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International Collaborative Initiative

Background Brief

Reducing the Cost of a Healthy Diet to Address Malnutrition in Bangladesh

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Key Messages

01 Bangladesh has achieved considerable progress in reducing child undernutrition but continue to face challenges with micronutrient deficiencies, including vitamin A, iron, and iodine.

02 The high cost of nutritious foods, especially in rural areas, prevents many from accessing healthy diets – leading to poor dietary habits and increased risk of malnutrition.

03 While the intake of fruits and vegetables has increased over the years, it remains below the recommended daily levels for a balanced diet.

04 Factors such as climate change, agricultural productivity, income inequality, and food price volatility directly affect the affordability of nutritious foods.

05 Addressing malnutrition requires collaboration between agriculture, health, and education sectors to ensure healthy foods are accessible and affordable to all.

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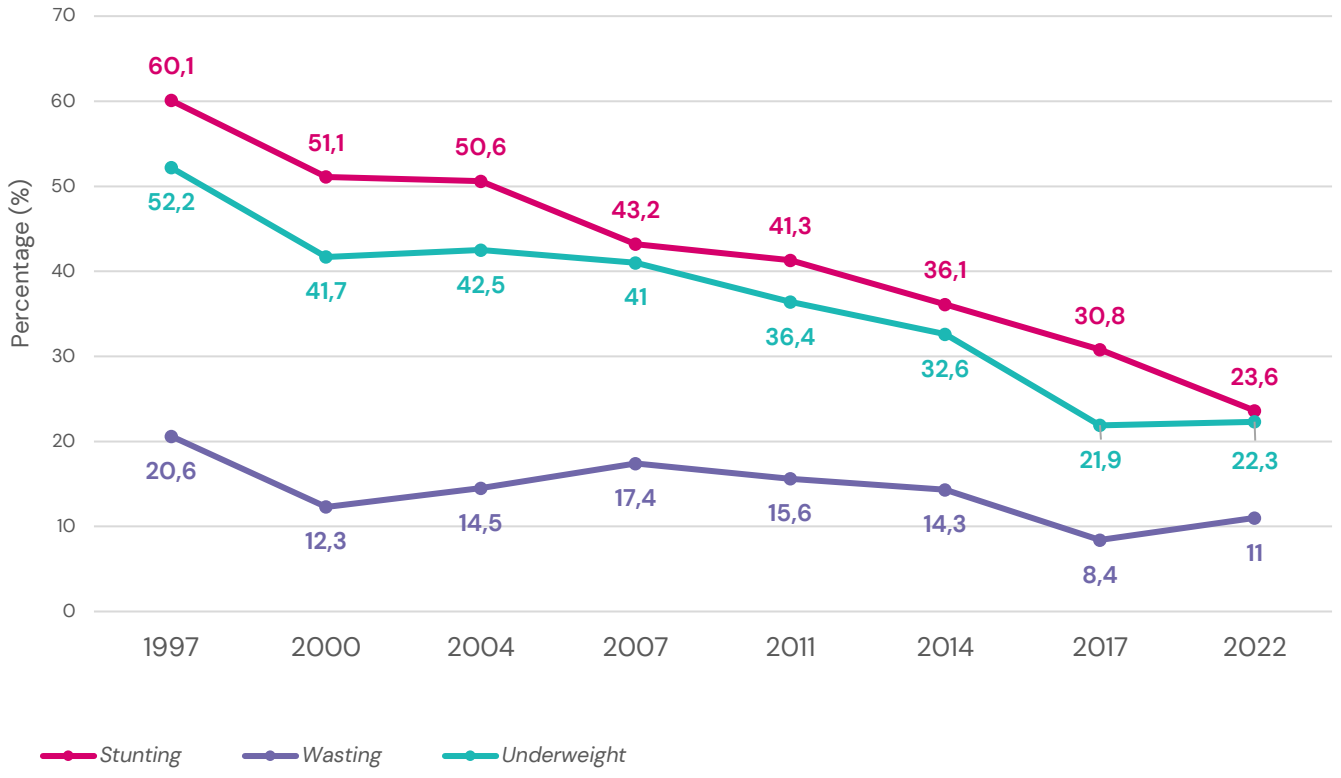
Introduction

Malnutrition, caused by an inadequate intake of nutrients, has long been a challenge in Bangladesh. After gaining independence in 1971, the country faced widespread poverty, food insecurity, and malnutrition, leading to issues such as protein energy malnutrition (PEM), vitamin A deficiency (VAD), iodine deficiency (IDD), and iron deficiency anemia (IDA). However, in recent years, Bangladesh has made significant strides in improving maternal and child nutrition. The country achieved key milestones in the Millennium Development Goals (MDGs) and is on track to meet the Sustainable Development Goals (SDGs), including commitments to international initiatives such as the United Nations Forum on Sustainability Standards (UNFSS) and Nutrition for Growth (N4G).

Image credit: IFAD/GMB Akash

According to the Bangladesh Demographic and Health Surveys (BDHS), stunting among children under five declined from 60% in 1997 to 23.6% in 2022 (NIPORT & ICF, 2023). However, despite improvements between 1997 and 2017, the incidence of underweight in this age group rose from 21.9% in 2017 to 22.3% in 2022 and wasting from 8.4% to 11%. Factors such as suboptimal feeding practices, inadequate access to healthcare, low socio-economic conditions, and environmental influences contributed to these increases. The impacts of COVID-19 further affected food security and undernutrition between 2020 and 2022, putting children at higher risk of developmental delays or death.

Figure 1: Trends in child undernutrition in Bangladesh



Women's nutritional status also demonstrated a mixed picture. While chronic energy deficiency (CED) among women dropped from 52% in 1997 to 12% in 2017 (NIPORT & ICF, 2020), obesity among women has increased: 32% classified as overweight or obese in 2017 with urban women being more affected than rural women (33% and 23%, respectively).

Bangladesh has successfully reduced VAD which was previously a major public health issue. A national supplementation program, launched in 1973, along with fortified foods and social safety nets, has helped lower the prevalence of mild and moderate VAD among preschool children by around 12% (ICDDRB, 2014; 2021). The prevalence of anemia among infants and children has also significantly declined, although it remains a concern among women – with rates increasing from 26% in 2011-12 to 30.1% in 2019-20. The country has also made progress in combating IDD, although access to adequately iodized salt remains low in rural areas.

Non-communicable diseases (NCDs), such as hypertension and diabetes, are rising in Bangladesh, linked to changing dietary patterns and lifestyle habits. Between 2011 and 2017-18, the prevalence of hypertension in adults over 35 increased from 20% to 34% among men and from 32% to 45% among women (NIPORT & ICF, 2020). Diabetes also rose slightly, with 14% of both men and women affected in 2017-18 (NIPORT & ICF, 2020). Nearly all adults (97%) aged 18-69 have at least one risk factor for NCDs, including poor diet, lack of physical activity, tobacco use, and alcohol consumption (NIPSOM, 2020).

Bangladesh has made significant progress in reducing child and maternal mortality, achieving key milestones in the MDGs. To combat hunger and malnutrition, the government has implemented various nutrition programs, such as the National Nutrition Policy (2015) and the National Food and Nutrition Security Policy (2020). However, ensuring food and nutrition security goes beyond meeting energy needs; it requires access to culturally appropriate and balanced diets.

This paper highlights the role of food affordability in addressing malnutrition in Bangladesh. Key trends and uncertainties affecting the cost of a healthy diet are identified and are used to explore future scenarios and provide key recommendations for policy intervention.

Defining a healthy and nutrient-dense diet in Bangladesh

A healthy diet, as defined by the State of Food Security and Nutrition in the World, is one that meets dietary recommendations for nutrient adequacy and long-term health, helping to prevent malnutrition and NCDs (FAO, 2023). The definition of a healthy diet varies across national, regional, and global contexts, but it is typically based on the country's food-based dietary guidelines (FBDGs), where available (Islam, et al., 2023; Dizon, et al., 2019). In Bangladesh's FBDGs, developed by the government and updated in 2020 (BIRDEM, 2013), a healthy, nutrient-dense diet includes a diverse range of foods.

The FBDGs of Bangladesh are represented by a pyramid of eight food groups: cereals, pulses, vegetables, fruits, meat/fish/eggs, milk and milk products, fats and oils, and sugar. Daily servings are specified for each group, with a focus on diversity and proportionality. This approach ensures that the recommended diet is culturally acceptable and closely aligned with actual food preferences in Bangladesh. The FBDGs also aim to promote the health and well-being of the population by emphasizing balanced intake of food groups rather than focusing solely on nutrients.

Figure 2: FBDGs of Bangladesh, 2020

Trends and challenges in fruit and vegetable consumption in Bangladesh

Fruits and vegetables are rich in dietary fiber, vitamins, minerals, and antioxidants (Slavin, J.L. and Lloyd, B., 2012), which help lower blood pressure, reduce the risk of heart disease, stroke, and certain cancers, and improve eye and digestive health. Bangladesh's FBDGs, like those of other countries, recommend consuming ample fresh fruits and vegetables (BIRDEM, 2013).

Recent data from the Household Income and Expenditure Survey (HIES) shows an increase in fruit and vegetable consumption in Bangladesh. In urban areas, per capita daily fruit intake rose from 45.2 grams in 2016 to 105.3 grams in 2022 (BBS, 2022). Rural areas saw a similar trend, with fruit intake growing from 32.2 grams in 2016 to 90.0 grams in 2022. Per capita daily vegetable consumption also increased between 2016 and 2022, reaching 201.3 grams and 202.2 grams in urban and rural areas, respectively.

Despite this progress, the average daily intake of fruits and vegetables remains insufficient. In 2022, the national per capita daily intake was 297.3 grams (BBS, 2022), well below the World Health Organization (WHO) recommendation of 400 grams.

Figure 3: Trends in fruit and vegetable intake in Bangladesh, 2010-2022

Several factors contribute to the low intake of fruits and vegetables, such as lower income, limited education, and food insecurity (Kaur, 2023; Mustafa, et al., 2021). For instance, lower-income households consume fewer fruits compared to wealthier groups. The traditional Bangladeshi diet also relies heavily on rice, which lacks the essential micronutrients found in fruits and vegetables. Additionally, cultural beliefs and misconceptions discourage the consumption of certain fruits and vegetables (Mustafa, et al., 2021).

Improving awareness through education campaigns is crucial to promote better dietary choices and increase fruit and vegetable consumption in Bangladesh.

Key challenges affecting the cost of a healthy diet

A key factor inhibiting access to safe, nutritious, and healthy foods in Bangladesh is affordability. When nutritious foods are too expensive, people often choose cheaper, less nutritious options, leading to poor diets. For low-income households, the inaccessibility of healthy foods increases the risk of malnutrition.

While Bangladesh has made strides in reducing extreme poverty, with rates decreasing from 17.3% in 2010 to 5.6% in 2022 (BBS, 2022), food insecurity remains a challenge. This is particularly the case for lower-income groups, such as day laborers, who struggle to afford quality food. Although the number of people unable to afford a healthy diet decreased from 75% in 2017 to 66% in 2021 (FAO, 2023), around 43% of households, particularly in rural areas, still cannot afford it (Islam, et al., 2023).

Estimates from 2022 showed that it costs US$3.64 per day for a person (FAO, 2023) to afford a healthy diet – a sharp increase from previous years (US$3.22 in 2020, and US$3.03 in 2017). There has also been a steady rise in the consumer price index, affecting the price of meat, poultry, legumes, and fruits. Studies show that nutrient-dense foods are often much more expensive than calorie-rich but low-nutrient options (Masters, et al., 2018), leading many to choose unhealthy alternatives. A recent study found that a 5% rise in food prices can increase the risk of wasting by 9% and severe wasting by 14% (Headey and Ruel, 2023).

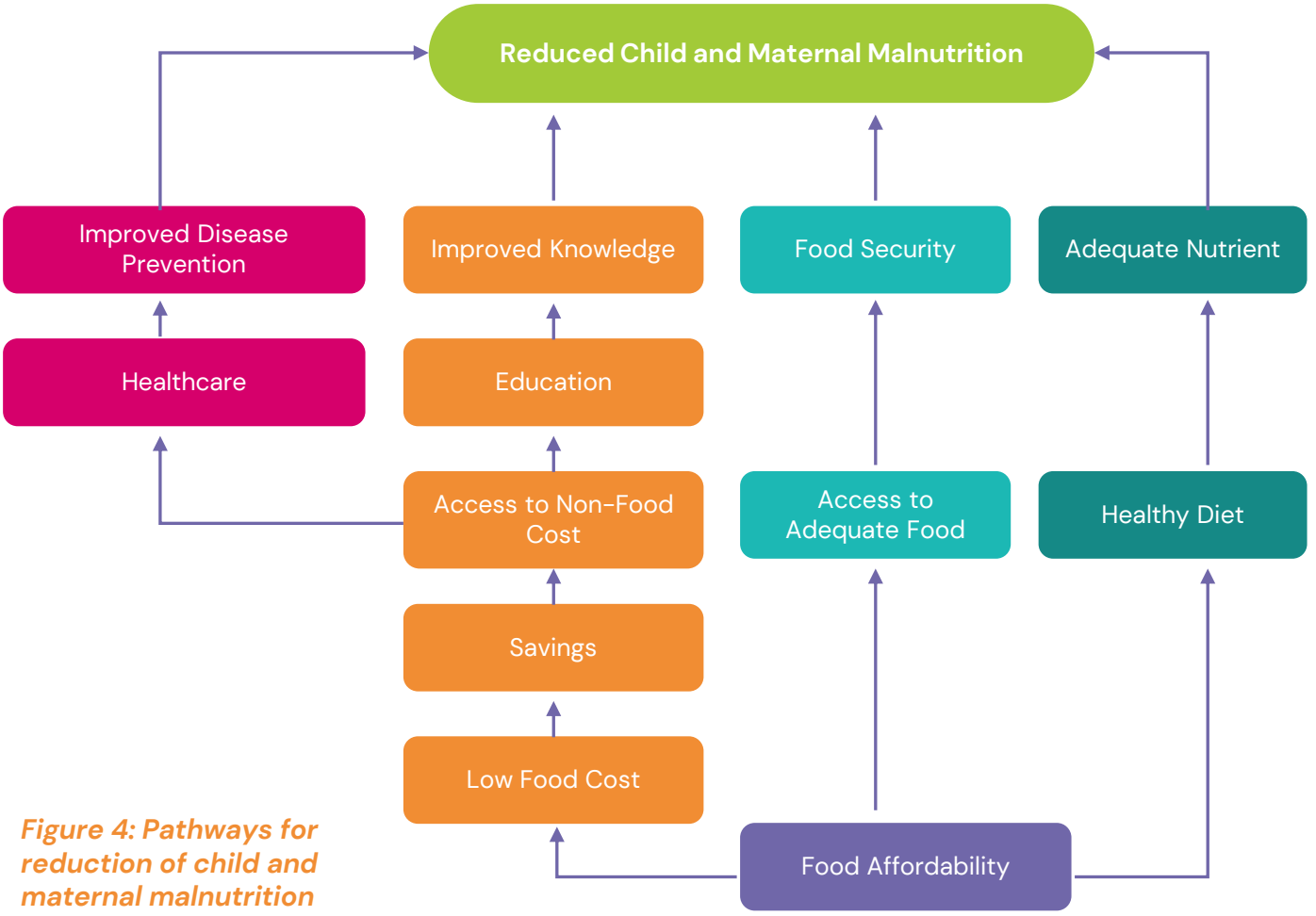


Figure 4: Pathways for reduction of child and maternal malnutrition through food affordability

Several key factors influence the cost and accessibility of nutritious food, including agricultural productivity, climate change, market dynamics, poverty, and income equality.

Agricultural productivity and climate change

Bangladesh faces increasing climate variability, with erratic rainfall and extreme weather events affecting crop yields. Rising temperatures and droughts reduce the production of staple crops like rice and wheat, and lead to more pests and crop diseases (Bebber et al., 2013). These factors increase food prices, particularly for vulnerable rural populations reliant on climate-sensitive agriculture.

Market dynamics and price volatility

Food prices in Bangladesh are influenced by supply and demand, agricultural output, trade policies, and inflation. In recent years, essential commodity prices have surged by 30-62% (Nusrat, 2022), making it difficult for many to afford nutritious foods.

Affordability and socioeconomic factors

Income inequality, unemployment, and inflation are significant barriers to food affordability. Income fluctuations and widespread poverty further exacerbate food insecurity, forcing people to rely on cheaper, less nutritious foods.

Changing dietary patterns

Dietary habits in Bangladesh have shifted toward lower-cost fast foods and processed meals over the past decade, particularly in urban areas. Addressing food price volatility and changing dietary patterns is essential to making healthy diets affordable for all.

Policy implementation and governance

Effective policies promoting food security and nutrition face challenges arising from inconsistent governance, bureaucratic obstacles, and poor accountability. Inadequate infrastructure and distribution networks in rural areas further drive-up costs and exacerbate food insecurity. Rapid urbanization and changing food preferences add complexity to policy efforts working to encourage healthier diets.

Scenarios affecting the cost of a healthy diet in Bangladesh

To conduct a scenario analysis, the most important challenges and uncertainties were first identified:

- Agricultural productivity
- Affordability and accessibility
- Climate resilience
- Changes in dietary patterns
- Equity and unemployment
- Food prices
- Policy implications and governance

These seven drivers were then placed into different combinations, resulting in four possible scenarios. These scenarios, discussed below, provide a valuable framework for understanding future food security in Bangladesh by 2050, by reflecting various potential outcomes for food demand and availability.

The four scenarios impact different stakeholders, including producers, middlemen, businesses (exporters and importers), processors, retailers, consumers, government, researchers, and input suppliers. Depending on the scenario, stakeholders may need to adapt their roles accordingly.

Scenario 1 - Optimal Health for All: Affordable Nutrient-Rich Diets

This is the ideal scenario, whereby nutrient-rich foods are affordable so all people can adopt healthy eating habits – leading to lower levels of food insecurity and malnutrition.

Consumers: Affordable nutritious foods improve health, lower rates of diet-related diseases, and reduce food insecurity, allowing consumers to save money for other needs.

Farmers: Increased demand for healthy foods boosts production and profits, although farmers may need to adopt efficient practices to maintain low prices.

Retailers: Higher sales of healthy foods may offset lower profit margins, but they will need to expand healthy food offerings to meet demand.

Policymakers: Policies supporting low food prices can improve public health but must also ensure quality and protect farmer livelihoods.

Scenario 2: High price for healthy eating (high costs, healthy eating)

In this scenario, middle- and high-income households consume a healthy diet despite high food prices. While individuals make informed choices and prioritize fresh, nutritious foods, the high cost creates barriers for low-income households, exacerbating food insecurity and health disparities.

Consumers: High food prices place a financial strain on low- and middle-income families, forcing tough spending choices and reducing access to healthy foods.

Farmers: Higher prices can increase profits for farmers producing nutritious crops and encourage investment in sustainable farming practices.

Retailers: Premium food markets may thrive, attracting health-conscious consumers willing to pay more, enhancing brand loyalty.

Policymakers: Governments may need to intervene with subsidies or food assistance programs to ensure that nutritious foods remain accessible for everyone.

Scenario 3: The paradox of choice: unhealthy eating in low food prices

In this scenario, low prices make processed, unhealthy foods more accessible. People opt for these cheap, nutrient-deficient options, leading to long-term health problems, such as nutritional deficiencies, and higher healthcare costs. This would happen due to a lack of awareness, taste preferences, cooking habits, etc.

Consumers: Low food prices encourage the consumption of cheap, unhealthy foods, leading to higher rates of obesity, diabetes, and chronic diseases. They have a lack of awareness of nutrition, limited time for cooking, limited cooking skills, taste preferences, etc. and they are influenced by advertisement and marketing.

Farmers: Farmers may prioritize high-yield, low-cost crops, reducing agricultural diversity and potentially harming the environment. They may produce limited crops having high demand.

Retailers: To make profitability, retailers may focus on low-cost processed foods of demand, sacrificing healthier options due to low demand.

Policymakers: Governments will face increased healthcare costs and may need to introduce regulations or subsidies to promote healthier diets.

Scenario 4: Crisis of nutrition (unaffordable, unhealthy diets)

The worst-case scenario occurs when high food prices lead to unhealthy eating patterns. People rely on calorie-dense, nutrient-poor foods, resulting in malnutrition and diet-related diseases. Food insecurity would rise, particularly among marginalized communities, leading to higher healthcare costs and reduced productivity.

Consumers: High prices of healthy foods push consumers toward unhealthy alternatives, increasing health disparities and diet-related diseases.

Farmers: Demand for processed foods rises, the production of high-demand crops/animals increases, and the need for diversified nutritious food production reduces.

Retailers: Processed food sales increase, boosting profits for certain food industries at the expense of health.

Policymakers: Governments will need to address the rising costs of healthy foods, support low-income households, and promote healthy eating through education campaigns. .

Recommendations For Policy Interventions

Promote climate-resilient agricultural practices: To reduce the impact of climate change on food production, Bangladesh should invest in diverse, resilient agricultural systems that can withstand environmental shocks and ensure stable food supplies.

Expand nutrition education: Consumption habits can be improved through increased public awareness about the benefits of a balanced and healthy diet. Nationwide nutrition education campaigns should target vulnerable populations. Development of healthy food choices, cooking habits, etc. should be prioritized.

Improve food infrastructure: Investments in food storage, transportation, and distribution systems are crucial to reduce the food waste and cost of perishable foods and ensure that nutritious foods are accessible country-wide all year round.

Strengthen social protection programs: Expanding social safety nets, such as food assistance and cash transfer programs, can help vulnerable households access healthy diets. These programs should be designed to prioritize nutrition and healthy diets.

Strengthen multi-sectoral collaboration: A coordinated approach involving the agriculture, health, education, and economic sectors is necessary to ensure that policies aimed at reducing malnutrition are comprehensive and sustainable. Law enforcement, maintaining regulation on food advertisement, market monitoring, taxation on fast food, subsidies for healthy foods, etc. should also be considered in the policy implementation.

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