

## Malnutrition and Millennium Development Goals in Post-2015 UN Development Agenda

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Health is the most important key to development. Health related issues play important roles as well in the current Millennium Development Goals (MDG) framework, with three out of the eight goals directly dealing with health conditions[1]. The eight Millennium Development Goals are: 1. Eradicate Poverty and Hunger; 2. Universal Primary Education; 3. Gender Equality and Empower Women; 4. Reduce Child Mortality; 5. Improve Maternal Health; 6. Combat HIV/AIDS, Malaria and Other Diseases; 7. Environmental Sustainability 8, and Global Partnership for Development

The MDG of halving the number of people suffering from hunger is within a reach. However, 162 million young children are still suffering from chronic undernutrition [2]. The double burden of malnutrition is a huge issue affecting developing and developed countries. Between 2 and 3 billion people are malnourished - they experience some form of undernutrition, are overweight or obese, or have some sort of micronutrient deficiency [3]. "Nutritional deficiencies" are responsible for over 50% of years lived with disability in children age four and under [4]. Malnutrition is the largest single contributor to disease in the world. Maternal and child undernutrition account for 11% of the global burden of disease [5]. Only caloric intake does not equate to nutritional value, which are necessary for fetal and early childhood physical and intellectual development, and threaten the mother and baby's health during pregnancy (MDG 4 and 5). Infants born to mothers who are poorly

nourished are more likely to be underweight and become genetically predisposed to malnourishment. Inadequate nutrient intake leads to children being less productive at school and at home, and even increasing absenteeism (MDG 2). This means they will contribute less to household income through physical labor (i.e. among farming communities) and miss out on opportunities for higher education and future employment (MDG 1).

Overweight is an increasing problem. In absolute numbers there are more overweight and obese children living in low and middle-income countries (LMICs) than high-income countries. The prevalence of infant, childhood and adolescent obesity is increasing in all countries, with most rapid rises occurring in LMICs. An estimated 42 million children were affected by overweight or obesity in 2013. In Africa, the estimated prevalence rate of child overweight and obesity of 8.5% in 2010 is projected to increase to 12.7% by 2020. In Asia, the 2010 prevalence rate of 4.9% equates to approximately 18 million children. If current trends continue, over 70 million infants and young children will be overweight or obese by 2025, the vast majority living in LMICs [6]. These countries have had high rates of child under nutrition and stunting, but now the rates of childhood adiposity are also rising rapidly. Unhealthy nutrition is one of the major causes of Non Communicable Diseases (NCDs). A failure to act to eliminate the obesity epidemic will have medical, social and economic consequences of major magnitude.

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Experience has shown that the poor nutritional value of diets among low-income countries is leading to co-morbidities that are straining global health systems, where diabetes for example has been shown to increase the risk of tuberculosis infection. So-called 'lifestyle diseases' are directly linked to the global disease burden through increased susceptibility to infections and weakened immune response. This means that morbidities associated with infections and the immune system can be significantly reduced through a much more preventative approach. Within the top 16 leading causes of death, high body mass index, iron deficiency and inadequate fruit and vegetable intake are all risk factors that can be addressed through a balanced diet. As nutrient intake represents "a causal bi-directional relationship", it is shortsighted if we do not look beyond the international poverty line standard of 2,100 daily calories consumption as a satisfactory standard for reducing suffering associated with poverty and hunger. Calories alone are not an acceptable measure of *nourishment*.

This proposed revision includes addition of specific targets for reaching minimum nutritional intake of specific necessary and essential vitamins and nutrients from natural sources. While humanitarian aid efforts have been made to distribute nutritional meal supplements for young (usually under-5s or pregnant women), these are not adequate interventions. National education and awareness programs need to integrate the importance of balanced diets, fruit and vegetable consumption, as well as exercise. Food and beverage producers, farming industries and import/exporting agencies must work within new global standards for ensuring that all countries have access to affordable sources of nutrition for a balanced healthy diet. Food quality can leave a permanent imprint on physical and mental growth, which will affect the economy as a result. Good nutrition status improves intellectual capacity in children and adults and therefore is essential for sustainable development. Prevention of under nutrition in early childhood leads to wage rates that are 48% higher; individuals who are 33% more likely to escape poverty; and women who are 10% more likely to own their own business [7]. Investments in nutrition have high returns. GDP totals in Africa and Asia are less than 90% of what they would be in the absence of undernutrition, and in China, approximately 95% of what they would be in the absence of obesity. There have been estimated new benefit-cost ratios for scaling up nutrition interventions in 40 countries. Across these 40 countries, the median benefit-cost ratio is 16 for every dollar, rupee, birr, or

peso invested, at the median more than 16 will be returned, which is highly competitive with investments in roads, irrigation, and health [3].

### We would like to put a list of sub-goals

- a. Advocate breastfeeding and ameliorate maternal nutrition
- b. Improve countries' capacities to collect, monitor and report nutrition data
- c. Invest in appropriate micronutrient treatment by food supplementation and fortification
- d. Promote and improve food education
- e. Make nutritious food more accessible to everyone

The global nutrition targets endorsed by the World Health Assembly in resolution WHA65/6 have been widely adopted by global initiatives [3]. There are number of high-quality case studies to demonstrate the success in the government level. The right to adequate nutrition and food is firmly recognized in a number of international human rights instruments. By implementing policies that attain this right, state leaders can, therefore, fulfil an obligation and realize an investment opportunity at the same time [5,8]. When looking at malnutrition data, it is important to take into account the local context in any level-geography, local governance, socioeco-nomic status, etc. Within the framework of MDG 1, it is a human right to have access to, and awareness of what a balanced and healthy diet should consist of. Proper immune response can significantly increase the chances of survival from common infections and communicable and non-communicable diseases. Through simple investments in education and food subsidies for fruits, vegetable, legumes and whole grains, offering alternatives to high-calorie and low-nutrient rich food, the burden on health systems will be significantly alleviated.

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