

Agbiotech being harnessed to fight hunger and poverty

October 2010 | [M Robin](#) | [Leave a comment](#) | [Read comments](#) | [Print this article](#)

She lives on one hectare, which she farms to provide for herself and her four children. When she's not tending the fields or cooking, she makes candles to sell to earn a dollar a day, which is her family's total discretionary income. She is married, but sees her husband about once every six weeks when he comes home from his labourer's job hundreds of kilometres away.



Her name is Abigail Muhonja. She lives in Africa, and she is Dr. Prem Warrior's boss.

Warrior, senior program manager for the Bill and Melinda Gates Foundation, shared Ms. Muhonja's story as part of his keynote address at the second day of the Agricultural Biotechnology International Conference (ABIC 2010) in Saskatoon. Warrior explains that the needs of Ms. Muhonja and millions like her are the *raison d'être* of the Gates Foundation's agricultural program to fight poverty.

"Our goal is to reach the 150 million Abigails in Africa and Asia," he says.

The strategy for doing this is to give money away - \$2 billion into agricultural research in the past four years. This is a much harder task than it might seem.

Warrior says he and his colleagues look for problems that have been ignored but have a large potential for a breakthrough. The technology must be scaleable, to help the maximum number of people. And it must be sustainable, providing a long term solution. Finally, they are looking for innovators, capable of taking bold action and accepting the risk of failure.

"We are fully aware that not everything we do is going to work," Warrior says. Small farmers like Ms. Muhonja's are typically home to the poorest of the poor – those that subsist on less than one dollar per day. Nearly three quarters are worked solely by women who have little say in decision making, so initiatives aimed at empowering these women are a high priority. Environmental protection and developing markets for farmers are also high on the list.

Biotechnology has an important role to play, Warrior says, although it has not yet been widely embraced in Africa and Asia, where up to 78 per cent of the world's poor live.

"An overall lack of regulation and acceptance are becoming a serious problem for biotech."



But there is much potential.

“We’re trying to double or triple legume production using nitrogen fixing inoculants,” he says.

Legumes are an important source of protein, the lack of which can cause developmental problems in children. Other projects funded by the Gates Foundation are looking at developing nitrogen fixing cereals. This is a challenge, since the symbiotic bacteria that fix nitrogen in legumes don’t colonize the roots of cereal grains.

“It hasn’t been done. But this is precisely why we must do it,” Warrior says. Crops that use water more efficiently and resist drought, and rice that tolerates prolonged flooding are other examples where biotechnology is being applied. About three billion people depend on rice in their daily diet. Likewise, millions of Africans eat cassava every day, and suffer from micronutrient deficiencies because of it. If cassava could be bred or engineered with a better nutritional profile, it would improve health right across the continent.

“I believe agbiotech will help produce more food with less land, water, fertilizer, and pesticides,” Warrior says.

Warrior says to be sustainable, solutions must be tailored to local needs. This includes the empowerment of women, and access to markets so farmers can get a fair price for their goods. It means sharing technological breakthroughs, and ensuring local scientists are trained to build upon these breakthroughs. It means policy reforms, and recruiting allies from every sector.