

**International Conference on Leveraging Agriculture for Improving
Nutrition and Health**

New Delhi, 10 February, 2011

Keynote address by Prof M S Swaminathan

1. Food and drinking water are the first among the hierarchical needs of a human being. Growing population, expanding ecological footprint, diminishing per capita land and water availability, increasing biotic and abiotic stresses, and above all, the prospects for adverse changes in temperature, precipitation and sea level as a result of climate change, emphasize the need for keeping issues relating to agriculture high on the professional, political and public agenda. The multiple roles of agriculture in food production, improving nutrition and health, and climate change mitigation are now well recognized scientifically, but are yet to be integrated into coherent national policies and strategies. Opportunities for generating synergy among agriculture, nutrition and health are great and this conference is therefore a timely one.
2. In India, the relationships between diet and health have been recognized since long in indigenous medical systems like *Ayurveda*. The National Institute of Nutrition of India is affiliated to the Indian Council of Medical Research (ICMR) to ensure synergy between nutrition and health care. Similarly, India was one of the early countries to develop an Integrated Child Development Service (ICDS) involving concurrent attention to nutrition, health and education. In spite of such early recognition of the need to “deliver as one” in relation to the nutritional and health requirements of the population, India has an unenviable record in overcoming child and adult malnutrition and in linking synergistically agriculture, nutrition and health.
3. Let me cite a few examples of the immense benefits that will accrue from leveraging agriculture for improving nutrition and health. When I was at the International Rice Research Institute, the Philippines, I organized in 1986 a consultation jointly with the World Health Organisation (WHO) on how to avoid the breeding of malarial mosquito in rice fields. We concluded that alternate wetting and drying of rice

fields will disrupt the breeding cycle of the mosquito. Such a practice does not affect yield but confers the additional benefit of a substantial reduction in the demand for irrigation water. This approach to water management in rice fields is now incorporated in what is popularly known as the “System of Rice Intensification (SRI)” – an agronomic management method being popularized by Dr Norman Uphof of the Cornell University, USA. As President of the Pugwash Conferences on Science and World Affairs, I had organized discussions on the role of nutrition in the treatment of HIV/ AIDS patients both in the “first wave” countries like South Africa, and “second wave” countries like India. The experience in both the first and second wave countries was the same – namely a food cum drug approach yields the best results. The same is true with reference to Tuberculosis and Leprosy where the need for prolonged treatment limits opportunities to poor patients for earning their daily bread.

4. Several steps are urgently needed for achieving the goal of linking agriculture with nutrition and health. First, nutritional considerations must be incorporated in Farming Systems Research. For example, pulses or grain legumes should find a place in the crop rotations. Crop-livestock integrated production system as well as coastal and inland capture and culture fisheries will help immensely in ensuring that the needed macro-and micro-nutrients are available in the diet. ICAR’s All India Coordinated Project on Farming Systems Research should have a competent Nutritionist on its staff, so that appropriate agricultural remedies are introduced for the nutritional maladies of the area.

The National Horticulture Mission affords uncommon opportunities for addressing the problem of micro-nutrient malnutrition i.e., the deficiency of iron, iodine, zinc, Vitamin A, Vitamin B12, etc in the diet. What is important is the addition of the nutritional dimension in the programmes designed to promote the cultivation of vegetables and fruits in different parts of the country. A Home Science graduate well versed in Nutrition can be added to the staff of the Mission in every district. They could also promote nutritional literacy in the area.

5. India proposes to make access to food a legal right soon, through a National Food Security Act. The National Advisory Council headed by Smt Sonia Gandhi has recommended that this Act should have both mandatory rights and enabling provisions. The mandatory rights will include the provisions of 35 Kgs of rice, wheat or millet (pearl millet, sorghum, maize, *ragi* and minor millets (preferred particularly in tribal areas) per month per family at a price of Rs.1, 2 and 3 per Kg in the case of millet, wheat and rice respectively. The inclusion of nutritious millets, inappropriately called “coarse cereals”, will help to improve both nutrition and climate resilience, since these crops are more drought tolerant. The legal entitlements will be structured on a life cycle basis, with particular attention to the first 1000 days of a child’s life (i.e., from conception up to the end of two years). The life cycle approach will ensure attention to all stages in one’s life. ICDS will be restructured so that the nutritional needs of the infant during the first 1000 days are met.

Among the enabling provisions, concurrent attention to clean drinking water, sanitation, environmental hygiene and primary health care, will be an important one. The additions of Nutrition in the National Rural Health Mission will help to foster symbiotic linkages among agriculture, nutrition and health. Synergy between nutrition and agriculture will include steps like the cultivation and consumption of *moringa* (drumstick) along with millet. *Moringa* is a nutritional marvel and the millet cum *moringa* combination in the diet will help to meet the needs of both macro-and micro-nutrients.

6. Globally and nationally, the prevailing rates of hunger and malnutrition are inexcusable. There are simple and cost effective approaches to making such a sad situation a problem of the past. This will however require coordinated planning and action among those involved in the agriculture, health and nutrition sectors.

Prof M S Swaminathan