

Using economics to address the challenges of improving global nutrition security

*In both rich and poor countries, more than 800 million people remain chronically undernourished, at an annual cost of more than \$2 trillion in lost productivity. **Roger Beachy** and **Daniel Sumner** write that in order to achieve affordable nutrition security across the world, the incomes of the poor must rise, and the supply of more nutrition rich foods must be increased through increased incentives for producers and more resilient crop varieties.*



Recent years have seen falling food commodity prices and improved access to food among the global poor. Progress toward better crop varieties with higher yields, higher incomes in developing countries and favorable weather have all caused the share of undernourished in poor countries to fall by 25 percent, as calculated by the UN's Food and Agriculture Organization (FAO). This represents improved nourishment for 150 million hungry people.



However, about 800 million people still remain chronically undernourished and hundreds of millions more, in rich and poor countries alike, remain nutritionally insecure. For many low-income households in very poor countries, healthy diet diversity is simply unaffordable and the foods they need are not available to them. Many poor infants and children have been physically and mentally stunted as a result. As adults they cannot perform at higher skill levels and suffer food-related chronic diseases. Estimates show that poor nutrition costs more than \$2 trillion annually in lost productivity alone. For families stuck in this vicious cycle poverty leads to poor nutrition, which in turn leads to more poverty.

Achievable pathways to global nutrition security – a core focus of the United Nations' Sustainable Development Goals – are a 'must have' for a healthy and secure society, and are within reach. But, the challenges are even greater now, in the face of climate change and recognition of the vulnerability of our natural resources. To tackle this, the [World Food Center at UC Davis](#) has recently initiated a project to define consensus pathways for education, technology, institutions and economic innovations to take us closer to this goal.

It is essential to refine ways and measurements to better track global progress toward improving sustainable nutrition security. This means recognizing ecological, environmental and social goals while maintaining a focus on food production and distribution that improves nutrition. With the [World Food Prize](#) and other organizations and agencies our goals are to effect practices that improve health and wellness through better diets; this October we held our first annual session to determine how this can be done most effectively.

So what should be done to get affordable, accessible supplies of nutrition-rich foods to those who need it?



Credit: ✨ Didi ✨ (Flickr, [CC-BY-NC-SA-2.0](#))

Economics is part of the solution in two ways. First, incomes of the poor must improve so that they have the buying power to effectively demand better access to more and better food. Farmers produce what consumers demand. When consumers are very poor, cheap calories come first. They demand crops such as cassava, potatoes, rice and maize that are heavy in starch rather than leafy greens, bright colored fruits and vegetables, milk or meat. The nutritional consequences, especially for the young, can be severe. Second, farms and food distributors must supply more nutrition-rich foods, at lower prices where it is accessible to the poor. This requires improved productivity and less waste all along the chain from farm to consumer. Since many of the poor are farmers themselves, farm productivity growth in developing countries is doubly important.

Increasing the demand for and supply of nutritious diets requires research and education, and incentives for food producers and marketers. Women and girls are responsible for growing food in many regions where malnutrition is prevalent. Women make primary decisions about what to grow farm and how to market their produce. Therefore involvement of these women in programs to effect change, and enrollment of their daughters in education programs, is especially critical for improving household income and nutrition.

Such improvement also requires thorough understanding of the interactions between the local ecology and foods crops. Genetic research is needed to develop the best locally adapted varieties that are resilient to diseases and climate changes as well as nutrient-rich, environmentally sound, and compatible with local preferences.

To aid in this effort, our colleagues at UC Davis are coordinating a genetic and genomic analysis of 100 'orphan crops of Africa' – local crops that lack broad commercial value, and for which advanced breeding technologies are unavailable. This effort has already enabled some crop varieties in East Africa to become more nutritious and resilient. Further success requires more research to improve the soils that they will grow in and improved training for farmers on effective planting and cultivation.

The nutrition gaps that need to be addressed to ensure global nutrition security are different in each society. In some regions, poor soils contribute to micro-nutrient deficiencies, including zinc, iron, or boron deficiencies, or reduced amounts of plant-based biochemicals such as vitamins, antioxidants and other nutrients. In some societies, the lack of high-quality protein from meat, dairy or legumes, can lead to diet deficiencies. In other areas arsenic, pesticide-laced soils, or micro-toxins produced by fungi that cause plant diseases lead to unsafe food and poor nutrition. Each

problem requires a targeted solution.

As we work closely with colleagues from several disciplines and institutions to carefully measure progress across a range of metrics of production, affordability, access and sustainability of nutritious diets, we believe we will be able to develop unified assessments to best reach the global goal of sustainable nutrition security for all and advocate for policies and actions that lead to success.

Please read our comments policy before commenting.

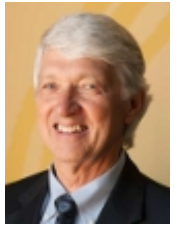
Note: This article gives the views of the author, and not the position of USAPP – American Politics and Policy, nor the London School of Economics.

Shortened URL for this post: <http://bit.ly/1PQgGpt>

About the author

Roger Beachy – *World Food Center*

Dr. Roger Beachy is the Executive Director of the World Food Center at the University of California, Davis. He is the former director of the National Institute of Food and Agriculture at the United States Department of Agriculture.



Daniel Sumner – *Agricultural Issues Center*

Professor Daniel Sumner is the Director University of California Agricultural Issues Center and a professor of agricultural economics at UC Davis. He is an Assistant Secretary for Economics at the United States Department of Agriculture.



- CC BY-NC 3.0 2015 LSE USAPP