

Save our selves

Guelph professor proposes a do-it-yourself approach to hunger issues

— Jonathan Gates —

In 1984, a boy just graduating high school watched a CBC news piece on the famine in Ethiopia. Peter Mansbridge, with a head full of hair, introduced Brian Stewart who was on location covering the famine. Attributed to "the worst drought in memory," the nation was suffering unprecedented food shortages. Reporting 100 deaths daily due to starvation, the piece displayed a grim image of a man forcefully straightening and binding a body set with rigor mortis in preparation for burial.

For this boy, now University of Guelph plant agriculture professor, Manish Raizada, this was a key moment of horrifying inspiration.

Raizada has turned his focus to combating famine and his work was recently featured on the CBC Radio show, Quirks and Quarks, as one of the 'Nine-and-a-half technologies that could change the world.'

Raizada has been looking at methods of making agriculture sustainable and affordable for farmers the world over. Though many of his solutions can help farmers here in North America, these technologies are aimed at helping poor farmers in developing nations like those in Ethiopia.

"In developing countries it becomes a life and death issue," Raizada said, underlining the value of these technologies to people in need.

Raizada puts his plan into perspective by first identifying a problem, asking us to "imagine if all the car makers in the world made the same three cars." Raizada said this would push the price down the world over, as all manufacturers would be competing with one another, though this absurd hypothetical situation is nearly an actuality for global agriculture.

"50 per cent of all food calories the world over are supplied by corn, rice and wheat. And 80 per cent of all our calories come from 20 crops in total," Raizada tones with a sense of disappointment.

In this market, it is cheaper for someone in Africa to buy a subsidized American farmer's corn after shipping costs than it would cost that person to buy unsubsidized local corn, Raizada

“How do you reach two billion people?”

professor Manish Raizada

said. Comparatively, there are an estimated 20 thousand edible crops to potentially be used.

"I'm shocked at the level of what has not been done," he added.

Cheap compared to governmental agriculture subsidies, Raizada expects that a program to invest \$1 million in a thousand new crops might open up new solutions to decades, if not centuries or millennia old problems in agriculture. Citing work by writers such as Jared Diamond, author of Guns, Germs, and Steel, Raizada said that though we generally understand that we are larger in stature than our ancestors due to improved nutrition, evidence suggests that we're just realizing the physical proportions that our ancestors achieved 20 thousand years ago due to a well-balanced, pre-agriculture diet.

A direct and practical solution for the short-term that Raizada is working on are Sustainable Agriculture Kits (SAKs) that will utilize simple and affordable technologies to be distributed to farmers. Presently, Raizada has a product called a GrainPro bag, what looks like a clear garbage bag is an 80 cent oxygen expelling storage container for seeds, filling in the role of a grain silo for those who could never afford such a thing, saving up to 80 per cent of the harvest. Another SAK product is a green-bag, which can the ripening process in fruits and vegetables to allow a farmer more time to move his product

before it becomes waste.

Currently, Raizada's lab is working on developing a cheap, on-site test for soil fertility. His team has managed to cut down costs to a dollar per soil fertility site test (about 500 tests per field) but still require a lab to do so. This is a huge step from the previous \$10 per site test that could never be within the financial reach of developing world farmers who make between \$1 and \$2 a day. They hope to one day have a portable, easy-to-use version of this test and it seems within reach.

With operations beginning in Haiti, Liberia and Afghanistan, Raizada hopes to branch out in the near future to the 30 poorest nations as ranked on the United Nations Human Development Index (HDI). But Raizada recognizes SAK's biggest challenge: distribution.

"How do you reach two billion people?" he said.

Raizada is adamant that the SAK project is not to run on subsidies or to be intended as a hand out. The SAK will be run locally in each nation and operate by being functional and affordable.

"It's a bottom up approach," said Raizada. "If it's not meeting people's needs they aren't going to buy it."

He's sure if it proves useful and affordable, the SAK will essentially pay for and distribute itself while providing food stability. Raizada said that each nation's SAK operation will handle



Professor Manish Raizada displays the Grain Pro bag. For less than a dollar this bag will preserve crops and function as a silo for farmers in developing countries.

itself as a business and focus on addressing local needs by adjusting the SAK for their respective climates and ecologies.

"I hate the image of the white man coming in to solve problems, it's arrogant," he said, adding that we'd never hire a PhD from Ghana, for example, to

come to Guelph to solve our employment solutions, so how can we expect to step in to problems we aren't fully familiar with and solve them.

"The SAK is not me, the SAK is the local people," said Raizada. "We're just putting the resources together."

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