and rock dumps, collect contaminated scrap metals, electrical and cable products, graze livestock in the territory of sites, and use contaminated materials for construction, economic and domestic needs.

Another aspect of the issue: population living far from the uranium sites do not have an idea about the existing problem. "Uranium tailings – what are they?" is the most widely spread reaction. However, radioactive pollution does not know territorial or state boundaries! Majority of uranium tailings are located in mountainous areas or in the basins of transboundary rivers. Any emergency situation like, for example, landslide or flood, caused by natural disasters (earthquake, rainstorms) , which have become frequent due to the climate change, pose threat of potential radioactive contamination of vast territories and can affect many hundred thousands of people.

Another angle of the issue is lack of effective and systematic exchange of information both within the countries and the region. Its lack is experienced by experts, specialists, practitioners, scientists, representatives of the public and local self-governments. Today the CA countries have reached understanding in that the uranium tailings are their common problem and they need an effective mechanism of exchange of experience, both successful and failure practices, joint solution and single approaches at the regional level.

Comments from the e-discussion forum:

Zokirov I.H. – Chairman of the Sogdian oblast television (STV):"*Population of Central Asia know little about the problems of radioactive waste and tailings. Unfortunately, there many myths, fictions and scoops about these wastes!!! And it is not only due to that the topic has been closed for all states in post-soviet area until recently, but also due to the shortage of environmental specialists and journalists in this area. Implementation of measures with support of the OSCE and UNDP through organization of workshops, conferences, journalist contests to increase awareness and develop skills of journalists started only recently. As a result, nowadays we can see more analytical materials with reliable data on pages of newspapers and on television.*
In Sogdian oblast of Tajikistan there is a weekly newspaper Varorud working in this area, also local mass media publishes materials on the issue. This problem is systematically covered in the oblast TV (STV). For example, we produced with the financial support of OSCE a film "Saving through actions" (2008), which tells about the current situation, problems and threats of uranium tailings located in Sogdian oblast. The film was translated into three languages: Tajik, Russian, English and regularly shown on local TV channels and presented at conferences and workshops".

Guest, Kazakhstan:

"The role of journalism in covering of problems of radiological safety, and not only about uranium tailings, is invaluable, despite some simplicity of statement of the problem. But what is most important in these materials is their timeliness, relevancy and the aim to find truth".

Svetlana Lapteva, reporter of the newspaper "Vecherny Bishkek":

"It would be great if Guideline was developed specially for journalists containing basics of radiation safety and tailings data across all Central Asia, plus international experience in this area and case studies. This would be very helpful for journalists in covering the issue."

Dmitry Prudskih, Director of the Aarhus Center in Khudzhent:

"There are some good examples of informational cooperation among the countries of our region. This kind of work was mainly carried out by the UNDP in Kyrgyzstan and Tajikistan. In 2004-2006 a project was implemented under the ENVSEC Initiative with participation of emergency ministries of these two countries. It was initially assumed that the work will be continued in future but, unfortunately, all this remained in words and no action followed after closing of the project. Another mechanism is about attracting groups of REACT in Tajikistan and Kyrgyzstan, which includes both government, international and public organizations.
As we already have a common informational network, it only needs to be focused on solution of certain tasks».

Improvement of information exchange and public awareness, both of local population and a wide public of real threats, risks and consequences is an important area for addressing the socio-economic and environmental problems of CA uranium tailings. CARNet Network offers a new mechanism for raising awareness of experts, public and decision-makers using the services of Internet, through electronic discussion forum (E-Forum).

The E-forum "Uranium Tailings in Central Asia: Local Problems, Regional Consequences, Global Solution" was organized as part of the informational support and preparation for the High-Level International Forum in Geneva and run from 10 March through 10 May, at the following internet address http://uranium.carnet.kg .

Both national and international experts in the area of radioactive safety, emergency situations, public health, tailings management, as well as representatives of NGO, local communities, business organizations, donor and international organizations, and all those who are interested in the problem were invited to discuss the issue in the electronic discussion forum.

The E-forum has become possible due to the support provided by the UNDP Environment Programme and the UNDP "Assessment of Radioactive Waste Management Capabilities in the Kyrgyz Republic in Transboundary Context" project.

The goals of the electronic discussion:

- Improvement of regional coverage of tailings issues in Central Asia;
- Involvement of public and experts in the discussion of uranium tailings issues;
- Creating effective tool for dissemination of latest and reliable information about the uranium tailings in CA for decision-makers and wider public;
- Building an interactive platform for exchange of experiences and best practices;
- Informational support of the Regional Conference (Bishkek, April, 2009) and International Forum of Donors in June 2009, in Geneva.

The Electronic discussion was organized around 4 thematic areas:

Section 1: Environmental and health impacts of tailings. Moderator: Natalya Rashepkina – Leading engineer –ecologist of "Chuy Ecological Laboratory", Kyrgyzstan. e-mail: rana56@mail.ru

Section 2: The problems of uranium tailings in transboundary context. Moderator: Vyacheslav Aparin **–** Head of the laboratory party "Geoecology", state enterprise "Hydroingeo Institute", Uzbekistan. e-mail: aparin@inbox.ru

Section 3: Effective management of tailings: exchange of experiences. Moderator: Saltanat Baymurzanova – Professional Development Manager, Public Foundation "EcoIDEA", Kazakhstan . e-mail: salta79@bk.ru

Section 4: Joint proposals to the Regional Conference in Bishkek and International Forum of Donors on Uranium Tailings in Geneva. Moderator: Dmitry Prudtskih – Director of the Aarhus Center in Khudzhent, Tajikistan. e-mail: ygpe@sugdinter.com

Regional moderator of the e-discussion – Alexey Kobzev, Chief of International Relations Unit, Ecological Movement of Uzbekistan, National Coordinator of CARNet in Uzbekistan. e-mail: ecopol@tps.uz

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Comments from the E-discussion forum:

Isakbek Torgoev, Candidate of Technical Sciences, Director of Science and Engineering Center "Geopribor", Chief of the laboratory of Geoecological monitoring, Institute of Geomechanics and Subsurface Resources of the National Science Academy of KR:

"Analysis of modern ecological situation in radioactive waste storage areas shows that negative impact of radioactive waste on environment can be seen in pollution of different components of environment. First of all, we talk about the hydrosphere pollution (surface and subsurface waters) with radionuclide and other toxic elements that can be conserved for a long time in different forms and concentrations in dump storages, and which enter the environment due to the poor gas and hydro isolation of storages, degradation of their protective covers and equipments. So, for example, water in Mayluu-Suu and soil nearby tailings is heavily polluted with uranium and selenium, flora with selenium, as well as high concentration of chrome, arsenium and weak concentration of uranium were found in the organisms of people living in Mayluu- Suu".

Vyacheslav Aparin, Chief of the Party of Laboratory " Geoecology", Institute Hydroingeo:

"Apart from radiation, tailings are also the source of pollution with heavy metals because radioactive radium and heavy metals are remain in solid after extraction of uranium. Because the minerals to Mayluu-Suu were brought from different countries such metals as chrome, nickel, cobalt, which are not characteristic for this territory are now can be found in the natural environment. Metals are concentrated in plants, which get into human body through domestic animals. For example, usually selenium is contained in plants in small amounts – less than 0,01 per kg. of dry mass. At tailings in Mayluu-Suu concentration of selenium in dry mass of plant is 260 mg.per kilogram, what means that it can be extracted from this plant."

Zafar Razykov, Vice-rector of Mining and Metallurgical Institute of Tajikistan, expert:

" If to assume that we find the resources for tackling of this problem in the nearest future, then the question of human resources will arise. Unfortunately, many specialists in this area moved out of the country. Even if we get funding and launch the projects, there is no one who can work on the mid- and high level of technical engineering! Mining and Metallurgical Institute of Tajikistan is ready to take part in solving the problem of human resources. It is necessary to train students giving them narrow specialization in mining, recycling, environmental engineering".

Muzaffar Yunusov, Doctor of Chemical Sciences, Professor:

"Digmayskoe is a functioning tailing but as there hasn't been processing works there for more than 20 years, the pulp does not get there. Around the Digmayskoe tailing – almost up to the Syrdarya River – there are more than 70 monitoring wells. The results of analysis and control show that concentration of uranium in underground water does not exceed the maximum permissible emission. Potential threat comes from the release of radon and decay products and this issue is under our control. Another problem concerns the state of tailing dam as it has not been examined for the last 30 years. This is a very serious issue!"

Statistics of the discussion: Figures and Tendencies

During two months the discussion forum registered 26504 visits under the topics**!!!.**

Electronic discussion in figures:

- 73 registered participants;
- 90 topics on uranium tailings issues in CA;
- More than 400 comments under topics;
- More than 50 information and analytical materials on uranium tailings in Central Asia;
- More than 120 daily visits of the forum pages.

The most popular themes of the electronic discussion:

Theme	Number of comments	Number of visits
Uranium tailings and health problems	50	2389
Best practices of tailings management	22	1171
Transboundary contamination risk as a result of natural catastrophes	16	789
Uranium tailings and gender problems	14	748
Ask experts	14	680
Environmental impact	10	671
Transboundary impact of uranium wastes in CA	12	525
Uranium tailings: problems of awareness in CA	13	510
Experience of business-projects in recycling of uranium wastes	9	499

As it is shown in *Table 1* the most popular theme of the electronic discussion was the **"Uranium Tailings and Health Problems"**. The fact that this section of the discussion has been the most visited one - 2389 visits during all discussion period demonstrates a sustainable tendency for informational need about the uranium tailings issues: among experts and population there is expressed concern about health impacts of uranium legacy and the need for objective and full information on this issue.

However, today this need remains unsatisfied. First, this is due to the shortage of information. For example, participants of the discussion from Tajikistan stated that there were not any regular and quality studies of health impacts on people living in these territories conducted in the country or any reliable data, which would allow to associate certain health problems with uranium tailings. Second, even the available information is unsystematic and non-representative. It is not by accident that the discussion members note many frightening stories and myths under this topic, which exist both among population and mass media, as a consequence, it can be stated that information is more emotional rather than factual.

The theme **"Best Practices of Tailings Management"**, which discussed institutional frameworks of uranium tailings management in CA , received much attention of the forum members. In particular, experience of Kazakhstan in management of uranium tailings captured a wide interest of participants, where good results have been achieved by today as one of the participants noted: *"not only due to the available budget but also due to good organization of management bodies in nuclear energy area".*

The theme which was considered in a more detail is **"Uranium Tailings and Gender Problems".** The discussion proved the thesis about gender aspects of the problem in the territories adjacent to tailings. Participants stressed that women together with children were more than others exposed to direct impact of tailings and risks and told about the need for special studies of uranium tailings impacts on men and women health taken separately.

Among general thematic areas of the E-discussion, the most popular section of the forum was - **"Problems of Uranium Tailings in Transboundary Context"**. Over 2 months there were 91 comments and 4874 visits. The most active participants in this section were the experts from Kyrgyzstan and Tajikistan. They discussed transboundary impacts of uranium tailings, including contamination risks as a result of natural disasters, contamination risks of water in Syrdarya River basin, informational coverage of uranium tailings problems and other themes.

Among the most current problems the members of the discussion forum highlighted the monitoring and control of tailings. Experts of the discussion noted that monitoring and evaluation demand large sums of money and availability of modern equipment. This problem can not be dealt by one state alone. Therefore, according to expert opinions, today it is crucial for CA countries to establish the interstate analytical and monitoring center with support of international organizations. As one of the discussion forum members emphasized: *"The goal number one is to set up a well-defined system of monitoring equipped with a laboratory".*

Information and analytical support of the discussion:

The forum had a special section, which held mass media stories (19 pieces of information) on the problem, as well as reports, studies and publications of participating experts. During the discussion the following materials were provided specially for the discussion of experts:

- Rasulzade T., newspaper "Varorud" issue No 23(151), 8 June 2005. "Bury and Leave Us Alone!"
- Torgoev I., Aleshin Y., Ashirov G., Institute of Physics and Rock Mechanics of KR National Science Academy. Ecological Problems in the Areas of Uranium Ores in the Territory of Fergana Valley (Central Asia)".
- "On the Status of Sites Posing Radioactive Threat in the Territory of Sogdian Obalst of Tajikistan" (on materials of the Department for Environment Protection of Sogdian oblast).
- Djangaracheva M., manager of the UNDP Environment Programme in Kyrgyzstan, "Socio-Economic Situation in the Territories of Uranium Tailings in Kyrgyzstan: Common Trends and Facts".
- Charskiy V., Chairman of the Public Association "Club of Agates". "Recommendations for Rehabilitation and Reclamation of Uranium Tailings in Mayluu-Suu".
- Executive summary for the section on medico-biological studies by Tuhvatshin R., "Technogenic Pollution of Kyrgyzstan's Biosphere with Uranium".
- Kaftaranov M., state enterprise "Uranliquidrudnik", Ministry of Energy and Mineral Resources of the republic of Kazakhstan. "Reclamation of Industrial Sites of Abandoned Uranium Mines and Koshkar-Ata Tailing".

Participants and visitors of the discussion forum:

Among registered members of the forum were the representatives of the following organizations: **State organizations:** SE "Vostokredmet", NAC "Kazatomprom", Laboratory "Geoecology", SE "Hydroingeo Institute", "Geopribor", Department of Pathological Physiology of the Kyrgyz State Medical Academy, Department of State Sanitary and Epidemiological Inspection of the

Ministry of Health of the Kyrgyz Republic, Ministry of Emergency Situations of the Kyrgyz Republic, Institute of Health Problems of the South Filial of the Kyrgyz State Medical Academy, Mining and Metallurgy Institute of Tajikistan , Sogdian Regional Television.
Non-governmental organizations: Ecological movement of Uzbekistan, EcoForum of Kazakhstan, PO "Club of Agates", "Eco-Joomart", ECOIS, public environmental organization "Bonu", "Drevo Zhizni", Aarhus Center in Khudzhent, PO Karaganda oblast ecological museum.

International organizations: UNDP, OSCE, UNESCO, Center for Non-Proliferation Studies

Comments from the E-discussion forum

Alim, CA region:
"This is true that mass media very often covers the issue of radiation wastes in the form of frightening stories. However at the same time we should not underestimate the negative impact of uranium tailings on public health. Especially if the rock dumps are on the surface, the wind and rains can spread small particles kilometers away from the dump site. This can lead to respiratory diseases once the polluted air gets into lungs and bronchus. Diseases of digesting system may be caused by polluted water. It can not be excluded that rock dumps were also exposed to radiation of uranium, what in its turn leads to high incidence of diseases (including cancer diseases), upsets the immune system. The weak immune system, contaminated air, water, consequently, food– these are more than enough for development of different diseases.

Rustan Tuhvatshin, Chief of the Department of Pathological Physiology of the Kyrgyz State Medical Academy, Doctor of Medicine, Professor:

"During the last 10 years we have been studying the state of public health in the villages Min-Kush, Mayluu-Suu and Kadzhisai. At the same time we developed patterns of pathological states caused by the effect of radionuclide in the condition of mountain hypoxia, post-hemorrhagic anemia and overheat. These studies allowed differentiating the role of radionuclide in development of pathology from the impact of other factors. Also we fixed the fact of accumulation of uranium in human and animal bodies and studied the food chain through which the uranium gets into the human body. For example, concentration of uranium in teeth of adult people living in Mayluu - Suu is three times more than in children teeth.

Natalya, Leading Engineer-Ecologist of Chui Ecological Laboratory Ltd.:

"First, continuous monitoring system should be put in place including stationary posts on collecting of dust from air between tailings and populated settlements, posts on collecting samples of drinking and irrigation water, monitoring wells in tailings impact area, as well as introduce radon monitoring in places, where radon emanation is fixed, develop a program for full assessment of exposition doze for population through inhalation and consumption of food. And only by results of the monitoring we can judge about the impact of tailings on public health. Depending on the local specifics there should be introduced additional elements of monitoring, for example, monitoring of landslides is needed in Mayluu-Suu.

Jamilya Aitmatova, expert, Kyrgyzstan:

"I think our main problem is lack of government funding for this rather expensive work – for processing of studies results on specialized equipment and acquiring of equipment. If we found grant resources for these purposes, we could obtain a lot of interesting information both application information, which could be used for diagnosing of each patient and for fundamental science purposes. The same information could become a good illustrative material during awareness raising campaign among local residents, specific data about themselves could be used as a demonstrative example and change their attitude to the neighboring tailings".

Toichuev Rahmanbek, Director of the Institute of Medical Problems of South Filial, National Science Academy in the Kyrgyz Republic:

«The course of diseases in adjacent areas has its own characteristics. Even the iodine deficiency prevention measures do not give the desired result. Therefore, we have developed adapted methods of prevention and treatment, which yielded positive results: in the group, where

prevention measures and workshops were held, the incidence of goiter among school-age children made up from 0 to 5.3%, while in the untreated group it ranged from 50 to 60% »

Guest of the discussion, Kyrgyzstan:

"Living standard of population nearby the former uranium mining and processing sites is very low due to the lack of jobs. This leads to migration of residents to seek work in other regions. The social and economic problems exacerbate the fear of radiation, the unwillingness to live in these regions, and financial problems because of which they can not leave. It is important to remember this psychological aspect, which creates a severe depressive situation on top of the the existing problems".

Sulhia Sadykova, Chairman of the Public Environmental organization "Bonu", Tajikistan:

"We conducted an explanatory work among residents of Taboshar, Khujand, Chkalovsk and Gafurov - doctors, teachers, school children. I think it is unlikely that those who participated in the meetings, discussions and workshops will graze cattle on the tailings again. As for medical research to identify the impact of tailings on the health of people, in my opinion, we simply do not have the ones. We met people who are seriously afraid of radiation, and they blame radiation for all health problems they have. I had to explain to them that not all diseases and sores are caused by radiation".

Voronova Julia, a leading geophysicist of the laboratory "Geoecology" SE "GIDROINGEO Institution:
"Radon is on one of the first ranks according to the degree of hazard. This is a heavy gas, which is accumulated in closed spaces and basements, and thus carries high risk for health. Radon is a problem of all uranium tailings: it is easily discharged from the soil into the air and falls into short-term products, called radon daughter products. These daughter products emitting alpha particles with high ionizing ability can have electric charge and attach to aerosols, dust and other particles in the air that we breathe. As a result, the daughter products of radon can be deposited in the cells of the airway where the alpha particles can damage DNA and potentially cause lung cancer". .

Dmitry Prudtskih, Director of the Aarhus Center in Khudzhent:

"Below I am giving the fragment from the study of uranium tailings state in Taboshar:

"During the study there have been found many surface damages of the tailings exposing the tail material (pits, ditches deep up 1.5 m) caused by the local population in search of scrap metal. In addition, in the territories of tailings there are unsanctioned soil roads, livestock pastures, and private residential buildings in the north-western part. The study carried out in 2001 found radiation anomalies of uranium nature due to the use of dump materials in construction of city streets in the residential area of the city Taboshar. Also gamma fields with maximal exposition doze from 30 to 60 microroentgen per hour were registered in southern and south-eastern outskirts of the city. . All of these sounds daunting, but so far no detailed medical study of health impacts of radiological wastes in Taboshar and other uranium tailings of Tajikistan has been carried out".

Electronic discussion as a public participation tool in addressing of uranium tailings issues

For the first time in Central Asia experts discuss during 2 months the problems of uranium tailings with a wide public. The CARNet Network has become an effective communication platform for this dialogue.

The e-discussion forum on uranium tailings in CA organized in the run-up-to the International Forum of Donors in Geneva has contributed to more intensive exchange of information and has become an effective tool for creating of the discussion platform, which allowed to influence the public opinion and improve the quality of decisions made on the problem.

It is notable that the facts, figures, comments posted on the e-discussion forum were cited and used as arguments by participants of the Regional Conference on Uranium Tailings in April 2009, in Bishkek. This means that information is relevant and demanded among the expert community.

The fact of appearance of an unplanned theme in the discussion, where participants could ask the experts any questions, demonstrates the importance of such information for a wide public and for people living in proximity to the uranium tailings. This topic of the discussion was unofficially named as "literacy campaign on uranium tailings" and has become one of the most popular topics in the discussion.

The electronic discussion forum of CARNet Network on uranium tailings in CA on the whole succeeded as a sustainable mechanism for conducting of Internet-based online discussions and public consultations on the environment and sustainable development issues. The discussion has contributed to:

- Empowerment for ensuring citizens' rights for access to information;
- Increasing public participation in management of uranium tailings;
- Exchange of expert opinions from different countries and regions;
- Access to information for unlimited number of consumers;
- Collection and storage of large amounts of information on the problem;
- Regional exchange of information and experience;

Comments from the E-discussion forum:

Vyacheslav Aparin, Chief of the Party of Geoecology Laboratory, Institute Hydroingeo:
"Tailings and radioactive stock piles are a place, where grass grow very well, therefore local population use them for grazing livestock, which is looked after usually by children and young women. Second problem is that flat squares on tailings covered with concrete and rubble material are well fit for playing football or other games. I say nothing of "helpfulness" of these sports".

Anna Solomatina, Chui Environmental Laboratory:

"Women are the main recipients of the impact of the tailings. We have seen this more than once when took part in residential radon screening in Mailuu-Suu and Shekoftare. Because of socio-economic problems , men from small towns and villages in the south of the Kyrgyz Republic have to seek jobs and earnings outside the home region or even the home country. During summer season only women and children are left in these locations. So they are exposed to full impact on all aspects".

Nurgul Asylbekova,
"*Survey of women picketers showed that most of them were recruited from residents of depressed small towns of Kyrgyzstan, including Mailuu Suu, Kok Zhangak, Tash Kumyr, etc. This is the most marginal group of population, which do not have land or work. They are easily recruited by various political groups, including by radical ones as a socio-political consequence of economic marginalization. In addition, there have been expert observations that alcoholism is widely spread among women and children in these regions, because there is an opinion among population that alcohol reduces the risk of radioactive contamination people drink alcohol".*

Kuban Ashirkulov , OSCE:

"Currently the OSCE-ACTED project is underway in the former mining village Min-Kush, which is aimed at improving the socio-economic situation and mobilization of community. By today the strategy and local development plan have been formulated and are being implemented now; with support from residents and local authorities the project has created first NGO in Min-Kush named "Min-Kush Kelechegi" ("The Future of Min-Kush") to implement the main activities under the strategy with participation of local and regional administrations.

The project also created business groups specializing in sewing handicrafts, baked goods, hairdressing and livestock breeding.

Kamilya, ERM:

"Diseases and mental disorders often found among the population of these territories can be attributed to the synergistic effects associated with the living standards of poor people and the fear of radiation. Currently the level of radiation dose is low and meets the maximum allowable level. However, even relatively low radiation doze can affect human immune system and lead to a stochastic / random-effects after prolonged exposure to ionizing radiation, sometimes after many years of latent period".

Natalia, Senior Environmental Engineer Ltd. "Chuy Environmental Laboratory":

“I propose to close the private scrap metal reception points, what will reduce the interest of population in collecting of scrap metal in the territories of the tailings ponds, and in parallel reduce the risk of health impacts, the costs for guarding of sites and for restoration works of the tailings cover. Also, this measure would prevent spread of radioactive contaminated scrap metal to clean areas and minimize the problems associated with search, disposal, clean-up and utilization of scrap metal. At the same time it will reduce the damages caused by adjacent urban settlements, as well as the risk of destruction tailings sites that underwent reclamation”.

Public literacy campaign on uranium tailings issues: Experts answer the questions

Anton, Uzbekistan
Question:

Can you tell about the mining technology? How different are the modern methods compared to those used 30 years ago? And what equipment is used by our companies?

Vyacheslav Aparin, Moderator from Uzbekistan:
Answer:

At present uranium is extracted by underground method using excavation techniques for determining the uranium pods. A sprinkler system over the top continually sprays acid solution over the mound. The leach solution trickles through the ore and mobilizes uranium, as well as other metals, into solution. Then the solution is collected and along the pipes sent to a plant, where it is processed to extract the uranium. This process is environmentally cleaner and does not pollute the environment".

Chinara, Kyrgyzstan
Question:

What techniques are used in Central Asia for remediation of tailings and how safe they are for environment and population. I heard that developing countries like ours use cheaper but temporary solutions using water and rubble, whereas the developed countries use rather expensive methods, where the original landscape is fully restored and environmental impact is removed after mining works.

Saltanat, Moderator from Kazakhstan
Answer:

As we were explained at "Uranliquidrudnik", Kazakhstan mainly uses two methods. By the first method, also used in Uzbekistan, non-radiation ores are filed with processed waste, this method was projected for the Stepnogorsky Mining and Chemical Combine (Stepnogorsk). The Koshkar-Ata tailing uses the method, where tailing is first packed with sand-gravel aggregate, then covered with concrete bars, and finally again covered with a one meter high layer of sand-gravel aggregate.

Moderator from Uzbekistan, Vyacheslav Aparin
Answer:

Reclamation of uranium wastes is rather expensive procedure. Germany, for example, spends hundreds of millions euro for that. As a result, people can live nearby these tailings. We also have an example of tailings with good conservation in proximity to the residential area in Tajikistan, in the town Gafurovo. It has been processed two times and the cover layer reaches 2 meters. The cover material consists mixture of gravel, pebble stone and large cobble with clay composing a basis. The state of this tailing is considered satisfactory. But this site anyway concerns the local people, and there have already been offers to transfer this tailing away from the populated area.

Gabriel, Uzbekistan
Question:
"I've heard about a mountainous district in Uzbekistan, where the high radiation had such an environmental impact that one can find there mice with three paws, mutated fruits and the whole region reminds a Zone depicted in the film "Stalker" by Tarkovsky. If it is possible, I would like to know more about this i.e. where this place is and how one can get there or has anyone been there?

Moderator from Uzbekistan, Vyacheslav Aparin
Answer:

I've never heard about such place. But abandoned uranium ores like everything abandoned have a really weird look. You can see there local people collecting metal scraps from underground, who are called "stalkers". This is the main problem as these people get exposed to radiation. Moreover, they sell these contaminated materials to scrap metal reception points. I would not recommend to go to such places. They are usually fenced with barbed wire and some of them are guarded.

Eugeniy, Uzbekistan:

How reliable is our monitoring? Is it possible that risk warning will be too late or will be hidden at all to save the image or avoid panic among people?

Moderator from Uzbekistan, Vyacheslav Aparin
Answer:

Who can we trust if not the monitoring data? These are serious studies, where radiation is measured around the site and in adjacent area. Samples of soil, water, plants are tested in laboratories for concentration of radionuclide. Apart from the state monitoring, monitoring is carried out by international organizations, first of all by the IAEA (International Atomic Energy Agency). So it is impossible to hide the true data!

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Additional information on uranium tailings issues in Central Asia and
materials to the High Level International Forum in Geneva are available on website
www.uranium.kg