

US Indian

UC Prof Discusses Affordable Methods of Arsenic Remediation

[Monica Luhar, Staff Reporter](#)

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Ashok Gadgil talks about technology

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Millions of South Asians have been affected by contaminated water filled with arsenic, potentially leading to cancer and various other health problems, according to Ashok Gadgil, professor of civil and environmental engineering at UC Berkeley, during a talk here Nov. 17. Gadgil and his team of colleagues at the Lawrence Berkeley National Laboratory sought to find a solution to the problem by launching a project in 2005 that would eliminate arsenic in afflicted areas such as Bangladesh and West Bengal, using technology that would be easily accessible and affordable for local populations in South Asia.

After several experiments, a team of experts at Gadgil's laboratory invented Electrochemical Arsenic Remediation, a method used to remove arsenic from water using electricity and iron rust particles.

Gadgil and his colleagues later traveled to Bangladesh, West Bengal and Cambodia, which have high levels of arsenic and mass contamination. The team tested the technology there and found that it worked well to remove arsenic.

"Based on the results, we know now it costs us 0.023 cents per liter of water. And it's inexpensive so local people can afford it. That's the idea," Gadgil told India-West.

The team also spent a lot of time in the field interviewing families and conducting tests at local high schools.

"We did a few tests about 11 months ago at a local high school in West Bengal. The school committee was very enthusiastic about the trial because the whole school only had one source of water and a shallow hand pump loaded in arsenic," said Gadgil.

During a Q&A session, the Indian American professor addressed issues concerning concentrated areas of arsenic, alternative technologies for arsenic remediation, including the future of the ongoing project and various other issues concerning arsenic poisoning.

"Arsenic is throughout the earth's crust. It's pretty broadly distributed. The western United States also has a problem with arsenic in ground water," Gadgil said.

"In California, right in Sonoma County, where people have to rely on ground water, they have too much arsenic in there. Arsenic is found in Chile, China, Mexico and many other areas," he added.

Another alternative for removing arsenic uses bottom ash from coal power plants and is quite affordable for local communities, according to Gadgil.

Gadgil and his team of colleagues continue to push for further research while conducting various ongoing tests. In 2012, the team is set to conduct a large field test involving a 500 scaled liter system which will run 10 hours a day.

"Once we demonstrate how to make a solution that is financially viable and locally affordable, and technically effective, we have done our intellectual contribution," said Gadgil.

Gadgil currently serves as the director of the Environmental Energy Technologies Division of Lawrence Berkeley National Laboratory and has received multiple awards and honors for his work. He holds a doctorate in physics from UC Berkeley.

The event was sponsored by the Center for South Asia Studies and the Blum Center for Developing Economies.