



## CHAPTER 12

# Getting to Specifics

## Bangladesh's Evolving Nutrition Policies

PETER DAVIS, NICHOLAS NISBETT, NAZNEEN AKHTAR, AND SIVAN YOSEF

REMARKABLE IMPROVEMENTS IN welfare and human development indicators in Bangladesh—including a notable reduction in the poverty headcount—have accompanied recent economic growth.<sup>1</sup> Some aspects of nutrition have been part of this success story. For example, the percentage of underweight children declined by 1.1 percent per year and stunting rates declined by 1.3 percent per year between 1997 and 2007.<sup>2</sup> And this trend has continued, with rates of child stunting falling to 36 percent in 2014 ([Figure 12.1](#)). Other countries may have experienced shorter, quicker reductions, but the Bangladesh story reflects “one of the fastest prolonged reductions in child underweight and stunting prevalence in recorded history.”<sup>3</sup>

This chapter tells the story of nutrition change in Bangladesh, drawing on primary research into nutrition-relevant policies and programs and 293 life history interviews, carried out in 2007, that reflect community-level changes in the country (see [Box 12.1](#)).<sup>4</sup> Five rounds of Bangladesh's Demographic and Health Survey, covering the period 1997–2011, provide supporting evidence

about the broad drivers of nutritional change, particularly those related to the reductions in stunting.<sup>5</sup>

### Bangladesh's Nutrition Achievements

Bangladesh has pursued nutrition-specific interventions, but according to stakeholders involved, these have been hampered by problems of governance and implementation since the outset, which have limited their contribution to nutrition improvements. The first large-scale nutrition policy intervention in the country, the National Plan of Action for Nutrition adopted in 1995, focused on behavior change communication, supplementation, and deworming, using the country's strong network of nongovernmental organizations (NGOs).<sup>6</sup> Although the program reached 16 percent of the rural population, the World Bank and other international development partners considered progress inadequate to meet the Millennium Development Goal (MDG) nutrition target.<sup>7</sup> The initial program was revamped in 2002, and the new program reached about 30 percent of the population

through volunteer community nutrition promoters working out of community nutrition centers. However, weaknesses in program design, including a lack of capacity within these health centers and interruptions in service delivery, reportedly prompted the Government of Bangladesh, with persuasion from donors such as the World Bank, to end this initiative by 2011.<sup>8</sup>

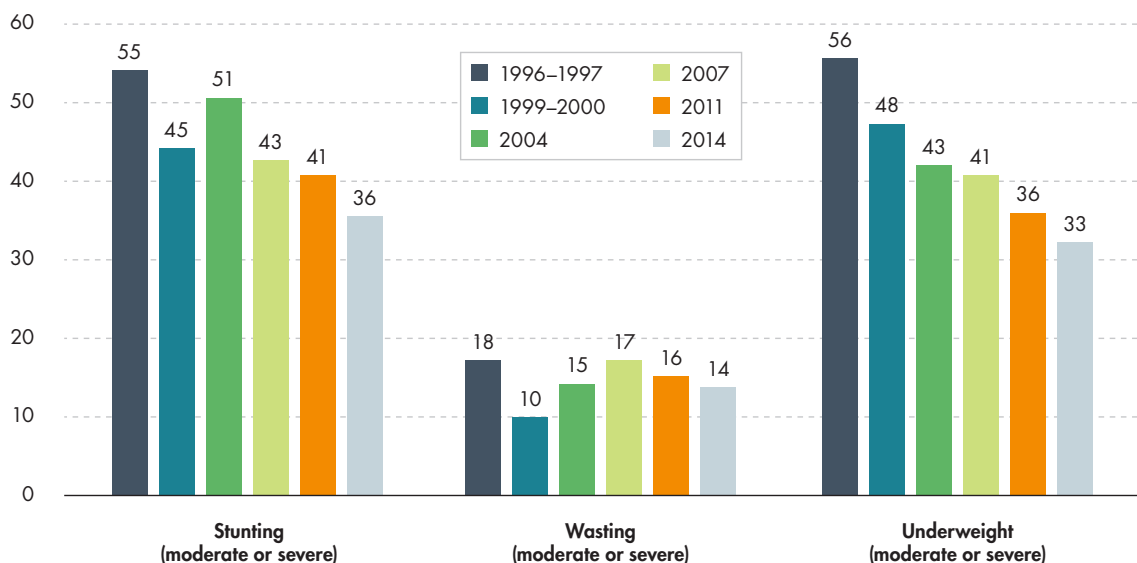
In 2011, the National Nutrition Services announced as its new objective implementation of a “mainstreamed, comprehensive package of nutrition services to reduce maternal and child malnutrition ... and strengthen coordination mechanisms with key relevant sectors.”<sup>9</sup> While it is too early to draw conclusions about the current policy, an interim assessment points to a number of challenges in delivering adequate nutrition interventions, particularly at the community level, including the poor training of frontline health assistants and family welfare volunteers.<sup>10</sup> Taken together, both past and

recent experiences highlight challenges in delivering nutrition-specific interventions. What then contributed to Bangladesh’s successes? The following sections explore the factors that likely were the main drivers of change.

### Pro-Poor Economic Growth Leading to Poverty Reduction

Pro-poor economic growth is associated with a significant part of the improvement of nutrition indicators in Bangladesh. Over the past two decades the proportions of the population in both extreme and moderate poverty have declined substantially.<sup>11</sup> Extreme poverty is commonly accompanied by malnutrition and high morbidity, and increases in household wealth are strongly linked with nutrition improvements. Poverty reduction also likely contributed to the decline in stunting in Bangladesh. In times of household crisis, extremely poor people often cut back on meals—eating two meals per

**FIGURE 12.1** Trends in nutritional status of children under 5 years of age in Bangladesh, 1996–1997 to 2014 (%)



**Source:** Authors’ compilation. 1996–1997 data are from National Institute of Population Research and Training (NIPORT), Mitra and Associates, and Macro International, *Bangladesh Demographic and Health Survey 1996–1997* (Dhaka, Bangladesh, and Calverton, MD, US: 1997); 1999–2000 data are from NIPORT, Mitra and Associates, and ORC Macro, *Bangladesh Demographic and Health Survey 1999–2000* (Dhaka, Bangladesh, and Calverton, MD, USA: 2001); 2004, 2007, 2011, and 2014 data are from NIPORT, Mitra and Associates, and ICF International, *Bangladesh Demographic and Health Survey 2014: Key Indicators* (Dhaka, Bangladesh, and Rockville, MD, USA: 2015).

day instead of three—and on expensive food items, such as meat, fish, milk, fruit, and vegetables, in favor of cheap rice, lentils, vegetables, and small fish.<sup>12</sup> Women and girls often suffer disproportionately.<sup>13</sup> With the decline in poverty, however, acute food shortages have also declined. Fewer households have been forced to cut food expenditures even in the famine-prone areas in the northwest of Bangladesh and in the pre-harvest season when food is scarcest.<sup>14</sup>

Wider analysis complicates this picture. Dietary diversity of Bangladeshis did not improve between 2005 and 2013, despite an increase in per capita consumption expenditure.<sup>15</sup> However, several of the life histories noted that hunger did not reach the extent and intensity experienced in the 1970s and 1980s, and for most people, with the exception of the declining number of extremely poor, hunger was no longer a problem.

Livestock are common household assets in rural Bangladesh, serving as a productive investment and contributing directly to improved nutrition through increased availability of meat, dairy, and eggs. Among the life history interviews, more than a quarter of interviewees considered livestock among the main causes of improvement in people's lives.<sup>16</sup> Livestock investments were usually accompanied by other improvements associated with gradually increasing wealth: investments in education for children, better use of qualified health providers, better water and sanitation, electrification, and a better quality diet. All these changes—including increased wealth in households and community-level improvements, such as improved infrastructure and electrification—are likely mutually reinforcing and support better health and nutrition.

Increased availability of nonfarm and manufacturing work has also been part of the story of economic development in Bangladesh in recent years.<sup>17</sup> These new opportunities have been particularly important for women working in manufacturing,



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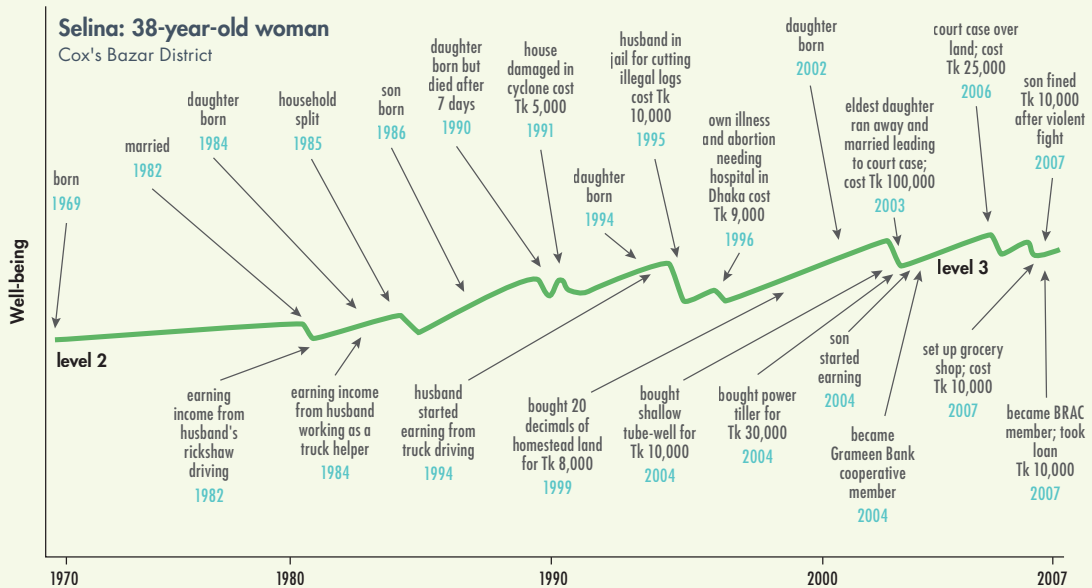
*Bangladesh used stipends to encourage families to send their children to school, and increases in enrollment likely contributed to improvements in nutrition.*

especially in the ready-made garments sector. In addition, Bangladesh's wide range of social protection policies likely helped by providing an income and food security floor for the poorest families, although the relationship of these policies to nutrition outcomes has not yet been demonstrated directly. However, a recent preliminary study in Bangladesh suggests that safety-net cash transfers that included nutrition behavior-change communication had a large and positive impact on child stunting reduction.<sup>18</sup>

## Agriculture

Increased agricultural production linked to the Green Revolution contributed to Bangladesh's economic development from the late 1960s into the

## BOX 12.1 Well-being in Bangladesh: An individual story of gradual change



**Note:** 1 decimal of land = approximately 40.5 square meters. Tk = Bangladeshi taka.

The timeline above summarizes one of the 293 life histories recorded in Bangladesh in 2007. Like many of these histories, Selina's story illustrates the gradual improvement in well-being that can be linked to economic and agricultural development, provision of health and family planning services, and accumulation of household assets. As shown by the timeline, she moved from moderate poverty (level 2—below the poverty line but with some assets) to just above the poverty line (level 3). The poverty level used is multidimensional and includes an assessment of how well the respondent was able to eat.

Selina was 38 years old in 2007 when she was interviewed. She was living in a hilly area of Cox's Bazar District with her husband, Babul (43), their two daughters (13 and 5), and one son (21). Babul worked as a truck driver. Their eldest daughter (23) was married and lived separately.

Selina's life trajectory shows gradual progress from a moderately poor childhood and early married life to a less vulnerable position. In 1982, when she was newly married, her family frequently was forced to miss meals. Their economic situation improved largely because of her husband's income from truck driving starting in 1994, and more recently, her son's income from sharecropping, working with a power tiller, and running a grocery shop. Selina herself was also active in various income-generating ventures supported by loans from NGOs. This gradual improvement in life circumstances was not without setbacks, including problems with Selina's health, the death of a baby, and a number of costly court cases related to the marriage of her eldest daughter, land disputes, and a fight over irrigation water. This pattern of gradual increase in economic well-being, interspersed with setbacks and accompanied by improvements in nutrition, is typical of many stories from the life history interviews.

**Source:** Life history interview conducted by Peter Davis, Dilara Hasin, and Anowara Begum, Cox's Bazar District, 2007. For a description of the methods used, see P. Davis, "Patterns of Socio-economic Mobility in Rural Bangladesh: Lessons from Life History Interviews," in *Methodological Challenges and New Approaches to Research in International Development*, edited by L. Camfield (Basingstoke, UK: Palgrave Macmillan, 2014).

**Note:** All names have been changed to protect the identity of research participants.

1980s. High-yielding varieties of rice and wheat, widespread irrigation, greater use of fertilizers and pesticides, introduction of completely new crops to some areas, such as potatoes and maize, and more intensive farming of vegetables have all boosted production.<sup>19</sup> Since independence, Bangladesh has more than doubled its production of cereal grains.<sup>20</sup> Although the population also more than doubled over the same period, the country is now self-sufficient in rice production. Much of this increase is attributable to the introduction and expansion of *boro* (dry season) rice varieties, grown over the winter season with the aid of irrigation from tubewells.<sup>21</sup> These increases in agricultural production and supply have likely played a significant part in generating nutritional improvements in Bangladesh, although data limitations preclude calculation of that contribution.<sup>22</sup> However, it is not clear if the same progress has been achieved in improving dietary diversity.<sup>23</sup>

Although seasonal food shortages have become less common, minimum dietary availability and dietary diversity have been slow to improve in recent years for all households. The majority of the population remains dependent on cereals for much of their calorie intake.<sup>24</sup> This stagnation has been linked to a research and policy bias toward rice as well as broader drivers of food prices coinciding roughly with the period covered by this review.<sup>25</sup> The prices of lentils and meat have increased steadily in comparison with rice over this period, making it more difficult for the poorest households to adequately diversify their diets.<sup>26</sup> In 2013/2014, Bangladesh experienced price spikes in the cost of its food basket owing to supply disruptions related to election protests and a fuel price hike, even during a time of relatively low and stable global food prices.<sup>27</sup>

### Family Planning and Demographic Trends

Bangladesh's demographic and family planning successes, particularly in reducing fertility and child

mortality, may be one of the strongest drivers in its nutrition success, along with the closely related improvements in women's empowerment and education. At the time of independence in 1971, fertility in Bangladesh was high and contraceptive use low. Less than 10 percent of couples were using contraception in 1969, and the total fertility rate was around seven.<sup>28</sup> Following the war for independence, a number of programs have been successful in expanding family planning support, including female family-welfare assistants promoting family planning directly in communities. Key stakeholder interviews cited these government programs, along with NGO-based programs, as contributing to increased use of contraception. Such programs have been linked to strong performance on some health indicators in the wider literature.<sup>29</sup> The total fertility rate declined slowly at first, but progress became more rapid after 1979, with a decline from 6.8 to 4.6 by 1988. More recently, the total fertility rate for 2008–2010 was 2.3 and was expected to be about 2.0 in 2016.<sup>30</sup>

Reduced fertility is associated with some improvements in nutrition outcomes.<sup>31</sup> Changes in attitude have accompanied the large demographic shift, with implications for improved nutrition. Field interviews found widespread understanding among interviewees of the importance of having small, healthy families, which reflects the national trend toward declining family size. Interaction with family planning, visiting primary health professionals, and NGO staff have likely contributed to these attitudinal changes.<sup>32</sup>

### Health Services

The association between improved health services and improved nutrition in Bangladesh is strong in some respects but mixed in others. Health sector success stories include impressive vaccination coverage, availability of relatively cheap medicines, spread of private health clinics, and more





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*A community health care provider makes his rounds, reaching people on this island in Bangladesh's Brahmaputra River.*

recently, the establishment of community clinics providing improved coverage for a range of primary health, family planning, and, increasingly, nutrition services.<sup>33</sup>

There have been marked achievements in neonatal, postnatal, and children's health. Maternal and infant mortality have declined, as have stunting rates. Antenatal coverage for births increased from 58 percent in 2004 to 79 percent in 2014, and 64 percent of women in 2014 benefited from services by a trained antenatal care provider.<sup>34</sup> Birth attendance by a skilled provider nearly tripled over a decade, from 15.6 percent in 2004 to 42.1 percent in 2014.<sup>35</sup> Statistical analysis underlines the significance of improved maternal health as a potential driver of stunting reductions—accessing facility birth and antenatal care was significantly associated with childhood stunting declines.<sup>36</sup>

Paradoxically, these successes have occurred despite a relatively weak health system. While indicators such as mortality and birthrates have plummeted, general levels of morbidity remain high. Nutrition indicators for women and children stand out as particularly poor in comparison with the rapid rates of improvement in other health areas.<sup>37</sup> Child stunting levels remain high, despite the rapid decline, as do a number of other indicators. For example, only 36 percent of mothers and children in 2013 received postnatal care within two days of delivery, and in 2013, 17 percent of women aged 19–49 were undernourished.<sup>38</sup>

## Education

School attendance in Bangladesh has increased rapidly in recent years, with stipend programs at primary- and secondary-school levels contributing

to improved enrolment rates.<sup>39</sup> Bangladesh has a long history of incentive programs for sending children to school. Beginning in 1993, the Food for Education (FFE) program provided wheat (and sometimes rice) to parents of children attending school. In 2002, FFE was replaced by the cash-based Primary Education Stipend. Although the amounts provided, in actual terms, are small and therefore have limited impact on poverty reduction, and coverage was rolled out slowly, the stipends have encouraged school attendance and provided relief for very poor families.<sup>40</sup> As reported in the life histories, parents usually used the money for school-related expenses, such as stationery and food. A Female Stipend Program for girls at the secondary-school level, which was introduced in 1994, increased enrollment rates, reversed the gender gap in grade attainment, and coincided with an increase in the marriage age of women.<sup>41</sup> The program has also likely contributed to improved nutrition. Although this is difficult to demonstrate conclusively, one study shows that parents' level of education was positively related to nutrition outcomes.<sup>42</sup> Children whose parents had both completed high school were expected to be taller than children of parents who had never attended school.

### Sanitation and Improved Access to Clean Drinking Water

Bangladesh has made significant strides in providing access to improved drinking water sources and sanitation. The percentage of population with access to improved water sources increased from 68 percent to 87 percent from 1990 to 2015—enough to meet the MDG of halving the number of people without access to safe drinking water. Rural provision has increased faster and disparities between urban and rural areas have disappeared.<sup>43</sup> While access to clean drinking water has direct health benefits, it also has indirect nutrition benefits, particularly in reducing childhood

illnesses, which in turn can exacerbate poor nutrition.<sup>44</sup>

The picture on sanitation is also positive; Bangladesh is one of 16 countries that reduced open defecation by over 25 percentage points in the MDG period.<sup>45</sup> Reductions in open defecation figure strongly as a likely driver of stunting reduction.<sup>46</sup> Change in rural communities appears to have been particularly significant, with the practice of open defecation falling dramatically from 34 percent to 3 percent of the population from 1990 to 2012. Unusual for South Asia, the gains have been broad-based, with progress among the poorest in rural communities being much faster than in any other country and largely driving the reduction in open defecation. Even with open defecation now negligible, access to improved sanitation facilities is still low, at 61 percent.<sup>47</sup> Large variations in access persist, particularly between wealth quintiles in the growing urban population.<sup>48</sup>

### Women's Empowerment

Looking at the link between nutrition outcomes and women's empowerment, a recent analysis could not detect a significant relationship between nutrition and indicators of women's empowerment. These indicators included the ability to travel alone to a health clinic, an indicator that may not capture wider dimensions of women's empowerment well, and various dimensions of women's decision making in households. These results contradict, to some extent, another observation in the same analysis: although both parents' education levels were significantly associated with changes in stunting, more of the change in child stunting was "explained" by mothers' education than fathers' education.<sup>49</sup>

Another recent study in Bangladesh found that increases in a measure of women's empowerment in agriculture are positively associated with calorie availability and dietary diversity.<sup>50</sup> However, the same study also found that household wealth,

education, and occupation were more strongly associated with adult nutritional status than women's empowerment.

The life history interviews elicited similar observations. Although women's empowerment is difficult to measure, the life histories support the view that women have become more empowered over recent decades and that this change is likely to have contributed to improved nutrition. Dimensions of empowerment include markedly increased levels of educational achievement and gender parity in secondary enrollment rates, widespread participation of women in NGO-supported income-generation and other activities, and increased employment of women along with control of their income.<sup>51</sup>

Both community- and stakeholder-level interviews highlighted how employment opportunities for young women are helping to delay the age of marriage and first pregnancies by empowering and valorizing the contribution of girls. Assistance for girls through the secondary education stipend program is having the same effect. The community interviews revealed fairly widespread acceptance of a national narrative that emphasizes the positive role of women in the country's development and the importance of having small families of well-educated, healthy children.

## Lessons Learned

Much of the improvement in nutrition in Bangladesh in recent years is likely explained by what can be seen as nutrition-sensitive drivers within a wider enabling environment of pro-poor economic growth. Pro-poor economic growth is

linked in turn to improved agricultural production and diversification, a vibrant NGO sector supporting income generation, expansion of non-farm business and manufacturing sectors creating employment opportunities, remittances from labor migration, and improving infrastructure and electrification. In addition, significant contributions have been made by improved access to education (especially for girls); health and family planning service use and availability; demographic change, such as smaller family sizes, increased birth intervals, and lower age at first pregnancy; and more widespread use of safe water sources and better sanitation. These likely drivers of nutritional improvement have multiple impacts and are mutually reinforcing. These drivers are also predominantly indirect—that is, they are largely the result of economic and social development, not of programs and interventions specifically intended to improve nutrition.

Yet many millions of children in Bangladesh still grow up stunted because of poor nutrition.<sup>52</sup> So while we still need to recognize the major contribution of indirect drivers, and their importance in sustaining gains, the challenge is to make further improvements. Interventions directly aimed at improving nutritional status have been expanding in scope and coverage, but their impact has been limited compared with broader drivers of nutrition-sensitive development. Looking to the future, however, the heavy lifting done by these drivers—including significant gains in income, health, lowered fertility, and sanitation—may not continue at the same rate. Nutrition-specific interventions will need to take on a greater role in Bangladesh.