

Viva la Revolution

The Green Revolution 2.0 is powered by the Gates Foundation... and plant breeding.

By Stephanie Fehr



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MAYBE BEST KNOWN INTERNATIONALLY for its HIV and malaria research, the Bill and Melinda Gates Foundation is adding poverty and hunger to its list of causes, aiming to give Africa a Green Revolution of its own. And it can't come too soon because a number of the continent's problems – malnutrition, food security and economic growth come to mind – are best addressed by agriculture.

Half a century ago, Asia and Latin America benefited from an investment in plant breeding called the Green Revolution that pulled many people in those regions out of poverty. However, because of Africa's complex geography and its diverse agriculture the revolution bypassed the continent.

But not for too much longer, if the Gates Foundation has any say in the matter – and with a \$150 million commitment to develop better seeds and ensure they get in the hands of the farmers who need them most – it probably does. The Foundation's Alliance for a Green Revolution in Africa (AGRA) focuses on African seed systems, soil health and fertility, along with access to water, and this commitment will mean more resources directed towards plant breeders through its Program for Africa's Seed Systems. It hopes to provide the benefits of productivity while learning from some of the pitfalls of the first revolution about the environment and wealth distribution.

With such lofty goals, real expertise is needed to hit the target. That's where Robert Horsch, Monsanto's former vice-president for international development partnerships, comes in. He's been brought in to head up the Science and Technology portfolio that aims to improve agriculture for the poor in Africa and south Asia.

Horsch and his real world expertise are a boon to the program, says Rajiv Shah, Director of the Agricultural Development Program at the Foundation. "We're very fortunate to have him and he's a great voice of reason and experience and a real reality

check," says Shah. "He's constantly asking us, 'Does this meet the needs of smallholder farmers? Is this the most appropriate technology? Are we talking and listening to smallholder farmers and understanding the risks under which they operate as we make funding decisions?' He's a real asset to this field and it was a big win for smallholder farmers the day he came to the Foundation."

But it's not only Westerners who are part of the revolution. A significant deployment of African researchers will be leading the way. "The breeding program is focused on developing locally-adapted seed," says Shah, "so we fund local breeding programs led by African breeders and national agricultural research institutions in Africa – breeders who are talking to farmers about what characteristics are important to them, for example drought tolerance, the amount of foliage, yield and flavor or appearance characteristics they value for cultural reasons."

This effort is part of a larger investment across the agricultural value chain – from planting the highest quality seeds to bringing crops to market more efficiently. "Our hope is to address the full spectrum of agricultural, economic, social and policy issues affecting the success and self-sufficiency of small farmers in developing countries," says Shah.

While some have suggested this Green Revolution might wrest control of seeds from the hands of the very people it's trying to help, Shah is clear this is not the case. "Our goal is to do what is most valuable to smallholder farmers," he says. "We also believe that countries must have robust regulatory and data systems so they can make their own decisions about whether or not to incorporate different types of technologies, and make their own risk-benefit trade-offs about what's most appropriate for their populations."

Having such prominent and vast resources focused on a new wave Green Revolution puts the spotlight on seed and plant breeding as solutions to global issues. **SW**