

As sea levels rise, GMO salt-tolerant crops could address urgent need

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Sea rise, one of the consequences of [climate change](#), now threatens millions of poor subsistence farmers across Asia. As ocean water swamps low-lying plots, experts say many could be forced to flee inland.

A team of Indian scientists is searching for solutions to what they describe as a fast-approaching agricultural crisis. Their neatly plotted rows of naturally salt-tolerant plants, known as halophytes, could be a part of the answer. The scientists from the M.S. Swaminathan Research Foundation are also trying other approaches: tweaking genes and cross-breeding plants by conventional means to discover which might grow and even flourish.

“Sea level rise is inevitable, and we are not prepared,” said Swaminathan. “We can say people can relocate, but where could we even accommodate all those who need to move inland?”

Scientists scouring coasts for wild grain species that might naturally tolerate some salinity, and using arduous breeding methods to create new salt-tolerant strains.

The foundation has also developed genetically modified rice using genes from mangrove trees. It says the resulting plant can tolerate salt concentrations of 12-15 grams per liter.

Genetic modification is considered the most difficult approach, because salt tolerance is a trait that involves numerous genes. But the molecular biologist leading the development of GM halophytic rice believes it's essential.

“Conventional breeding just takes too long, and this problem is urgent,” said Ajay Parida, the foundation's executive director. His work stalled in 2007 under an effective moratorium on field testing GMOs, but the Indian government is considering shifting its GM testing policy and Parida now expects his trials to start soon.

“We could eventually be cultivating wastelands and places considered entirely unsuitable,” he said. “But it's only after crisis hits that people realize the magnitude of the problem and start pushing for an answer.”

Read full, original post: [As Seas Rise, Saltwater Plants Offer Hope Farms Will Survive](#)