
The End of Hunger?

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Through benign neglect of agriculture, the planet is fast running out of food. The G8 and G20 have pledged to increase funding to smallholder agriculture, but is the end of hunger an attainable goal?

One billion people on the planet are hungry. More than one-quarter of children in poor countries are underweight for their age or height. According to a paper published in the *Lancet* in 2008 by Robert Black of the Johns Hopkins Bloomberg School of Public Health, Baltimore, MD ([www.thelancet.com/journals/lancet/article/PIIS0140-6736\(07\)61690-0/abstract#](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(07)61690-0/abstract#)), malnutrition is implicated in 35% of the estimated 10 million preventable deaths of children under five each year in developing countries.

For most, hunger and malnutrition are not the results of war or catastrophic events like droughts or floods. This is chronic hunger and malnutrition that perennially affects poor people, leaving them unable to produce or buy the food they need to stay healthy, go to school, undertake a day's work, or simply live with dignity. Malnutrition lowers immunity to diseases and can permanently reduce the learning capacity of affected children.

Global food shortages in 2007 and 2008 and, more recently, the global financial crisis plunged millions more into a state of extreme vulnerability and dependency on food aid and other forms of emergency assistance. In 2008, the World Food Programme fed an unprecedented 102 million people in 78 countries, but is struggling to meet the demand from food-insecure countries. The World Bank reported that, even with sharp declines in commodity prices in the wake of the economic slowdown, food prices in August 2009 were almost 60% higher than in 2005.

Despite remarkable growth in agricultural productivity brought about by Asia's Green Revolution, it appears that we have barely kept pace with population growth. The past two years have starkly revealed the fragility of global food security and the panic and violence that accompanies the shortage of food.

Subsistence to Surplus

Agricultural productivity improvements have been a major driving force of social and economic change in human societies for millennia. The traditional production of crops and livestock fulfilled household requirements for food, fibre, fuel, medicine and other essential consumables. Surpluses and the income derived from them opened up opportunities for specialised roles for producers, processors and traders of agricultural products, spreading benefits beyond farmers to the broader society.

This evolution from subsistence to market-oriented agriculture provided the foundation of a structural transformation – a dynamic process that leads to a relative decline of the agriculture sector and to a more diversified and productive economy dominated by manufacturing and services, as observed throughout Europe, North America and Japan, and more recently emerging in China and India. In large part, the generation of surplus production over and above basic household needs was the result of technical innovation to improve agricultural labour productivity, and improved access to markets.

Asia and Africa: The Path Divides

The most compelling evidence of agriculture-led poverty reduction and food security comes from Asia. During the past three decades, the region experienced unprecedented economic growth and structural transformation. According to the International Food Policy Research Institute, poverty declined from 50% in the 1970s to 18% in 2004, while hunger declined from 30% to 16% over the same period.

These successes are attributed largely to improved agricultural productivity as a consequence of technological change and market liberalisation – the Green Revolution. By combining modern agricultural science, sound policies and political leadership, global average yields of Asia's staples, rice and wheat, more than doubled. Hundreds of millions of small-scale farmers made the transition from subsistence to commercial agriculture. These results of investment in smallholder agriculture provided a foundation for unprecedented economic growth.

In contrast, agricultural productivity growth in Sub-Saharan Africa has not kept pace with population growth. The per capita growth rate of agricultural gross domestic product was negative during the 1980s and 1990s, although improvements have been noted since 2000. Production growth of the major African food crops (maize and root crops) was based almost entirely on extending the cultivated area, with only minor contributions from yield growth.

Poor infrastructure and related high transport costs (for both inputs and surplus production), inadequate institutional support (credit and extension), political instability, diverse agro-ecological complexities, low fertiliser use and the limited availability of suitable high-yielding varieties have all contributed to low agricultural productivity growth in Africa.

The slower productivity growth in Africa compared with Asia masks a number of limited successes that could point to a latent African Green Revolution. Recognising the role of agriculture in stimulating economic growth and reducing rural poverty, many African governments promoted fertiliser use during the 1970s and early 1980s through several interventions, including direct subsidies that reduced fertiliser prices for farmers, government-financed and -managed input credit programs,

centralised fertiliser procurement and distribution, and control of output markets.

Impressive improvements in maize productivity were demonstrated in Kenya, Zimbabwe and Zambia during the 1980s, and cereal crop output in Ethiopia has dramatically increased over the past decade. Several other studies have shown the potential of input subsidies in accelerating crop production. However, these positive results were generally not sustained with the advent of donor-driven structural adjustment and the dismantling of government-supported institutions and subsidies.

By the turn of the last century, fertiliser use in Africa was only 8 kg/ha, compared with 96 kg/ha in East and South-East Asia and 101 kg/ha in South Asia. Today, Africa accounts for less than 3% of global fertiliser consumption, with most of that going to higher income countries and export crops like coffee and tea. A World Bank synthesis of lessons learned from earlier efforts to promote fertiliser use on the continent attributed this failure to high and unsustainable fiscal and administrative costs, governments' weak capacity to implement programs, and governments' inability to take account of the diversity of production systems and farmers' needs.

Donors, led by the World Bank, argued for the abolition of state-led interventions including subsidies. As a result, many government input supply agencies were dissolved or privatised. Under these circumstances, fertiliser costs rose sharply and constrained the adoption of fertiliser use by small-scale farmers. This policy failure caused a serious reassessment among governments, creating the setting for a return to subsidies as a potential intervention for promoting food security and agricultural growth.

How to End Hunger

Today, the global epicentre of chronic hunger is Africa. One in three Africans is undernourished. Most are not living in war zones or refugee camps. The bulk of Africa's hungry and malnourished live on farms of less than two hectares. Typically, these small farms have lost their soil fertility through years of cropping without the benefits of fertiliser, improved seed or irrigation. There has been no Green Revolution here. And there have been no surpluses to store or sell.

The good news is that chronic hunger in Africa

and other hot spots, like Haiti, Afghanistan and Timor Leste, can be ended within a few years with targeted investments based on our current knowledge. This was the unanimous conclusion of several recent expert reports, including those of the United Nations Millennium Project (2006), the Irish Hunger Task Force (2008), an independent advisory group to the Madrid Conference on Food Security (2009), and the United Nations High Level Task Force on the Global Food Crisis (2008–09). These reports, representing the analyses and conclusions of hundreds of scientists, practitioners and policy experts from international organisations, governments, civil society organisations and the private sector, concluded that small-scale farmers hold the key to ending hunger.

Illustrating this point, the government of Malawi, over the past four years, has demonstrated beyond any doubt that investing in small-scale farmers not only brings national food security but enhances economic growth. According to the International Monetary Fund, Malawi's growth rate in 2008 was a remarkable 9.7%, with the maize crop acknowledged as an important contributor. This year throughout Malawi, men, women and children harvested the country's fourth successive bumper crop, a whopping 3.7 million tonnes of maize – enough to feed the country for a year and provide more than a million tonnes to its neighbours.

After the disastrous harvest of 2005, the then newly elected President Bingu wa Mutharika declared “enough is enough” to his nation's regular call for emergency food aid. For each of the past four seasons, around half of the country's 3.4 million small-scale farmers has received improved maize seed and fertiliser at sharply discounted prices through a national voucher program. Farmers responded to this program by doubling their yields and exceeding the national maize requirements. In all likelihood, Malawi will be a food donor to the region this year, as it was two years ago in supplying impoverished Zimbabwe with 300,000 tonnes of grain.

Malawi's experience is inspiring similar efforts across the continent, including in neighbouring Tanzania, which this year launched its own fertiliser voucher program, reaching 700,000 farmers through a private sector agro-dealer network. The governments in both Malawi and Tanzania have taken bold steps to increase smallholder production in a time of reduced tax

revenues, declining overseas remittances and faltering donor assistance. At least a dozen other countries across Africa have plans to begin similar programs with the potential to boost agriculture and reduce hunger sharply.

Decades of agricultural research, some of it supported by Australia, mean that the knowledge exists to produce, protect and market more food. But we should not ask governments to cut back on health, education and road-building programs to finance agriculture. The sustained and widespread end to hunger requires that we invest in all these areas simultaneously.

Food Security: Beyond Production

The experience of India has shown us that increased agricultural productivity and rapid economic growth do not automatically lead to large improvements in nutritional status. According to the University of Sussex Institute for Development Studies, from 1980 to 2005 real GDP per capita in India grew by 3.95% per year, yet between 1992 and 2006 the percentage of underweight infants under three in India only fell from 52% to 46%. Despite achieving and generally sustaining aggregate national self-sufficiency in food during the past 30 years, more than 200 million people in India remain hungry.

Increased productivity is a necessary but not sufficient requirement for food security. A broader definition of food security comprises three components: availability, access and utilisation. Improved agricultural productivity can improve availability. Increased incomes and effective markets can improve access to food for those who cannot produce it. And better health services, clean water and sanitation can enhance the ability of people to use and benefit from the food that they can access.

Malawi has also recognised the need to invest beyond food production. With consistent surpluses, the country's small-scale farmers are struggling to protect their grain stores from voracious insect pests, like the larger grain borer, that are estimated to consume as much as 40% of the nation's harvest.

If Malawi could just cut these losses by half, the country would have another 700,000 tonnes of grain for consumption or export – worth more than \$250 million at today's prices, and enough to

feed more than three million Malawians or their neighbours. By saving 700,000 tonnes of grain, the country's small-scale farmers could diversify into higher value products on 350,000 hectares, generating much-needed cash and export earnings without sacrificing self-sufficiency in maize.

Reducing post-harvest losses is a priority for ending hunger. The knowledge and technology to make this breakthrough – through improved storage facilities, better crop handling and deployment of safe chemicals – are available and only need to be applied in maize-producing countries like Malawi.

Expert opinion, expressed in the various reports mentioned earlier, leaves no doubt that a comprehensive approach, embracing availability, access and utilisation, is needed if hunger and malnutrition are to be ended. This holistic multi-sectoral approach is now being applied in 12 African countries through the Earth Institute's Millennium Villages Project. In less than five years, this project has reached more than 500,000 people, leading to sharp reductions in the incidence of hunger and related diseases.

New Commitments Offer Hope

Less than three months ago in L'Aquila, Italy, the G8 declared to act "with the scale and urgency needed to achieve sustainable global food security", acknowledging that adequate food is not only necessary for economic growth and social progress but, more fundamentally, is the cornerstone of political stability and peace. In a rare departure from rhetoric of vague intent, the G8 with several like-minded governments and international agencies agreed to provide \$20 billion over three years for sustainable agricultural development. Such a commitment, if realised, would sharply reverse a 30-year downward trend that has seen agriculture fall from the radar of most aid agencies and governments.

In September 2009, the G20 meeting in Pittsburgh endorsed the L'Aquila initiative and called on the World Bank to establish a new global fund to scale up agricultural assistance in poor countries. In what the G20 communique called "this historic effort", the new fund would require country ownership, bring in the private

sector and non-government organisations, and allow rapid disbursement of money, breaking through the bureaucracy that has plagued past efforts to deliver aid promises.

An Australian Role to Play

The Rudd government has promised to increase Australia's Official Development Assistance to 0.5% of Gross National Income by 2015–16, and has reaffirmed its support of the Millennium Development Goals, including a deeper and broader engagement with Africa. To be most effective, Australia needs to focus its efforts on where it has shared interests and where we can bring unique expertise to the table.

Australia and Africa are vast, dry continents, both heavily dependent on rainfall for food and livelihoods. But the Intergovernmental Panel on Climate Change pointed to the vulnerability of African agriculture to climate change. As a focus for Australian aid, there is no better place to start than sustainable agriculture and helping African farmers adapt to climate change. In the process, Australia may share and learn valuable lessons in managing with less water.

The L'Aquila commitment of \$20 billion over three years represents less than one-third of the unmet promise made at Gleneagles by the G8 to double aid to Africa. A year from now, the world's leaders will gather in New York to reflect on progress towards the Millennium Development Goals. In terms of the hunger goal, we are actually in a worse state today than we were when the MDGs were agreed by 189 nations in 2000. We have to grasp the opportunity that L'Aquila and Pittsburgh has provided.

As a member of the increasingly credible and confident G20, and as a champion for action on climate change and ending extreme poverty, Australia should throw its support behind this new agriculture fund that will fight hunger at its roots. With a sharp focus on small-scale farming in countries that have demonstrated a commitment to action, such a fund could produce results within a year without the need to cut back investments in other crucial development areas.

With the US, Australia and few others showing the way with hard cash, early successes would inspire other aid agencies to step up and deliver on past promises. If we get this right, food-insecure nations will at last have the resources they need to end hunger.