

# Revisiting Global Voices Against

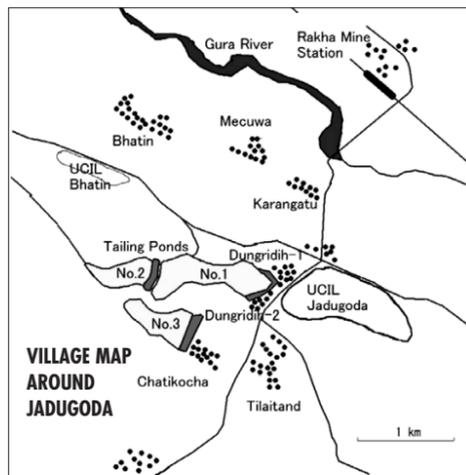
*“Don't destroy our land, our culture and env*

The Uranium Corporation of India Ltd. (UCIL) has applied for renewal of its uranium mining lease and for a fresh allotment of 6.37 hectares (more than 15 acres) of forest land for the construction of a tailings pond that will house the radioactive waste generated during the milling of uranium ore. Even though uranium mining has a history of more than 30 years in eastern India, this is the first time that UCIL has mentioned its real objective — making bombs. This expansion plan is happening after the government of India signed the Indo-U.S. nuclear cooperation agreement in 2008 and International Atomic Energy Agency (IAEA) guidelines for nuclear cooperation with the Nuclear Supplier's group.

## THE POOR QUALITY ORE

The environmental impact assessment (EIA) report mentions that the ore present in Jadugoda in West Singhbhum district is of poor quality (0.06% of natural uranium). In other countries, this would not be considered uranium ore. The current milling capacity is 0.6 million tons of ore per year. If the concentration of U238 is 0.06%, UCIL should be able to recover about 300 tons of natural uranium without any capacity addition. UCIL has sought to increase the milling capacity by 20% to 360 tons a year. (This is less than one percent of global uranium production).

Once India is permitted to buy uranium from the international market, the only purpose of local production will be for nuclear weapons. The Department of Atomic Energy (DAE) has a huge stockpile of high-level waste (containing plutonium), generated during the past 30 years. If the strategic imperative is 500 warheads, which is what smaller nuclear powers like China, the United Kingdom, and others have, there seems to be no need for additional fissile material. Mining and milling of low-grade uranium is not only economically unviable but also ecologically unsustainable.



## ECOLOGICAL PROBLEMS ALREADY KNOWN

Several independent researchers have conducted environmental and epidemiological studies in and around Jadugoda. Notable among them are a study of radon in air by a scientific team with Greenpeace and Hiroaki Koide of the Research Reactor Institute at Kyoto University. Prof. Koide's findings are summarized below:

- *The external gamma radiation dose rate exceeds 1 milliSievert per year (mSv/y) in the villages, and reaches 10 mSv/y around the tailing ponds.* (Converted to units of radiation-equivalent doses used in the U.S., the 1 mSv/y dose in the villages is equal to 100 millirem/year, which is the U.S. Nuclear Regulatory Commission's limit for doses to the public from releases of radioactive materials from facilities licensed by the NRC. The 10 mSv/y dose around the tailings pile is equal to 1,000 mrem/y, or 1 rem/yr, which is 10 times greater than the public limit and one-fifth of the allowable annual dose to nuclear workers in the U.S. of 5,000 mrem or 5 rem.)
- *The soil surrounding the tailings ponds is contaminated by uranium.* Particularly high contamination levels were found in the village of Dungridih, which borders tailings pond No.1. In other villages, no serious contamination was found.

- *Radon emanating from the tailings ponds and other areas of the mill spreads contamination.*
- *Waste rock from the mine used for construction material spreads contamination.*
- *The tailings pond No. 1 shows contamination by cesium, which is a radioactive byproduct of the splitting of uranium atoms in a nuclear blast or a nuclear reactor.* This shows that high-level radioactive wastes were brought in from a source other than the UCIL uranium mine.
- *Uranium concentrate produced at the mill was dealt with carelessly and was found dispersed at Rakha Mine railway station.*

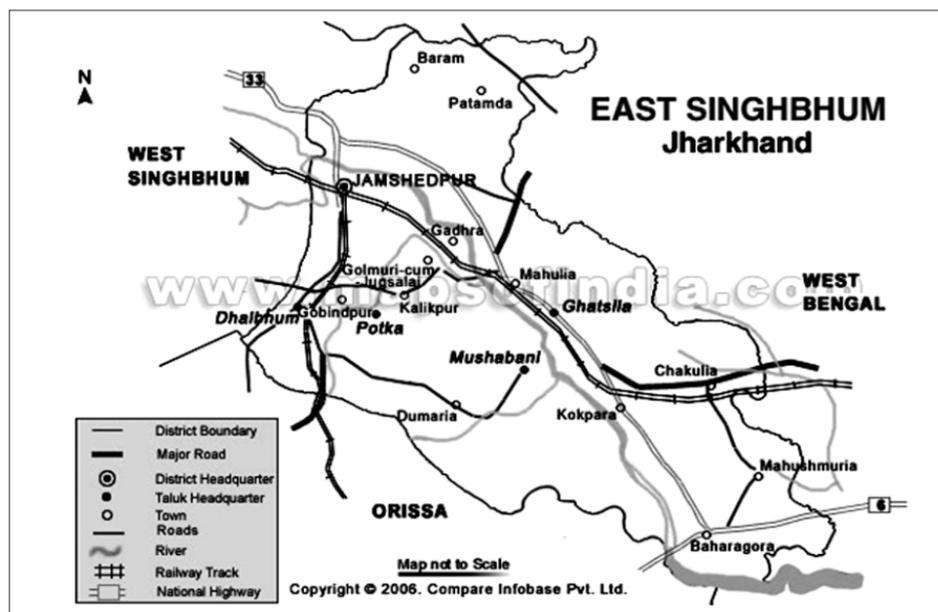
The dumping has directly affected 15 village clusters, Jadugoda town, Narwapahar town, and the areas around the Rakha railway station. Altogether, the areas have a population of more than 30,000.

## HEALTH EFFECTS

Health studies were conducted by Dr. Surendra Gadekar and Dr. Sanghamitra Gadekar of Anumukti and recently by the Indian Doctors for Peace and Development, the Indian affiliate of the International Physicians for Prevention of Nuclear War (IPPNW). In two different phases, one survey was conducted in villages located within 2.5 kilometers (about 1.6 miles) of the mines and another was conducted in villages located about 30 km from the mining areas. A total of 2,118 households were surveyed in the local villages, and 1,956 households were studied in the remote villages. The survey found that in the local villages, about 9.5% of newborns are dying each year due to extreme physical deformity, compared to 1.7% in the remote villages. And primary sterility is becoming common with 9.6% of women not being able to conceive even three years after marriage (vs. 6.3% in remote villages). Cancer deaths in local villages are about 2.87% and 68.3% people are dying before the age of 62, compared with 1.89% and 53.9% respectively in the remote villages.

The EIA, citing health studies conducted by UCIL, states that no congenital abnormalities among children or other health problems in the communities could be attributed to the operations of UCIL. However, the EIA provides no information about the methodologies used by UCIL or the experts who conducted the studies. While the independent researchers have published their reports in detail, the UCIL researchers have not made their reports public. As such, it is impossible to review them.

The same is true about the radiation measurements. All the radiation readings quoted in the EIA are more or less within the range of normal levels. However, if



measurements are done at non-contaminated places, no abnormal levels would be anticipated. The road along which the ore is transported to the mill is a place where contamination could be higher. On that road, places near the speed-breakers have higher contamination than other places. (Editor's Note: Hiroaki Koide of Kyoto University measured levels of uranium in soils near Jadugoda. His data can be found on the WISE-Uranium site: [www.wise-uranium.org/pdf/jadkoide.pdf](http://www.wise-uranium.org/pdf/jadkoide.pdf).)

# Uranium: VOICES FROM INDIA

Environment for your greed and nuclear pride!”

## PIPE BURST

Every day, more than 3,000 tons of radioactive waste in slurry form is discharged from the mill to the tailings ponds. While more than half the uranium in the ore is extracted by the mill, all of the other radionuclides of the uranium decay chain remain in the tailings, accounting for about 80% of the original radioactivity in the ore.

(Editor's Note: Typically, only uranium is removed from the ore by the milling process, leaving approximately 85% of the original radioactivity in the ore. Almost all of uranium's decay products, including radium, thorium, radon, polonium, and isotopes of radioactive lead remain in the tailings.) Bursting of pipes carrying the tailings slurry to the ponds has become almost a routine event at UCIL. Such accidents and callous mismanagement after the accidents have caused contamination of people's lands and water sources.

## IMPACT ON AQUIFER

Jadugoda uranium facility is sitting on a rich aquifer that supplies water to about 30,000 people over a 20 sq. km area. This aquifer has a total annual recharge of 4.3 million cubic meters of water. The tailings pond, which at its nearest point is 10 meters from the village, leaks radioactivity into the ground below. Well water in the nearby village of Chati Kocha has been severely contaminated. Though the impact is now felt in one village alone, the radionuclides could migrate and contaminate the entire aquifer.

The EIA mentions studies on radiological quality of ground and surface waters. These are based on a small number of unrepresentative samples. Sampling has not been done for a full year. A more systematic study of the aquifer is the need of the hour. It has to be noted that (a) the waste generated annually is huge, about 600,000 tons a year, and (b) the aquifer could also be linked to other nearby water bodies. Thus, the contamination could threaten the life and well-being of people living far away from Jadugoda.

## CONCLUSION

Several research studies conducted by independent experts reveal adverse environmental and health impacts among the people living downwind and downstream of the uranium mining and milling in Jadugoda. Besides the scientific studies, the plight of the local population has been captured in an award-winning documentary film, *Buddha Weeps in Jadugoda*. This evidence cannot be ignored or dismissed as anti-national propaganda.

India accounts for less than 1% of the total uranium produced in the world. Typically, one almost never finds a uranium mine and mill in the midst of

densely populated villages. But here, the distance between the tailings pond and the nearest residence is a few meters.

UCIL has been operating for more than four decades now. Many of the social problems — for example, the lack of just compensation for the land acquired, cost of medical treatment for radiation-caused illnesses among the workers and the local population, and contamination of land, water, and air — have not been addressed. UCIL has a responsibility to protect and help Singhbhum district's First People, an indigenous tribal community who have been forced to make sacrifices for India attaining nuclear capability. ✈

## FOR MORE INFORMATION

### Jharkhandi Organisation Against Radiation (JOAR)

Village Tilaitand • PO Jadugoda • District East Singhbhum • Jharkhand, INDIA • [www.jadugoda.net](http://www.jadugoda.net)

### WISE Uranium Project

Jadugoda Uranium Mine, Jharkhand, India • [www.wise-uranium.org/umopjdg.html](http://www.wise-uranium.org/umopjdg.html)

### Study on Health Status of Indigenous People Around Jadugoda Uranium Mines in India, Executive Summary

Indian Doctors for Peace and Development (IDPD)

[www.n-email.com/etapcontent/InternationalPhysiciansForT/Documents/UraniumMiningExecSuml.pdf](http://www.n-email.com/etapcontent/InternationalPhysiciansForT/Documents/UraniumMiningExecSuml.pdf)

### Radioactive contamination around Jadugoda uranium mine in India

Hiroaki Koide, Kyoto University, April 27, 2004 • [www.wise-uranium.org/pdf/jadkoide.pdf](http://www.wise-uranium.org/pdf/jadkoide.pdf)

## Public Hearing without the Public UCIL'S 2009 EXPANSION PLANS

**JHARKHAND, INDIA (May 26, 2009)** — The much-awaited public hearing by the Uranium Corporation of India Ltd. (UCIL) is over. There were lots of public, and there were also lots of policemen and members of different security forces. For every one person not in uniform, there was one person from the forces in uniform, some wielding batons, others with rifles and some in riot gear. UCIL has about 2,000 permanent workers and nearly 1,000 people who are either on casual or temporary employment. So the total number of direct beneficiaries is about 3,000. If you add members in the families of the beneficiaries, then UCIL counts more than 15,000 people as “supporters.” Though most of the workers are exposed to dangerous levels of radiation, most of them consider themselves fortunate and lucky. That is quite expected in a country where the wage rates/returns in farming are very low and no other job opportunities exist.

On May 25, 2009, about 200 villagers of Matigoda entered the UCIL premises and started plowing the land. Even though the land was acquired long back, the villagers were paying the tax. They were not paid any compensation. Nobody got a job either. The situation became tense. They were invited to negotiate (with UCIL) after a few hours. They were taken to the local police station. The meeting lasted for a few hours and ended with some promises, but no document was signed.

The public hearing was held on the private land of UCIL, near the camp of the Central Industrial Security Forces. By early morning, hundreds of UCIL workers and other beneficiaries had occupied the chairs kept in the hall for the public hearing. The local villagers who have lost their lands for the mines and whose health has been damaged due to radiation had no place in the entire process.

The hearing was held to get the peoples' consent for a 20% expansion in the current UCIL uranium mill, from 2,020 tons per day (tpd) of ore to 2,500 tpd, and for another tailings pond to house the radioactive

mill tailings from the expanded milling operation. The total volume of tailings that will be sent to the new pond will be about 850,000 tons per year. About 15 acres of forest land has also been sought for these. UCIL got all what they sought.

The UCIL-sponsored citizens group entered the venue carrying banners, some of which were carried by small children. One banner read, “When compared with hunger, pollution is a small issue. Save UCIL.”

When members of Jharkhand Organisation Against Radiation (JOAR) and other groups carrying their banners tried to enter the venue, UCIL supporters manhandled them; a few women activists were beaten up and Pargana Charan Murmu, JOAR's senior member, was pushed away. He and some others fell down. Police and other security forces were mute spectators to this denial of a place to sit for the villagers so they may air their grievances. Finally, the company supporters and the security forces (police, para military, and own security force of UCIL) pushed the villagers out of the hall.

Since none of the villagers was allowed to enter the hall and speak, JOAR and other organizations decided to boycott the public hearing. The groups joined together shouting slogans — “public hearing is farce,” “stop false public hearing,” and “land, water, and forest is ours” — and then they came out and sat for a Dharna (“sit in” style protest).

UCIL succeeded in convincing the workers that those who were critical of the project were working towards closing down the mining and milling activities in Jadugoda. The slogans shouted by the workers and other beneficiaries and the placards they were carrying all spoke about saving UCIL. The critics' position — demanding safe operations for workers, people in the neighborhood and the ecosystem — was unheard.

Around 11 a.m., the General Manager of UCIL read out a document listing the details of the project. The GM sounded like he was reading from

a science textbook. There were technical terms like Becquerel, in his speech. A journalist who was covering the event asked one of us: “What does a Becquerel mean?” (Editor's Note: A becquerel is a very small unit of measurement of radioactivity.) The presentation by the general manager lasted for about 30 minutes. After this, the organizers announced the names of the speakers from the “public.” Everybody was unanimous on one issue: UCIL provides jobs, food, clothing, and houses. But the UCIL supporters said there is no need to hear any viewpoint that is against the interests of the company. All talk about radiation is anti-national propaganda, they said. UCIL has to be protected at any cost, they said.

JOAR representatives Ghanashyam Biruli, Dumka Murmu, and Charan Murmu briefed the press. Among their demands are (a) no new uranium mines; (b) bring the existing mine under the international safety guidelines; (c) return tribal land acquired earlier but not utilized for mining; (d) provide livelihood and rehabilitation to the displaced people; (e) clean up contamination from previous tailings spills and releases of mining wastes; (f) commission an independent study about the environmental contamination and health effects among the people; (g) continuously monitor water bodies to ensure that the radionuclides do not seep into the aquifer, which is the lifeline of more than 100,000 people. The activists also reiterated their position that there is no compelling need to expand the capacity of UCIL, as the country can now buy uranium on the international market.

- **Ghanashyam Biruli**, President JOAR
- **Dumka Murmu**, Secretary JOAR
- **Charan Murmu**, Pargana
- **VT Padmanabhan**, Genetic Epidemiologist, Bangalore
- **Dr. Meher Engineer**, Physicist, former Director of the Bose Institute, Calcutta
- **Pradip Dutta**, Writer & People Science Activist, Calcutta
- **Shripakash**, Filmmaker, Ranchi