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briefing paper

Ending Hunger: The Role of Agriculture

by Charles Uphaus

Bread for the World Institute provides policy analysis on hunger and strategies to end it. The Institute educates its advocacy network, opinion leaders, policy makers and the public about hunger in the United States and abroad.

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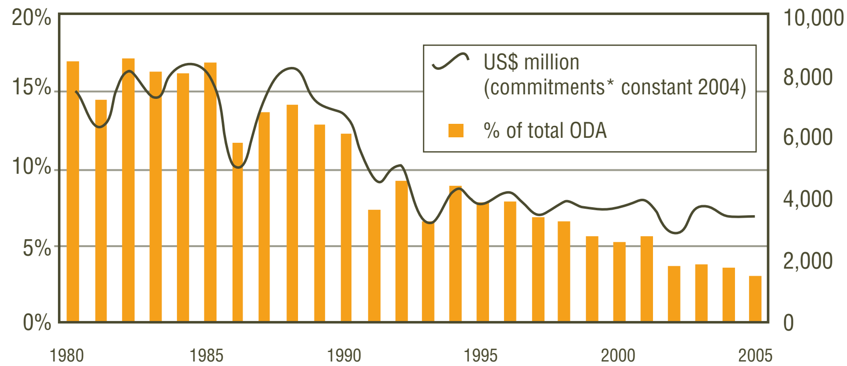
Official Development Assistance (ODA) to Agriculture, 1980-2005



*Commitments is a firm obligation expressed in an agreement or equivalent contract and supported by the availability of public funds, undertaken by the government, an official agency of the reporting country or an international organization, to furnish assistance of a specified amount under agreed financial terms and conditions and for specific purposes, for the benefit of a recipient country.

Source: OECD International Development Statistics–Creditor Reporting System.

Key Points

- Increasing agricultural productivity in developing countries is necessary to reduce hunger and poverty, especially in the face of rapidly rising food prices.
- Agricultural and rural development strongly determines whether a developing country is likely to achieve broad-based economic growth and the Millennium Development Goals.
- Declining rates of poverty and hunger in Asia, where agricultural growth helped raise incomes of poor people in rural communities, provides valuable lessons for sub-Saharan Africa.
- In recent decades, rich and poor countries alike have diverted resources away from promoting agricultural growth in developing countries, disadvantaging smallholder farmers.
- Disinvestments in agriculture have been compounded by protectionist trade and agriculture policies in rich countries. New investments would be more effective if these policies were reformed.

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Abstract

A spike in global food prices has increased hunger. A prolonged period of higher prices threatens to stall or reverse progress in achieving the Millennium Development Goals (MDGs).

Of the 862 million poor people around the world who are chronically hungry, 75 percent live in rural areas and depend on agriculture for their earnings. Increasing agricultural productivity in poor countries is critical to reducing hunger. It increases food supply, which lowers food prices. Poor people benefit the most because they spend a much greater share of their income on food. Increasing the productivity of smallholder farmers also raises their incomes, improving their ability to cope.

Over the last twenty years, donors have been partners in a progressive decline in support for agriculture and rural development. A substantial increase in funding for agriculture is needed but aid by itself won't be enough. Reforming trade distorting policies in rich countries is also necessary. In addition, developing countries themselves have to provide supportive policies, along with additional investments, for donor resources to be effective.

Margaret W. Nea

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Since 2005, prices for rice, wheat, corn, and other food grains have soared by 83 percent. Many factors are responsible for rising food prices. Higher incomes in China and India, as well as in other developing countries, have led to more diversified diets, including greater consumption of meat and dairy products, contributing to greater demand for feed grains. Meanwhile, the diversion of crops and agricultural land for the production of biofuels, particularly corn-based ethanol, has meant decreasing supplies for human and livestock consumption. When extended drought in key producer countries is added to the equation, the result is a major jump in prices as demand begins to outstrip supply. Finally, sky-high oil prices are contributing to what World Food Program's Executive Director Josette Sheeran has called "a perfect storm hitting the world's hungry."[1]

Higher food prices may be good news for some farmers, but they add a crushing load to the most vulnerable and poorly nourished people, including young children and nursing mothers in developing countries. Poor people typically spend up to 80 percent of their disposable income on food. Food riots in countries as far-flung as Haiti, the Philippines, Indonesia, Ethiopia, Burkina Faso, Egypt, and Cameroon suggest troubling times ahead as fears of hunger take root.[2] The international community must take measures to provide food and cash assistance to meet immediate needs and to improve agricultural policies. Increasing demand for staples has not been matched by investments in agricultural productivity, especially in developing countries where rising food prices are felt most acutely. The longer-term impact of this global hunger crisis could stall or reverse decades of progress against hunger and extreme poverty and prevent the world from reaching the Millennium Development Goals (MDGs) by 2015.

Bolstering the agricultural sector in poor countries is a smart investment that will yield substantial dividends, especially when it comes to hunger. Of the 862 million people worldwide who are chronically hungry, 75 percent live in rural areas and depend on agriculture for their earnings, either directly, as farmers or hired workers, or indirectly in sectors that derive from farming.[3] Realizing agriculture's potential and creating economic opportunities in rural communities is imperative to achieving MDG #1, cutting hunger and poverty in half by 2015.

Agriculture, Hunger, and Poverty

"No country has been able to achieve a rapid transition out of poverty without raising productivity in its agricultural sector," explains Peter Timmer of the Center for Global Development, and one might say the same of achieving sustainable reductions in hunger.[4] Decreasing poverty in rural areas has been the main cause of the decline in extreme poverty (the proportion of people who live on less than $1 a day) in developing countries—from 28 percent in 1993 to 22 percent in 2002.[5] The poorest countries have largely rural economies: agriculture accounts for roughly

30 percent of gross domestic product (GDP) and employs 65 percent of the workforce.[6] Frequently, the industries and sectors linked to farm production account for another 30 percent or more of GDP.[7]

In general, countries with rapidly increasing food production are more effective in reducing poverty.[8] The World Bank's 2007 *World Development Report* notes, "Cross-country estimates show that GDP growth originating in agriculture is at least twice as effective in reducing poverty as GDP growth originating outside of agriculture."[9] One of the main reasons for this is that agriculture in developing countries tends to be labor intensive. Agriculture and agricultural support industries have the potential to absorb relatively large amounts of labor compared to other sectors of the economy.

For example, Chile's expansion of its agricultural GDP can be largely credited to a labor-intensive agricultural export boom over the past two decades. Each 1 percent of expansion in agricultural and agro-processing output is estimated to have reduced national poverty by between 0.6 and 1.2 percent.[10] Poor people in rural areas benefited from the expansion indirectly, through their employment by larger-scale farmers and processing firms. Many of these jobs were taken by women. Similarly, a recent study in Rwanda found that agricultural growth contributed 50 percent more to poverty reduction than growth in other sectors, and that a 1 percent annual growth rate in staple food production translates into a 3 percent reduction in poverty.[11]

Steadily increasing agricultural productivity over the past 30 years has succeeded in keeping food prices generally low and stable. In effect, low food prices mean higher incomes for poor people, who spend the bulk of their disposable income on food. This is true even for farmers in poor countries. Increasing agricultural productivity also stimulates job growth in the manufacturing and service sectors. Thus, improving agricultural productivity helps address both hunger and poverty: not only does it increase the amount of food available, it stimulates economic growth by creating jobs, both on- and off-farm, which raise people's incomes and enable them to purchase food.

But the task of continuing to raise food production in developing countries will be complicated in the coming years by the harmful effects of global warming. These include warmer and drier conditions, shorter growing seasons, and changes in cropping patterns. Poor countries will pay the heaviest cost in the next few decades even though they had the least to do with causing climate change. But the worst predicted outcomes are by no means inevitable. There is time to avert disaster scenarios by limiting greenhouse gas emissions (particularly by developed countries, who are the biggest contributors), and by investing in research and technology to help developing countries adapt to changing weather patterns and conditions.

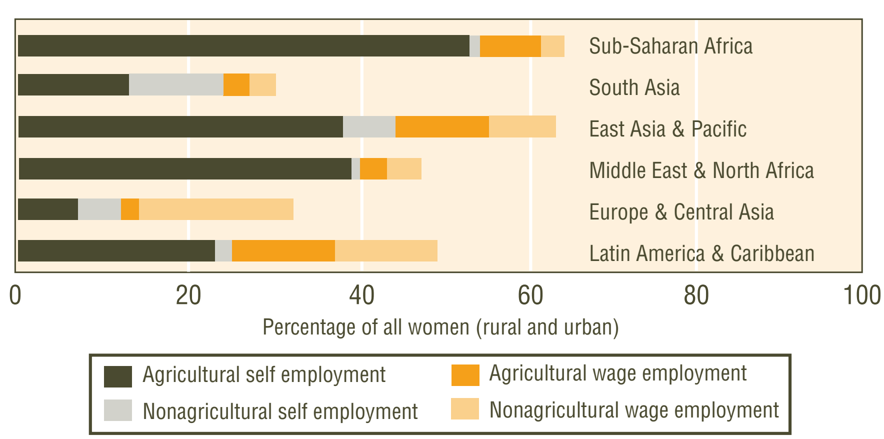
Job Growth: On and Off the Farm

Job creation is a major concern both in terms of economic growth and social stability. Jobs available to people with few skills contribute directly to reducing poverty. Compared to other sectors of the economy, agriculture has the potential to absorb large numbers of workers. This is especially important because there will continue to be many new jobseekers—in 2005, 30 percent of the population in the developing world (41 percent in Africa) was younger than 15.[12]

In Asia, most rural households earn half or more of their incomes from non-farm sources, but it is often the agricultural sector that provides the "ladder," as Peter Timmer describes, "from underemployment at farm tasks to regular wage employment in the local economy."[13] The opening up of employment opportunities to women, in particular, leads to a range of benefits. The benefits are especially important in nutrition, since research shows that more income in the hands of women leads directly to additional spending on food.

Throughout the 1990s, almost 80 percent of economically active women were involved in agriculture. This is projected to decline but remain above 70 percent into the next decade.[14] The result of agricultural growth is increasing numbers of women in the economy, whether their jobs are on or off the farm.

Women's Participation in Agriculture



Source: World Bank, 2008.

Lessons from a Green Revolution

In the early and mid-1960s, many experts were predicting that millions of people around the world would die of starvation. Like many African countries today, India and China, Indonesia and Thailand were mired in poverty. Countries in South and East Asia relied heavily on food imports. Overall economic growth barely kept pace with population growth, and agricultural productivity was stagnant.

Then, beginning in the 1960s and continuing through the 1970s, new technologies developed by international agricultural research centers, in partnership with the Rockefeller Foundation and supported by the U.S. Agency for International Development (USAID) and other donors, were introduced in Asia. These technologies involved using improved varieties of wheat, rice, and hybrid maize in combination with more fertilizer. Countries in the region began to experience what has come to be known as the "Green Revolution."

The Green Revolution fueled a dramatic increase in food production in India. Between 1970 and 1999, India doubled its cereal production, fueled by a threefold increase in wheat production. India is now a net rice exporter, and the wheat that it imports is an insignificant share of all the food available. Moreover, technological innovations have come largely from Indian research farms, the result of decades of investment in science and technology that began in the 1960s.

So far, there has been no Green Revolution for sub-Saharan Africa. In fact, one of the major barriers to its development has been the poor performance of the agricultural sector—agricultural production has not kept up with population growth. The cause is neglect by both national governments and donors. Since 1973, the region has been a net food importer.

The graphs at right show the relationship between agricultural productivity (measured in terms of crop yields) and poverty levels for South Asia and sub-Saharan Africa between 1984 and 2002.[15] The story behind this graph is one of glaring discrepancies between South Asia's and sub-Saharan Africa's key agricultural indicators. Sub-Saharan Africa's rate of irrigation is one-tenth that of South Asia, and its rate of fertilizer use one-eighth that of South Asia. Africa's cereal yields are less than half those of South Asia.[16]

In spite of some formidable obstacles, however, it is possible to achieve sustained agricultural growth in Africa. Twelve sub-Saharan African countries are already succeeding in their efforts: they have had agricultural growth rates higher than 3 percent (some higher than 5 percent) sustained over the past 15 years.[17]

Another encouraging sign is that a number of African leaders have pledged to commit 10 percent of their national budgets to agricultural investments.[18] The accomplishments of the Green Revolution would not have been possible without substantial political and financial support from the countries involved. The emerging Alliance for a Green Revolution in Africa (AGRA), bringing the Gates and Rockefeller Foundations together in partnership with national leaders and African scientists, holds real promise for stimulating the kind of research and policy reform that will lead to sustainable, pro-poor economic growth. Organizations like the National Smallholder Farmers Association of Malawi (NASFAM),[19] which provides production and marketing support for more than 100,000 farmers, demonstrate what can be achieved through a combination of local partnerships and financial and technical support.

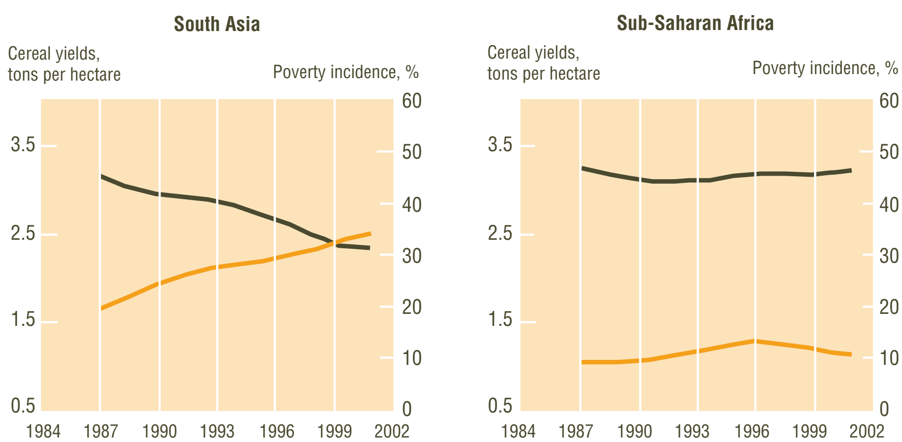
At the beginning of Asia's Green Revolution, many experts were skeptical that India would ever emerge from chronic food insecurity. Despite what they saw as nearly insurmountable obstacles, India has been able to reduce poverty from 55 percent in 1970 to 35 percent in 2000. And it did so largely because of growth in agriculture and the rural economy. For African countries to achieve similar results, national governments and the international community will need to act in concert, putting in place the policies, institutions, and resources that will encourage and support smallholder agriculture and rural development.

Ploughing a Path for Sustainable Development

China, another Green Revolution success story, has had the most rapid reduction in poverty in modern history. In little more than two decades, the country's poverty rate fell more than sixfold: from 66 percent of the population in 1981 to 10 percent by 2004. Over this period, 500 million Chinese people were lifted out of extreme poverty.[20] Economists often point to China as a textbook case of export-led growth in the manufacturing sector. But in reality, rural economic growth and agricultural growth in particular had far more to do with China's dramatic reduction in poverty between 1981 and 2004.[21]

In the past 15 years, Vietnam has had a tremendous growth

Agricultural Productivity and Poverty Levels



Source: World Bank, 2008.

spurt. Extreme poverty has declined from 58 percent of the population in 1993 to 16 percent in 2006.[22] Vietnam's progress is due to a combination of economic reforms and technological innovations in its agricultural sector, very much in the vein of the Green Revolution.

The most significant policy changes were loosening state controls on agriculture while implementing land reforms that provided market incentives to farmers. These changes were followed by permitting more private sector activity in agricultural processing and marketing. Farmers responded by increasing production, growing two or even three successive crops on the same piece of land each year. More use of irrigation and the development of new rice varieties requiring shorter maturation periods helped them accomplish this. From 1993 to 2006, per capita food production grew at 3.8 percent per year, a rate that was equaled or surpassed by only five countries in the world.

There are many other examples of how agricultural growth has fueled poverty reduction. The general point is the same: Improving agricultural productivity among poor farmers is the most effective way to ensure that economic growth will be broad-based. Equitable economic growth not only increases family incomes and disposable incomes, but expands and sustains investments in social services like health and education. Targeted programs to address the more intractable cases of poverty depend on sustained growth in the broader economy. President Jakaya Mrisho Kikwete of Tanzania said recently, "No country can develop through investing in the social sector alone. Indeed, Tanzania's impressive strides in the social sectors were quickly eroded when the domestic economy could not grow fast enough to generate domestic capacity for expansion, maintenance, and sustainability."[23]

As national incomes grow, more resources are available to government, enabling it to finance spending on health, education and other social sectors. Ultimately, countries will be able to "graduate" from foreign aid. An official in the U.K. Department for International Development noted: "Countries that are growing rapidly are on-track to achieve most of their MDGs, and those that are not are failing."[24]

Chronic Underinvestment in Agriculture and Rural Development

Over the last 20 years, instead of increasing resources for agriculture and rural development, most donors have been partners in a progressive decline in support.[28] From 1985-2005, agriculture's share of U.S. Official Development Assistance (ODA) declined from more than 12 percent to just 3.1 percent.[29] In absolute terms, support for agriculture went from a high of about $8 billion in 1984 to $3.4 billion in 2004.[30]

The international donor community has also undercut prospects for African agricultural development through a combination of misguided policy advice, trade restrictions, and subsidies for its own agriculture. The "Washington consensus"[31] policies

Agriculture and the Millennium Development Goals

Goal 1: Eradicate extreme poverty and hunger: The majority of poor people reside in rural areas and rely on agriculture. Improvements in agriculture pave the way for economic growth in poorer nations. Meeting the first MDG will contribute to progress on all.

Goal 2: Achieve universal primary education: By raising incomes, agricultural growth enables parents to send children to school rather than to work. Education prepares children, particularly girls, to take advantage of economic opportunities. It empowers poor men and women in all aspects of life.

Goal 3: Promote gender equality and empower women: Women play a critical role in agriculture in much of the developing world, especially in sub-Saharan Africa. Formalizing their legal and economic rights will help boost agricultural productivity.

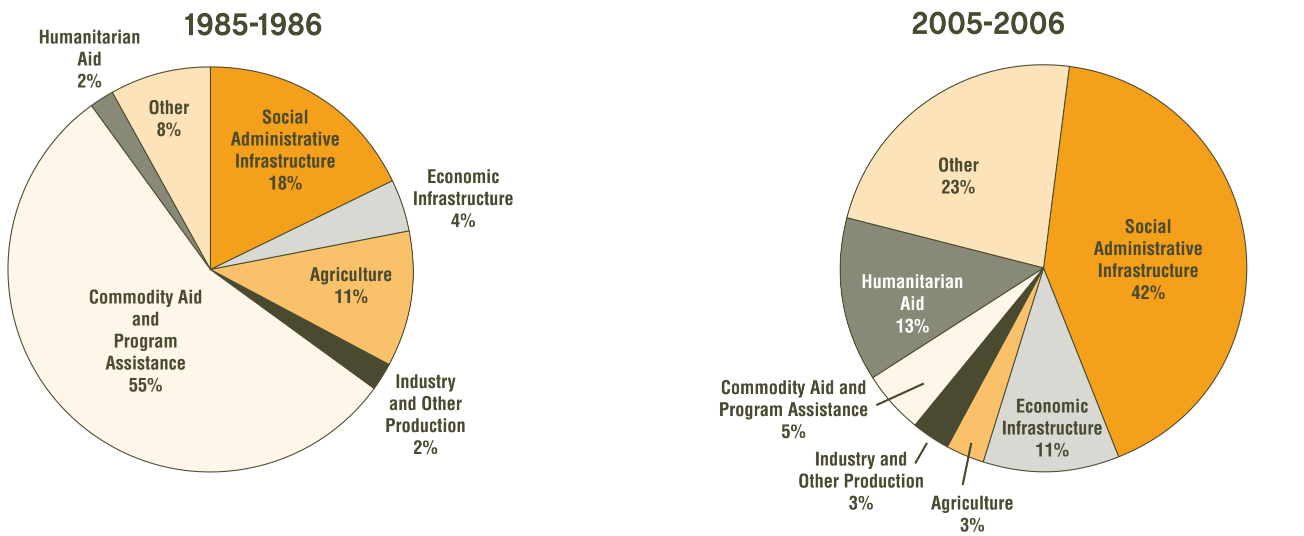
Goals 4 & 6: Reduce child mortality and improve maternal health: More children die before the age of five in rural than urban areas. About half of these deaths are due to malnutrition. Increased and diversified agricultural production is one of the most reliable, sustainable interventions to improve nutrition and reduce child malnutrition and mortality.[25]

Goal 5: Combat HIV/AIDS, malaria, and other diseases: When people with HIV lack sufficient food and proper nutrition, they develop AIDS more rapidly.[26] The agricultural sector in developing countries can help by generating income to purchase food and increasing the availability of nutritious food.

Goal 7: Ensure environmental sustainability: Many agricultural practices that increase productivity may also cause damage to the environment. Overuse and misuse of agricultural chemicals can pollute surface and ground water supplies and leave dangerous residues in food. But agriculture's large environmental footprint can be reduced. Agriculture can also help protect the environment through carbon sequestration.

Goal 8: Develop a global partnership for development: Domestic agricultural policies in rich countries hurt many poor countries. Rich countries subsidize their farmers to overproduce, which makes it difficult for the world's poorest farmers to compete and therefore to earn a living.[27] Agricultural protection in rich countries remains solidly in place despite agreements to bring agriculture within the purview of the World Trade Organization and negotiate fairer policies.

U.S. Official Development Assistance by Sector



Source: OECD Development Assistance Committee 2007 statistical annex.

imposed on developing countries during the 1970s and 1980s as a condition of financial support restricted poor governments' expenditures and promoted one-sided trade liberalization. These were policies driven by rich countries through the World Bank, International Monetary Fund and other international financial institutions. During this period, low global prices for cereals made it easy to argue that developing countries could neglect agriculture and buy needed food on international markets.

Trade restrictions and subsidies have had two troubling effects. First, maintaining production levels well above those that would prevail in the absence of restrictions and subsidies—thus increasing global supplies of staple crops—drove world prices down and made it difficult for African farmers to compete even in their own markets. Second, rich countries restricted the markets available to African farmers in order to protect their own farmers. This unfair market environment gave poor countries good reasons not to invest much in agriculture. In 2003, the International Food Policy Research Institute estimated that protectionism and subsidies in industrialized nations cost developing countries about $23 billion annually in lost income.[32]

U.S. Assistance for Agricultural Development

Among donor countries, the United States has been particularly neglectful of agriculture in developing countries. U.S. foreign assistance has had a proliferation of special initiatives and earmarks, from both the administration and Congress, that have tended to squeeze out funding for agriculture.[33] The FY2008 budget for agricultural investments in developing countries is illustrative. While there was a slight increase in overall funding for development assistance, funding that is not earmarked and could be used for agriculture has declined significantly. Lack of funding has forced steep cuts in U.S. support for international agricultural research centers, where vital work is being done in how agriculture can adapt to climate change and other topics crucial for food production.

It's important to note that when developing countries are given the opportunity to prioritize their needs, they have consistently asked for more agricultural support than donors have been giving in recent years. The U.S. Millennium Challenge Corporation (MCC) funds development assistance "compacts" in poor countries that are well governed and invest in their people. These compacts are based largely on the country's own assessment of development priorities. And in fact, more than half of the funds committed to date by the MCC are for agriculture and related rural infrastructure.

The low, stable commodity prices that prevailed up until last year allowed the international community to turn its attention to education, maternal and child health, water and sanitation, and global pandemics like HIV/AIDS. These are crucial areas of work for poverty reduction. But because there are limited resources available for long-term poverty-focused development assistance, the effect has been to crowd out funding for agriculture and rural infrastructure. The growing global hunger crisis—rapidly rising food prices and the inability of poor people around the world to cope with them—is largely a consequence of this underinvestment.

Helping to Create the Conditions to Reduce Hunger and Poverty

What role can developed countries play in addressing the global hunger crisis and reducing hunger and poverty in the long term? Food aid can and does go a long way toward meeting the immediate needs of hungry people. In 2006, international donors provided food for more than 90 million people in more than 80 countries.[34] But food aid is, at best, a palliative, and the increase in food prices highlights the shortcomings of relying solely on food aid to reduce global hunger. Long-term food security depends on increasing the supply of food and raising the earning potential of poor people. Broad-based growth in agriculture and the rural economy is crucial. Increasing development assistance for agricultural development is necessary to this end.

More development assistance by itself won't suffice. For donor resources to be effective, developing countries themselves have to provide supportive policies and the bulk of the extra investments. But developed countries can support agricultural development in a number of ways: working with farmers, especially smallholder farmers, to provide the resources they need to improve their yields; promoting good governance; providing technical assistance and advice on how to strengthen institutions and accountability; and supporting research and development to improve agricultural productivity in the longer term.

Developed countries should also reduce trade barriers and subsidies for their own agriculture. Donor governments and financial institutions need to step back and encourage developing country governments to determine their own policies, rather than requiring them to adhere to agendas determined in Washington or other foreign capitals. They should not promote their own policies or technology interventions over others that may be better suited to local conditions. Governments and civil society in developing countries will need to work out their own options based on what will work for them.

The ultimate test of aid effectiveness is how much it contributes to the goal of ending global hunger and poverty. In the case of the Green Revolution and agricultural development more broadly, the test results are in: foreign aid in combination with domestic political backing and supportive policies saved the lives of millions of people and launched many countries on the path to sustained poverty reduction and economic growth. Certainly, we know enough about the benefits of investing in agricultural productivity to make a powerful case for increased donor support.

Endnotes

[1] Sanders, Edmund and Tracy Wilkerson (April 1, 2008), "U.N. food Aid Costlier as Need Soars," *Los Angeles Times*.

[2] Food and Agriculture Organization of the United Nations (April 11, 2008), "Poorest Countries Cereal Bill Continues to Soar, Government Tries to Limit Impact," FAO Newsroom.

[3] The 862 million reflects the number of undernourished people in 2002-2004. http://www.fao.org/faostat/foodsecurity/Files/NumberUndernourishment_en.xls.

[4] Timmer, Peter (2005), *Agriculture and Pro-poor Growth: An Asian Perspective*; Center for Global Development.

[5] World Bank (2007), *Agriculture for Development: World Development Report for 2008*.

[6] Ibid.

[7] Bathrick, David (October 1998), *Fostering Global Well-Being: A New Paradigm to Revitalize Agricultural and Rural Development*, International Food Policy Research Institute.

[8] Timmer, Op. Cit.

[9] World Bank, Op. Cit.

[10] Ibid.

[11] NEPAD PowerPoint presentation, *Accelerating CAADP Implementation in Rwanda*; PowerPoint Presentation.

[12] United Nations (2007), *World Economic and Social Survey*.

[13] Timmer.

[14] Alexandra Spieldoch (2007), *A Row to Hoe: The Gender Impact of Trade Liberalization on Our Food System, Agricultural Markets, and Women's Human Rights*, International Gender and Trade Network.

[15] World Bank.

[16] World Bank Independent Evaluation Group (2007), *World Bank Assistance to Agriculture in Sub-Saharan Africa*.

[17] Ibid. Countries include Benin, Burkina Faso, Cameroon, Central African Republic, Ghana, Guinea, Guinea-Bissau, Mozambique, Niger, Nigeria, Tanzania, Uganda.

[18] The commitment has been made under CAADP (the Comprehensive Africa Agriculture Development Program), an initiative of the New Partnership for African Development (NEPAD).

[19] Data available from the NASFAM website: www.nasfam.org/

[20] Martin Ravallion (Jan. 2008), *Lessons for Africa*, World Bank Dev. Research Group.

[21] Ibid.

[22] *Nhan Dan* (February 16, 2008), "Vietnam leads Way in Tackling Poverty, Says WB,": http://www.nhandan.com.vn/english/life/160208/life_v.htm

[23] President Jakaya Kikwete, remarks at CGD symposium "Power and Roads in Africa: A Tanzanian Perspective," December 14, 2007.

[24] U.K. Development Minister Sriti Vadera speech to mark the launch of the World Bank's "Doing Business Report," October 12, 2008.

[25] Timmer.

[26] Von Braun, Joachim, M.S. Swaminathan and Mark W. Rosegrant (2004), *Agriculture, Food Security, Nutrition and the Millennium Development Goals*, International Food Policy Research Institute.

[27] Timmer.

[28] Food and Agriculture Organization of the United Nations, Op. Cit.

[29] OECD/DAC, Statistical Annex of the 2007 Development Co-operation Report, December 2007

[30] WDR, pp 41-42. While this decline was common to bilateral as well as multilateral aid, the decline in the latter was more pronounced.

[31] A package of economic policies pushed by the donor community during the 1980s and 1990s as a condition for financial support involving, inter alia, fiscal discipline, trade liberalization, privatization, competitive exchange rates, tax reform and generally reduced government regulation and role in the economy.

[32] International Food Policy Research Institute (August 2003), *How Much Does It Hurt? The Impact of Agricultural Trade Policies on Developing Countries*.

[33] Currently, only about 4 percent of the USAID budget is available for unencumbered use to promote the largely microeconomic reforms that can speed economic growth in poor countries. Another 20 percent or so is available for promoting economic growth in a particular sector or for a particular country or region. For all donors, aid directed at agriculture and economic growth (including economic support infrastructure) amounted to 19 percent of the total. (OECD DAC 2005 statistical annex)

[34] United Nations World Food Program (2007), 2006 Food Aid Flows.

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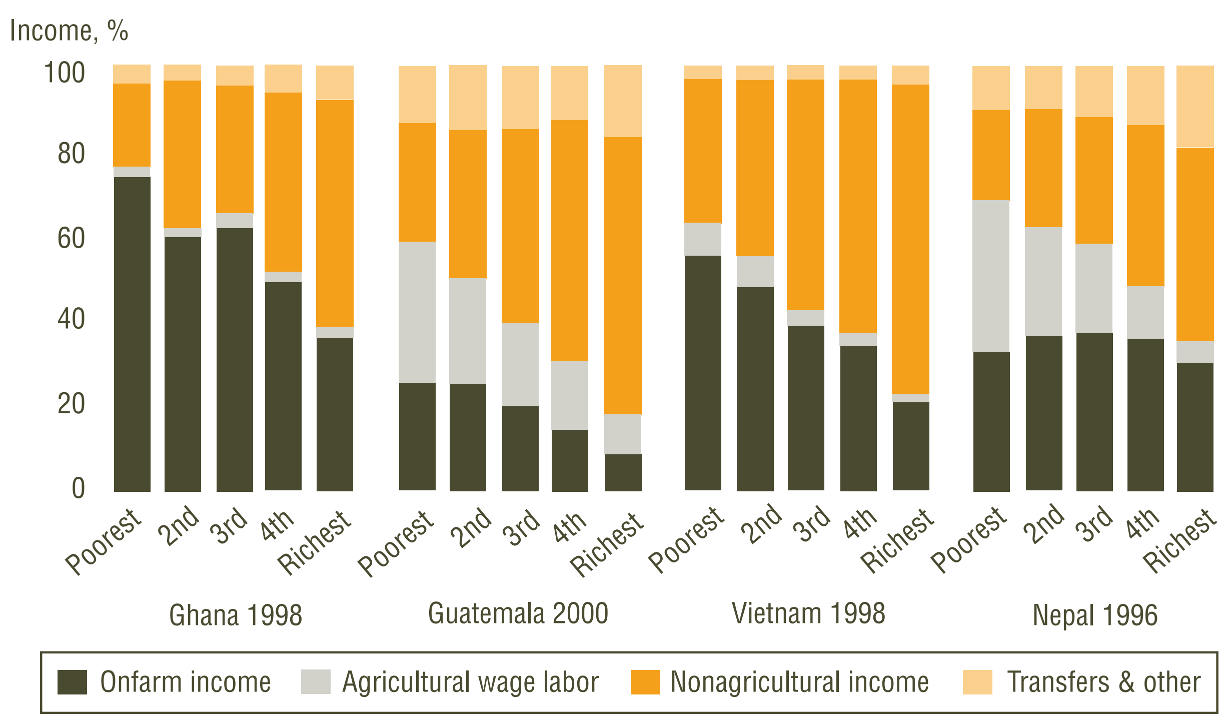
Sources of Income Vary Between Poor and Rich



Source: World Bank, 2008.
Note: Most resent cross-country studies; for each country, columns represent the bottom fifth to the top fifth of the expenditure distribution.