

India

## Washing out silicosis

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New Delhi



**From left to right: Krishnendu Mudhopadhyay of Sri Ramachandra University, Manoranjan Mishra of Jeevan Rekha Parishad, Perry Gottesfeld of OK International, and Bipin Pattnaik of Orissa Stone Crusher Association.**

It was in 2002 that Perry Gottesfeld, a public health professional, started Occupational Knowledge (OK) International in San Francisco in the US.

His outfit helps developing countries curb illnesses caused by exposure to hazardous materials and environments in places of work.

To fulfill its mission, OK International assists NGOs in checking industrial pollution and preventing workers from falling ill. Accordingly, Gottesfeld put out a request for proposals - offering technical assistance and a grant of \$1,000.

“We got 60 responses from all over Asia and Africa,” he says outside the conference room in Delhi’s Qutub Hotel, “but what caught our interest was one from a small NGO in Bhubaneswar, Orissa, the Jeevan Rekha Parishad (JRP). They had seen a proliferation of stone-crushers where the national highway was being built, leading to huge dust problems, but had no expertise to deal with it.”

OK International and the Public Health Foundation, New Delhi, organised a Silica Hazard in Construction and Mining Conference in Delhi on 11 and 12 December. The meeting, which was sponsored by the Central Pollution Control Board and the National Human Rights Commission, brought together public health experts, urban planners, medical research agencies and government officials.

Gottesfeld, MR Mishra, president of the Jeevan Rekha Parishad, and Dr Bipin Patnaik, president of the Orissa Stone-Crusher Federation explained at the meeting how they successfully put in place dust mitigation measures and created a safer working environment for workers and their children.

The stone-crushing industry in India has grown quickly due to increasing demand from construction agencies. Rapid urbanisation has seen small towns enhance infrastructure and build new roads, changing the face of cities around the country.

“Stone-crusher units were established in the 1960s and since then have grown in number. Orissa has 1,200 to 1,500 units,” says Dr Bipin Patnaik. “In the 1960s when this industry started, there were no pollution laws. The Act came in only in 1998 and was enforced in 2002. In this labour intensive industry, there were little guidelines towards the exposure of workers to silica dust during stone - crushing operations.”

The problem is that workers in industries like stone-crushing, mining, construction and many others face exposure to silica dust. Breathing air laden with silica causes silicosis, a debilitating disease which scars the lungs. There is no cure for silicosis. It is a death sentence. And it increases, by three times, the risk of developing tuberculosis.

Gottesfeld recalls that OK International started by asking the NGO what exactly were the levels of exposure to silica dust? They drew a blank as Jeevan Rekha Parishad had no means or expertise to test for such a hazard. With donated equipment, the NGO trained volunteers to collect air samples from Khurda district of Orissa. These were taken to the US and tested.

“We found that exposures averaged five times above the regulatory level,” explains Gottesfeld. “Respirable crystalline silica dust generated during stone-crushing operations is linked to silicosis and an increased risk of tuberculosis. While the government spends 70 million dollars on treatment for tuberculosis, there is nothing being spent on its prevention. Most stone-crushing mills operate without dust control.”

OK International decided to enhance the capacity of Jeevan Rekha Parishad and started a small pilot project to mitigate dust in two or three stone-crushing mills in Khurda district. But the owners of these mills were very resentful. They did not want to spend money on any technology. No worker had ever complained of dust pollution, they said. The owners paid Rs 100 as daily wages and washed their hands off any responsibility towards their workers.

Instead of taking on the owners of the stonecrushing mills, Jeevan Rekha Parishad changed tack. They began welfare programmes like health camps and crèches and schools for the children of workers. The emphasis was on creating a safe environment.

“It was in the second year that Jeevan Rekha Parishad began making inroads. Two mill-owners installed the water-spraying system. The specially designed equipment removes respirable size particles, using what looks like an irrigation hose with special nozzles, characterised by spray patterns. This process makes the dust wet and suppresses it from rising. These nozzles reproduce a fine mist and are useful for respirable dust control,” said Gottesfeld.

After the two mill-owners installed the watersprinkling system, 40 more voluntarily followed suit. “We have seen an 80 per cent drop in respirable silica dust generation, so there is bound to be an appreciable health benefit. It has been a process. It is not destroying business but creating awareness and building the capacity of people to bring about a change in the lives of poor communities,” he said.

The technology has been rather successful in Orissa. About 40 per cent of mill-owners have adopted it. “There was opposition also because people felt that selling wet chips did not have the same get up and look as the one which was traditionally done,” said Gottesfeld.

The conference discussed other dust mitigation methods and came up with recommendations to prevent, identify and eliminate silicosis.

OK International hopes that similar pilot projects will be undertaken in India. Already the group is planning to enhance the capacities of local NGOs in Jajpur (Orissa), Jhansi (MP) and Hubli (Karnataka), to tackle exposure to silica by getting quarry owners to induct the water-spray technique. It can be combined with rainwater harvesting where water is scarce.

Says Gottesfeld of the Orissa experience: “It’s a low hanging fruit, its benefits are there for all to see. We hope that it is taken up at the national level.”

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