

Feeding a Growing World Sustainably and Nutritiously

Written by Dan Glickman, Guest Contributor
Friday, 20 January 2012 23:57



Few human experiences are as universal as the need for food. Ensuring people have enough to eat is the foundation for good health and economic prosperity. Today, almost a billion people are chronically hungry and 1.5 billion are overweight or obese. As the world population grows, incomes rise, and climate shifts, there is a real risk that these rates will increase, hindering economic growth and creating conditions that foster instability.

A key solution to this crisis lies in the improvement of agricultural systems, especially those in the developing world. With demand for food expected to more than double in the next 40 years, the world's farmers, ranchers, and fishers must be equipped to sufficiently increase food production and accessibility. Reaching this goal will require political and financial support for global agricultural development by governments, businesses, international organizations, and donors.

By the middle of the century, agricultural production will need to increase by 70 percent to feed a growing and more affluent world. Today's global population of 7 billion people, 925 million of whom are chronically hungry, will climb to 9.5 billion. Rising incomes in emerging economies such as China, India, and Brazil will increase demand for higher-value food products such as meats, processed foods, and edible oils.

Complicating this basic need for increased production are resource scarcity and climate change. Most of the world's arable land is already being cultivated or grazed. Production increases will therefore need to result from advances in yield-enhancing seed and fertilizer technologies or increasing output on under-utilized lands, most of which are located in Sub-Saharan Africa and South Asia. Agriculture must also become more resilient in the face of rising temperatures and increased frequency of extreme weather, such as droughts or flooding.

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The challenge is not just to grow more food, but more nutritious food. Good health is based on good nutrition, and good nutrition depends on agriculture. Both global production and consumption of meats, processed foods, salts, oils, and sugars are climbing, correlating closely with the rise in nutrition-related chronic diseases such as heart disease, diabetes, and some forms of cancers. The World Health Organization estimates that 1.7 million deaths worldwide are associated with diets low in fruit and vegetable intake. This is not just a problem facing high-income countries: 80 percent of global deaths from chronic diseases, for which diet is an independent risk factor, occur in low- and middle-income countries.

In addition to posing a public health dilemma, chronic diseases negatively affect worker productivity, inhibiting economic growth. The cost of the global decline in productivity due to illness and death from chronic disease is projected to reach \$35 trillion by 2030. Although the relationship between agricultural production and food consumption remains unclear, these correlations indicate that the agriculture and food sector have a role to play in making nutritious food more available and accessible.

Overcoming these challenges and securing a reliable and nutritious supply of food lays the foundation for stability and economic growth. The recent revolutions in the Middle East and North Africa were not just about democratic freedoms – they were about food. A recently released study by the New England Complex Systems Institute confirms the hypothesis that high food prices are a precipitating condition for social unrest. Increasing productivity of agricultural systems in the developing world can make the food supply more reliable, decreasing the risk of commodity price rise and volatility. Greater agricultural productivity also reduces poverty and stimulates local economies. Investments in agriculture are twice as effective in reducing poverty as investments in other sectors. Each dollar of value added in the agricultural sector generates 30 to 80 cents in income gains elsewhere in the economy.

The international community has recognized these challenges and benefits, and is beginning to invest in global agricultural development. In 2009, members of the G-8 pledged \$22 billion toward strengthening developing country agricultural systems, supporting previous commitments made by African leaders to contribute 10 percent of their GDP to making agriculture in their countries more productive. Businesses and private donors are also showing renewed interest in this issue: the World Economic Forum's New Visions for Agriculture Initiative is leveraging the resources and capabilities of 26 international consumer industry companies to support sustainable agricultural growth in the developing world. Agricultural development in Africa and South Asia is also a strategic objective of The Bill & Melinda Gates Foundation.

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Although promising, these actions must be considered just the first steps in what needs to become a broader, long-term commitment by the international community to global agricultural development. The security and economic benefits that flow from productive agricultural and food systems mean that investments in agricultural development should not decrease during times of economic distress - they should be maintained or expanded.

So what are some steps that governments, businesses, international organizations, and donors can take to make agriculture and food systems more productive?

The first step is to prioritize investments in global agricultural development. Agricultural potential in the form of arable land, available labor, and emerging markets throughout the developing world, particularly in Africa and South Asia, is largely untapped. If the goal is to increase overall production amidst resource constraints, it will be necessary to focus investment in these areas, where poverty is deepest and the highest returns are possible.

Basic and adaptive agricultural research is at the foundation of any effort to increase agricultural productivity. It was investments in genetic and agricultural sciences that led to the Green Revolution in the 1960s and 1970s, causing significant production increases in Latin America and Asia, and pulling over one billion people out of poverty. Today, advances in science will be critical to increasing yields for all commodities in spite of resource scarcity and climate shifts. Research will be especially important to increasing the production of fruits and vegetables and other nutrient-dense specialty crops that require unique growing conditions. Rates of return on investments in agricultural research have been found to have either the highest or second highest rates of return in reducing poverty.

Finally, agricultural investments will yield the greatest return if they focus on women. Women make up almost half of the world's agricultural workforce, but have limited access to land and agricultural inputs. If women were given the same access to productive resources as men, yields on female farms would increase by 20 to 30 percent, total national agricultural output in the developing world could increase by 2.5 to 5 percent, and the number of undernourished people the world would decrease by 12 to 17 percent. Investing in women has positive repercussions not just for productivity, but also for nutritional improvement. Women make the majority of household nutritional decisions, and giving women nutrition information is proven to improve maternal and children's health.

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For the past century, the global agriculture and food system has successfully overcome challenges, increasing production to provide a sufficient and reliable supply of food as population rose. With proper investment and well-targeted innovation in global agricultural development, the goal of providing nutritious food to growing world with fewer resources can be similarly achieved.

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