Bangladesh, once derisively referred to by Henry Kissinger as a “basket case” for its seemingly intractable poverty, has made impressive strides across development sectors in the past three decades, particularly in agriculture. But an aggressive new wheat fungus, never before observed outside of the Americas, is threatening to destroy much of its wheat crop while pushing smallholder farmers deeper into poverty. The fungus, known as wheat blast, was only confirmed at the end of February, but its impacts in some communities are already catastrophic.

While, and perhaps because, the harrowing incident and aftermath of the 1974 famine (with an estimated death toll of up to 1.5 million) still loom heavily in the national political consciousness, Bangladesh has more than tripled rice production since independence, from about 10 million metric tons in 1971 to 35 million today. No longer reliant on imports for its staple crop, it now seeks to expand and diversify both cereal and horticultural production. In so doing, smallholder farmers, who have historically grown one rice crop per year, are now expanding their production to two and sometimes three annual crop cycles. This shift, if enacted at sufficient scale, has the potential to buttress and smooth incomes in some of the country’s most vulnerable communities while simultaneously supporting dietary diversity and nutritional gains.

As 1 of 19 Feed the Future focus countries, Bangladesh has also seen substantial U.S. government investment in agriculturally driven poverty reduction on the order of $50 million per year since the presidential initiative was launched in 2010. This robust resource stream has supported investments in deep-placement fertilizer, which is both more cost effective and more environmentally friendly; in improved mechanization and irrigation processes; in both the quality of and access to inputs (seed varieties, soil testing, pest management, advisory services); and in a battery of market integration activities from feeder road improvement to aggregation and auction centers to information and communications technology solutions, which correct information asymmetries for smallholders. Many interventions incorporate strong private-sector partnerships to maximize sustainability.

A perennial challenge of such development program-led structural transformation relates to the mass adoption of new behaviors. Even in the face of compelling evidence that new practices will lead to significant economic gains for poor households, a host of rational impediments to large-scale behavioral change persists. Farming is a particularly risk-exposed enterprise, extraordinarily so for Bangladeshi smallholders, and the introduction of new and complex risks associated with unfamiliar practices is understandably unpalatable (development economists have written on the challenges of behavior change extensively; the Center for Global Development published an engaging and accessible policy paper in 2012). The cyclical nature of agricultural production also requires substantial front-end investments that are only recuperated many months later, if the harvest is successful. Credit-constrained smallholders are often unable to smooth their expenses accordingly, while also maintaining sufficient resources on hand for daily consumption needs.

It is, then, no small feat to manage the broad adoption of new crops, but Feed the Future, in partnership with the International Maize and Wheat Improvement Center (CIMMYT) has achieved this in Bangladesh’s southern delta region through the Cereal Systems Initiative for South Asia (CSISA). In recent years, CSISA has supported over 82,000 Bangladeshi farmers to grow wheat for the first time. The project emphasizes research into new wheat varieties with higher yield potential and that perform well in the heat-intensive, stress-prone areas of southern Bangladesh. Five new varieties were introduced with Feed the Future support. Profit margins on wheat in this area
are double those of rice, and farmers who have traditionally grown one rice crop per year thus face the potential to triple their annual incomes. With careful planning and the selection of appropriate short-season varieties, the introduction of a third annual crop may even be possible.

But in a devastating turn of events, Bangladeshi and CIMMYT scientists have recently confirmed the widespread presence of wheat blast, a fungal disease, in southern Bangladesh—it’s first-ever appearance on the continent. “The fact that it is now in Asia is a real concern,” explained a Dhaka-based CIMMYT expert. Infected fields of susceptible varieties saw 90 percent losses in a matter of days, while fungicidal treatment of less susceptible varieties has curbed losses to about 10 percent. But no fungicidal treatment is effective if warm, rainy weather occurs during the wheat heading stage, and few resistant genes have been identified.

First detected in Brazil in 1985, the wheat blast fungus quickly spread to neighboring Latin American countries but has never before been observed outside of the Americas. An unseasonably warm and wet winter, symptomatic of a changing climate, has likely contributed to the fungus’ growth, but the precise pathway of contamination is not yet understood.

Even with the recent concentration of investments, Bangladesh only produces about 1.3 million metric tons of wheat per year and imports the balance of its consumption needs. Neighboring India, in contrast, is the world’s second-largest wheat producer (after China), averaging over 90 million metric tons annually. The spread of wheat blast into India, which supplies global markets in addition to its own growing population, would be calamitous—and the borders are quite porous.

For the smallholder farmers of southern Bangladesh, the appearance of wheat blast has severe implications. Having invested scarce proceeds from the fall rice harvest into wheat planting and cultivation, rather than in providing for their families, many farmers are now economically worse off than they would otherwise have been, at least in the short term. The situation highlights an uncomfortable question in agricultural development: If international donors, with science and good intentions on their side, successfully nudge the world’s most vulnerable people into behavioral change that results in unforeseeable negative outcomes, what responsibilities do they bear?

In developed agricultural economies, including our own, public- and private-sector crop insurance schemes are highly evolved: in 2014, 1.2 million federally regulated and subsidized insurance policies were sold in the United States, with an insured value of $110 billion. Only 2 percent of Americans are farmers, while around 75 percent of Bangladeshis derive their livelihoods from agriculture. Yet no comparable insurance schemes exist on a national scale to protect an agrarian population that was hit with 58 cyclones between 1960 and 2010 and is disproportionately vulnerable to climate change.

The Asian Development Bank piloted a crop insurance scheme in 2014, with an eye to national expansion, but the odds are not in its favor. In fact, no index-based crop insurance program has ever reached national scale without very heavy subsidies. The subsidy levels required to achieve mass adoption effectively transform such insurance schemes into cash transfer safety net programs. The government of Bangladesh recently invested over $2 billion in safety net programs to cover 4 million households, leveraging an additional $500 million from the World Bank, but no program targets crop losses in a direct manner. Other potential risk-insulating financial mechanisms could include preapproved, indexed lines of credit, or the integration of group-based savings with weather index products. On a research trip in early March, the CSIS Global Food Security Project team interviewed impacted Bangladeshi wheat farmers who had no knowledge of any such protections.

With a dual mandate to reduce poverty and to improve nutrition, Feed the Future would do well to frame its risk mitigation investment strategy more comprehensively. The Index Insurance Innovation Initiative is a good start, but a broader set of financial services (including transfers) that draws on the strengths of both public- and private-sector actors could drive uptake of both improved agricultural practices and risk insulation products on a much larger scale. Asking a farmer who struggles to put food on her table each day to assume an elevated level of risk with no protection when things go awry is an ethically fraught proposition that belies a true “partnership” model of
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