

# NJIT engineering professor spurs interest in sanitary landfills throughout Asia

June 19 2014

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Uncontrolled landfills are a growing problem in the developing world, polluting groundwater and emitting foul odors, while also boosting greenhouse gas emissions.

There is a simple, cost-effective alternative to open dumping, however, which employs caps composed of soil and [native plants](#), that is gaining currency among policy and technical officials, notes Jay Meegoda, a professor of civil and environmental engineering and a [waste management](#) expert who is actively promoting the technology's adoption in cash-strapped nations.

"There is little money for sanitary landfills in the developing world and leachate from these sites is contaminating groundwater, while methane is exacerbating global warming. The current practice is to dump waste and sprinkle a little soil over it. This is what we did in this country 40 years ago, and these countries are doing it now," says Meegoda, who recently returned from a UN-sponsored meeting in Colombo, Sri Lanka with government, policy, and technical officials from several countries in Asia who expressed interest in the technology.

"With the method known as phytocapping, we place more soil on top of the dumps and grow native plants that absorb the liquid that would leach from them. Enzymes in the plant roots convert the methane produced by decomposition to carbon dioxide, which is a substantially less [potent greenhouse gas](#)," he adds. "This is much more effective and not that costly."

Meegoda and Sam Yuen, a colleague from the University of Melbourne in Australia, proposed wide use of phytocaps at the recent meeting in Colombo, which was sponsored by both the National Science Foundation of Sri Lanka and the United Nations University, an arm of the UN that functions as a global think tank and postgraduate teaching organization focusing on global challenges to human survival, development and welfare. India, Nepal, Thailand, Vietnam, and Sri Lanka have all said they would like to move ahead with the technology.

Meegoda says that he and Yuen are now seeking financial backing to conduct a pilot project from developed nations looking to fund low-cost measures to help developing countries tackle [greenhouse gas emissions](#).

In wealthier nations, modern landfills are lined and outfitted with pipes that distribute liquids to hasten decomposition of landfill material and to extract methane. While these methods are too expensive for much of the [developing world](#), Meegoda calls phytocapping a vast improvement and a "no-brainer" from the standpoint of cost.

Meegoda, the director of NJIT's Geotechnical Testing Lab and the faculty advisor for the university's chapter of Engineers Without Borders, has been working with students since 2007 to bring potable water to a village in northern Haiti through the use of bio-sand filtration systems.

Provided by New Jersey Institute of Technology

Citation: NJIT engineering professor spurs interest in sanitary landfills throughout Asia (2014, June 19) retrieved 20 April 2024 from <https://phys.org/news/2014-06-njit-professor-spurs-sanitary-landfills.html>

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