Strategic Pathways and Interactions to Cutting Hunger in Half in Africa

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The moral imperative to cut human suffering due to hunger and malnutrition in Africa has spawned a broad array of initiatives, including elements as diverse as free food-aid distribution, micro-enterprise development, nutrition education, and basic agricultural research. This note explains how the various elements are related to hunger alleviation and to each other. The note then describes how a broad-based agricultural and food-system development strategy can provide a sustainable pathway to cutting hunger in Africa through exploiting the synergies among these various elements.[1]

The basic argument is that while a number of factors beyond just agricultural growth, such as investments in sanitation, potable water, health, and health and nutrition education, are necessary to reduce malnutrition in Africa, they cannot be economically sustained without broad-based economic growth. Such growth can only be achieved through a strategy that puts at its center agriculture and the food system, which is by far the largest employer and most broad-based economic activity in Africa. This strategy will require creating a facilitative domestic, regional and international enabling environment for investments in agriculture and the food system; developing improved technologies; improving the functioning of input and output markets; and creating the mechanisms to tap some of the resulting growth to help finance the needed complementary investments in health, nutrition, and education. By its nature, this approach represents a long-term strategy, so it will need to be complemented with actions to create safety nets that help deal with short-term food crises and improve the access of the truly destitute to food.

1. Understanding Hunger and Malnutrition

1.1 Acute vs. Chronic Hunger

Hunger and malnutrition can be either acute or chronic. Images of *famine*–the most extreme form of acute hunger–touch our conscience and lead to outpourings of humanitarian assistance from the US and other countries. Famines result from breakdown of the systems people use to obtain food, either through their own production or through the market. While sometimes triggered by natural calamities, in the modern world famines persist almost entirely because of

[1] The *food system* is defined as the whole array of activities, ranging from input distribution through on-farm production to marketing and processing, involved in producing and distributing food to both urban and rural consumers (including farmers).

war and other human actions that disrupt food production and marketing and prevent timely inflows of relief to the affected areas. The solution to famine is short-term relief coupled with development and peace-making efforts aimed at preventing its recurrence.

Important as famines are, they seldom affect more than 3-4 million people per year. In contrast, chronic hunger and malnutrition, resulting from long-term inadequate food intake and utilization, affect hundreds of millions of Africans every year. Chronic hunger (or chronic food insecurity) is a silent killer that increases morbidity and mortality (especially among children), saps the energy of large elements of the population, and slows economic growth. This food insecurity results inadequate food *availability*, poor *access* to the food by the hungry, poor food *utilization*, or a combination of these three elements.

1.2 Food Access, Availability, and Utilization, and the Efforts to Improve Them

The first element that affects hunger is **food availability**. Food becomes available in a region through local production and regional and international trade. Thus, efforts to increase agricultural production can be a key element in combating chronic food insecurity.[2] Projects to improve: (a) agricultural technologies of both food crops and cash crops (the latter often having important positive spillovers to food crops), (b) land, (c) irrigation, and (d) access to inputs are classic examples of such efforts. On a global basis, increases in agricultural productivity are essential in order to allow food availability to grow apace with demand, which is driven by population growth and higher incomes. Equally important in Africa are efforts to reduce domestic marketing costs and import barriers, as these greatly affect the availability of affordable food to both rural and urban consumers. Thus, projects aimed at providing marketing and processing improvements and a more favorable trade and investment environment for those involved in the food systems contribute to this aspect of food security.

Food access refers to whether a person has a socially recognized claim on the available supply of food. Such a claim derives from owning the resources that produced the food, having income to purchase the food through the market, or having rights to some sort of grant to food via private or public safety nets. The fundamental cause of chronically inadequate access to food is low income, which reflects low labor productivity, lack of ownership of productive assets, and/or inadequate rights for help from others in society. Increasing the poor's access to food thus involves improving their access to income-earning opportunities (e.g., through education and new technology), assets, and safety nets.

Programs aimed at improving agricultural productivity are fundamental to raising incomes in rural Africa, where the majority of the poor live. Programs aimed at increasing the productivity of smallholders' crops and livestock raise these rural households' incomes directly through own

[2] As long as such efforts don't have unintended negative consequences on health or intra-household distribution of resources–points that are discussed below.

production and by generating increased demand for agricultural workers on neighboring farms. In low-income economies such as those in Africa, agricultural productivity growth is also essential to expanding employment in other sectors of the economy. By helping produce lower-cost food, higher productivity in the food system helps keep wage rates low, since workers need to spend less for food. The lower wage rates improve the competitiveness of non-farm firms, leading to expanded employment. A vibrant agricultural sector also is the main source of demand for micro-enterprises, a major generator of incomes for the poor; and provides the resources to finance expansion of non-agricultural firms and the educational and health infrastructure necessary to raise workers' productivity (as well as their well-being).[3]

Even with strong agricultural growth, the truly destitute may still rely on public and private grants to assure their access to food. Hence programs to improve the effectiveness of such safety nets (e.g., work to improve food-aid targeting to the poor) also strengthen improve food security. Improving access ultimately means improving the access of *individuals*, not just households. Thus, another element affecting access is an individual's place in the household. Programs aimed at improving parents' knowledge about their children's nutritional needs thus aim at improving the children's access to the household's available food. Many studies have shown the importance, for example, of girls' and women's education in reducing child malnutrition, by making mothers more aware of their children's nutritional and health needs.

Even if adequate food is available and an individual has access to it, the person may still be malnourished if he or she cannot adequately utilize that food. **Food utilization** depends on having adequate knowledge about how to prepare food in a way that preserves its nutritional value and gets it to those in the household who need it most (hence, the importance of nutrition education programs). It also depends critically on the body's ability to utilize the nutrients ingested. Diarrhea, intestinal parasites, and a host of diseases can compromise the body's ability to benefit from the food a person eats. The strong interaction between nutrition and disease flows in both directions: disease compromises absorption of nutrients, and malnutrition strikingly increases disease susceptibility, morbidity and mortality. Efforts to provide safe drinking water; control, treat, and prevent disease (e.g., through vaccinations and oral rehydration therapy); and offer improved nutrition education all contribute to food security through improving food utilization. A major challenge in poor countries is to find ways to finance such services sustainably through local resources.

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[3]For details on these indirect effects of agricultural growth on employment and incomes in other sectors, including micro-enterprises, see John M. Staatz, "The Strategic Role of Food and Agricultural Systems in Fighting Hunger through Fostering Sustainable Economic Growth." East Lansing: Michigan State University, Agricultural Economics Staff Paper no. 94-39, June, 1994; and Carl Liedholm, "Micro and Small Enterprises and the Rural Poor" in *International Agricultural Development*, Third edition, edited by Carl K. Eicher and John M. Staatz, pp. 416-30. Baltimore: Johns Hopkins University Press, 1998.

Efforts to expand agricultural production can sometimes lead to unintended negative effects on food security through compromising food utilization. For example, expanded agricultural production may increase demands on women's time for agricultural tasks, which could lead mothers to devote less time to child care (resulting in poorer child health). Irrigation schemes my result in more standing water and consequently growing populations of disease vectors such as mosquitoes and schistosomiasis-bearing snails; and agricultural workers may face greater exposure to pesticides. In each case, the resulting poorer health can lead to poorer food utilization and hence greater malnutrition.[4]

2. Putting It All Together: Strategic Pathways to Cutting Hunger and Malnutrition

Developing a strategy to combat hunger and malnutrition in Africa is difficult because of their multiple proximate causes: low incomes, poor agricultural technology, inadequate nutritional education, poor health, etc., each of which can be attacked in several ways (land redistribution, micro-credit, agricultural research, mother-child clinics, ...). The challenge is to find a strategy that addresses the various determinants of hunger and malnutrition in a way that "adds up" and is economically sustainable. A strategy built on broad-based growth in agriculture and the food system, by simultaneously addressing food availability, access, and utilization, provides such a pathway to sustainably cutting hunger and malnutrition.

2.1 Driving Down the Real Cost of Food: The Nexus of Availability and Access

The combination of food availability and access are reflected in the form of *real food prices,* which represent how much people have to spend on food compared with other goods. Poor people spend a large portion of their income on food, either in monetary terms or in terms of the amount of effort they expend on producing food themselves. Consequently, driving down the cost of food to the poor can substantially increase their real incomes.

Productivity increases throughout the food system., through improved technologies and institutions governing on-farm production, processing, and marketing, are essential to driving down the real cost of food to consumers, be they urbanites or food-deficit rural residents. Driving down such costs improves access to food by the poor while maintaining incentives to farmers, traders, and processors to increase production. As explained above, lower food prices, in turn, are critical in expanding non-farm employment through their effect on holding down wage rates. Thus, reducing the real cost of food should be a major in any strategy aimed at broad-based poverty alleviation and cutting hunger in Afria.

[4]Assuming that these effects were not offset by the positive effects on food intake and health resulting from the higher incomes generated by the expanded production.

2.2 Food System Growth as an Engine to Finance Investments to Improve Food Utilization

As outlined above, driving down real food costs is a necessary step to cut hunger and malnutrition in half in Africa, but it will be insufficient if disease and lack of knowledge about nutrition continue to compromise food utilization. Major investments in sanitation, education, clean water supplies, and health facilities are necessary to address these constraints. Poor African countries, however, have not been able to finance such investments on a sustained basis, so they remain dependent on the vagaries of donor funding.

Experience from around the world demonstrates the central role that improving productivity in agriculture and the food system plays in stimulating broader economic growth in low-income countries (see Staatz, op. cit.). By stimulating growth throughout the economy, a broad-based agriculture-led growth strategy can serve as the engine that generates the resources to expand and sustain investments in health, child survival, and nutrition education. Expanding such activities without the economic growth to pay for them will ultimately lead to their collapse, as outsiders will not fund such activities forever.

3. Implications for the Type of Strategy Needed

The forgoing discussion has at least three implications for the type of agriculture-led strategy needed to cut hunger and malnutrition in Africa:

3.1 Need for a Broad-based Approach

While a food and agricultural focus is needed in the development strategy, not just any agriculture will do. Simply expanding food availability through large-scale, capital intensive farming (or imports of food aid) will do little to expand incomes (and hence access) for the broad masses of the population employed in agriculture and the rest of the food system. Without this broad-based income growth, the demand to support labor-intensive non-farm employment (e.g., through micro-enterprises) will also be lacking. Hence, the agricultural strategy needs to focus on improving the productivity of the large number of small farmers and traders throughout the continent. This does not mean that *all* small farmers and traders will stay in their current jobs. Some may have enterprises that are simply too small to support their families with any of the technologies and institutional reforms that are likely to be forthcoming in the future–for these people, finding productive employment in other sectors will be necessary. But it is clear that simply focusing efforts on a small proportion of large, “modern” farmers will not provide the basis for substantially reducing hunger in Africa.

2. Need to Focus on Productivity Enhancement

The central goal of reducing the real cost of food to the poor can only be achieved through improving *productivity* throughout the food system. Improving productivity is not the same as simply increasing production. Production can also be raised by increasing the use of costly inputs, such as fertilizer, irrigation, and fuel. But unless the use of such inputs reduce the unit cost of producing food, such a strategy will not help the poor unless input or output prices are highly subsidized, which is ultimately unsustainable in poor African countries. Similarly, imposing high import taxes on food or other forms of agricultural protection may lead to increased domestic food production, but the higher costs will reduce access of the poor to that food. Many past efforts to increase food production in Africa focused either on such trade barriers or simply on increasing agronomic yields, with little attention to the cost of attaining the additional output. When farmers had to pay the full costs of the proposed technologies, they found them unprofitable and quickly abandoned them. Thus, future efforts at developing new agricultural production and marketing technologies and institutions need to focus on how they reduce the unit costs of food to the ultimate consumer by increasing productivity throughout the food system. Given that over half the cost that urban Africans often pay for their food derives from post-harvest activities, attention needs to focus on off-farm well as on-farm elements of the food system.

3. Need to Develop Tools to Mobilize Increased Incomes to Improve Nutrition

Increased incomes from a broad-based agriculture-led growth strategy in Africa will do little to improve nutrition if poor sanitation, unclean water, disease, and lack of knowledge about health and nutrition impede utilization of the food people eat. Thus, the development strategy needs to include means of mobilizing some of the increased production to finance key complementary investments in health, education, and sanitation. With increasing decentralization in many African countries, working with local farmer organizations, local governments, and NGOs offers opportunities to identify the needed investments and develop the self-taxation arrangements needed to finance those investments on a sustainable basis.