

Biotech

In focus



Cooperative Extension Service
Biotechnology Outreach Program
College of Tropical Agriculture and Human Resources
University of Hawai'i at Manoa

September 2014

Issue 18 of 24

Hunger in a World of Food



As we consider the challenges of feeding 9 billion people by 2040, we start by asking how well we're feeding today's population of 7 billion. The answer to the question "What were your food choices today?" depends very much on your address and your pocket book.

The United Nations' Food and Agriculture Organization (FAO) reports that in 2011 the food supply available in the United States was sufficient to provide each resident with more than 3,600 calories, over 160 grams of fat, and almost 110 grams of protein: enough for the entire population to gain ample weight. At the same time, access to this nutritional abundance is not equal: more than 14 percent of U.S. households experienced food insecurity during 2013, meaning that at some point during that year they lacked enough food to keep everyone healthy.

The situation is far more difficult in the least developed countries, where the 2011 food supply provided an average of 2300 calories, 45 grams of protein, and 60 grams of fat per person. Most of the world's 900 million undernourished citizens live in developing countries. In some of the nations of sub-Saharan Africa, more than half of the population is undernourished.



Ania Wieczorek, PhD

Associate Professor
Department of Tropical Plant
and Soil Sciences
College of Tropical Agriculture
and Human Resources
University of Hawai'i at Manoa
Honolulu, HI 96822
ania@hawaii.edu

Thank you to Carol Oshiro for
web design, Jessica Radovich for
graphics and Kathleen Vickers
for text editing.



Human populations are growing most rapidly in developing countries, so that future growth will impact people already at greatest risk for hunger. The U.S. Department of Agriculture predicts that population growth rates in most developing countries will average 1.2 percent during the next 10 years, compared with 0.4 percent in the rest of the world.

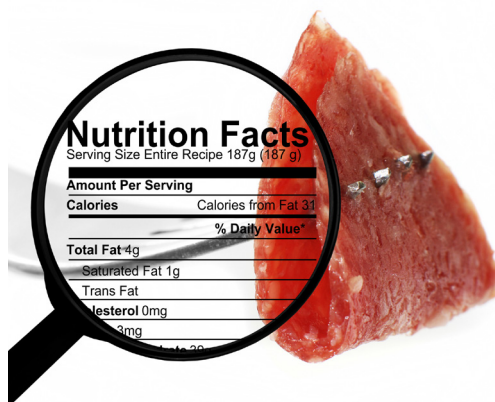
Persisting Food Insecurity

Food surpluses in the industrialized world and programs that support the export of those surpluses to developing nations have helped the poorest countries increase per capita calories by 18 percent, proteins by 25 percent, and fats by 33 percent during the past two decades. However, the persistence of food insecurity indicates that food aid is insufficient to prevent hunger and underscores the importance of increasing local food production and minimizing the food that spoils after harvest.



Differing Diets

In comparing industrialized and developing nations, we can see that some of the differences in food supply calories per person reflect differences in diet. At the turn of the 20th century, animal products represented 28 percent of the calories eaten by people in industrialized countries but only 13 percent of the calories consumed by residents of developing countries.



Increasing Demand



As economies develop, demand for meat increases. USDA anticipates that during the next decade more than 80 percent of increased global demand for meat will be in developing countries.

Satisfying Demand

About 40 percent of global crop calories are currently fed to livestock; satisfying the projected demand for meat will consume more plant-based feed.



Providing adequate food for the world population not only requires increased crop production, but also involves crop uses, food distribution, and food affordability. This is true for people who live in industrialized economies, but represents an even greater challenge to the developing world. In developed and developing countries, 15-50% of food may be lost during harvest, storage and shipping. Reducing these losses can potentially address some of the projected needs. In our next bulletin, we'll examine what roles genetically modified crops might play in meeting this challenge.