



Chris Barrett speaks to children in a Kenyan village.

Can Financial Markets Help End Global Poverty?

Professor Chris Barrett believes that technology, new approaches to financing aid, and international markets can pull billions of people permanently out of poverty.

BY AARON GOLDWEBER

For Chris Barrett, finding a way to end persistent global poverty is deeply personal. “If my five kids were a random sample of children around the world, three of them would be living in grinding poverty and one of them would have died by now. So, which child would I choose? I don’t want to choose any of them,” says Barrett.

While many children will end up living better lives than their parents did, many more are stuck in the same “poverty trap” that has ensnared their families for generations.

"Each day, 15,000 children die unnecessarily of hunger-related causes in a world of plenty," he sighs.

Yet, while the data on the number of impoverished people worldwide paint a grim portrait, Barrett is optimistic.

"In the last 300 years, the world has gone through an unprecedented escape from poverty. When you look back on the 18th century and earlier, the vast majority of people lived diseased, short lives with lots of hard work and little in the way of material comforts," he says.

Still, Barrett insists we can do better.

"While I can sit in this air-conditioned office and not have to wonder about where my next meal is coming from, I remain in the minority of the world's population," he says. "Why are one to two billion people unnecessarily and disturbingly trapped in extreme poverty?"

For Barrett, a professor in the Department of Applied Economics and Management, the solution to ending poverty lies at the confluence of policy, technology, markets, risk management, and finance. Within each thread there is potential to improve efficiencies and create partnerships to leverage markets and technologies.

With his research focused on Africa, Barrett does not shy away from putting his findings and his ideas into the policy arena.

"I often take 'body blows' politically, but I need to speak up about what works and what doesn't about government or NGO policy. I need to translate theoretical and empirical work into practical, actionable terms if this is to be more than just an intellectual pursuit," he says. "And it is."

Much to the point, he recently published a book entitled, *Food Aid After Fifty Years: Recasting Its Role*, in which he and coauthor Dan Maxwell MS '86 of Tufts University argue that the U.S. wrongly uses a decades-old model of food aid. As a result, he says, a lot of taxpayer dollars are misused because a strict "buy American" policy requires that all U.S.-funded food aid purchases must be American-grown and American-processed commodities and 75 percent must be shipped on American-flagged vessels.

Barrett is characteristically frank in his



Barrett hopes that his work will provide for a better future for children in developing nations.

assessment: "A large chunk of aid today is an employment program for Americans. We congratulate ourselves on feeding the hungry, but the truth of the matter is that about 65 cents on the dollar is not going into the value of the food consumed by people abroad—it's going into shipping and administrative costs; it's going to ship line owners and agribusinesses."

For example, in Northern Kenya, Barrett and his colleagues can predict with 75 percent accuracy the onset of widespread severe childhood malnutrition—three months in advance. "The key is rapid response. Today, the average lag from the call for help to a food aid delivery is four to five months. Delays kill, and we know that costs increase sharply as a disaster progresses," Barrett says.

A recent article in the *Sunday Observer* (U.K.) illustrated an example in Malawi where costs for a school meal program were three times as much as necessary. Despite a local bumper crop of maize in the region, food was purchased and shipped from U.S.

"If we could just purchase the maize in

Malawi, we'd be reaching a lot more kids and stimulating the local economy by supporting the local farmer. It's truly crazy that we can't," Barrett says.

Barrett and Maxwell have proposed a new food-aid strategy based on rapid, efficient response to minimize the damage done by disasters that might otherwise knock people into a poverty trap. Working with, rather than against, markets and improving agricultural productivity are central to this strategy.

Improving Technology and Taking Risks

If improving agricultural productivity is a key step on the path to reducing poverty, why don't some technologies take hold?

"Poor productivity is synonymous with poverty. Understanding how to improve productivity is central to understanding how to get people out of poverty. And understanding the constraints to the adoption of newer technology is essential to scientists and engineers who develop new technologies," Barrett says.

Risk plays a major role in limiting uptake of new technologies. According to the International Labour Organization, agriculture is the riskiest sector in the global economy because of factors like storms,

The Poverty Trap

Formulating an effective approach to ending poverty requires understanding the underpinnings of global poverty. Why are people poor? Why do they stay poor?

"A large percentage of the world's population remains mired in grinding, long-term poverty that is passed down like a family heirloom from generation to generation," explains Barrett.

Most improvements in the human condition have been ignited by improvements in agricultural productivity, he says. As people employed in agriculture generate more per hour worked, food supply grows in volume and quality, the price of food goes down, people eat better, health improves, people begin investing in nonfarm businesses, and poverty begins to lift.

Most of the world's poor live in rural areas and are employed in agriculture. Barrett says that without improvements in technology and markets, there is little hope for their lives, or their children's lives, to improve. Basic accounting shows that poor people can't invest much because they have to spend the vast majority of their income on basic sustenance. Often, they can't even maintain current levels of agricultural productivity by properly maintaining their health, their soil, and other key assets.

"Getting out of poverty requires investment—in technologies, markets, capital—so what do you do? The same model that brings talented, disadvantaged American teens to Cornell University is what we should see in Africa. Discounted lending, outright grants—well-targeted assistance enables students in the U.S. to build up valuable human capital, and the same approach can make a difference to the poor elsewhere in the world, too," Barrett says.

Barrett knows that aid has historically yielded low returns that have made governments, companies, and individuals cautious about such investments. But he insists that we can learn from our mistakes.

"Just because your crazy Uncle Morty lost a bunch of your money in the stock market, doesn't mean you should never invest again; it means invest differently," he says with a laugh.



pests, drought, and health hazards for workers. Add in price fluctuations and it's easy to see why many farmers in the developing world are cautious.

"And let's not forget that people in these countries don't have the social safety nets that we in the U.S. enjoy—health insurance, home insurance, and unemployment insurance," Barrett says. "Poor people are that much closer to the 'tipping point' where, if they cross it, they collapse into grinding poverty and it's difficult to come back."

Shocks such as drought, fire, theft, or anything that gets in the way of tending your herd or working your fields can invite collapse. Therefore, says Barrett, the people most susceptible to becoming completely impoverished by a shock tend to take the most cautious approaches.

"People typically adapt their behavior to avoid risk, so they trade high risk and the potential for high returns for low risk and low returns. But low returns mean you're not going to earn very much. So you're trapped in a perpetual cycle of destitution and vulnerability by your own behaviors," explains Barrett. "You choose not to gamble on this slightly riskier but potentially very high-return farming method because it risks your and your children's future."

Innovative Ways to Finance Aid

Barrett thinks it's important to leverage the ideas—and considerable resources—available in the private sector to address the current shortfall in funding that can help the poor withstand a shock, implement new technology, or get an education. Presently in Africa, to move everyone who currently lives on less than \$2 a day to \$2 a day requires more than seven times present official aid flows.

"Nobody thinks we're going to multiply aid flows by three—much less by seven or 10," Barrett says. "So we need to stimulate high-productivity investments in technology, market infrastructure, education, and health and mobilize private financing that will dwarf public funding. Getting business involved is about getting people with different interests—businesses, aid organizations, governments—to find a common cause that will lead to the results each of them seeks," he explains.

Seeking innovative ways to mobilize financing, Barrett is working with a current doctoral student, Pin Chantarat; a former doctoral student now working in Kenya, Andrew Mude, PhD '06; and Cal Turvey, the W. I. Myers Professor of Agricultural Finance, to explore the possibility of using



weather derivatives (essentially weather bonds or insurance for famine prevention) to pre-finance emergency response before disaster happens.

If slow-onset disasters are foreseeable, then global financial markets offer a promising new way to finance emergency response. For example, in Northern Kenya, Barrett and his colleagues can predict with 75 percent accuracy the onset of widespread severe childhood malnutrition—three months in advance.

“The key is rapid response. Today, the average lag from the call for help to a food aid delivery is four to five months. Delays kill, and we know that costs increase sharply as a disaster progresses,” Barrett says.

By having financing in place ahead of time, response can be more nimble, costs can be kept down, and more people can be helped. Barrett cites an example in Niger in 2004–2005. A drought and locust infestation threatened crops. The call went out for \$9 million but nothing came in. After six months it was a full-fledged emergency that needed a \$30 million response. In the span of six months the cost per person helped more than tripled, from \$7 to \$23.

“If you can predict these things three months out, financial markets can take care of this. That’s what catastrophe bonds and

weather derivatives are all about. If you can establish the probability of an event happening and how correlated this is with other events, the money can be mobilized,” Barrett says.

Because rainfall in Kenya has nothing to do with pork bellies or other risky investments, those investments are potentially attractive to people looking to reduce the overall risk in their portfolio, he says. And it provides a new source of funding aid to developing countries.

“We have to start making markets work for the poor,” Barrett says.

An Aid Optimist

Barrett says that inefficiencies in current aid policy are hurting the poor. Part of what bothers him are the repeated mistakes in policy by governments, businesses, and NGOs. The “good miserly economist” in him hates inefficiencies and waste. They cost poor people much more than they cost the wealthy, he says.

“But, I’m very much an optimist. It’s hard to be sober when recognizing how widespread and persistent deep poverty is and not get caught up in a doom and gloom perspective—but things aren’t hopeless,” he says. If we’ve gotten 20 percent of the world’s poor out of poverty already and

Above, left to right: Farmers in Kenya pump water from the Pekerra River to irrigate their fields; a Kenyan boy stands in a waist-high tea field in Embu, Kenya; and herders in Ngambo, Zambia, treat sheep for scrapies (wasting disease).

another 30 to 50 percent is well on its way out, it’s clear that we’re heading in the right direction.”

He also feels he’s in the right place for his work to make a difference.

“One reason that I’m proud to be part of a place like Cornell is that senior leadership sees that we do have some responsibility because of our fortunate position. This work is in the tradition of land-grant extension. It’s not easy, but that’s what makes it all worthwhile. It’s important, feasible, and challenging. And that’s what a great university is all about: taking on major but solvable problems.”

For more information:

www.aem.cornell.edu/profiles/barrett.htm