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Investing in Nutrition Now: A Smart Start for Our Children, Our Future. Estimates of Benefits and Costs of a Comprehensive Program for Nutrition in Bangladesh, 2011–2021

Executive Summary of the PROFILES and
Nutrition Costing Technical Report

June 2012



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1. Executive Summary

Imagine Bangladesh free of the scourge of malnutrition. What will it take to get there? What would be the benefit? How much would it cost to achieve this goal? Over the past year, national stakeholders and technical experts gathered in an attempt to answer these and other questions. This report presents the results of this consultative and consensus-building process and seeks to provide a better understanding of the value of investing in nutrition and the level of investment required to improve nutrition as a means of achieving the Millennium Development Goals (MDGs) and *Bangladesh Vision 2021*¹ goals. For the period 2011 to 2021, this report presents, first, projections of the benefits of investing in nutrition in terms of gains in development outcomes and, second, the cost of providing maternal and child nutrition services at scale nationally. PROFILES,² a data-based tool that provides estimates of economic and other benefits that would result from improved nutrition, was used to project the benefits of investing in nutrition in terms of improvements in development outcomes, specifically reduced maternal and child mortality and improved economic productivity. The cost of providing maternal and child nutrition services at scale nationally was estimated by developing a national costing model for nutrition programs. The objective of this report is to share estimates that were generated from these two models to guide policy makers on the scope of nutrition interventions and costs of nutrition programming for consideration as the operational plans for the health, population, and nutrition (HPN) sector program are implemented.

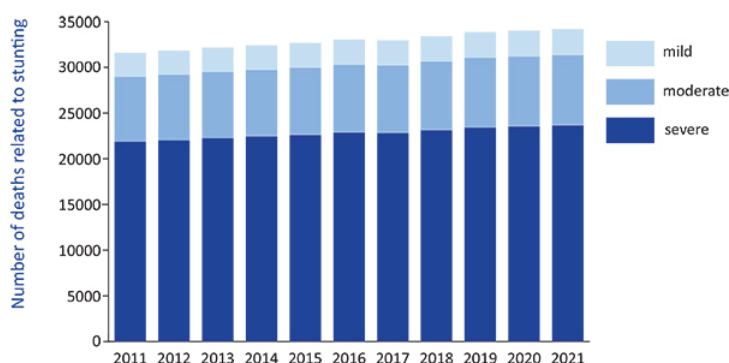
The PROFILES estimates (**Executive Summary Figures 1–6**) suggest that, over the 2011–2012 period, about 160,000 child deaths could be averted by reducing the prevalence of chronic malnutrition (stunting). Similarly, about 150,000 child deaths could be averted by reducing the prevalence of acute malnutrition (wasting).³ The cost of providing effective nutrition services at scale for Bangladesh (**Executive Summary Table 1**) is estimated in the range of Tk. 9,000–12,000 crore (US\$1.3–\$1.7 billion) for the period 2011 to 2021 (i.e., Tk. 900–1,200 crore per year [US\$130–\$170 million]). The net benefit of these investments in nutrition in terms of increased economic productivity alone exceeds Tk. 70,000 crore (US\$10 billion) by 2021. The total cost of providing nutrition services at scale is not high; the amount required for the nutrition program in an average year is only 11 percent of the total amount budgeted for the HPN sector. Overall, the amount required is small relative to, for example, the size of the proposed government budget for FY 2011–2012, which is Tk. 130,000 crore (US\$18.6 billion), of which 5.5 percent (Tk. 7,150 crore [US\$1 billion]) has been allocated to the HPN sector. To meet the required amount per year, the Ministry of Health and Family Welfare (MOHFW) could reallocate and reorganize cost centers and line items, or the government could increase its allocation for the HPN sector from 5.5 percent to 6.74 percent—an increase of only 1.24 percentage points.

¹ http://www.cpd-bangladesh.org/Policy%20Brief/sub%20folders/downloads/Vision_2021_English.pdf.

² PROFILES is an advocacy tool and process for nutrition policy advocacy that builds on a series of models reflecting current nutrition knowledge, developed and maintained by FHI 360. This work has been supported by grants from many donors as well as internal FHI 360 resources.

³ There is some overlap in the deaths associated with stunting and wasting.

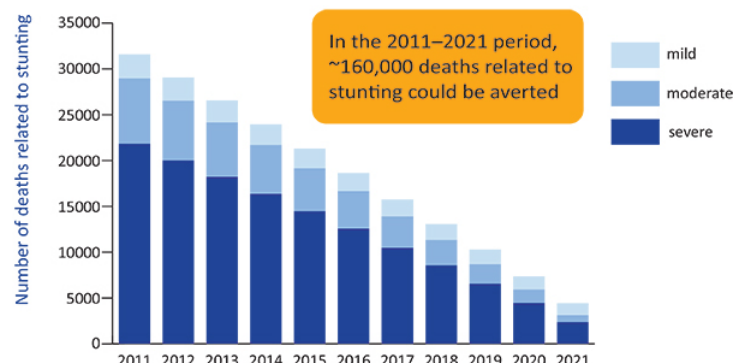
Executive Summary Figure 1.
Status Quo = Increasing* Number of Under-5 Child Deaths Related to Stunting from 2011 to 2021**



* Because of increase in annual number of births

** Mild, moderate, and severe stunting (low height-for-age)

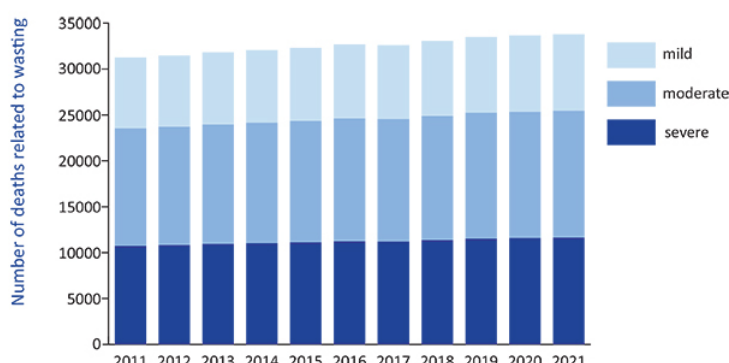
Executive Summary Figure 2.
High Coverage of Effective Nutrition Interventions = Decreasing Number of Under-5 Child Deaths Related to Stunting* from 2011 to 2021**



* Mild, moderate, and severe stunting (low height-for-age)

** In the 2011–2015 time period, ~28,000 deaths related to stunting could be averted

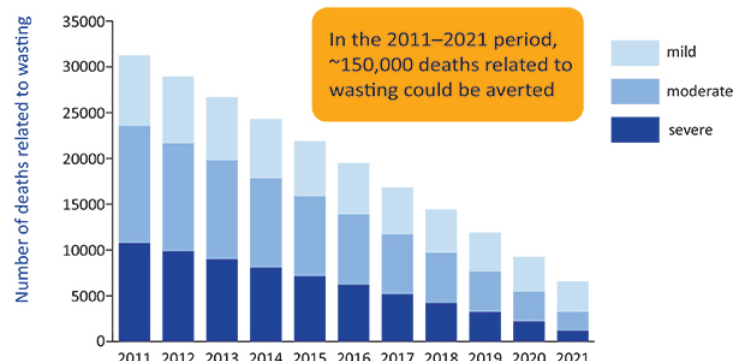
Executive Summary Figure 3.
Status Quo = Increasing* Number of Under-5 Child Deaths Related to Wasting from 2011 to 2021**



* Because of increase in annual number of births

** Mild, moderate, and severe wasting (low weight-for-height)

Executive Summary Figure 4.
High Coverage of Effective Nutrition Interventions = Decreasing Number of Under-5 Child Deaths Related to Wasting* from 2011 to 2021**



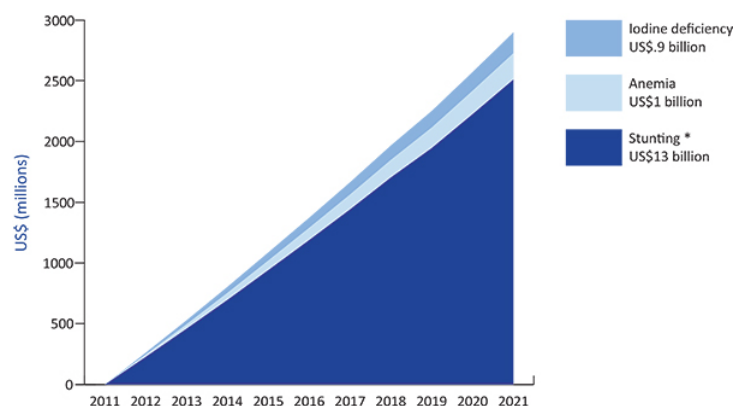
* Mild, moderate, and severe wasting (low weight-for-height)

** In the 2011–2015 time period, ~26,000 deaths related to wasting could be averted

Executive Summary Figure 5.
Saving Lives and Preventing Disabilities

	Maternal deaths averted	Perinatal deaths averted	Infant deaths averted	Child deaths averted	Permanent disabilities averted*
	IDA	IDA	LBW	VAD	IDD
2011–2015	~1,000	~30,000	~34,000	~8,000	~360,000
2011–2021	~6,000	~150,000	~230,000	~50,000	~2,000,000

Executive Summary Figure 6.
Productivity Gains by 2021



Executive Summary Table 1. Estimates of Cost for 2011–2015, 2016–2021, and 2011–2021, by Cost Center

Cost centers	Scenario 1						Scenario 2					
	Estimates of cost						Estimates of cost					
	2011–2015		2016–2021		2011–2021		2011–2015		2016–2021		2011–2021	
	Tk. crore	US\$ (millions)	Tk. crore	US\$ (millions)	Tk. crore	US\$ (millions)	Tk. crore	US\$ (millions)	Tk. crore	US\$ (millions)	Tk. crore	US\$ (millions)
Direct costs												
Social and behavior change communication (SBCC) and community nutrition promotion	722	105	1,075	156	1,797	260	722	105	1,075	156	1,797	260
Management and coordination	142	21	223	32	366	53	142	21	223	32	366	53
Systems strengthening ¹	436	63	265	38	701	102	436	63	265	38	701	102
Micronutrient supplementation ²	1,161	168	1,935	280	3,095	449	1,161	168	1,935	280	3,095	449
Targeted food supplementation of pregnant and lactating women and children under 2 among bottom three quintiles							1,128	163	1,868	271	2,997	434
Management of severe acute malnutrition (SAM) in children ³	1,827	265	1,174	170	3,001	435	1,827	265	1,174	170	3,001	435
Deworming for children aged 2–5 years	9	1	17	3	25	4	9	1	17	3	25	4
Total	4,297	623	4,689	680	8,985	1,302	5,425	786	6,557	950	11,982	1,736
Indirect costs through public-private partnership												
Food fortification	1,126	163	1,919	278	3,045	441	1,126	163	1,919	278	3,045	441

¹ System strengthening cost includes training and management information system (MIS) cost.

² Micronutrient supplementation includes iron-folic acid (IFA) supplementation to pregnant and lactating women and non-pregnant adolescents, supply of vitamin A capsules to mothers and children, supply of multiple micronutrients to children 1–5 years of age, and supply of zinc to children under 5 during treatment for diarrhea.

³ Management of SAM children includes treatment of SAM children in a health facility and a supply of ready-to-use therapeutic food (RUTF) for them.

Today, malnutrition in Bangladesh affects almost half of all preschool children and women of childbearing age. In 2007, the prevalences of underweight, stunting, and wasting among children under 5 were 41 percent, 43 percent, and 18 percent, respectively.⁴ Trends in the prevalence of malnutrition in Bangladesh indicate that over time the rate of improvement has been variable. Underweight, stunting, and wasting declined rapidly between the 1996–1997 and 1999–2000 BDHSs, by approximately 10 percent. In contrast, in the period between 1999–2000 and 2007, the decrease in the prevalence of underweight was only around 1 percent, and for stunting about 8 percent over the same period; the prevalence of wasting actually increased by about 5 percent over that period.

Malnutrition is a major cause of childhood illness and mortality in Bangladesh. If malnutrition rates were reduced significantly, the returns on improved health, well-being, and productivity would be significant, and the child mortality rate would also be reduced substantially. Reducing the prevalence of malnutrition by half by 2015 is an explicit target under MDG 1 and improved nutrition is essential to achieving MDGs 2, 4, 5, and 6.⁵ However, at the current rate of improvement in the prevalence of underweight, Bangladesh is unlikely to meet the target for MDG 1 by 2015, which will likely have an effect on the rate of progress toward reaching the other MDGs as well. One of the goals of *Bangladesh Vision 2021* is to significantly reduce malnutrition, but achieving these targets requires rapid improvements in nutritional status in Bangladesh, especially of women and children.

Investing in nutrition is smart and sound: This critical investment saves mothers' and children's lives and improves children's education outcomes, which, in turn, boosts economic productivity. For Bangladesh, investing in nutrition today will result in short-, medium-, and long-term benefits. Increasing investment in nutrition now will enable Bangladesh to achieve and exceed all five of the country's MDGs and fulfill its *Vision 2021* goals. The results presented in this report show that investing now in nutrition programming will lead to a significant improvement in nutrition indicators, which, in turn, will result in substantial returns in terms of development outcomes in the future. The cost of this investment is feasible for Bangladesh over the next decade. Increasing health sector expenditure by a fraction and reallocating resources within existing funding over the next decade can ensure that Bangladesh will be a country free of the scourge of malnutrition in the near future.

As the Government of Bangladesh (GOB) begins the implementation of its next Health, Population, and Nutrition Sector Development Program (HPNSDP), it is hoped that the following recommendations, based on the analyses presented in this report, will be considered. These recommendations have been grouped into three sets. The first presents recommendations that are based on the results of the PROFILES and costing analyses. The second and third sets support the results presented in this report and focus on the enabling environment that would be needed to effectively implement nutrition services at scale, which is essential to ensuring reductions in the prevalence of chronic and acute malnutrition in Bangladesh.

⁴ NIPORT, Mitra and Associates, and Macro International. 2009. *Bangladesh Demographic and Health Survey 2007*.

⁵ MDG 2 refers to achieving universal primary education. MDG 4 refers to reducing child mortality. MDG 5 refers to improving maternal health. MDG 6 refers to combating HIV/AIDS, malaria, and other diseases.

Results-Based Recommendations

The PROFILES estimates show that while there are many nutrition problems, because the prevalences of chronic and acute malnutrition are high in Bangladesh, implementing effective nutrition interventions that will target and reduce these two more intractable forms of malnutrition will result in the greatest benefit—in terms of significant reductions in child mortality and gains in economic productivity mediated through improved education outcomes resulting from improved nutrition. This suggests that the next nutrition program should focus on these two nutrition problems and, because evidence shows that the best window of opportunity to intervene is in the first 1,000 days, that effective nutrition interventions focus on this period.

- Focus nutrition efforts on the more intractable nutrition problems.** The gains that could be achieved through effective implementation of health and family planning interventions at scale have largely been achieved. Achieving the next level of improvement will likely depend on and benefit from greater investment in and focus on the implementation of effective nutrition interventions. Sustained improvements across all three HPN subsectors will depend on harnessing the synergy between these three subsectors. Within nutrition programming itself, efforts should focus on tackling adolescent nutrition, maternal nutrition, low birth weight (LBW) (less than 2,500 g at birth), stunting, and acute malnutrition, and on ensuring that nutrition services provide a continuum of care that crosses the spectrum from prevention of chronic malnutrition to treatment of acute malnutrition.
- Focus nutrition programming on the first 1,000 days.** It is now well established that the period from pregnancy until a child turns 2 years of age is the window of opportunity for sustained reductions in the prevalence of malnutrition. In Bangladesh, this implies that nutrition programming should focus on four key areas: promoting adolescent nutrition and delaying marriage and first pregnancy to reduce the prevalence of LBW and to ensure adequate maternal nutrition at the onset of pregnancy; improving maternal nutrition during pregnancy to reduce the prevalence of LBW, and improving maternal and newborn care to improve birth outcomes; promoting exclusive breastfeeding in the first 6 months followed by appropriate and timely infant and young child feeding (IYCF) practices from 6 to 24 months to prevent chronic malnutrition; and preventing and treating moderate and severe acute malnutrition in children under 5.

The costing results provide an estimate of the cost of providing nutrition services at scale for Bangladesh. While the amount needed per year for nutrition services is within the means of the national budget, it is an increase over the level of funding nutrition has received in the past. This increase is needed to deliver results in reducing malnutrition in Bangladesh. Not only is the nutrition subsector under-invested, the HPN sector as a whole needs to be adequately funded to both deliver a return on that investment in each subsector and to reap the benefit of the synergy and efficiency gained by investing in each subsector.

- Increase investment in nutrition as a subsector.** Increasing resource allocation to the nutrition subsector in tandem with efforts to strengthen integrated implementation of health, family planning (FP), and nutrition services at scale will help ensure that the nutrition subsector can achieve its stated targets.

- **Increase allocation for health expenditures from the national budget.** Adequate resource allocation for each of the three HPN subsectors will be important for further improvements in health, FP, and nutrition. The synergy across the three sectors working together in an integrated and coordinated manner will also result in greater cost-efficiency over the long term. Increasing resource allocation for the health sector as a whole can ensure that the nutrition subsector will have adequate resources to achieve the stated targets.

Creating an Enabling Environment for Improved Nutrition

Program-Based Recommendations

One issue that stakeholders reflected on throughout the process of developing the results presented in this report was how nutrition services should be implemented at scale. Three broad areas were identified; they focused on developing a plan for phasing implementation at scale, strengthening supervision and monitoring and evaluation of nutrition services, and revising job descriptions of government health sector providers to reflect the integration of nutrition.

- **Develop a plan for phasing the implementation.** As scaling up of nutrition services will likely take some time, it is recommended that the GOB develop a plan for phased implementation, selecting pilot upazilas for the first year to launch services and capture lessons learned for moving forward. For the purposes of costing, it was assumed that the government would phase the scale-up of nutrition services, starting with providing services in 100 upazilas in Year 1, 204 upazilas in Year 2, and the remaining 204 upazilas in Year 3, such that by Year 3 nutrition services would be provided at scale across the country. Prioritizing upazilas in the first phase should take into account various factors, including malnutrition prevalence, geographic considerations, and existing infrastructure and personnel, among others.
- **Strengthen supervision, monitoring, and evaluation.** Effective supervision, monitoring, and evaluation will be important for delivering quality service and ensuring accountability among managers. Clear roles and responsibilities on nutrition integration for managers and each tier of staff will be essential to ensure effective implementation and oversight of integrated nutrition services. The current Director General Family Planning (DGFP) and Director General Health Services (DGHS) management information systems (MIS) and related reporting forms should be revised and updated to include key nutrition indicators to track progress on nutrition outcomes. At each level of service provision, staff should be adequately trained on reporting and collecting nutrition-related data. This includes community volunteers and community service providers (CSPs) in the community clinics (CCs), but also higher-level staff in the upazilas and districts.
- **Revise job descriptions and reallocate staff to positions that allow them to focus on nutrition.** Implementing the nutrition component through the HPN sector will require some changes to the existing service delivery structure, which also entails changes to the roles and responsibilities of personnel and service providers working in the HPN sector at different levels. Job descriptions should be revised to clarify the roles and responsibilities for each tier of staff in integrating nutrition in their day-to-day work. Revised job descriptions should be clear on what is required by position in

integrating nutrition and how every staff member will be held accountable for fulfilling these duties.

Policy-Based Recommendations

Part of having an effective enabling environment for the provision of nutrition services at scale is to have a policy environment that clarifies and guides government and nongovernment stakeholders on the expected results of nutrition interventions and that provides a framework with target outcomes, approaches, and target populations to be reached. As such, the three policy-based recommendations to support the scale-up of effective nutrition services are to develop an updated National Nutrition Plan of Action for Bangladesh, to develop a harmonized social and behavior change communication (SBCC) strategy and communication plan for nutrition, and to convene a high-level multisectoral steering committee within the GOB to provide oversight and guide the scale-up and implementation of nutrition services.

- **Develop an updated, evidence-based National Nutrition Plan of Action for Bangladesh.** The last update to the National Nutrition Policy was conducted in 1997. Since that time, the nutrition situation in Bangladesh has evolved, as has the field of nutrition itself. As such, a critical first step to guide both the GOB and its key partners, including international and local nongovernmental organizations (NGOs), is the development of a new National Plan of Action (or Policy) for Bangladesh. Given the efforts that are under way to implement a new national program for nutrition, through the National Nutrition Services (NNS), such a plan of action is essential to guide and build synergy between policy makers, program managers, and implementing partners in their efforts to improve the nutrition situation of Bangladesh. Such a document would strengthen the GOB's position by laying out its vision for the country in terms of being free of malnutrition, and it would identify a roadmap of how the GOB and its partners can better coordinate and leverage each other's resources to achieve this central goal of eradicating malnutrition. Without such a plan of action, the current efforts under way to tackle malnutrition can easily be lost.
- **Develop an SBCC strategy and communication plan linked with the National Nutrition Plan of Action.** In order to maximize the effectiveness of SBCC in Bangladesh, the GOB and implementing partners should have a unified and harmonized approach to SBCC and, based on that approach, develop a communication plan. A consultative workshop with the GOB and its partners to develop a comprehensive SBCC strategy, which would align with the priorities and outcomes outlined in the National Nutrition Plan of Action for Bangladesh, is needed. This process would focus on coordinating activities and resources for a multilayered SBCC approach, and creating linkage and reinforcing messages between existing and needed nutrition SBCC projects and campaigns. This would ensure less duplication of effort, greater harmonization of messaging, and increased synergy between SBCC activities, and would ensure that all stakeholders working on nutrition are “speaking the same language” in promoting key nutrition behaviors. In addition, a communication plan should be developed that addresses the four critical areas in the lifecycle approach: adolescents; pregnancy and birth outcomes; breastfeeding, IYCF, and the prevention of chronic malnutrition; and severe acute malnutrition (SAM) and moderate acute malnutrition. The communication plan developed collaboratively would specify target audiences, the desired change for each audience, barriers

inhibiting that change, communication objectives that address barriers, strategic approaches, key messages, channel mix (e.g., interpersonal, community-based, and mass media), activities, and materials.

- **Form a high-level multisectoral committee.** Effectively implementing a comprehensive nutrition program will involve several sectors, particularly health and family welfare, local government and rural development, education, information, and food and agriculture. As such, a high-level committee should be formed, preferably with the prime minister or the finance minister as the chair. This committee would establish the overarching agenda and guidelines for each sector to integrate nutrition, allocate the required resources, and monitor the performance of each at regular intervals. A committee at this level will promote high-level collaboration and dialogue across the sectors, which will further cultivate shared responsibility for nutrition for Bangladesh. It will also enable representatives from each of the sectors to resolve any issues that may arise in the course of implementation.

