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Rajasthan's Killer Sandstone Mines

By: Seema Sharma

Mine workers in Rajasthan are perhaps the most vulnerable among manual workers in India's unorganised sector. They are exposed to various kinds of dust, which makes them very susceptible to developing severe occupational lung diseases, including silicosis.

In the summer of 2022, I visited the Soorsagar mines area in western Rajasthan's Jodhpur district. From the mound of a sandstone quarry at Sodo Ki Dhani village, I saw groups of workers excavating stones under the blazing desert sun.

At one place, a lanky man was struggling with the rock bed, carefully manoeuvring a handheld drilling machine and forming a cloud of dust around himself. Metres away, women were busy hammering stones while children as young as 10 carried the rubble for a short distance. No one wore any personal protective equipment, such as face masks, helmets, safety footwear or gloves.

Minutes later, I reached Bhil Basti, a settlement of indigenous people who had migrated to the region from several parts of rural Rajasthan in search of a livelihood. It supplied cheap labour to the stone quarries and mines in Soorsagar and elsewhere.

On seeing a stranger in his basti, a man named Bhanu Ram (the names of miners have been changed) approached me. After exchanging pleasantries, he suddenly went inside his hut. Returning, he said, "I won't live long."

He handed me a laminated sheet of paper, which said, "This is to certify that as per the report of the expert committee constituted by the Medical College, Mr. Bhanu Ram S/O Mr. Bhola Ram, Age 37 Years, Resident of Sodo Ki Dhani, Kali Bairi, Jodhpur, is suffering from Silicosis disease as per International Labour Organization (ILO) protocol guidelines."

"I have lost four men in my family. My husband went first, followed by my three sons. They all worked and died in the mines," said a middle-aged woman tearfully.

I peered over my glasses and saw Bhanu Ram sitting on his haunches, staring at me. "I won't live long," he nervously repeated. In an adjacent hut lay another sick man, Ram Lal. Frail and shivering, he was being fed by a woman. "What happened to him?" I enquired. "Suffering from the same disease as I am; he is counting his days," said Bhanu Ram. "The condition worsens over time."

By now, several women had gathered. "I have lost four men in my family. My husband went first, followed by my three sons. They all worked and died in the mines," said a middle-aged woman tearfully. Another added, "You won't find a single house around here where no one has died due to this work or where someone is not suffering from TB" (tuberculosis).

"Why don't you find some other work?" I asked them. "It is hard to find any other work here. We have no land, no education. Mines offer ample work opportunities. So we work there, breaking and lifting stones all day long," a woman said in a monotone.

The Human Cost

Rajasthan has [the country's highest number of mining leases \(33,031\)](#)—174 for major minerals, 15,280 for minor minerals, and 17,577 quarry licences—and most of these are in the small-scale and unorganised sector. The mining and mineral processing industry is a major employer in several districts of the state, providing employment to nearly three million workers. Another major employer is the construction industry, which employs approximately 2.4 million workers in the state.

Mine workers are maybe the most vulnerable section among manual workers in India's unorganised sector. They do physically demanding and backbreaking work in appalling conditions—extreme temperatures, an unhealthy level of noise, no safety equipment, and low pay. Most mines function 24/7, forcing workers to toil for long hours. Such working conditions and deprivation contribute to high morbidity and mortality among mine workers.

Workers in the mines and in construction are exposed to various kinds of dust, which increases their chances of developing [dust-related occupational lung diseases collectively termed pneumoconiosis](#). Silicosis is a common pneumoconiosis disease resulting from inhaling

fine silica. It causes permanent and irreversible lung damage, leading to disability and premature death.

The sources of exposure to this deadly occupational disease in Rajasthan are activities related to sandstone mining, such as drilling, hammering, digging, cutting, polishing, and grinding. All these processes produce fine silica particles that the mine workers inhale. Silica dust particles are also a threat to the health of communities living near mining areas.

Rajasthan accounts for the highest number of silicosis cases in India every year. A high prevalence of tuberculosis and silico-tuberculosis (where both diseases exist together) is also reported among mine workers in the state.

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Besides material deprivation, undernutrition, and substance abuse, the inhalation of large quantities of silica dust by mine workers corrodes their lung tissues, making them susceptible to tuberculosis. Since the clinical manifestations of silicosis and tuberculosis are similar, silicosis is often misdiagnosed by health professionals and misunderstood by people.

Mine owners generally pay little attention to these occupational lung diseases. They tend to avoid or defer screenings, which would make them liable for compensation if silicosis is detected. Besides being ravaged by these deadly diseases, most mine workers also suffer from the consequences of injuries and other disabilities, such as hearing loss.

There is a high prevalence of substance abuse among Rajasthan's mine workers. Sangeeta, a staff member of the [Gramin Vikas Vigyan Samiti \(Gravis\)](#), a non-governmental organisation working in the region for more than three decades, observed that “over 90% of the male mine workers consume alcohol”. They often view alcohol as important as food. “After working long hours, the mine workers often return home with body aches and injuries of varying severity. Alcohol helps them forget their pain and fall asleep. Thus it helps them to get up for work the next day,” she added.

A study in Rajasthan's Karauli district showed a “high prevalence” of substance abuse among mine workers (Ahmad et al. 2020). The physically tedious work drove men to alcohol and tobacco.

Drinking alcohol at the workplace is a part of the accepted work culture in mines. In the beginning, workers are often provided free alcohol by the thekedars (mine contractors). Most of them take to alcohol, believing myths that have no basis in reality—such as that it cleanses the body by getting rid of dust particles when they defecate. Others think alcohol improves their efficiency at work. Once addicted to alcohol, they start facing its repercussions, such as loss of consciousness, loss of health and money, and a propensity to indulge in domestic violence.

Silicosis manifests itself in prolonged illness and a painful death—a harsh reality that is common knowledge among mine workers. Despite losing family members, neighbours, and friends to silicosis, they feel compelled to work in the mines because of the lack of alternative employment and livelihood opportunities. A large section of Rajasthan's population is dependent on agriculture and allied activities. However, since agriculture here primarily relies on rain, mining offers a reliable source of livelihood for smallholder farmers and agricultural labourers, especially during low-yield and drought years.

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A GRAVIS study in Western Rajasthan's mining sites—Barmer, Markana, Bikaner, and Jodhpur—shows that 95% of the mine workers in the state are migrants, of which 60% to 70% are those who shuttle from one district of the state to another. Frequent droughts have forced the state's labourers to seek employment in the mining sector. Sangeeta said, “Households trapped in poverty, illiteracy, disease, and debts have no option but to send their children to mines as early as possible. Often, debt bondages bring several children to mines that operate illegally.”

The study further found that around 96% of the workers had begun working in mines before they were 18. However, they could not continue to work for long due to illness. Sangeeta said, “Mine workers have short life spans. Most of them tend to develop silicosis between the ages of 25 and 30. Some may continue to work till the age of 40 but others die earlier. Those who work on the drilling machines are the most susceptible to silicosis because they are directly exposed to large quantities of dust.”

Silicosis has reduced [Budh Pura, a village in Bundi district](#), to a “village of widows”. There are 180 widows and 80 cases of silicosis there. [A GRAVIS study in Jelu village’s mining settlements](#) revealed that about 75% of the women above the age of 45 there were widowed because of silicosis, tuberculosis or mine accidents killing their spouses. Similarly, 60 households in Kaliberi, a village in Jodhpur district, had lost male family members because of mining accidents and diseases.

After their partner’s death or illness due to mine-related diseases and accidents, women feel compelled to work in the mines at meagre wages. [Children, too, are not spared](#) and pushed to work in the stone quarries when their parents contract silicosis.

Legal Protection

Indian labour laws such as the Workmen’s Compensation Act, 1923 [amended in 2017 as the Employees Compensation (Amendment) Act], the Employees’ State Insurance Act, 1948, and the Factories Act, 1948 recognise silicosis as an occupational disease. The law mandates employers to compensate workers who suffer from it. The Mines Act, 1952 further regulates labour and safety in mines.

However, despite these regulations, their enforcement has remained a challenge. As a result, the situation of mine workers has only worsened with the [increasing prevalence of occupational diseases such as silicosis](#).

A “[Special Report on Silicosis](#)” by the Rajasthan State Human Rights Commission flags several gaps in the enforcement of laws. Mine owners violate the legal provisions meant for mineworkers’ “safety, security and health” while the government and regulatory agencies lack the will or ability to hold them accountable. Government doctors lack enough awareness about occupational diseases while the state health department is unprepared to address the problem.

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There is a dearth of rehabilitation programmes for affected mine workers. The report encapsulates the collective demands of civil society organisations. It recommends the adoption of a “wet drilling” method in sandstone quarries and mines. Similarly, a [National Human Rights Commission report entitled “NHRC Interventions on Silicosis”](#) notes that silicosis is preventable provided working conditions are adequately regulated and proper protective equipment is used.

While explaining why the mine owners do not adopt the wet drilling method, Sangeeta said, “Wet drilling is certainly a very effective method to reduce the exposure of mine workers to dust causing silicosis. But, ironically, the life of a machine is more precious to mine owners than a human life. They are averse to adopting wet drilling as it causes frequent breakage of drill bits, which adds to the mining cost.”

The mine workers tend to avoid protective gear, such as masks. According to Sangeeta, “They work in high temperatures and are always surrounded by dust, which forms a deposit on their masks, making it difficult for them to breathe. If a mine worker is already suffering from silicosis, a mask with a substantial deposit of silica dust makes breathing even harder. It affects their efficiency at work, and hence what he earns.”

To address the health-related occupational hazards in mines, the Rajasthan government, in 2019, announced [the Rajasthan Policy on Pneumoconiosis \(including Silicosis Detection, Prevention, Control and Rehabilitation\)](#), which emphasises the need to provide relief and rehabilitation to affected persons and prevent, control, and eliminate occupational diseases.

Conclusions

Bhanu Ram’s words “I won’t live long” kept echoing in my mind for long. As did images of a shivering Ram Lal. Nancy Krieger’s notion of “embodiment”, which recognises humans as “social beings” and “biological organisms” simultaneously, offers three insightful points. One, “bodies tell stories about—and cannot be studied divorced from—the conditions of our existence.” Two, “bodies tell stories that often—but not always—match people’s stated accounts.” Three, “bodies tell stories that people cannot or will not tell, either because they are unable, forbidden, or choose not to tell.”

Krieger draws an important analogy between the proverb “dead man’s bones” and “our living bodies” to suggest that bodies tell stories about people’s lives. Even though Ram Lal in Bhil Basti did not utter a single word, his body told his story loud and clear.

Silicosis, which debilitates the bodies and minds of Ram Lal, Bhanu Ram and other mine workers in Bhil Basti and elsewhere, is not a result of their personal lifestyle choices. Their illness points to a sinister pattern in the distribution of sickness and health, which is intricately related to their occupation, among other factors.

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