



No. 9

GPFS – AT WORK:

NUTRITION SENSITIVE AGRICULTURE AND FOOD SYSTEMS

The purpose of this paper is to raise general awareness on the relevance of nutrition to SDC's work and to guide the increasing interest for programming Agriculture and Food Security interventions that contribute to better Nutrition outcomes.

Today, one third of the world population is malnourished (Figure 1). Malnutrition in all its forms, including under nutrition, micronutrient deficiencies¹, overweight and obesity is of greatest global concern, as shown in the Second International Conference on Nutrition (ICN2) in 2014 and the Global Nutrition Report 2015: 795 million people are hungry, 2 billion have micronutrient deficiencies and 1.9 billion are overweight. 159 million children under 5 years are too short for their age (stunted); 50 million too thin (wasted) and 41 million overweight or obese.

While hunger is decreasing worldwide, the challenge of malnutrition increases. This will also challenge the achievement of many Sustainable Development Goals (Agenda 2030), as good nutrition is crucial for social and economic development (Figure 2). It is vital to break the vicious circle of malnutrition (Figure 3), which is passed from malnourished mothers to their babies, if no optimal nutrition is provided during the first 1000 days (from conception until their 2nd Birthday). These children start their lives stunted and thus carry the burden of irreversible negative preconditions for a prosperous life. Investing to prevent malnutrition is a necessity, also economically: 1:16 is the estimated cost / benefit ratio for investments in healthy nutrition, considering the lost contribution of an individual to societal development over a life time when not using its full potential, due to being stunted.

The fight against malnutrition requires a multi-sectorial approach, covering aspects of health, water and sanitation, education, agriculture and many more. While SDC uses a multi-sectorial approach to the challenge, this present paper focuses only on the food based approaches.

Food based approach to malnutrition

The food based approach to tackle malnutrition puts the consumption of nutritious food in the center; healthy and divers diets are facilitated, for everybody on a regular basis and throughout their entire lifetime (Figure 4). Using a food based approach requires looking at food value chains, food consumption habits, gender, food and agricultural policies.

1) Make food baskets nutrition-sensitive through targeted interventions along value chains.

- **Promote a diversified primary production to increase the choice for nutritious consumption.** Increase the production quantity and variety of fruits, vegetables and livestock products. Foster the use of the wide range of nutritious valuable crop varieties, including orphan crops² and wild plants, but also protein sources such as milk, eggs, insects, pulses and small livestock (considering their ecological impact). They all contribute to a more varied food range on the market and for self-consumption; the basis for dietary diversity and thus good nutrition. Nutritious traits of plants and animals shall have a stronger influence on production choices and breeding efforts³, rather than only productivity or disease resistance.
- **Improve agricultural practices and optimize inputs to increase the positive and reduce the negative impact on the consumers.** Improve water management to avoid water borne human diseases; use integrated pest management to reduce negative impact on human health and environment (eg. quality of drinking water); adding specific micronutrients to the soil through fertilization can increase the content of this specific nutrient in the plant.
- **Improve storage, preservation and transportation facilities to reduce quantitative and qualitative product loss.** This includes the reduction of mycotoxin formation, but also loss of nutrient content. Improving cold chains, preservation techniques and transformation of perishable nutritious food, such as fruits and vegetables, facilitates their availability throughout the year, a key challenge regarding malnutrition.
- **Promote gentle food processing to enhance the nutritious quality of food and bridge food shortages or seasons.** Gentle processing techniques (e.g. drying) maintain the mineral and/or vitamin content and preserve its nutritious value. Limiting the use of certain

This series is meant to give guidance and reflects the position of the GPFS.

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¹ Vitamin A deficiency can lead to night blindness, deficiency of iron to anemia, of zinc to increased diarrhea or of iodine to goiter

² Orphan crops are underutilized species, who do not gain sufficient attention in research or production

³ Biofortification is a way to increase the nutritional value of plants by enriching the content of certain vitamins or minerals (conventional selective breeding or genetic engineering methods); eg. Orange fleshed Sweet potatoes with high Vitamin A content, beans enriched with iron; for SDC's position on genetic engineering, see also GPFS at work Nr. 1

additives or ingredients harmful for human nutrition in high quantities (e.g. salt/sodium, saturated- /trans-fat, etc.) facilitates availability of nutritious food for consumers as well as support to research and innovation. Fortification with minerals or vitamins is a known practice and cost effective intervention (e.g. iodized salt).

2) Enhance nutrition sensitive consumption, it is not the automatic consequence of nutritious food availability.

- **Stimulate the demand for nutritious food.** Nutrition sensitive **education, marketing and promotion** are necessary. There are several points of intervention possible: health focused social marketing campaigns which aim to render healthy food desirable to consumers, including traditional nutritious food like pulses, insects, green leafy vegetables etc. so that they remain aspirational, modern and attractive; nutrition education on what a healthy diet is composed of, considering the changing needs over a lifetime and depending on the lifestyle, e.g. physical activities, health status, etc. Education and information can occur in schools, at points of sales, but also for community health or extension workers to assure that their advices are nutrition sensitive. Food labelling supports an informed decision by the consumer, but presupposes respective knowledge on healthy nutrition. Restrictions on marketing towards children or for certain products, like breast milk substitute, can reduce the consumption of food which hampers a good nutrition outcome.
 - **Improve accessibility and utilization of nutritious valuable products.** Affordability of nutritious food, like fruits, vegetables or protein sources is key to stimulate their consumption. Promoting gentle cooking practices maintains the nutritious value of products high; only a healthy consumer can absorb it appropriately though.
- ## 3) Improve agricultural and food policies on safe and nutritious food, targeting simultaneously availability, accessibility, utilization and stability of nutritious food for consumers. Due to the complexity of their impact chains, there is still rather limited evidence on the influence of food policies on consumers' nutritional status. The ones existing regard primarily overweight and obesity⁴ and less undernutrition.
- **Consider smart policies to promote nutritious primary production.** Do not only consider the caloric needs of a population, covered by staple crops like maize, rice, etc., when designing subsidy or other support schemes, but also the consumer's nutrient requirements throughout the year. Facilitate cultivation of nutritious food, like fruits and vegetables, pulses and other protein sources.
 - **Consider incentives or taxes on food items to actively steer their consumption frequency.**
 - **Promote regulations on food processing techniques and ingredients to steer the availability of healthy food.** This regards food safety aspects, like threshold for pesticide residues or mycotoxins as well as food quality aspects, assuring to maintain or enhance the nutritious value of food.
- ## 4) Give due consideration to gender and women empowerment in any nutrition sensitive approach. Women have a special role as pregnant and breastfeeding mothers, but also as the ones preparing food for entire families, thus influencing what is planted, bought, prepared and finally consumed by family members.
- **Strengthen women's knowledge and decision power** for making nutrition favoring decisions when producing their own food, buying it on the market, gathering it in the wild, cooking or storing it.
 - **Consider food distribution habits within households** as they do not always correspond with the needs of the individuals, particularly for pregnant women and children.
 - **Pay attention to women's time availability for care and food preparation**, resp. potential negative impacts of any measure taken on their time availability.
 - **Include men** in training and education efforts to be effective.

Guiding Principles

- Multi-sectorial approaches to nutrition:** It is necessary for positive nutrition outcomes to address malnutrition from different sectors simultaneously (health, water and sanitation, education, agriculture etc.), as single sector approaches do not work for nutrition. Improved consumption of divers' diets can only have a positive impact in combination with other measures (e.g. health to assure nutrient absorption or increase breastfeeding; WASH to reduce diarrhea and nutrient loss; education to increase nutrition knowledge, etc).
- Food System Level approach:** The growing number of countries suffering from a double burden of malnutrition (where over- and under nutrition occur in parallel) shows the importance of addressing the challenge on a food systems level, including food perception and images.
- Increase Diversity:** a) of food through selected entry points regarding supply and demand; b) of policy measures, as their influence on people's food choices, consumption frequency and thus nutritional status is not linear and straight forward.
- Monitoring nutrition outcomes:** For making programs and projects more nutrition sensitive it is important to include nutrition outcomes and define useful indicators to assure that the nutrition sensitive dimension is adequately considered in steering decisions. As many nutrition outcomes require long term observations, like reduced stunting, it is advisable to define intermediary outcomes, like improved food consumption diversity, which serves as a proxy for nutrition status of an individual (see also document on indicators for nutrition).

⁴ Hawkes 2014 , Bailey 2015, WHO 2015

Figure 1: Global Malnutrition, Source Global Nutrition Report 2015: www.globalnutritionreport.org

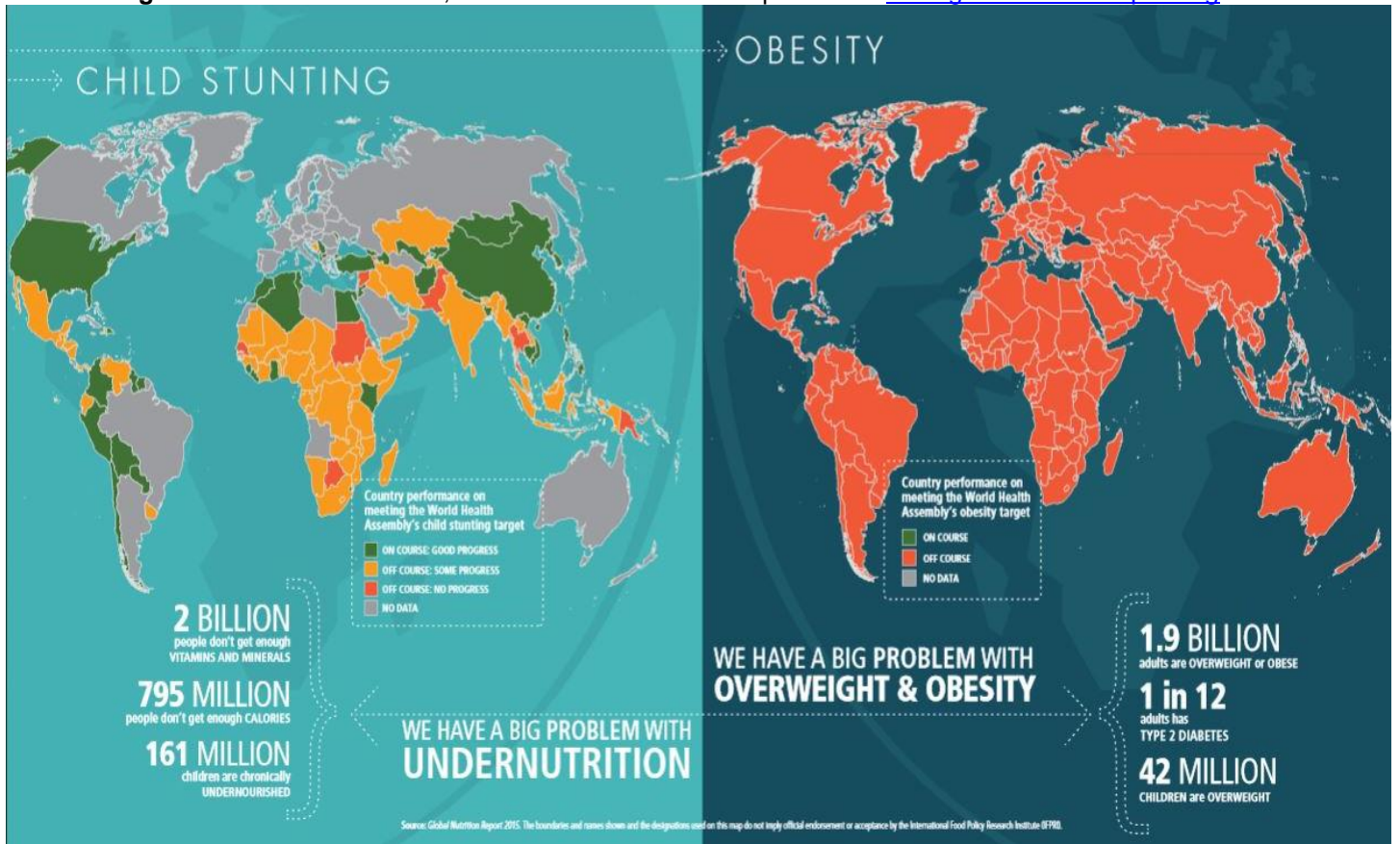


Figure 2: Causes of Malnutrition and SDG's (Source: 1000Days, adapted by SDC)

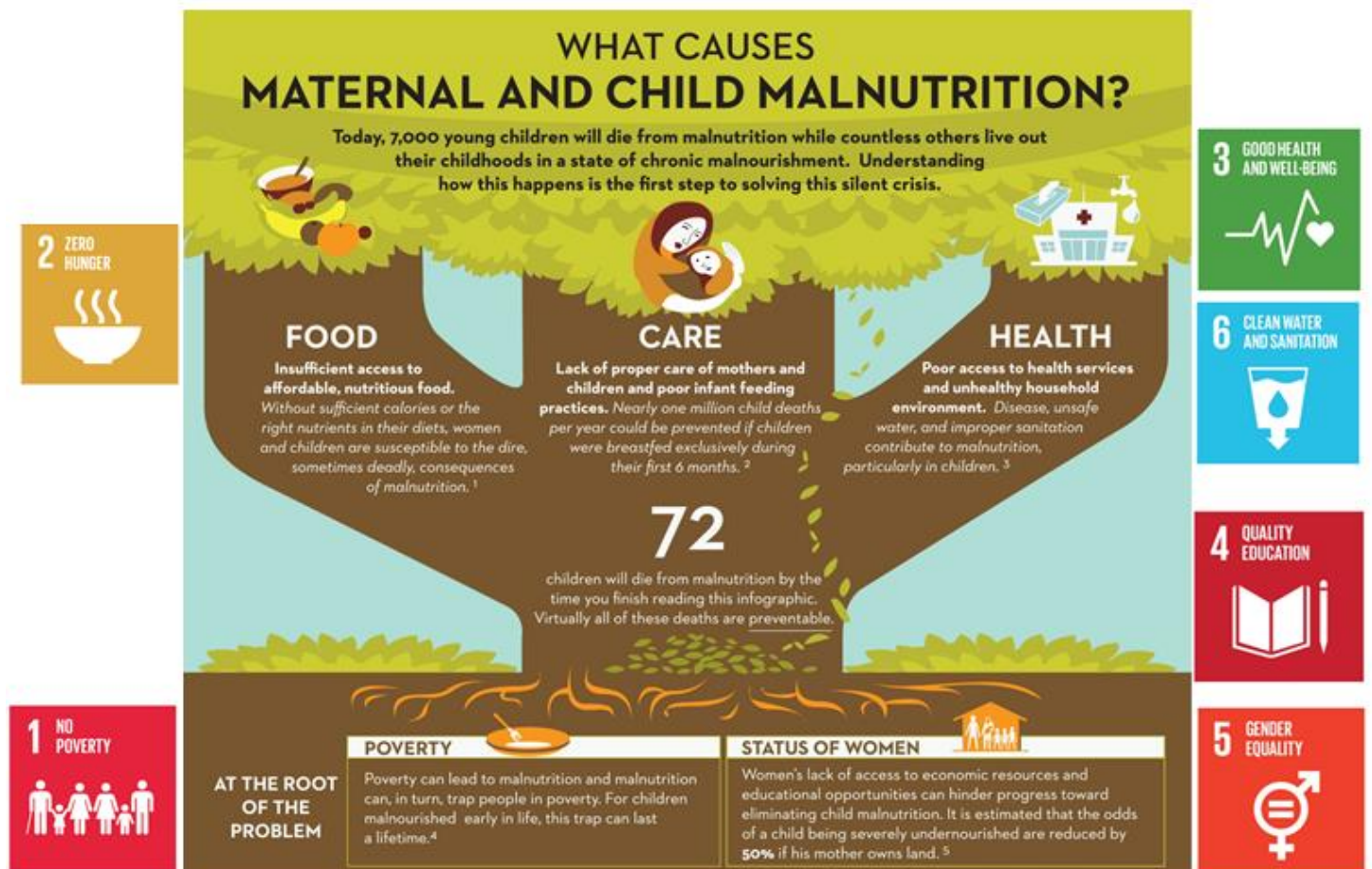


Figure 3: Nutrition and Development (Source: Micronutrient Initiative)

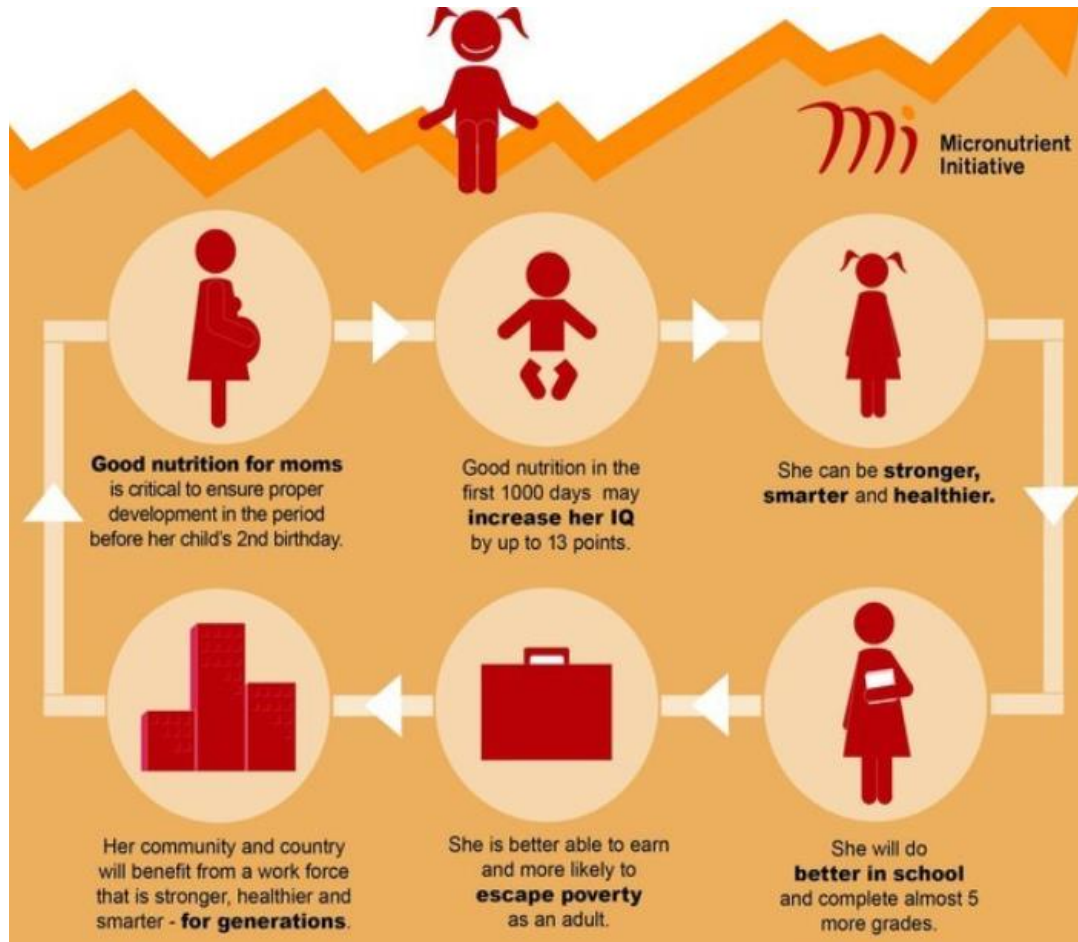


Figure 4: Food Pyramid, example for Teens (Source: Food and Nutrition Research Institute, Philippines)

