

News / World

## Canadian food research helping farmers boost crop yields in Asia, Africa

Canada researchers helping farmers in Ethiopia, India, Sri Lanka and Nepal boost food crop yields and reduce spoilage with nanotechnology, micronutrients, rhizobia



A girl walks through a market in New Delhi, looking for spoiled food to eat. Projects by Canada's CIDA and IDRC are aimed at reducing food spoilage rates in countries such as India.

By: **Rick Westhead** Staff Reporter, Published on Thu Apr 04 2013

Manish Raizada, a University of Guelph agriculture professor, is changing lives in India, Nepal and Sri Lanka by showing farmers how to boost crop yields with weeding and planting techniques and by adding new crops.

Other Canadian researchers are bolstering Ethiopia's agriculture sector, introducing farmers to rhizobia, a bacteria that naturally adds nitrogen to the soil and helped Saskatchewan, nearly a century ago, become a leading soybean exporter.

Then there are Canadian-led efforts in India that use nanotechnology to improve the lifespan of mangoes, efforts that should help improve livelihoods in a country where half of children under five are malnourished.

Even as the Canadian government comes under fire for allegedly muzzling scientists who specialize in the environment and climate change, some scientists who are agriculture experts say the government's support of food security studies has never been more robust.

In response to a food crisis that rattled the world's food markets five years ago, doubling the price of grain between early 2007 and spring 2008, the Canadian government has invested more than \$50 million since 2008 into food security research.

On Friday, Canada will announce its commitment to provide a further \$62.5 million for more food-security research, The Star has learned.

The money will be administered jointly by the Canadian International Development Agency and the International Development and Research Centre, a Crown corporation that funds research in developing countries.

“Canada’s investments in development improve the lives of those in need and are a tangible expression of Canadian values,” parliamentary secretary Lois Brown said in an emailed statement.

The funding comes as CIDA is also said to be considering expanding its presence in the agricultural sector.

While CIDA has funded development partnerships alongside Canadian non-profits and private companies in the mining sector, a controversial effort that has critics charging that the companies should be footing project-related bills, CIDA chief of staff Neil Desai has told some aid agency officials that CIDA, which administers the majority of Canadian foreign aid, is making plans to expand partnerships in the agricultural sector.

“In no way would Canadian scientists in the agriculture sector say they are muzzled,” said Stephen McGurk, director of IDRC’s agriculture programs. “We’re engaged outside our borders and doing research now that’s valuable to Canadians but has to prove its salt somewhere else first.”

For instance, McGurk said one government-funded project is helping lengthen the shelf life of mangoes by as much as two weeks by introducing a nanoparticle-based coating that prevents them from ripening as fast.

“That way they’re attractive when they get to market, not looking like pulp,” McGurk said. “That science, once it has been tried in India can be equally applied to fruits here like plums or raspberries.”

The \$50 million in funding that’s been provided so far has been disbursed via the Canadian International Food Security Research Fund, which supports 19 research projects headed by officials with 11 Canadian organizations and 26 in the developing world.

Raizada, from the University of Guelph, has spent the past year and a half helping about 1,000 South Asian farmers improve yields of crops such as millet, a hardy small-seeded grass that is less dependent on water or irrigation than corn or wheat yet typically is higher in protein and vitamins than corn.

Raizada and his colleagues have been showing farmers the advantages of planting cowpea between rows of millet. The cow pea can be used as animal fodder and, more importantly, boosts the soil’s nutrient content for subsequent crops.

By showing farmers they’re better off using implements and micronutrients like zinc, subsequent demand for those items will prompt entrepreneurs to set up their own small businesses to sell them, he said.