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Food Security for a Billion Poor

THERE ARE AT LEAST 1 BILLION POOR PEOPLE LIVING WITH CHRONIC UNDERNOURISHMENT, and the United Nations (UN) Millennium Development Goal of substantially reducing the world's hungry by 2015 will not be met. The developing world's poor are experiencing the effects of higher commodity prices, and declining agricultural productivity growth is exacerbating the problem. Next week, leaders in science and society will convene in Montpellier, France, for the first Global Conference on Agricultural Research for Development (GCARD 2010) to organize sweeping changes in global agricultural research. The meeting follows major reforms of the Consultative Group on International Agricultural Research (CGIAR), endorsed in December 2009. CGIAR's new business model is meant to more effectively address food security, focusing on people, results, and efficiency. "Mega Programs" (now called "Themes") will deliver research outputs to achieve scaled-up impacts on poverty, and a new fund will harmonize donor contributions to support CGIAR's 15 research centers. But the total global investment in public-sector agricultural research is 20 times greater than that of CGIAR. How to better harness this critical resource (along with private-sector investments) for worldwide poverty reduction will be a major focus for GCARD.

The main battlegrounds for poverty reduction are Asia and Africa, where 97% of the world's food-insecure reside. Although international food prices have declined from their peak in 2008, they have remained higher than the trend in developing countries, reflecting a supply/demand imbalance. Contributing to the problem, cereal yields growth has declined. According to the Intergovernmental Panel on Climate Change, a 2°C increase in temperature could lead to a further 20 to 40% fall in cereal yields, mostly in Asia and Africa. Lifting a billion people out of poverty and feeding an extra 2.3 billion by 2050 will require increasing cereal production by 70%, doubling the output of developing countries.* In sub-Saharan Africa, where more "ultrapoor" live, developing technologies to boost productivity is especially difficult because of greater threats from pests and diseases, poorer soil, and drought. In addition, Africa's R&D establishments are small compared to those of South Asia—half had fewer than 100 scientists in 2000. Compared to Latin America, Africa has less than half the rural roads per hectare, 1/40th the capital per farmer, and 1/50th the rural electricity supply per worker.† Despite some success with maize, cassava, and some horticultural crops, few African countries have experienced a Green Revolution.

Agricultural development requires a combination of enabling policies; secure land rights; and farmers' access to knowledge, technologies, and markets. Some technologies, such as new plant varieties or those that enable more efficient use of water and nutrients, can be obtained from international sources. But innovations involving natural resource management or the involvement of women have no universal blueprints and must be developed to suit particular conditions. Hence, restructuring CGIAR with sharper research priorities that bring in partner countries is a hopeful sign.

Public investment in agriculture is critical. Only Brazil, China, and India have boosted research expenditures as a share of agricultural gross domestic product; but it may now be increasing elsewhere, after two decades of decline because of complacency among policy-makers. The 2009 pledge of the G8 countries of \$20 billion in new aid to food and agriculture over the next 3 years, with a focus on Asia and Africa, should help, as will an anticipated expansion of South-South partnerships. The goal of the GCARD 2010 meeting is to transform the global architecture of agricultural research over the next several years, as an essential complement to the CGIAR reforms. The stakes are high: Without this change, we may face a billion more hungry on our planet.

— Uma Lele

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*World Summit on Food Security, Food and Agriculture Organization of the UN, Rome, Italy, 16 to 18 November 2009.

†J. Schmidhuber, J. Bruinsma, G. Boedeker, in *Proceedings of the Expert Meeting on How to Feed the World by 2050*, Food and Agriculture Organization of the UN, Rome, Italy, 24 to 26 June 2009.

