

Malnutrition and Food Insecurity Projections, 2020

by **Marito Garcia**

The Nutrition-Health Connection

In 1990 a total of 780 million people out of 4 billion in the developing world are living on diets that are not sufficient to maintain a healthy life, according to the Food and Agriculture Organization of the United Nations (FAO). This implies food insecurity for every fifth person in the developing world. Insufficient food consumption is one of the primary causes of malnutrition; the other is infection and poor health. The nutrition situation reports of the United Nations ACC/SCN (Administrative Committee on Coordination/Sub-Committee on Nutrition) found that protein-energy malnutrition (PEM), measured by the proportion of children falling below the accepted weight standards, affects 34 percent of all preschool children in the Third World. In 1990 the problem affected some 184 million children, based on national anthropometric measurements. A recent study by Pelletier et al. shows that PEM, even in its mild-to-moderate form, contributes to 56 percent of child deaths in 53 developing countries, suggesting that malnutrition has a far more powerful impact on child mortality than is generally believed.

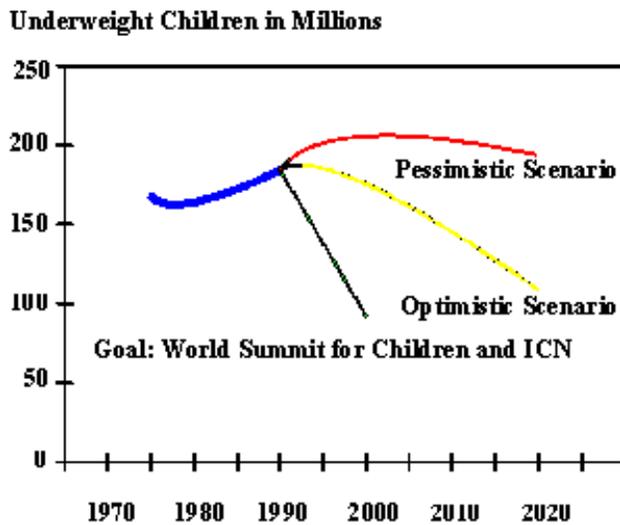
In addition to PEM, insufficient food consumption leads to other problems that are of public health significance. Among these are deficiency in iron, which causes iron-deficiency anemia; deficiency in vitamin A, which leads to blindness (xerophthalmia); and deficiency in iodine, which contributes to iodine deficiency disorders and goiter. Preschool children and pregnant and lactating women are the most vulnerable groups. Every year, 250,000-500,000 children go blind due to vitamin A deficiency. Estimates by ACC/SCN indicate that in 1990, 370 million women between 15 and 49 years of age were anemic, a condition that contributes to high maternal mortality rates, especially during childbirth. The World Health Organization (WHO) estimates that the lifetime chance of maternal death in North America is better than 1 in 6,000 and in Africa it is 1 in 20. A recent assessment by WHO indicates that some 655 million people in the developing world are affected by goiter. This figure is nearly three times previous estimates.

Future Trends

If trends in the 1980s persist, it is likely that the number of children with PEM will increase by the year 2000; it is expected to remain at about 200 million by year 2020 despite the projected decline in fertility rates (Figure 1). Two projections into the future--a pessimistic scenario and an optimistic scenario--are mapped based on historical trends. Projections of absolute numbers of malnourished children account for the future trends in fertility, but do not consider possible breakthroughs in food production or for disasters such as the uncontrolled spread of AIDS. The optimistic scenario is built around the "best five-year" historical trends between 1975 and 1990, whereas the pessimistic scenario is based on the "worst five-year" historical trends over the same period. Thus, one could say that "if the trends in 1990 to 2020 are like the rates of improvement

in 1975 to 1980, then we will see a reduction in malnourished from . . . " A similar scenario-building approach was used in the Second Report on the World Nutrition Situation (1992) for year 2000 projections; the trend line is extended to the year 2020 for purposes of the present exercise.

Figure 1--Projections of malnourished preschool children in developing countries, 2020

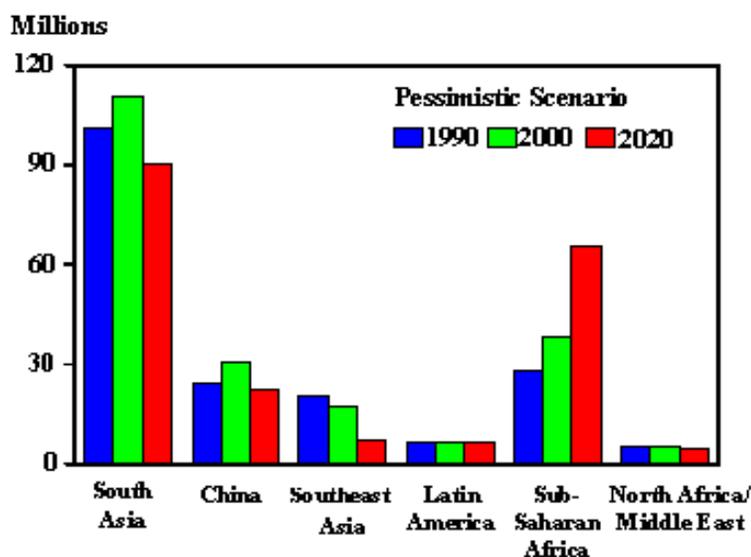


Source: Marito Garcia.

The projections indicate that a satisfactory nutrition situation will not be realized unless new approaches are tried. The best-case ("optimistic") scenario shows that by year 2020 there would be about 100 million preschool children with PEM. The potentiating effects of malnutrition will likely be responsible for roughly 56 million child deaths in this scenario. The projections show that the goal of reducing child malnutrition prevalence by half by year 2000 set by the World Summit for Children (1990) and the International Conference on Nutrition (1992) will not be attained by 2020 even using the best-case scenario. The worst-case ("pessimistic") scenario looks grim. The proportion of underweight children would likely rise to about 200 million by year 2000.

Historical data indicate that more than half of the world's protein-energy malnutrition problem is in South Asia (Figure 2). Driven by the weight of its population, extremely high prevalences of about 58 percent prevail. In 1990 about 100 million out of the 184 million underweight children in the world were found in the subcontinent comprising India, Pakistan, Bangladesh, Nepal, Sri Lanka, and Bhutan. The next biggest number of underweight children is in Sub-Saharan Africa with about 30 million in 1990, followed by China (24 million) and Southeast Asia (20 million).

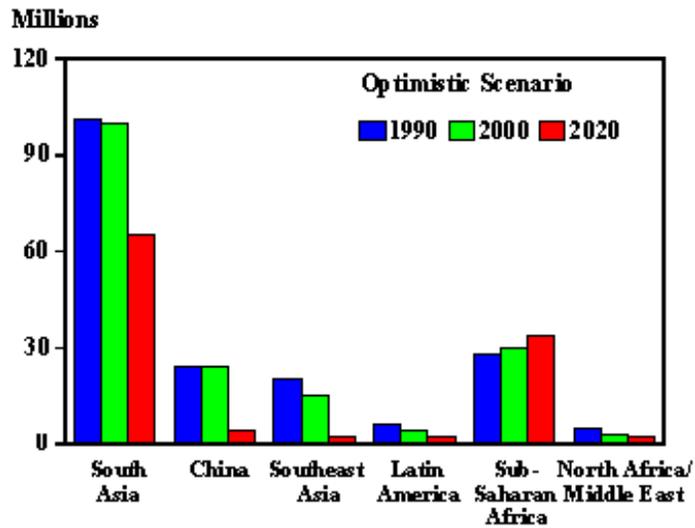
Figure 2--Projections of numbers of underweight preschool children, by region, pessimistic scenario, 2020



Source: Marito Garcia.

The regional projections given in Figure 2, using the pessimistic scenario, and Figure 3, using the optimistic scenario, provide a glimpse of the trends across the continents. Under the optimistic scenario, it is expected that by year 2020 virtually each region in the world will experience a reduction in the absolute numbers of underweight preschool children, with the notable exception of Sub-Saharan Africa. The regions of China and Southeast Asia (Indonesia, Thailand, the Philippines, Vietnam, Malaysia, Myanmar, Laos, and Kampuchea) will likely experience the most dramatic improvements. Reductions in numbers underweight (from 44 million in 1990 to 6 million in 2020) will be brought about by the combined effect of a decline in the prevalence of underweight and a decline in fertility over the 25 year period. The trends in the Sub-Saharan Africa region will be fundamentally different from the rest of the world. Even an optimistic scenario puts the number of malnourished at about 34 million in the year 2020. Current population growth rates of the Sub-Saharan region are estimated at 3.0 percent--the highest in the world--and unless the rates are dramatically reduced, the absolute number of underweight will rise even if the prevalence rates are kept at present levels in 2020.

Figure 3--Projections of numbers of underweight preschool children, by region, optimistic scenario, 2020



Source: Marito Garcia

Policy Implications

The implications from the two scenarios of malnutrition in year 2020 is clear. Unless explicit policies to reduce the numbers of underweight are put in place, the total number of children with protein energy malnutrition will rise, and child deaths associated with malnutrition problems will continue unabated. A number of programs and policies aimed at a systematic attack on PEM have been implemented successfully in several countries, including those in Thailand, Zimbabwe, Indonesia, Costa Rica, Chile, and in Tamil Nadu in India. In Thailand, the prevalence of underweight children was reduced from 36 percent to 13 percent over a period of eight years, through a national program and policy that both attacked poverty and promoted explicit nutrition programs. Increase in incomes and reduction in poverty are important, but experiences in several countries indicate that even where there is no rapid improvement in incomes, malnutrition can be reduced by explicit programs and policies that aim at improving household access to food and health services and improving child care practices such as breastfeeding and proper weaning of infants. A concerted effort to follow the examples of successful countries is needed to reduce the numbers of malnourished children in the future.

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"A 2020 Vision for Food, Agriculture, and the Environment" is an initiative of the International Food Policy Research Institute (IFPRI) to develop a shared vision and consensus for action on how to meet future world food needs while reducing poverty and protecting the environment. Through the 2020 Vision initiative, IFPRI is bringing together divergent schools of thought on these issues, generating research, and identifying recommendations. The *2020 Briefs* present information on various aspects of the issues.