

Breakout Nation: The Nutrition Transformation of Bangladesh

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ABSTRACT Bangladesh has not only become the second-fastest growing economy in South Asia, it has also made significant headway in reducing malnutrition. This success owes, in part, to nutrition-sensitive interventions, including provision of diversified foods, improved sanitation, and women's empowerment. The country's strategy of a multi-sector approach that scales up health and nutrition programmes for women, in particular, has shown consistent results. This brief examines Bangladesh's successes in improving nutrition and overall health outcomes, and its progress towards the UN's Sustainable Development Goals (SDGs). It highlights the strategies that have worked and underscores the targets yet to be achieved.

Attribution: Shoba Suri, "Breakout Nation: The Nutrition Transformation of Bangladesh", *ORF Issue Brief No. 323*, November 2019, Observer Research Foundation.

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ISBN: 978-93-89622-08-9

ISBN Digital: 978-93-89622-09-6

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INTRODUCTION

Over the past few decades, South Asia has significantly improved its performance indicators in arresting undernutrition. Bangladesh, in particular, has made considerable progress in reducing undernutrition through scaling up nutrition-sensitive interventions like education and access to healthcare.¹ Bangladesh's progress in this sector has set a positive trend for other nations in the region, especially India.

Since the early 1990s, Asia has been home to nearly three-fourths of the world's poor.² The consequences of poverty on children are well reflected in the high percentage of children who were stunted, wasting, and underweight in the region in 1990 (Table 1). One-third of children under the age of five in developing countries were underweight, in contrast to more than half in South Asia. The prevalence of underweight children widely varied within South Asia, with Bangladesh topping the list at 65.8 percent, followed by India (60.8). Wasting was prevalent in 17 percent of South Asian children, with disparities among Asian countries. Here again, three South Asian countries — India (18.9

percent), Bangladesh (15.5 percent) and Sri Lanka (12.9 percent) — contributed to the 56 percent of wasted children across Asia. Stunting prevalence was higher than underweight and wasting, with 41 percent in developing countries and a high 60 percent in South Asia. These numbers have improved over the years, but persistent problems indicate the need for deeper analysis of the nature of undernutrition in the region.

The underlying factors³ for child undernutrition in Bangladesh include household food insecurity, poor healthcare services, and unhealthy household environments. Gender influences these underlying factors and affects both food security and caregiving. Water, sanitation, and health facilities influence the environment where children are exposed to infections and risk suffering undernutrition. Over the years, Bangladesh has made remarkable progress in its food availability and nutrition-sensitive interventions for access to clean drinking water and sanitation, infant and child mortality, immunisation coverage, and school enrollment. It needs to further mainstream the developments in the agriculture and health sectors for improved nutrition outcomes.⁴

Table 1. Percentage of Wasted, Stunted and Underweight Children under five in 1990

Region	Wasted	Stunted	Underweight
Developing Countries*	9	41	34
East & South East Asia	5	33	24
South Asia	17	60	58

* Developing countries include Sub-Saharan Africa, East & North Africa, South Asia, East and Southeast Asia, Latin America and Caribbean

Source: Adapted from the FAO's Sixth World Food Survey

According to *Sustainable Development Goals Progress Report 2018*,⁵ Bangladesh has shown outstanding progress in the areas of poverty alleviation, ensuring food security, gender parity in primary and secondary level education, lowering infant and under-five mortality rate and maternal mortality ratio, improving immunisation coverage, and reducing the incidence of communicable diseases. Climate change poses a major threat to achieving the WHO's global nutrition target 2025, with a direct link to stunting in children, caused by decrease in food availability and reduced resilience among the vulnerable population. According to the World Bank,⁶ climate change could accentuate poverty and inequality in South Asian countries. A study⁷ on the impact of climate-related shocks and stresses on nutrition and food security in Bangladesh conclude that flood events are associated with wasting and drought, with a rise in stunting.

The 2030 Sustainable Development Goals seek to end hunger and achieve food security and promote sustainable agriculture. This aims

to reduce stunting among children and provide access to food through sustainable food systems. Bangladesh has been a frontrunner in achieving the Millennium Development Goals (MDGs) way ahead of 2015, and has strategies in place to achieve the SDGs. The progress is attributed to strong policies and programmes that promote access to universal education and quality maternal and child health services. However, challenges of high food insecurity, gender parity, and natural disasters need to be overcome to achieve the goals.

POVERTY, FOOD SECURITY, AND NUTRITION

A recent World Bank report⁸ shows sharp economic slowdown in South Asia due to a drop in domestic consumption. However, of all the countries in the region, Bangladesh (8 percent) and Nepal (7 percent) have shown upward growth projection as compared to India (6 percent), whose growth has dropped drastically. Table 2 summarises the GDP growth in South Asia along with projections for 2020-21.

Table 2. GDP growth in South Asia

Country	2018	2019	2020	2021
Afghanistan	1.8	2.5	3.0	3.5
Bangladesh	7.9	8.1	7.2	7.3
Bhutan	4.6	5.0	7.4	5.9
India	6.8	6.0	6.9	7.2
Maldives	6.7	5.2	5.5	5.6
Nepal	6.7	7.1	6.4	6.5
Pakistan	5.5	3.3	2.4	3.0
Sri Lanka	32	2.7	3.3	3.7

Source: Adapted from World Bank Report 2019, 'Making Decentralization Work'

Bangladesh, with a population of approximately 163 million, is one of the world's most densely populated countries. The country has made progress in reducing poverty from 34.8 percent in 2000 to 14.8 percent in 2016. It also has a developing market economy with a growth of 7.3 GDP, owing to garments exports and domestic agricultural sector.

Bangladesh ranks 88th out of 117 countries in the 2019 Global Hunger Index (GHI), and the share of its undernourished population is at 14.7 percent in 2016–2018.⁹ With a score of 25.8, the nation suffers from a serious level of hunger, even as numbers have improved over the decades. What is even more remarkable is the manner in which Bangladesh has pulled itself out of being a food-deficit country in the 1970s; today the country has food production at pace with its population growth.

The significant advancement in child nutrition in Bangladesh is attributed to its steady economic growth. The GHI indicates robust economic growth and attention to 'nutrition-sensitive' sectors such as education, sanitation, and health as being the key to Bangladesh's success.¹⁰ India, on the other hand, continues to grapple with a high rate of undernutrition.

The decline in stunting, for example, has been more significant in Bangladesh—from 58.5 percent in 1997 to 36 percent in 2014. In India, there has been a more marginal improvement over the same period, for both stunting (52 to 38.4 percent) and underweight (53.4 to 36 percent).¹¹

Bangladesh has also reduced stunting prevalence in the last three decades. However,

there are still 5.5 million (36 percent) stunted children under the age of five (36 percent), and 14 percent children suffer from wasting. Evidence¹² also suggests that over 70 percent of Bangladesh's workforce was stunted in childhood, which has resulted in enormous economic costs to the nation. Undernutrition leads to long-term effects, including cognitive and growth deficits and a drop in immunity to infections. According to one study,¹³ 80 percent of the world's undernourished children are from only 20 countries, including Bangladesh.

To add to the burden of malnutrition in Bangladesh, 42 percent of women in the reproductive age are anaemic and 19 percent are underweight, which has lasting effects on future pregnancies, and is one of the leading causes for the high rate of low-birth weight babies.¹⁴ The situation worsens when infants receive inadequate diets. According to the World Health Organization (WHO), an unbalanced diet and lack of food (other than mother's milk), is directly linked to high rates of stunting, excessive weight, and death in children under five. Adolescent pregnancies and being underweight further increase both the risk of neonatal deaths and burden of low birth weight (23 percent). It is therefore important to break this intergenerational cycle of malnutrition. The first 1,000-day period from conception to two years of age provides a critical window of opportunity to prevent childhood stunting and obesity problems later in life. Exclusive breastfeeding, long considered the best form of nutrition for newborn babies, averages 42 percent globally whereas Bangladesh¹⁵ averages at 55 percent on exclusive breastfeeding and children who begin complementary feeding at 6 months is

65 percent. However, only 23 percent of children are fed minimum meal frequency and from 4+ food groups.

PROGRESS TO DATE: NUTRITIONAL OUTCOMES

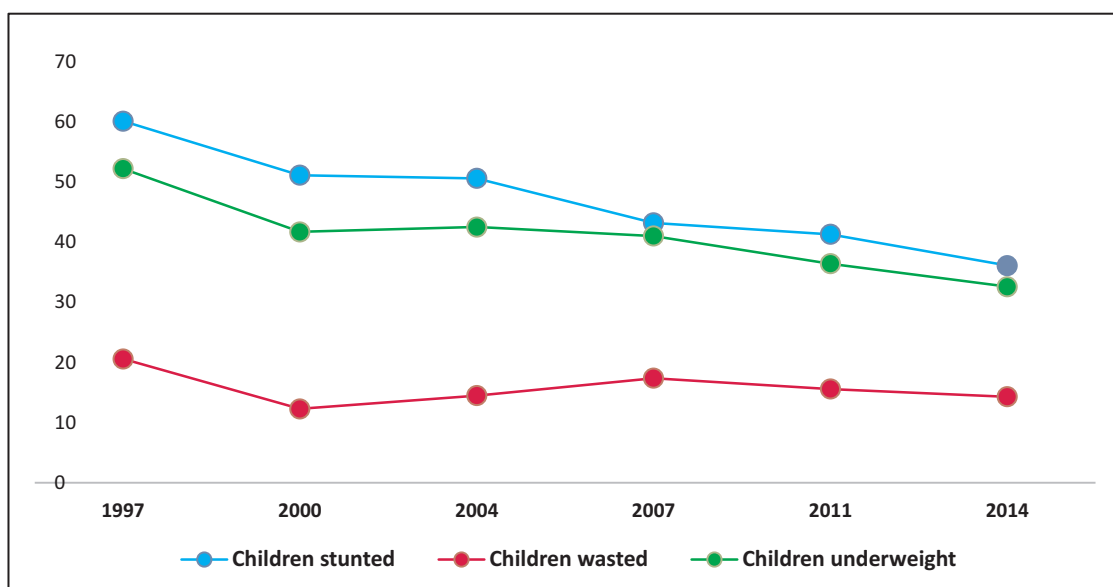
Figure 1 indicates the trends in the prevalence of malnutrition in Bangladesh over the years. The trends indicate massive decline over the two decades in children being stunted and underweight.

Stunting: There has been a steady decline in stunting among children in Bangladesh under five at the rate of 1.4 percentage per years; and yet, 36 percent of the nation’s children are stunted. The prevalence is high among children aged less than two years, indicating poor infant feeding and hygiene practices. There is a higher incidence of stunting in children in rural areas (38 percent) as compared to urban areas. The prevalence of stunting tends to increase more than twofold in parallel with maternal education. Stunting

is at 47 percent for mothers with no formal education, and drops to a low of 18 percent with mothers who have received a secondary education. Stunting also shows a steady decline with increase in household income — with 19 percent in the highest quintile and a high of 49 percent in the lowest wealth quintile. There is regional/divisional disparity (Figure 2) in stunting rates ranging from high of 50 percent in Sylhet, much above the national average, to a low of 28 percent in Khulna.

A recent study¹⁶ on the prevalence of stunting across regional divisions of Bangladesh shows reduction in stunting across divisions — except Sylhet. The stunting has been on the higher side in Sylhet, 61 percent in 1996-97 to 49.6 percent in 2014, followed by 42 percent in Barisal and 41 percent in Chittagong. Dhaka was the only division with a 10 percent decline in stunting from 2011 to 2014, contributing to the overall reduction in stunting for Bangladesh. The regions/divisions of Bangladesh have distinct features —

Figure 1: Malnutrition Trends (1997-2014)



Source: Demographic Health Survey, <https://dhsprogram.com/Data/> / @Observer Research Foundation's India Data Labs

characterised by areas with frequent flooding, natural disasters, and hilly terrains — thus affecting the availability and accessibility of food. An earlier study¹⁷ cites accumulation of wealth, improved parental education, and nutrition sensitive interventions of sanitation and health as important contributors in the reduction of malnutrition.

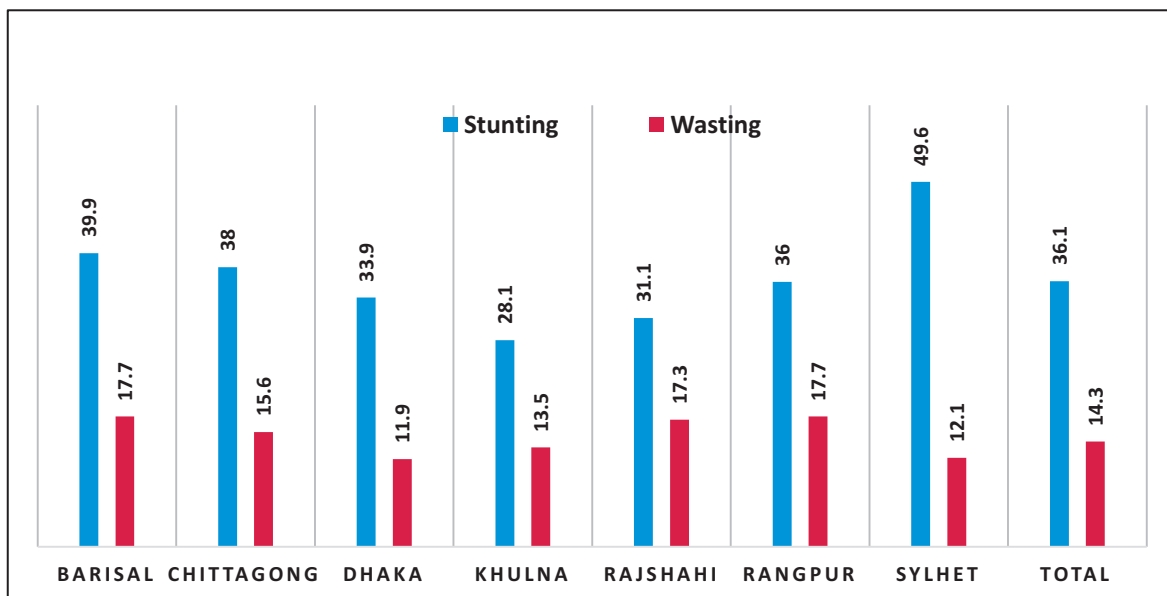
Wasting: According to WHO/UNICEF,¹⁸ wasting is high at 14 percent in Bangladesh. The wasting prevalence has not shown much decline in the past two decades (Figure 1) — a slight improvement was observed in 2014. About 2.2 million children under five suffer from wasting and evidence¹⁹ suggests that a school feeding programme, along with school enrollment, can improve children’s diets. Unlike stunting, there is no difference in wasting rate across the wealth quintile, ranging from 11-13. (Figure 2).

Underweight: The decline in rates of underweight children is similar to stunting, as

is evident from Figure 1. According to a cross-country study,²⁰ Bangladesh has had the fastest reductions in underweight and stunted children in the 1997-2007 period. However, with only 23 percent children aged between 6-23 months consuming a minimum acceptable diet, and a lack of availability of food — there is a risk of increasingly underweight children.

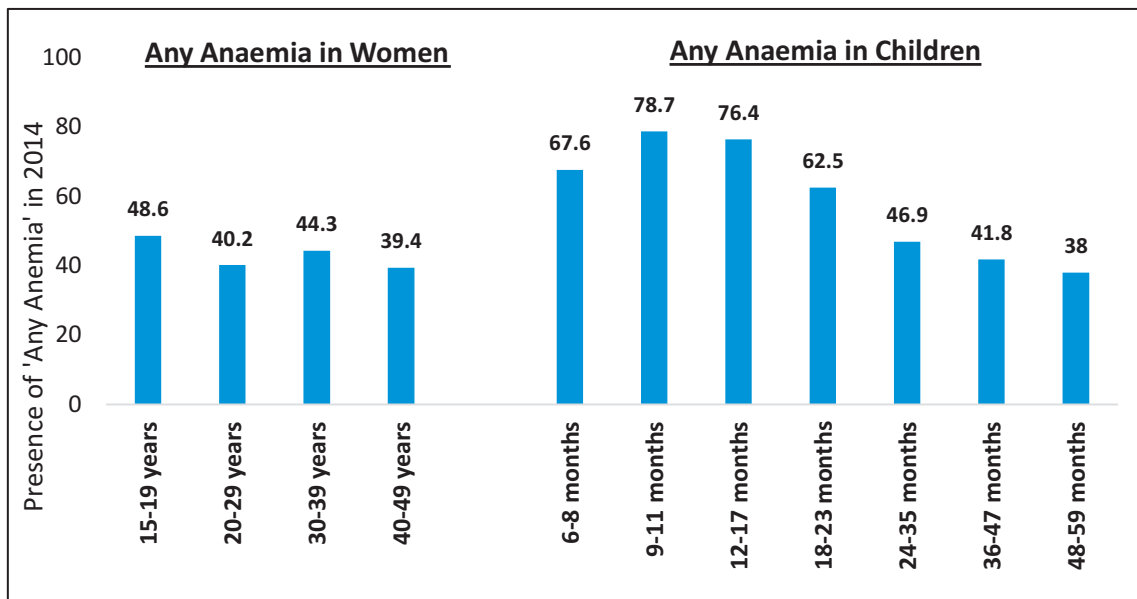
Anaemia: More than half of children under five (51 percent) are anaemic. A study²¹ suggests that iron deficiency is a major cause of anaemia in children, followed by a deficiency of vitamin A (21 percent), zinc (45 percent), vitamin B12, and folate. Anaemia is high in children under the age of one (79 percent) and pregnant women. 42 percent of women in their reproductive age (15-49 years) are anaemic and this increases to 50 percent in pregnant women. Data indicates a deficiency of 22 percent (Vitamin B12) and 9 percent (folate) in non-pregnant/non-lactating women. Figure 3 highlights the prevalence in

Figure 2: Stunting & Wasting across regions/divisions of Bangladesh



Source: Bangladesh Demographic and Health Survey 2014

Figure 3: Presence of 'Any Anaemia' in 2014



Source: Demographic Health Survey, <https://dhsprogram.com/Data/> @Observer Research Foundation's India Data Labs

anaemia across age groups in children and women.

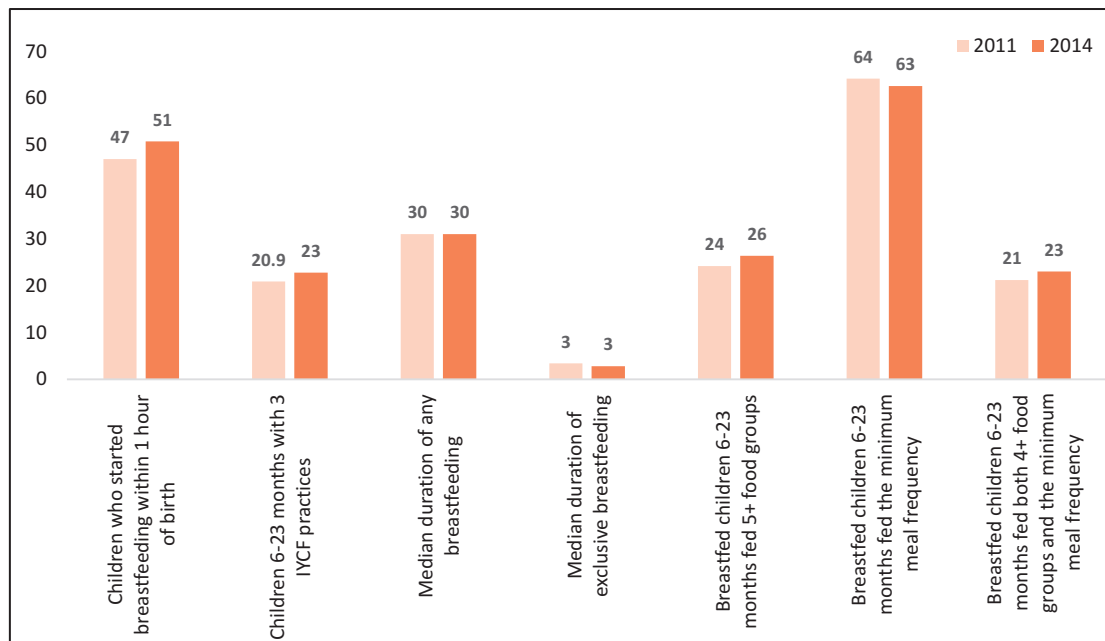
Maternal Malnutrition: Thirty-one percent of adolescent girls (15-19 years) and 19 percent of women (15-49 years) in Bangladesh are underweight, owing to poor maternal nutrition. This is contributing to an intergenerational cycle of malnutrition and poverty. Adolescent pregnancies are also associated with increased risk of stillbirths and neonatal deaths.²² Maternal undernutrition and anaemia underlies the increased risk of low birth weight (23 percent) and subsequent stunting or wasting in children. On the other hand, obesity, or being overweight in 24 percent women of reproductive age (15-49 years), is a growing concern.

Maternity benefits are important for good health and nutrition for women after childbirth and also help establish exclusive breastfeeding. Bangladesh²³ provides six months of paid maternity leave to women

working in the public sector. While there is no provision for paternity leave or breastfeeding breaks, a breastfeeding room in the workplace is mandated. Unfortunately for the women in the private sector, in their case, this provision depends on the employer's initiative. At present, there seems to be no provision for nearly 80 percent of women who work in the unorganized sector,²⁴ primarily in garment factories.

Infant and Young Child Feeding: Figure 4 indicates child nutrition practices. Exclusive breastfeeding at 0-5 months at 55 percent has dropped from 64 percent in 2011. Only half of all children in Bangladesh are exclusively breastfed and this contributes to the high rates of undernutrition. The early initiation of breastfeeding is at 51 percent with 27 percent receiving pre-lacteal feed. The prevalence is higher in rural areas (53 percent) than urban (47 percent) for early initiation and pre-lacteal feeding practice. The median duration of breastfeeding is estimated at 30 months.

Figure 4: Status of Child Nutrition



Source: Demographic Health Survey, <https://dhsprogram.com/Data/> @Observer Research Foundation's India Data Labs

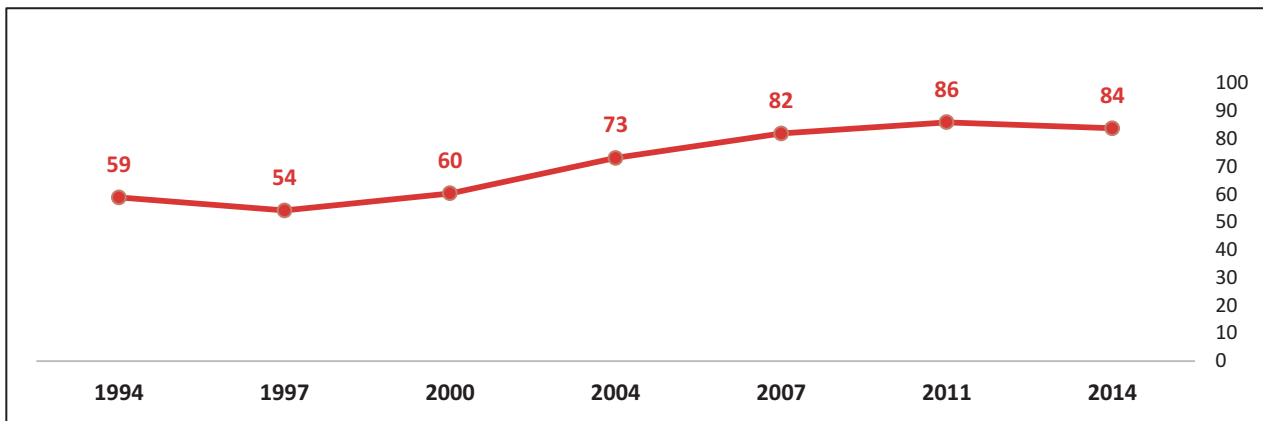
According to national data, the bottle-feeding rate of 14 percent is showing a decreasing trend over the years. Though 65 percent children between 6-23 months are introduced to complementary feeding, the minimum dietary diversity is only 23 percent. Only one-fourth of children receive a minimum acceptable diet with foods from 4+ food groups and frequency. The infant and young child feeding practices show variation in rural and urban communities. Sub-optimal feeding practices can increase risk of illness — leading to impaired growth and development. Studies²⁵ suggest lack of knowledge, time, and resources to the low rates of breastfeeding and complementary feeding, especially during floods. Improved education²⁶ on complementary feeding along with behavioural change is necessary to improve feeding practices. It is also important to improve hygiene in calamity-prone areas to reduce morbidity related to poor feeding.

PROGRESS TO DATE: HEALTH OUTCOMES

Recent evidence suggests a gradual decrease in neonatal, under-five child, and maternal mortality in Bangladesh over the past two decades. A sustained decline in this rate is key to achieving the target of SDG 3 — ‘To ensure healthy lives and promote well-being for all at all ages.’

Child Health: There has been a rapid decline in the under-five mortality rate in Bangladesh from 1990 to 2011, and slow decline in case of infant mortality and neonatal mortality rate. The under-five mortality rate fell to 53/1000 live births in 2011 from 151/1000 live births in 1990 (Figure 6). The infant mortality rate and neonatal mortality rate stands at 43 and 32, respectively. The decline in under-five mortality is indicative of improved interventions of immunisation to 84 percent in 2014 (Figure 5), and improved care

Figure 5: Children who have received all 8 basic vaccinations



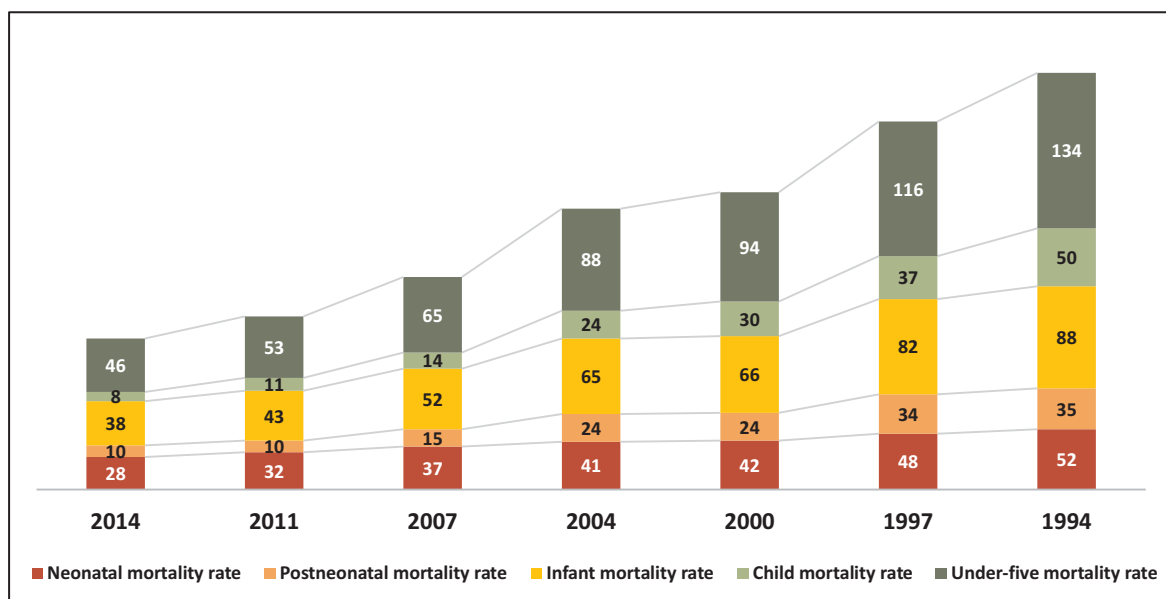
Source: Demographic Health Survey, <https://dhsprogram.com/Data/> @Observer Research Foundation's India Data Labs

seeking behaviours for both diarrhoea and acute respiratory infections.

Bangladesh has been able to reduce disparity between its rural and urban areas in terms of mortality of children aged under-five. A study²⁷ of trends from Bangladesh highlights that the reduction in child mortality over decades has been key to its success towards the MDGs. However, more work needs to be done to achieve SDG 3.

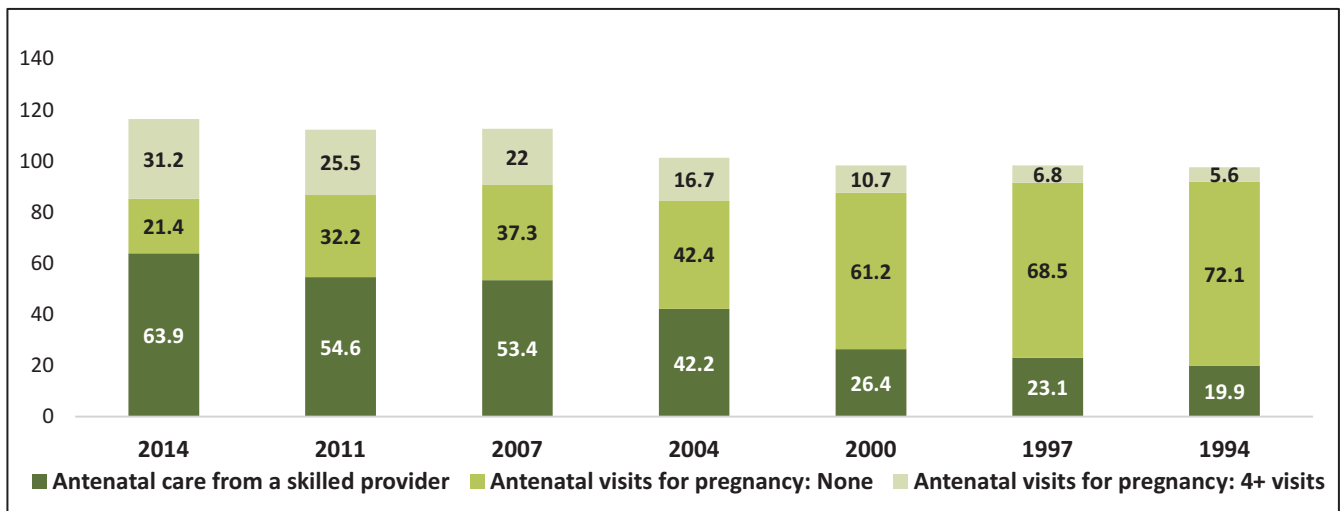
Maternal Health: Bangladesh has seen a steep decline in maternal mortality rate from 574/100,000 live births in 1990 to 143/100,000 in 2015. This significant decline needs to be sustained to be able to meet the SDG 3 target of 70/100,000 live births. Reduced fertility rate from five to two births per women over the past two decades, and increases skilled birth assistance from five percent in 1991 to 32 percent in 2011 are contributory to reduction in maternal

Figure 6: Trends in Child Health Indicators



Source: Demographic Health Survey, <https://dhsprogram.com/Data/> @Observer Research Foundation's India Data Labs

Figure 7: Trends in Antenatal Care



Source: Demographic Health Survey, <https://dhsprogram.com/Data/> @Observer Research Foundation's India Data Labs

mortality rate. About 60 percent of women deliver in a health facility or at the hands of a skilled provider. Figure 7 indicates the improvement over the years on antenatal care provided by a medically trained or skilled provider. These are critical interventions for reduction in maternal and neonatal outcomes.

Water, Sanitation and Hygiene: Even as Bangladesh has come a long way in improving sanitation, more sustained efforts will help achieve the SDG target for sustainable sanitation. Nearly 99 percent²⁸ of the country's population has access to improved drinking water source and 96 percent households have a hand-washing facility. Open defecation has come down to three percent from a high of 34 percent, due to behavior change campaigns. However, only 55 percent of people have access to sanitation, and less than 50 percent have an improved latrine. According to UNICEF,²⁹ 84 percent of schools in Bangladesh have toilets but only 45 percent are in use.

PROGRESS TO DATE: SUSTAINABLE DEVELOPMENT GOALS

According to the Sustainable Development Goals Progress report³⁰ for Bangladesh, the country is on-track to achieving its targets by 2030. The SDGs are aligned to the 7th Five-year Plan (2016-20) of Government of Bangladesh.³¹ The country is faring well in achieving many of the SDGs, including the eradication of poverty, gender equality, quality education, and economic growth. SDG 1 (No Poverty) is on track with policies and programme to address the multidimensional nature of poverty. SDG 2 (Zero Hunger) is being addressed by the government's emphasis on food security and its focus on nutrition sensitive interventions. SDG 3 (Good Health and Well-being) is being addressed by a multi sectoral approach through the Health, Population and Nutrition Sector Program (HPNSP) (2017-22), using improved governance, and ensuring quality health care. SDG 5 (Gender Equality) is important to tackle widespread women's rights issues in Bangladesh and is an underlying factor in heightening food security and malnutrition.

GOVERNMENT POLICIES ON NUTRITION

Almost 25 million³² people go hungry every day in Bangladesh. The government is thus committed to improving maternal and child nutrition and has rolled out the National Plan of Action for Nutrition 2016-2025, coordinated by the National Nutrition Council. The plan is based on a multi-sectoral strategy involving health, education, agriculture, fisheries and livestock, environment, social protection, women empowerment, and disaster management to combat all forms of malnutrition. It aims to ensure universal access to nutrition services, and strengthened human resource capacity with focus on children, adolescent girls, pregnant women, and lactating mothers.

Over the past decade, the Government of Bangladesh has shown a strong commitment to reducing poverty, improving human development, and reforming its social protection system to address the high levels of malnutrition. The country has focused on nutrition-specific interventions that address the immediate causes of undernutrition. There have been various nutrition-specific policies implemented over the years since 1997. In 2011, the country adopted a multi-sector approach and integrated the nutrition services into the health sector through the Health, Population and Nutrition Sector Development Program to be implemented through the National Nutrition Service (NNS). The NNS coordinates across ministries including women and children, agriculture, disaster management to mainstream nutrition.

Efforts have also been made to develop social protection across the life cycle, with a greater focus on empowering women. The Government of Bangladesh is providing support for breastfeeding and complementary feeding, dietary diversification, food supplementation and fortification, and management of severe malnutrition at the community level. The government of Bangladesh programme on the 'National Strategy for Anemia Prevention and Control' further aims to improve maternal and child nutrition for anaemia reduction by dietary improvement and fortification.

STRATEGIES TO IMPROVE FOOD SECURITY


Bangladesh has worked on an innovative approach to impact food and nutrition security. The nutrition garden strategies have shown considerable impact in improving food production, consumption, and nutrition. An intervention³³ from Bangladesh found a three-to four-fold increase in variety and quantity of fruits and vegetables among households practicing kitchen gardens. A home garden model³⁴ tested in rural households in Bangladesh has found a reduced expense on vegetables, improved intake of fresh fruits and vegetables, and increased income generation by sale of the produce. Aquaculture and fish consumption,³⁵ being common in Bangladesh, provide for the micronutrients and protein needs of children and women. Child mortality has been found to be lower in Bangladesh during fishing seasons in mothers who consume fish. According to a study,³⁶ 25 percent of the recommended nutrient intake is fulfilled for infants, pregnant and lactating

women with consumption of fish in Bangladesh. Micronutrients and Omega 3 fatty acids help reduce malnutrition and burden of non-communicable diseases. Research³⁷ findings on leveraging agriculture for nutrition in South Asia suggest pathways linking nutrition and agriculture and highlight its role in achieving the SDG on No Poverty.

CONCLUSION

Stunting remains a considerable challenge in Bangladesh. There is a need for improving the coverage of the first 1,000 days for pregnant women and adolescent girls to break the intergenerational cycle of malnutrition. Bangladesh faces the challenge of food insecurity, access to affordable quality of nutritious food, and dietary diversity especially in rural areas. Infant and young child feeding practices are presently inadequate, but are critical for tackling malnutrition. However, the improvements in access to safe water and

sanitation have reduced open-defecation, leading to a reduction in stunting. Bangladesh is tackling malnutrition by addressing both direct and underlying causes that affect nutrition.

The Government of Bangladesh, through its multi-sectoral approach and coordinated action with other stakeholders, is committed to achieve the SDG targets by 2030. The country is setting an example in tackling undernutrition for others with similar demographics and nutritional status. What is needed is effective and sustained implementation and scaling up of both nutrition-specific and nutrition-sensitive interventions to tackle hunger and malnutrition. A potential programme should have robust monitoring and evaluation systems to show the impact on nutrition. The integration of women, behaviour change communication strategies, and income-generating activities can encourage sustainable outcomes for nutrition in Bangladesh. 

ABOUT THE AUTHOR

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ENDNOTES

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