Combating Hunger

AT THE CLOSE OF THE RECENT LONDON OLYMPICS, THE UNITED KINGDOM ANNOUNCED A PROGRAM designed to rescue 25 million children worldwide from malnutrition by the time of the next Olympics in Brazil. In May 2012, the World Health Assembly agreed to a target of reducing the number of stunted children by 40% (a reduction of about 70 million children) by 2025. To meet these targets and nourish the 870 million hungry people in the world,* the world’s leaders will need to prioritize an innovative science-based marriage of nutrition and agriculture.

The problem of hunger is not simply a lack of sufficient quantities of food. The chronic hunger caused by protein and calorie undernutrition is exacerbated by malnutrition (the “hidden” hunger caused by the deficiency of micronutrients, which include iron, iodine, zinc, vitamin A, and vitamin B12) and sometimes by human diseases that disable the body’s ability to absorb what micronutrients it receives. To address such intertwined problems, there must be synergy among national programs dealing with the availability, access to, and absorption of food. These nutrition security programs should be based on a life-cycle approach that starts with the “first 1000 days” from pregnancy to 2 years old, the critical period when stunting can cause irreversible damage.†

In September, a High Level Panel of Experts to the United Nations (UN) Committee on World Food Security, which I chaired, released a comprehensive report on Social Protection for Food Security, with recommendations for combating chronic childhood hunger.‡ One of its recommendations—the concept of a “food security floor”—is particularly worthy of mention. The food security floor recognizes that freedom from hunger is a fundamental human right, defining the minimal steps needed for hunger elimination. These include nutrition literacy, clean drinking water, sanitation, and primary health care.

In some “hunger hot spots” of the world where agriculture is the backbone of survival, as in sub-Saharan Africa and South Asia, mainstreaming nutrition in agriculture programs is the most effective and low-cost method of eliminating malnutrition. This requires greater attention to the net income of smallholder farmers, whose women food producers have particular needs that require specific policies and support. As an example, the M S Swaminathan Research Foundation in Chennai, India, has designed a Farming System for Nutrition initiative, comprising specific steps. They include carrying out a nutritional survey of the area and identifying the major causes of chronic and hidden hunger, and redesigning the farming system so that specific agricultural remedies are introduced for each nutritional malady, such as the cultivation of biofortified crops and crop-livestock integration. Thanks to the work carried out since 2004 under the Harvest Plus program of the Consultative Group on International Agricultural Research, micronutrient-enriched varieties are becoming available in several crops, such as iron- and zinc-rich rice; iron-rich beans and pearl millet; zinc-rich wheat; and vitamin A–rich cassava, sweet potato, and maize. The year 2014 has been designated the International Year of Family Farming by the UN, and every effort should be made by developing countries to make each family farm a biofortified farm. We also should aim to train one woman and one man in every village in nutrition literacy to serve as Community Hunger Fighters.

The Olympic spirit stimulates efforts to achieve what may appear unachievable. There are already encouraging examples of speedy progress, with Brazil leading the way through its Zero Hunger (Fome Zero) program initiated in 2003 by then-President Luiz Inácio Lula da Silva, which has helped to cut the number of Brazilians living in extreme poverty by more than half. If synergy can be created among scientific know-how, political do-how, and farmers’ participation, it should be possible to achieve the goal of overcoming chronic and hidden hunger in large sections of the population of developing countries during this decade. – M. S. Swaminathan

Combating Hunger
M. S. Swaminathan (November 22, 2012)
Science 338 (6110), 1009. [doi: 10.1126/science.1231305]

Editor's Summary

This copy is for your personal, non-commercial use only.

**Article Tools**
Visit the online version of this article to access the personalization and article tools:
http://science.sciencemag.org/content/338/6110/1009

**Permissions**
Obtain information about reproducing this article:
http://www.sciencemag.org/about/permissions.dtl