Fighting Hunger Worldwide

Impact Evaluation

School Feeding in Bangladesh (2001-2009): A Mixed Method Impact Evaluation Vol I. Full Report

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Prepared by
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WFP
World Food Programme
wfp.org

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Disclaimer

Evaluation Management

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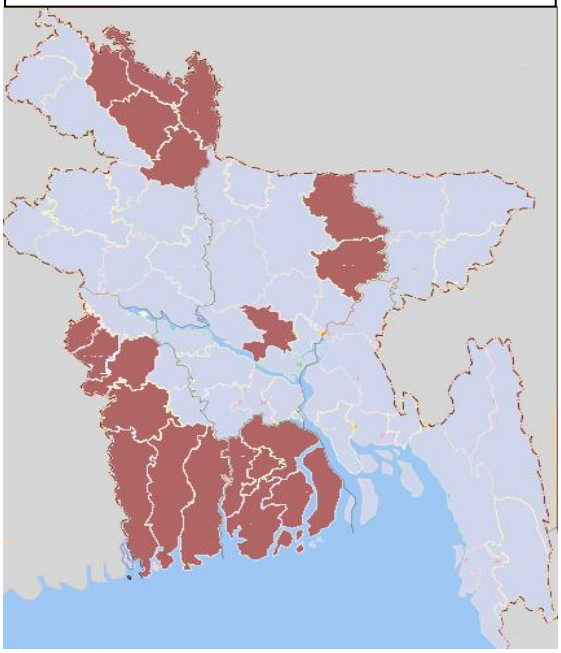
Fact Sheet: School Feeding in Bangladesh (2001-2009)

Project No.	Type	Time Frame	Title	Approved Budget[1]	Tot Received[1]	% funded
6317.0	EMOP	Dec 00 - Nov 03	Assistance to flood affected people in Southwest Bangladesh	40.1	22.6	56%
10059.0	CP	Jan 01 - Dec 06	CP-Bangladesh 2001-2005	209.9	165.1	79%
10380.0	EMOP	Aug 04 - Nov 05	Assistance to Flood-Affected People in Bangladesh	73.7	32.2	44%
10715.0	EMOP	Nov 07 - Feb 09	Food Assistance to Cyclone Affected Populations in Southern Bangladesh	78.9	69.1	88%
10410.0	CP	Jan 07 – Dec 11	CP-Bangladesh 2007-2011	378.5[2]	229.9[2]	60.7%
10788.0	EMOP	Nov 08 - Jul 10	Emergency safety net for vulnerable groups affected by high food prices and natural disasters in Bangladesh	182.1[2]	55.2[2]	30%

Source: SPR, Resource Update
[1] Millions US$; [2] Resource Update as of 25 July 2010

Fig.1 Geographical coverage of Programmes with School Feeding 2000-2009



Source: SPR

Fig.2 Proportion School Feeding beneficiaries by programme type

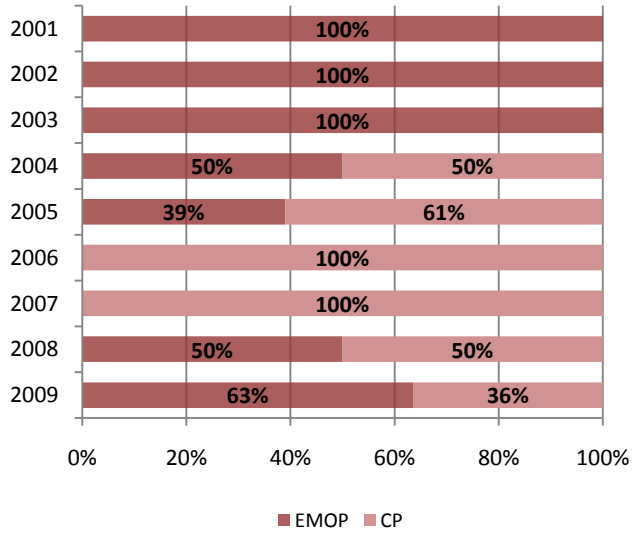
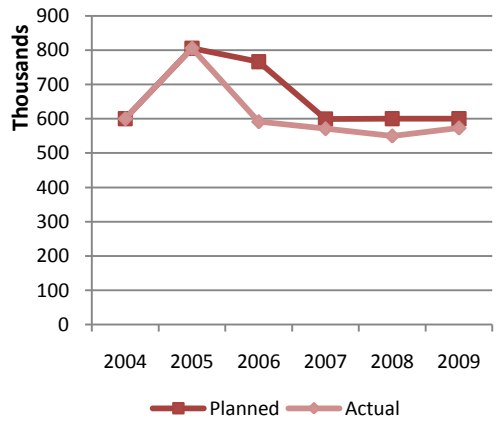


Fig. 3 Children receiving school meals (CP)



Main Donors, partners and Evaluation Stakeholders

Donors:
Australia, Bangladesh, Canada, European Commission, Germany, Japan, Netherlands, United Kingdom, UNCERF, United States of America.

Partners:
UN Agencies: UNICEF, WHO, FAO, UNESCO
Government Agencies: Ministry of Primary and Mass Education (MoPME), DPE, Ministry of Health and Family Welfare (MoHFW), Ministry of Agriculture (MoA)
NGOs: Local & International

Stakeholders:
WFP, DPE, MoPME, MoHFW , Donors, NGOs partners, UN agencies, School Head Teachers and teachers, School Management Committees, school children, beneficiaries and non-beneficiaries, District and Upazila Education Offices, Biscuit manufacturing companies.

Sources: For Fig.1 (project document, SPR, Coates, J., & Hassan, Z. 2002. School Feeding in Vulnerable Rural Areas and Urban Slums in Bangladesh: A Baseline Report to the WFP Bangladesh; Surch. 2007. Baseline Survey Report on FFE Activity), for Fig.3 (SPR), for main donors & partners (WFP NGO & Donor Relations Unit).
*The Evaluation does not cover operations supporting refugees from Myanmar (PRRO 10045.1/.2/.3/.4).

Executive Summary

Evaluation Features

1. This report summarizes the results of an impact evaluation of the World Food Programme's (WFP) school feeding programme (SFP) in Bangladesh commissioned by the Office of Evaluation as one in a series of impact evaluations of school feeding. The SFP in Bangladesh uses only a micronutrient-fortified biscuit.

2. The evaluation assessed the extent to which school feeding outcomes and impacts extend beyond primary education into secondary school, social safety nets and other areas; the factors contributing to the limited impacts that previous evaluations found in some areas; the alignment of WFP's targeting strategy and school feeding modality with Government of Bangladesh policy priorities and activities, other WFP activities in Bangladesh and the activities of other partners; and changes that could be made to the school feeding strategy and design to address the evaluation findings.

3. The evaluation was conducted by a team of four independent consultants from the consulting firm, Tango International, who carried out the inception phase from 5 to 11 February 2011 and the qualitative fieldwork from 5 to 26 April. Mitra and Associates, a Bangladeshi survey research firm, carried out the quantitative fieldwork from 3 to 23 April.

Methodological Approach

4. The evaluation used a mixed-method approach to assess the factors that affect learning outcomes – including children's physical status, and the school, household and community environments – and explored how decisions about education are made, and their effects. It was conducted in two of the most food-insecure and disaster-prone areas of Bangladesh, the northwest (NW) and the southern coast, in sub-districts chosen for their high poverty and low education completion rates. Data collection methods included:

i) a systematic review and analysis of secondary data;

ii) a quantitative survey of 80 programme and control schools in similar socio-economic contexts;

iii) a quantitative survey of 1,890 families in the catchment areas of the sampled schools;[1] and

iv) an in-depth qualitative appraisal of 22 schools and communities in programme and control areas, purposively selected to represent a cross-section of schools, geographic areas and livelihood pursuits.

5. Limitations to the evaluation included the lack of baseline data against which to compare the data collected in the evaluation, although control areas were carefully selected to match programme intervention areas in terms of vulnerability[2] Two consecutive pipeline breaks disrupted the flow of biscuits to schools immediately preceding and during the evaluation,[3] which limited the ability to assess the biscuits' contribution to body mass index (BMI) and observe biscuit distribution and consumption.

[1] The sample included 943 families in the NW (473 intervention and 470 control) and 947 families in the southern coast (471 intervention and 476 control).
[2] Based on vulnerability analysis and mapping (VAM) vulnerability classifications.
[3] The first was in November–December 2010, when WFP suspended distribution owing to quality concerns after some biscuits were reported to be contaminated. The second was in January–April 2011, when the delivery of biscuits manufactured in India was delayed while import issues were addressed with the Government of Bangladesh. An uninterrupted supply of biscuits had not been available in some schools since November 2010 and in others since January 2011.

Context

6. Since the mid-1990s, Bangladesh has consistently experienced average annual growth of approximately 6 percent. Despite this progress, however, approximately 49 percent of the population lives on less than US$1.25 per person per day, and 81.3 percent on less than US$2 per person per day. Bangladesh ranks 129th out of 169 countries in the 2010 United Nations Development Programme (UNDP) human development index.

7. The Government has improved access to primary education and virtually eliminated gender disparity in primary schools. With government initiatives such as free tuition and books, school feeding and cash stipend programmes, gross enrolment in primary school reached 101.6 percent in 2004. Primary school enrolment and attendance grew far more quickly than the supply of trained teachers or new infrastructure, while completion rates fell and learning outcomes lagged. The quality of education and the educational environment remain very low and are a major focus of concern.

8. WFP's SFP targets geographic areas at the sub-district or upazila level, based on poverty and educational performance. The areas of highest priority are those with poverty rates greater than 33 percent and primary education completion rates less than 40 percent.

9. The NW districts of Kurigram and Gaibanda are among the poorest and most vulnerable regions in the country. The majority of the population is rural and work as landless agricultural producers. Widespread poverty is exacerbated by annual floods, which create livelihood uncertainty and instability, as large areas of agricultural land are eroded, depriving families of their land and livelihood. Most landless families migrate seasonally to other parts of Bangladesh for employment. WFP has been providing school feeding in Kurigram since 2002 and in Gaibanda since 2008.

10. The southern coastal division of Barisal is subject to periodic cyclones, river surges and annual flooding. Most poor rural inhabitants are landless and pursue mixed livelihood strategies that include agricultural production, agricultural labour, fishing and casual labour. Two powerful cyclones struck this region over the last five years, resulting in a major emergency relief effort, of which school feeding was a component.

11. Precarious livelihoods contribute to poor health and nutrition, and malnutrition rates in Bangladesh remain among the highest in the world. Nearly half of all children under 5 are stunted and there are high rates of anaemia, at 68 percent, and micronutrient deficiencies among this age group. A quarter of Bangladeshi households consume nutritionally inadequate diets that are deficient in energy.

Key Findings

Livelihoods

12. The variability of household livelihoods affects the outcomes and impact of school feeding. To capture this variation, households were grouped into four vulnerability categories, from the most vulnerable to the least, based on their incomes, food consumption scores and assets. The evaluation then analysed how vulnerability correlates with education, nutrition and social protection outcomes. The NW and southern coast areas and their respective control areas were analysed separately.

13. As shown in the table overleaf, level of vulnerability is relative in Bangladesh, with even those classified as least vulnerable earning a monthly income of US$45. The income of the more vulnerable households barely covers the minimum estimated costs of food.

VULNERABILITY INDICATORS, BY VULNERABILITY GROUP AND REGION					
		Least vulnerable	**On the edge**	**Vulnerable**	**Most vulnerable**
Northwest					
Household monthly income from all sources	*taka*	3 260.3	1 425.8	1 062.2	783
	US$ equivalent[1]	45.2	19.8	14.7	10.9
Minimum monthly household food cost	*taka*	633	633	633	633
Total asset value	*taka*	169 098	72 391	33 528	15 799
Own agricultural land	decimals[2]	160.1	70	24.9	10.1
Southern coast					
Household monthly income from all sources	*taka*	3 433.1	1 597.9	1 151.2	782.7
	US$ equivalent	47.6	22.1	16.0	10.8
Minimum household monthly food cost	*taka*	633	633	633	633
Total asset value	*taka*	143 527	54 994	26 027	14 697
Own agricultural land	decimals	254.8	59	22.8	10.8

[1] As of April 2011, using the official United Nations exchange rate.
[2] 1 decimal is equivalent to 0.01 acres or 0.004047 ha.

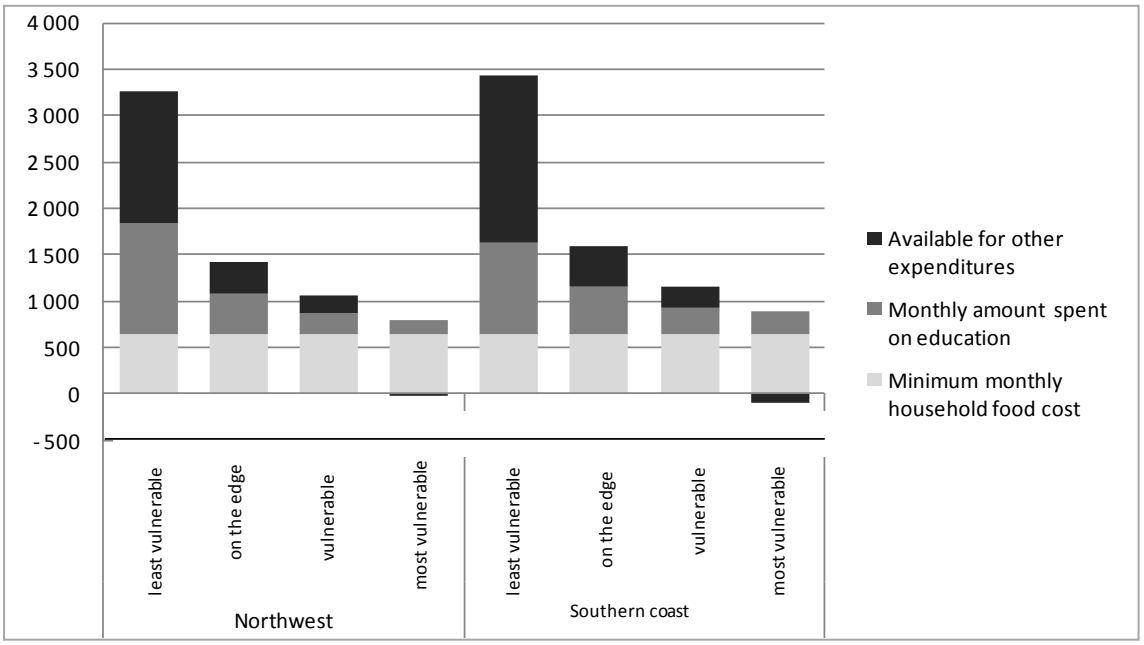
14. As shown in the table below, most families, including approximately 40 percent of the most vulnerable, pay for private tutoring as a way of addressing problems with the quality of education received in school.

EDUCATION COSTS, BY VULNERABILITY GROUP AND REGION					
		Least vulnerable	**On the edge**	**Vulnerable**	**Most vulnerable**
Northwest					
Monthly amount spent on education	*taka*	1 207.9	439.2	227.3	156.9
Households undertaking tutoring costs	% of total	78	61	56	39
Monthly tutoring costs	*taka*	581	212	121	126
Southern coast					
Monthly amount spent on education	*taka*	993.8	512.9	296.8	252.7
Households undertaking tutoring costs	% of total	80	63	55	43
Monthly tutoring costs	*taka*	518	249	174	186

15. Given these additional investments, the share of household income required to cover the combined costs of food and education is approximately 25 percent for the least vulnerable households, but exceeds total income for the most vulnerable, in both the NW

and the southern coast. For these households, food costs leave little per capita monthly income for investing in education. The shares of monthly income spent on education and food costs by different vulnerability groups are shown below.

Monthly expenditure, by vulnerability group and region (as share of monthly income, in *taka*)



Educational Outcomes

16. Overall, primary school attendance rates are high. However, in the NW, attendance rates in programme schools are 6 to 8 percentage points higher than in control schools. In the southern coast, overall attendance in programme schools is nearly 10 percent higher than in control schools, while the equivalent figure for girls' attendance is even higher in some grades. Attendance rates do not vary significantly by type of school. In 2010, the ratios of girls to boys were 1.06 in programme schools and 1.01 in control areas.

17. In the NW, class 1 enrolments have increased since 1990, in both programme and control schools, while class 4 and class 5 enrolments have decreased, and at higher rates in programme areas. In the most vulnerable households of the NW, only 80 percent of children aged 5–18 years are in school, compared with almost 97 percent in the least vulnerable households. In the NW, 5 percent of households had no school-age children in school, mainly in the most vulnerable groups.

18. In the southern coast, enrolment is higher, and vulnerability has no apparent impact on whether or not children are in school. In southern schools, class 1 enrolment increased and, since 2008, the overall drop-out rates in programme schools have been lower than those in control schools. However, average enrolment in class 5 was about one-third less than in class 4. In the southern coast, the drop-out rate for girls diminished after school biscuits were introduced, to 49 percent in 2010 in programme schools, compared with 63 percent in control schools.

19. An uninterrupted normal progression through grades was achieved by fewer than half of primary school students. In the NW, only 43 percent of children aged 6–12 years in programme areas had age-appropriate normal progression through school, compared with 42 percent in control areas. In the southern coast, the equivalent figures were 47 percent in programme areas and 33 percent in control areas. However, data suggest that children are following a more normal progression than their older family members did.

20. The table below shows the percentages of parents reporting factors that affect the decision to keep children in school.

REASONS FOR CHILDREN REMAINING IN SCHOOL		
	NW	**Southern coast**
Parental encouragement	50%	60%
Child's learning ability/interest	25%	20%
Quality of school learning environment	12%	10%
Presence of food at school (programme schools only)	23%	18%

21. In the NW, more than 80 percent of the children who have never attended school are in the two highest vulnerability classes. In the southern coast, household vulnerability is less of a factor. Among households surveyed, 55 percent of those in the NW and 45 percent in the southern coast cited economic reasons and the need to send children to work as reasons for children leaving or never enrolling in school.

22. Completion rates decreased between 2008 and 2010 in all school types, in both programme and control areas in the NW and in control areas in the southern coast; 45–50 percent of children who begin class 1 do not complete class 5. Children who fail to complete primary school are concentrated in the most vulnerable households.

23. Religious schools and ethnic minority schools enrol the poorest children and those who may be discriminated against in the formal system. This population is the most vulnerable, both nutritionally and educationally, but is not currently included in the school biscuit programme.

24. Respondents reported that when children from poor families become old enough to earn a living, they go to work. Many work in the households of wealthier families, in restaurants or tea shops or even in hazardous employment in welding shops, car garages and rock quarries. Families who migrate seasonally in search of wage labour may bring their children with them, in the hope that they also can gain employment if they are old enough.

25. Transition rates to secondary school for children who complete primary education are very high. Transition to and success in secondary school are strongly influenced by two factors: the education level of the household head, and the household's vulnerability status. Few of the most vulnerable households have a member who has completed secondary school; interviews suggest that the financial burden of secondary school is a serious obstacle.

Nutrition Outcomes

26. Micronutrient deficiencies increase the risk of mortality from diarrhoea, measles, malaria and pneumonia,[4] and are responsible for a large proportion of infections, poor physical and mental development and excess mortality in the developing world. Studies have shown that micronutrient-fortified biscuits can significantly improve the micronutrient status of primary schoolchildren, reduce the prevalence of anaemia, and enhance the effect of deworming[5]. Previous studies of WFP's school feeding intervention in Bangladesh[6] found

[4] Black, R., Allen, L., Bhutta, Z., Caulfield, L., de Onis, M., Ezzati, M., Mathers, C. and Rivera, J. 2008. Maternal and child undernutrition: Global and regional exposures and health consequences. *The Lancet,* 371(9608): 243–260.

[5] Van Stuijvenberg, 1999; Nga, 2009.

[6] Ahmed, A.U. 2004. Impact of Feeding Children in School: Evidence from Bangladesh. International Food Policy Research Institute, Washington DC; Mustafa, S. 2010. Food For Education (FFE) Activity of the World Food Programme: Outcome Survey Report. World Food Programme, Rome; van Stuijvenberg, M.E., Dhansay, M.A., Smuts, C.M., Lombard, C.J., Jogessar, V.B., and Benade, A.J.S. 2001. Long-term evaluation of a micronutrient-fortified biscuit used for addressing micronutrient deficiencies in primary school children. *Public Health Nutrition* 4: (6): 1201–1209; Nga, T.T, Winichagoon, P, Dijkhuizen, M.A., Khan, N.C., Wasantwisut, E., Furr H.

significant improvements in the nutrition status of beneficiaries in comparison with control groups, in terms of BMI, energy intake, anaemia, underweight and worm infestation.

27. The evaluation collected evidence about the diets of school-age children from 24-hour dietary recall and anthropometric information, interpreted using BMI-for-age. As shown in the table below, the diets of most primary school-age children in the programme areas were found to be deficient in energy, vitamins A, B1 and B2, and iron.

AVERAGE CONSUMPTION OF SELECTED MICRONUTRIENTS BY SURVEYED CHILDREN, BY REGION					
	Vitamin A (µg retinol equivalent)	**Vitamin B1, thiamine (mg)**	**Vitamin B2, riboflavin (mg)**	**Vitamin C (mg)**	**Iron (mg)**
RNI[1]	500[2]	0.9	0.9	35	13.4
Northwest	333.6	0.55	0.34	34.2	8.5
Southern coast	328.6	0.63	0.44	43.71	10.02

[1] Recommended nutrient intakes (RNIs) for children 7–9 or 7–10 years from: WHO/FAO. 2004. Vitamin and mineral requirements in human nutrition. 2nd edition. Geneva. (Assuming that iron bioavailability is 7.5 percent.)
[2] For vitamin A, the figure represents recommended safe intake.

28. On the day of recall, in the NW programme areas, only 2.7 percent of children met the lowest of the range of energy requirements and 46 percent did not meet the lowest range of the protein requirements. In the southern coast, only 20 percent of children met the lowest of the range of protein requirements.[7]

AVERAGE MACRONUTRIENT CONSUMPTION BY SURVEYED CHILDREN, BY REGION			
	Energy (kcal)	**Protein (g)**	**Fat (g)**
Requirement	1 428–2 341	19.3–33	23–35
Northwest	730.3	24.4	17.5
Southern coast	1 147.4	40.8	28.0

29. Each pack of biscuits provides 338 kcal of energy, 7.5 g of protein, 10.5 g of fat and 66 percent of the required daily vitamins and minerals for a primary school-aged child. The biscuits would boost the energy intake of the average child in NW programme areas by 46 percent, and the protein consumption by 31 percent. In the southern coast programme area, they would increase the average child's energy consumption by 29 percent.

30. Mothers, school personnel and members of School Management Committees (SMCs) reported that the biscuits reduce hunger, lessen the incidence of skin diseases and alleviate weakness and dizziness in children, which parents believe improves the children's ability to learn. There were no significant differences in BMI-for-age between programme and control groups in either area, which may reflect the extended pipeline break and absence of biscuits in the programme areas when the measurements were taken.

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and Wieringa, F. 2009. Multi-Micronutrient–Fortified Biscuits Decreased Prevalence of Anemia and Improved Micronutrient Status and Effectiveness of Deworming in Rural Vietnamese School Children. The Jour. of Nut.,139: pp 1013–1021.
7 Diets in control areas were also deficient in micronutrients and macronutrients, but differences between control and programme groups are not reported as an impact because school biscuits would have a limited affect on the overall quality of the diet.

Value transfer

31. As shown in the table below, for the most vulnerable groups in both areas, the biscuits contribute about 4 percent of annual stated income, while for the least vulnerable group the equivalent figure is about 1 percent. Households in the two more vulnerable categories spend less on education than the value of the biscuits; for the most vulnerable group, the transfer value of the biscuits is three times as high as household education expenses. This suggests not only that the biscuits contribute to household income, but also that they do so net of the cost of education. The school biscuits provide a value transfer to poor households of 4.4 percent of the daily food bill. When the value of the biscuits and the annual education stipend are combined, the financial incentives for sending children to school for the most vulnerable families rise to 10 percent of annual income in the NW and 8 percent in the southern coast.

TRANSFER VALUE, BY VULNERABILITY GROUP AND REGION

	Least vulnerable	On the edge	Vulnerable	Most vulnerable
Northwest				
Transfer value to household (240 projected days) *(taka)*	1 407	1 429	1 539	1 499
Transfer value to household (180 projected days) *(taka)*	1 055	1 072	1 154	1 124
Transfer value (as % of annual income)	1.1	1.8	3.3	4.5
Transfer value (as % of education expenses)	26	78	135	329
Southern coast				
Transfer value to household (240 projected days) *(taka)*	1 273	1 472	1 416	1 488
Transfer value to household (180 projected days) *(taka)*	954	1 104	1 070	1 123
Transfer value (as % of annual income)	0.5	1.6	2.4	3.7
Transfer value (as % of education expenses)	37	48	72	118

32. Table 6 also shows the loss of value transfer due to pipeline breaks. The projected annual number of "biscuit days" is 240, allowing for the summer vacation and holidays. In 2010, there were 182 actual biscuit days, 75.8 percent of planned. WFP delivered 74.2 percent of its target in 2009, 91.8 percent in 2008, and 89.7 percent in 2007. The loss of value transfer will be higher in 2011 as no biscuits were available for the first term. Pipeline breaks were caused by funding shortfalls, production problems, unsubstantiated reports of quality problems and delays in finalizing school data.

33. In both regions, most households prepare less food if their children are receiving school biscuits. In both the NW and southern coast, nearly 90 percent of households stated that children receiving school biscuits do not eat breakfast at home. From the perspective of the household, school biscuits have three major advantages, see table next page.

ADVANTAGES OF SCHOOL BISCUITS, AS CITED IN HOUSEHOLD SURVEYS		
	NW	Southern coast
Save food and money	40%	52%
Promote the health of younger siblings (most likely by food savings or additional time for child care)	40%	22%
Save time	14%	40%

Quality of Education

34. To keep up with school enrolment goals and make up for the insufficient number of schools and teachers, almost all schools operate a double-shift system, which results in reduced classroom hours. Schools have high student-to-teacher ratios; in NW programme schools, the ratio is 58:1 compared with 44:1 for control schools; and in the southern coast, the ratios are 39:1 for programme schools and 51:1 for controls. In the NW schools surveyed, half of the teachers are women, and in programme schools slightly more than half are women. In the southern coast, 40–45 percent are women. Teachers in government primary schools have higher credentials than those in non-government schools. Desks and benches were inadequate in most schools visited, and electricity was rarely available. Most schools have latrines, usually with separate facilities for boys and girls, and most have adequate teaching supplies and textbooks. Household surveys and interviews found that most families pay for additional tutoring outside the classroom.

35. School biscuits are a suitable modality for this context, as they are easy to transport to remote areas, to store, and to distribute and consume in crowded classrooms, without drawing teachers away from their duties or disrupting limited classroom time. Biscuits have also proved suitable for use in the natural disasters that frequently affect the country.

36. WFP is currently implementing pre-primary school feeding on a small scale and plans to expand this in the coming years. Parents and schools reported strong interest in a pre--primary school biscuit component as a means of helping to prepare children for school by introducing them to the learning environment earlier.

37. School feeding has enhanced the position of women on SMCs, increasing the proportion of women in leadership positions on food management committees to 65 percent. WFP has also developed the capacity of SMCs by organizing community mobilization workshops and training.

Alignment with National Strategies, Policies and Priorities

38. WFP's SFP's well aligned with government priorities and activities for education, nutrition and poverty reduction, with its long-term aim being to hand-over to the Government. However, the education sector of the Government has limited capacity and expertise to manage school feeding, which is outside its core mandate to deliver a high-quality education. The Government is considering moving to a single-shift school day and providing hot meals; such adaptations would have a significant effect on how school feeding is carried out and make it even more costly and challenging to manage. WFP is providing support to develop the capacity of national and local government officials and SMCs, and is establishing and funding a liaison unit within the Government. The objective over the coming three years is to enable the Government to plan and manage a SFP independently of WFP.

39. The pre-primary age group often falls into a coverage gap in nutrition interventions, although the National Strategy for Anaemia Prevention and Control identifies children aged 2–5 years as being at medium risk, and therefore in need of iron-folate or multiple micronutrient supplements as they are not covered by the National Nutrition Programme.

Conclusions

The following table summarizes the areas of impact found by the evaluation.

<table>
<tr><th colspan="3">AREAS OF IMPACT</th></tr>
<tr><td rowspan="4">Education Impacts</td><td colspan="2">NW and Southern coast</td></tr>
<tr><td colspan="2">Reduced variation in enrolment
Biscuits a motivating factor for parents to keep children in school
Biscuits a motivating factor for children to go to school willingly
Improved transition to secondary school for children from the most vulnerable households
Some components of the Essential Package: school gardening, malaria prevention</td></tr>
<tr><td>NW</td><td>Southern coast</td></tr>
<tr><td>Slight increase in enrolment
Reduced drop-out, except in class 5
Higher attendance
Class 5 girls' attendance well above average
Some components of the Essential Package
➢ Nutrition education
➢ Personal hygiene education
➢ Deworming</td><td>Drop-out reduced relative to control schools, especially for classes 3 and 4
Reduced drop-out for girls
Higher attendance for boys and girls, especially girls
Higher educational progression score
Fewer households have no school-age children in school</td></tr>
<tr><td rowspan="4">Nutrition and health</td><td colspan="2">NW and Southern coast</td></tr>
<tr><td colspan="2">66% RNI micronutrient boost
Reduced hunger reported
Reduced food security instability</td></tr>
<tr><td>NW</td><td>Southern coast</td></tr>
<tr><td>31% protein boost
46% energy boost
Reduced morbidity reported</td><td>29% energy boost</td></tr>
<tr><td rowspan="4">Household economy</td><td colspan="2">NW and Southern coast</td></tr>
<tr><td colspan="2">Meal substitution
4.4% reduction in daily food bill
4% contribution to household annual income
Time saved
More food for younger siblings</td></tr>
<tr><td>NW</td><td>Southern coast</td></tr>
<tr><td>10% annual income value transfer to the most vulnerable households, when combined with government stipends</td><td>8% annual income value transfer to the most vulnerable households, when combined with government stipends</td></tr>
<tr><td rowspan="2">School management</td><td colspan="2">NW and Southern coast</td></tr>
<tr><td colspan="2">More women on SMCs</td></tr>
</table>

40. No impacts were seen on classroom size, drop-out rate in classes 4 and 5, or transition to secondary school. Evidence of deterioration in completion rates was seen in programme areas.

41. The achievement of learning outcomes arises from a complex set of interrelated factors, of which school biscuits are one input. While the evaluation showed some positive impacts on attendance and drop-out rates, there is no consistent pattern of the effect on

performance in programme schools relative to control schools. This limited impact on critical education outcomes reflects shortcomings in the education system – limited contact hours, high student-to-teacher ratios, large class sizes, poor infrastructure, etc. – and economic pressures on households.

42. Parents and teachers perceive school biscuits as an important input; in addition, they help attract children in lower grades to school, provide a critical supplement to a nutritionally inadequate diet and support government policies. School biscuits also provide an important value transfer, although this is insufficient for the poorest and most marginal to offset the cost of keeping a child in school as compared to having them work. There is need to examine the SFP strategy and alternative modalities to help offset these factors for older children.

43. Given the success of the primary school enrolment effort, the evaluation suggests that a priority for Bangladesh is to create the environment for enhancing the transition to secondary school, so that children are able to acquire the skills needed to improve their livelihoods.

Recommendations

44. **Recommendation 1:** The country office and its partners should continue to develop integrated and complementary programmes that target the poorest households in the school feeding areas, in alignment with WFP's country programme.

45. **Recommendation 2:** The country office should use policy dialogue to support a strategy designed by the Government and other education bodies to address the issue of quality in schools.

46. **Recommendation 3:** The country office should develop a hand-over strategy for school feeding, in cooperation with the Government.

47. **Recommendation 4:** The country office should adopt a comprehensive approach to school feeding in primary education, with targeted goals for different age groups, including pre-primary, primary and older students in classes 4 and 5.

48. **Recommendation 5:** The country office should support the Government's design of a specific strategy to assist children in the transition to secondary school; it should include a food-for-education component.

49. **Recommendation 6:** The country office should ensure that the micronutrient content of the biscuit meets the WFP objective that 70 percent of the recommended nutrient intake be provided.

50. **Recommendation 7:** The country office should work with the Government to give full consideration to expanding the provision of school biscuits to schools outside the current coverage area, including to religious schools (primarily madrasahs) and ethnic-minority schools.

51. **Recommendation 8**: The country office should expand its monitoring and evaluation system to focus on grade attrition in primary school and the reasons for low primary completion rate.

1. Introduction

1.1. Evaluation Features

Rationale, objectives, and scope

1. Bangladesh was one of five countries selected for an impact evaluation of school feeding (SF) in 2010-2011. The objectives are to evaluate the outcomes and impact achieved in relation to intended objectives; evaluate outcomes and impact in relation to WFP's new nutrition and value transfer policy objectives (even though these were not explicitly included in the programme design); evaluate unintended outcomes and impacts; and identify changes needed to WFP operations in order to contribute to development objectives and the WFP Strategic Plan and SFP 2009. The evaluation covers the period from 2001 to 2010 and includes observations during the field work in 2011.

2. The evaluation serves accountability and learning purposes. The main intended users of the evaluation are the WFP Office of Evaluation, the WFP regional and country office, and core partners within the Ministry of Primary and Mass Education, primarily the Directorate of Primary Education (DPE), as well as the UNDP and the United Nations Children's Fund (UNICEF) (see Annex 1 for the Terms of Reference).

Methodology and limitations

3. The evaluation used a mixed methods approach that combined: 1) a literature review on WFP SF policy and programmes, and past evaluations and assessments; 2) a quantitative survey of 80 schools; 3) a quantitative survey of 1,890 households in the catchment areas of the sampled schools; and 4) an in-depth qualitative appraisal of 22 communities and schools. Both programme and control areas were surveyed (see Annex 2, Evaluation Methodology).

4. It is important to acknowledge that there is no baseline data set against which to compare the outcomes analyzed in this evaluation. Because of this, it was not possible to apply the difference in differences analysis done in previous studies (e.g. Mustafa 2010). The control upazilas were selected as matching sites based on vulnerability analysis and mapping (VAM) vulnerability classifications. In other words, the control upazilas were selected because they shared the same set of socio-economic characteristics used by VAM to define vulnerability levels.

5. The Inception Phase took place in Bangladesh from 5-11 February 2011. The quantitative surveys were carried out from 3-24 April by Mitra and Associates, a Bangladeshi firm. The qualitative field work was conducted from 5-26 April in Gaibanda and Kurigram districts in the Northwest (NW) and Barguna and Patuakhali districts in the southern coast (see Annex 3 for the detailed field work schedule). The qualitative team was composed of the Team Leader, Quantitative Specialist, Education Specialist, and Nutritionist.

6. The primary limitation to this evaluation was two consecutive pipeline breaks that disrupted the flow of biscuits to schools immediately preceding and during the evaluation period. The first break occurred when WFP suspended distribution in November-December 2010 due to concerns over quality after some biscuits were reported to be contaminated. The second pipeline break occurred in January-April 2011 when the delivery of biscuits manufactured in India was delayed while importation issues were addressed with the Government of Bangladesh. As a result, an uninterrupted supply of biscuits had not been available in some schools since November 2010 and in others since January 2011.

7. This affected data gathering on the dietary intake of school children, since daily consumption of the micronutrient-fortified school biscuit should significantly increase the vitamin and mineral content of diets and energy intake. The nutritional analysis was able to show the deficiencies in the diets of school children and calculate the additional nutritional value of the biscuit to those diets. It was anticipated that BMI data would be especially useful since the kilocalorie value of the biscuit, combined with a reduction in illness and the

micronutrient fortification, may have a significant impact on BMI. However, the data showed no difference in BMI between programme and control areas, so the team was not able to assess the contribution of the biscuit to BMI. This may have been due to the prolonged break in distribution. The qualitative team also was not able to observe biscuit distribution in the schools to assess sharing, water consumption, hand washing, or palatability.

Livelihood Profiles

8. This report analyzes and discusses three categories of SF outcomes and impacts: educational outcomes, nutritional outcomes, and social protection outcomes. To frame the analysis, livelihood profiles derived from the quantitative data are presented, and households are grouped into a set of four vulnerability categories from most to least vulnerable. As stated above, the NW ("char") region and the Southern ("coast") region are treated as unrelated samples wherein the outcomes and impacts are evaluated separately and presented as such. In each region, the analysis compares outcomes where the SF biscuit has been present in the school ("programme") and where it has not been present ("control"). The sample was constituted of 943 families in the NW (473 intervention and 470 control) and 947 families in the Southern coast (471 intervention and 476 control).

9. A summary livelihoods profile is useful to establish an analytical backdrop to distinguish the two regions in the evaluation. The NW area of Bangladesh is widely held to be the most poverty-stricken and the most vulnerable region in the country. The majority of the population is rural and dependent upon some form of agricultural production. However, lands are historically concentrated in the hands of an elite few, and most rural families are either landless workers or obtain land access through lease or sharecrop arrangements. Many households do not even own the land upon which they live, a local indicator of extreme poverty. These already binding livelihood constraints are further exacerbated by the uncertainties of nature. The major river systems that flow through the NW toward the Bay of Bengal are characterized by wide swings in water volume related to the monsoon and snowmelt in the Himalayas. When rains arrive in the upriver watershed, rivers swell and gain velocity, eroding riverbanks and consuming scarce agricultural land. Severe flooding is also a common occurrence in this region. At the same time, these river dynamics create the famous channel islands, known as chars, which can expand over time into large, established land tracts, also dominated by the elite. The annual cycle of flooding and riverbank erosion creates not only an uncertainty in char livelihoods but also instability, since significant areas of agricultural land are lost every year, leaving families without a source of livelihood. In this context of vulnerability, seasonal, cyclical, and repeated migration to other parts of Bangladesh is the main source of income for most landless families.

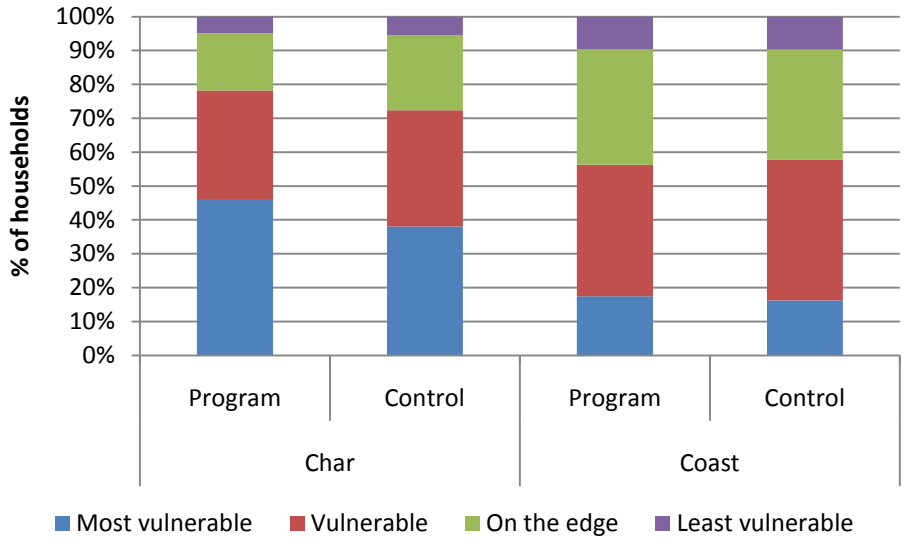
10. The Division of Barisal encompasses the southern coastal region of Bangladesh, which lies within the swath of Bay-of-Bengal cyclonic activity. This region is beset by regularly occurring cyclones, severe storms, and river surges. Here, too, most rural inhabitants are landless, and large char islands are established where major rivers flow into the bay. Annual flooding occurs as part of the agricultural cycle, but the major source of vulnerability comes from violent storms (including cyclones) and sea surges up into the rivers. Two major cyclones have struck this region over the last five years, resulting in a major emergency relief effort, of which SF became a component. School feeding continues as an emergency operation as livelihoods engage a path to recovery.

11. These livelihood profiles imply a high level of variability in individual households, and these differences could affect the outcomes and impacts of SF. To capture this source of variability, the analysis of the 1,890 households in the sample created a set of four vulnerability categories using principal component analysis. The vulnerability classification is used to examine inherent differences among households and to determine the extent to which vulnerability determinants correlate significantly with education, nutrition, and social protection outcomes within households. In other words, the analysis seeks to document if the more vulnerable households make different decisions regarding, for example, the

education of their children, and if the school biscuit has differential impacts on overall household well-being. The factors that most effectively clustered into distinct vulnerability categories were annual income, the food consumption score,[8] and total assets (in Taka).

12. As Figure 1 illustrates, in the NW over 46 percent of the families are classified in the most vulnerable group and another third are in the vulnerable category. There is no significant difference between intervention and control families with regard to the distribution of households across the vulnerability categories. In the Southern coast, however, the pattern of household vulnerability is lower, with 17 percent in the most vulnerable and 40 percent in the vulnerable group. Also, no differences in vulnerability classifications exist between programme and control households in the Southern coast.[9]

Figure 1. Vulnerability categories in the Northwest and Southern Coast



Quality assurance

13. Throughout the evaluation process, the evaluation team has worked to ensure that input was solicited from a range of stakeholders including schools, parents, local government and education officials, non-governmental organizations (NGO) partners, WFP field and headquarters staff, donors, external agencies involved in education, and others. The team endeavoured to objectively record the complete range of stakeholder views, values, beliefs, needs, and interests and to maintain the independence and transparency of the process. Quality control of the quantitative study was maintained by Mitra and Associates with oversight by the Quantitative Specialist and the Team Leader, plus an internal Quality Control Officer. The mixed methods approach allowed the team to triangulate information by using different evaluation lenses to look at issues from a variety of perspectives while using their own experience and expertise in analyzing results. A desk review of previous evaluations and surveys of SFPs was conducted to identify well documented aspects of SF and gaps in knowledge. Gaps were identified in the areas of seasonality and the influence of livelihoods on access to education, as well as information on the interplay of educational quality and SFPs. The validation of information and information gaps against previous studies also helped ensure the quality of the evaluation process. At the end of the field work, the evaluation team presented a debriefing and received feedback on preliminary findings and recommendations from the country office, Regional Office, and headquarters.

8 food consumption score CS is a measure of diet diversity developed by WFP and used throughout the world to compare food utilization patterns (WFP 2008).

9 This is to be expected since the control groups were selected from upazilas that match the socio-economic characteristics of the programme groups, using WFP/VAM information.

1.2. Context

Overview

14. Bangladesh is one of the most low-lying and densely populated countries in the world. The population of approximately 157.8 million people is growing at an annual rate of 1.6 percent. The seventh most populous country in the world, [10] it has the third highest number of hungry people behind India and China.[11] Bangladesh exhibited macroeconomic resilience during the recent global financial crisis and has consistently achieved an average annual growth rate of approximately 6 percent since the mid-1990s. Despite this progress, approximately 49 percent of the population lives on less than US$1.25 per day and 81.3 percent lives on less than US$2 per day.[12] Bangladesh ranks 129th out of 169 countries on the 2010 UNDP Human Development Index.[13]

Food and livelihood security

15. The predominant livelihood system is agriculture, employing 45 percent of the programme force[14] or 73.9 million people. Although poverty has declined in Bangladesh over the last decade, 63 million people live below the poverty line of less than 2,122 kcal/person/day, and 28 million live in extreme poverty, consuming less than 1,805 kcal/person/day (WFP 2006). Three-quarters of the population (76 percent) live in rural areas; 37 percent of the rural population is considered ultra-poor.

16. Food insecurity is more pronounced in disaster-prone areas in the northwest, north, southeast and part of the southern coastal belt. Bangladesh is highly vulnerable to natural disasters due to its geographic location. The frequency of disasters is increasing and the country ranks highest among the 15 countries considered at 'extreme risk.'[15] Approximately one-third of the country is subject to annual flooding that disrupts lives and livelihoods and exacerbates food insecurity.

17. Other factors that contribute to food insecurity in Bangladesh include a large and growing population dependent on a fragile natural resource base, recurrent and extreme natural disasters, lack of purchasing power resulting from under- and unemployment, inefficient infrastructure and markets, and unequal access to productive assets, especially land. A 2008 study in northern Bangladesh on the impact of food price increases found that while the richest households benefited from the increase in the price of rice, between 32 percent and 50 percent of households had a lower disposable income in 2008 than before the crisis.[16]

18. Ultra-poor households depend on a variety of livelihood strategies and social networks. The most vulnerable lack productive assets and survive on irregular income as day programmeers and on seasonal migration to cities. Food insecurity is further undermined by the marginalization of women, whose limited access to education, income-earning opportunities and social services has a negative impact on the health, nutrition and food security of society as a whole.

Health and nutrition

19. Bangladesh has made important strides in some areas of health and nutrition though malnutrition rates remain among the highest in the world. Bangladesh is one of only six countries that has reduced its child mortality rate by at least half since 1990.[17] While it has

[10] http://www.cia.gov/library/publications/the-world-factbook/geos/bg.html
[11] Bangladesh Bureau of Statistics (BBS). 2000. Household Income Expenditure Survey. Dhaka.
[12] UNDP. 2009. Human Development Report.
[13] UNDP. 2010. Human Development Report.
[14] Ibid.
[15] Natural Disasters Risk Index 2010.
[16] Save the Children United Kingdom. 2009. How the Global Food Crisis is Hurting Children.
[17] UNICEF. Child Survival Bangladesh Fact Sheet. February 2010.

reduced its Global Hunger Index score from 35.9 in 1990 to 24.7 in 2009, this remains within the 'alarming' category.

20. In the most recent national nutrition survey,[18] about half of all children under five were found to be stunted (48.6 percent) and 37.4 percent were underweight; the prevalence of global acute malnutrition was 13.5 percent and severe acute malnutrition was 3.4 percent, indicating that more than 2.1 million children under five in Bangladesh are wasted.[19] Rural areas have statistically significant higher rates of acute, chronic and underweight malnutrition than urban areas.

21. Bangladeshi children have high rates of anemia and micronutrient deficiencies: 68 percent of children under five are anemic as well as 40 percent of adolescent girls and 31 percent of adolescent boys. Anemia impairs ante- and postnatal growth and development, especially of the brain, and has important consequences for educational achievement.

22. Children with severe worm infections perform poorly in learning ability tests, cognitive function and educational achievement. Illness due to worm infections contributes significantly to school absenteeism.[20] Deworming of primary school children was part of the Bangladesh National Plan of Action for Children 2004-2009.

23. A quarter of households in Bangladesh consume nutritionally inadequate diets based predominantly on starchy staples.[21] Household food consumption studies[22] show that cereals (largely rice) make up the largest share (62 percent) of the diet, followed by non-leafy vegetables, roots and tubers, which together comprise more than four-fifths of the rural people's total diet. Protein and micronutrient-rich foods such as fish, meat, eggs, milk, milk products, fats and oils account for less than 10 percent of the rural person's diet, and the consumption of vegetables and fruits is declining steadily.[23] In addition, cultural norms dictate a better diet for males than females with the male head of the household getting the best meal portions.

Education

24. Bangladesh has made great progress in improving access to primary education. From 1996 to 2004, gross and net enrolment ratios grew from 95 percent to 101.6 percent and from 82 percent to 89.7 percent, respectively (CREATE 2007). The overall adult literacy rate increased from 29 percent in 1981 to 54 percent by 2008. The gender gap in basic education also narrowed: in 1994, 35 percent more men than women were literate, but by 2008 that difference had declined to 18 percent.[24] Gender parity has been achieved at both primary and secondary levels.[25] However, while enrolment, attendance, and gender parity have increased, other key indicators such as completion rate and learning outcomes are lagging behind.

25. With Government initiatives such as free and compulsory primary education, distribution of free textbooks, food for education (FFE) and stipend programmes, primary school enrolment grew faster than the number of schools and trained teachers. As a result, quality of education, particularly in terms of learning achievements, remained very low and

[18] Bangladesh Household Food Security and Nutrition Assessment Report 2009, WFP, UNICEF, Institute of Public Health Nutrition, Ministry of Health and Family Welfare, Government of the People's Republic of Bangladesh

[19] Data are not available for school-aged children.

[20] School deworming at a glance, WHO/World Bank.

[21] WFP, UNICEF and Institute of Public Health Nutrition (2009). Household Food Security and Nutrition Assessment (HFSNA).

[22] Bangladesh National Nutrition Survey (1995–1996).

[23] Bhattacharjee, L., Saha, SK. and Nandi, BK. In collaboration with the Project Team, Department of Agricultural Extension, Ministry of Agriculture, The People's Republic of Bangladesh and FAO Regional Office for Asia and the Pacific (2007). *Food-based nutrition strategies in Bangladesh, Experience of integrated horticulture and nutrition development*.

[24] UNICEF Statistics. http://www.unicef.org/infobycountry/bangladesh_bangladesh_statistics.html December 2010

[25] Bangladesh PRSP, 2005; Bangladesh Human Development Report 2000; Finan et al., 2001

has become a major focus of concern (Chowdhury et. al. 2001). Subsequently, several quality improvement initiatives were undertaken, including the Primary Education Development Programme (PEDP II), which supports primary schools to improve their physical facilities (classrooms, drinking water and toilet facilities, playgrounds, and provisions for those with special needs). Components to improve quality of teaching-learning included recruitment of new teachers with a priority on females, teacher training, and development of Upazila Resource Centres (Nath and Chowdhury 2008).

26. Access to education is increasingly seen as linked to equity and participation in education. Although there is high enrolment, there is also a high dropout rate (48 percent cohort dropout in 2004). There are large disparities in rural-urban and socio-economic categories for participation in education. The extreme poor are the largest category excluded from primary and secondary education. There is also a hidden category of those who are 'virtually excluded,' i.e., physically present in class but not engaged in learning, who are at risk of dropping out. These aspects of access and equity are yet to be adequately understood or addressed, but need serious attention if overall quality of education is to be improved (CREATE 2007).

27. A wide variety of institutions offer primary education. Official statistics show ten such categories: (1) government primary schools (GPS), (2) registered non-government primary schools (RNGPS), (3) non-registered non-government primary schools (NRNGPS), (4) experimental schools (linked to primary teacher training institutes), (5) Ibtidayee madrasahs, (6) kindergartens, (7) NGO schools (complete), (8) community schools, (9) attached to high madrasahs, and (10) attached to high schools (CREATE 2007).

28. The Government is the key provider of primary education, with around 37,671 GPS enrolling 57 percent of school-age children. GPS are fully financed and managed by the Government through the DPE and its field-level offices. To meet the growing demand for schools, the Government provides support to 19,428 RNGPS which enrols 24 percent of students. Of the remaining primary students, 9 percent are enrolled in all types of madrasahs, 2.5 percent in kindergartens and 1.1 percent in non-formal education schools, though the non-formal school enrolment seems to be underestimated.[26]

29. In order to be registered, RNGPS schools must meet certain standards, including having a building and land, teacher credentials at par with GPS, and a minimum number of students enrolled, attending, and completing primary school. RNGPS teachers are paid by the Government, though at a lower rate than GPS teachers. The community is expected to take a complementary role in the management and financing of the RNGPS. Generally, the provisions for teachers and physical facilities are poorer in RNGPS compared to GPS.

30. In the sample of schools surveyed for this evaluation, around half from each region were GPS. In the NW, 35 percent of schools were RNGPS and 15 percent were non-registered, non-government primary school. In the Southern Coast, 46 percent of the schools were RNGPS and one was a non-registered, non-government primary school.

31. In addition to government-sponsored primary education, NGOs such as BRAC and others play a significant role in providing basic education. The NGO schools serve around 1.5 million children, seeking to reach the families who are at the margin of society and the most difficult to reach (CREATE 2007). These students are not, however, included in official education statistics.

32. School types differ in terms of infrastructure; resources; educational level, training, and salary of teachers; student-teacher ratio; school contact hours; and other factors that may have differential effects on students' learning and performance. GPS have better infrastructure, more trained teachers, and better paid teachers than either the RNGPS or NGO non-formal primary schools (Ahmed & Nath et.al. 2005; CREATE 2007; Nath & Chowdhury 2008).

[26] DPE, 2002; Ahmed and Nath 2005; CREATE, 2007.

33. In GPS, the average student-teacher ratio is 64:1 while in RNGPS the ratio is 53:1 (CREATE 2007). Most GPS schools have two shifts. The morning shift, with the lower grades, is a two-and-a-half hour session; the upper grades attend the second shift for four hours. The non-formal primary schools follow a one-teacher one-school model with 30 to 33 students per teacher, and are in session for one three- to four-hour shift.

34. Factors such as social and economic disadvantages of the child and the home environment are important when assessing the impact of the school biscuit programme on enrolment, attendance, and retention. Some types of schools may be better able to reach the socio-economic groups that are most difficult to enrol or retain. The Bangladesh Education Watch reported that children from "always in deficit" families had a 30 percent less chance of being enrolled in a school and were five times more likely to drop out compared to a child from a "surplus" family (Ahmed and Nath 2005). In this study, over 40 percent of families cited poverty as the primary reason for dropping out. Among the reasons for non-enrolment, refusal of admission was cited as the second most important reason, while "not liking school" was an important cause for not enrolling or for dropping out.

35. Among the various approaches to SF there is interest by some government stakeholders on exploring (at least in pilot form) the option of providing a hot meal or fresh fruit and eggs in school. India's mid-day meal, launched on a nation-wide scale following the India Supreme Court ruling in 2001 mandating this as part of the 'Right to Food' (Winch, 2009), has added some political pressure on the Bangladesh government to follow suit.

Government strategy and capacity

36. The 2015 the Government Poverty Reduction Strategy (PRS) includes "quality education" as a priority area. Recommendations for quality improvement include appointment of qualified teachers, modern in-service training, improving the teacher-student ratio, an effective monitoring, supervision and evaluation mechanism, curriculum development, and activating the School Management Committee (SMC).

37. "Education for All" the National Plan of Action (II) 2003-2015 prepared by the Ministry of Primary and Mass Education refers to the SFP as a pilot supported and coordinated by WFP that would be expanded as proposed in the PRS. The plan includes an objective of developing and implementing a "phased SFP for primary education based on nutritionally-relevant meal content, cost-effectiveness, decentralized supply chains and a management strategy which avoids vesting responsibilities on teachers."

38. The National Plan Of Action For Children 2005-2010 prepared by the Ministry of Women and Children Affairs also refers to the school biscuit programme. The National Strategy for Anemia Prevention and Control in Bangladesh identifies children ages two to five years and school-age children (ages five to 11) as medium risk groups. Neither group is covered by the National Nutrition Programme, though they should be targeted for iron folate or micronutrient supplements.[27]

39. The Government carried out its own FFE programme from 1993 to 2002. The programme provided a free monthly ration of rice or wheat to poor families provided their children attended primary school. FFE covered about 27 percent of all primary schools and enrolled approximately one-third of all primary school students. The FFE programme was ended due to concerns by the government and donors about 'leakages' – the diversion of subsidized food rations away from the intended recipients (Ryan and Meng 2004). The Government launched EC-funded SF in July 2011.

[27] National Strategy for Anemia Prevention and Control in Bangladesh. Feb 2007. Institute of Public Health Nutrition, Ministry of Family Health and Welfare.

40. FFE was replaced by the Primary Education Stipend programme (a cash-for-education programme), of which Phase II runs from 2008 to 2013.[28] The Government also implements the Female Stipend Programme, created in 1982 to help increase the enrolment and retention of girls in secondary schools (Raynor and Wesson 2006).

41. Outside of government, there are a few very small scale NGO SF pilots. Land o' Lakes has been working in SF in Jamalpur district (in NW Bangladesh) since 2002. In January 2011 it started programming a new 14-month pilot that focuses on local and regional food procurement. Previously, Land o' Lakes distributed biscuits and ultra-high temperature milk to primary school children. The new project distributes a cereal bar comprised of peanuts, chickpeas, sesame seed, puffed rice, sugar, oil and a micronutrient pre-mix to more than 100,000 children in 441 schools in three upazilas. Each student receives a 40 g bar per day comprising 200 kcals per day. The project has already noted an increase in attendance of 8 percent in the two to three months since its initiation, as well as an increase in enrolment. Since 2009, Action Aid has piloted a mid-day school meal programme in two schools in Jamalpur district but has not scaled up the initiative.

1.3. WFP's School Feeding Programme in Bangladesh

42. WFP has provided food assistance to Bangladesh since 1974 and initiated its SFP using micronutrient fortified biscuits in 2001. School feeding activities have reached over 7,000,000 beneficiaries, 50 percent of which are girls. The WFP-assisted schools are mostly GPS and RNGPS, with some community and NGO schools. Beneficiaries have grown from nearly 800,000 in 2002 to 1.5 million in 2009 – half of WFP Bangladesh's total portfolio.

43. The SFP provides a 75 g daily portion of fortified biscuits containing roughly 338 calories and 66 percent recommended nutrient intake (RNI) of common vitamins and minerals for a school-age child, including vitamins A, B1,B2, C, and iron. Children are supposed to receive the biscuits 240 days per year. The ration is designed with the assumption that other sources of consumption will be accessed by children. So the nutritional status of the children also depends on dietary practices at home.

44. Previously, WFP selected local factories for the production of biscuits through a competitive bidding process. WFP managed procurements and oversaw the supply of vitamin pre-mix in conformity with the national fortification guidelines to the local biscuit factories, and monitored the quality of production and storage. The factories delivered fortified biscuits to local warehouses maintained by WFP and its NGO implementing partners per a distribution plan. NGO partners facilitate transportation and distribution of biscuits to schools, monitor the distribution, and resolve problems. WFP field staff conduct random sample monitoring of schools as well, in conjunction with local education officials. In 2010, a combination of quality, bidding and cost issues prompted WFP to contract a manufacturer in India. This new process contributed to the pipeline break, which included a delay in receiving Government permission to import the biscuits duty-free that delayed the biscuit delivery by several weeks.

45. In response to repeated flooding between 2000 and 2008, three emergency operations (EMOP) of various durations provided food assistance to affected districts, particularly in coastal areas. Activities included emergency SF to encourage continued school attendance of children during recovery. In response to rising food prices in 2008 and ongoing recovery issues from Cyclone Sidr in 2007, EMOP 10788.0 provided SF (fortified biscuits and monthly take-home rations based on attendance).

46. Over the same period, country programme (CP) 10059.0 and 10410.0 were operational. SF – as well as other forms of supplementary feeding – was included as part of the Integrated Food Security programme activity in CP10059.0. CP10410.0 focused on five

[28] Ministry of Primary and Mass Education, Government of the People's Republic of Bangladesh. Retrieved from http://www.mopme.gov.bd/index.php?option=com_content&task=view&id=426&Itemid=492 on December 2010.

priority areas, including enhancing enrolment, attendance and learning, and reducing the drop-out rate in pre-primary and primary school-age children.

47. There has been limited overlap in geographical targeting of the EMOPs and CPs. Some districts have been involved with SF activities for up to eight years, while others received no more than a single year of intervention. Table 1 indicates the history of interventions in those districts identified as relevant to the current evaluation.

Table 1. History of WFP Interventions in Bangladesh

Division	District	EMOP 10715 2007-2008 (Extended to 2/09)	EMOP 10788 2008-2009[29]	CP 10059 2002-2006	CP 10410 2007-2010	Appr Yrs Total
Coast Barisal	Barguna		X		X	3
Coast Barisal	Patuakhali	X	X		X	3[30]
NW Rajshahi	Kurigram		X	X	X	8
NW Rajshahi	Gaibanda		X		X	3[31]

48. Previous studies of SF in Bangladesh involved only CPs and not EMOPs. Some districts receiving SF may have received both CP and EMOP assistance. Because the shorter-duration EMOPs were expected to have different impacts than CPs and targeted different populations (though some overlap occurred), direct comparisons between the two types of intervention are less than ideal. The current evaluation reviewed previous surveys to eliminate duplication and enable a deeper understanding based on key questions. Per the terms of reference (TOR), SF provided through protracted relief and recovery operations (PRRO) to Myanmar refugees beginning in 2002 were not included in this evaluation.

2. Results: Outcomes and Impacts of School Feeding

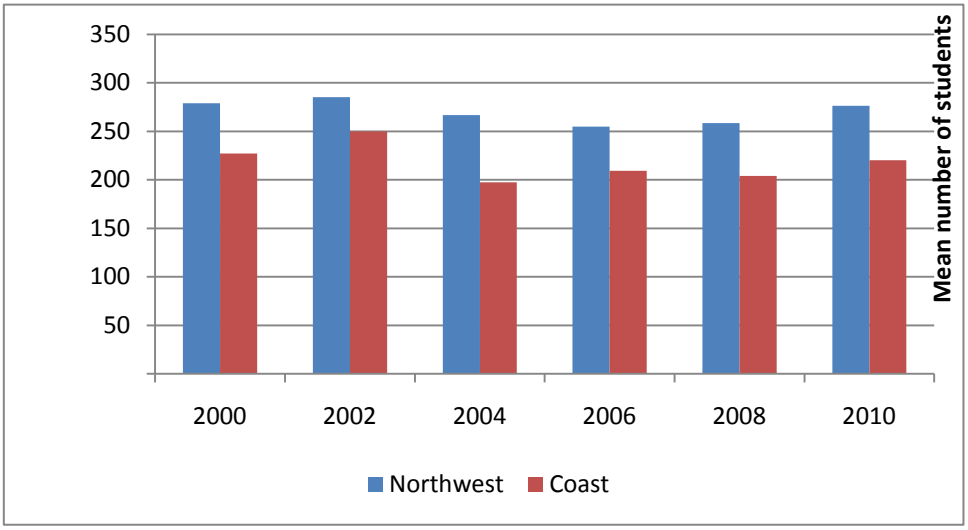
2.1. Education Outcomes and Impacts

Primary school enrolment

49. It is expected that the presence of the biscuit would attract more children to school, as Mustafa (2010) has demonstrated in his outcomes study. As Figure 2 shows, the average number of children per school enrolled between 2000 and 2010 ranged between 260 and 300 in the NW and between 200 and 230 in the Southern Coast. (Even with information on the number of primary-age children in the catchment area, it is not possible to estimate gross or net school-level enrolment rate, since parents often have a choice of schools from within that area.) As shown, the average school size is significantly higher in the NW relative to the Southern Coast.[32]

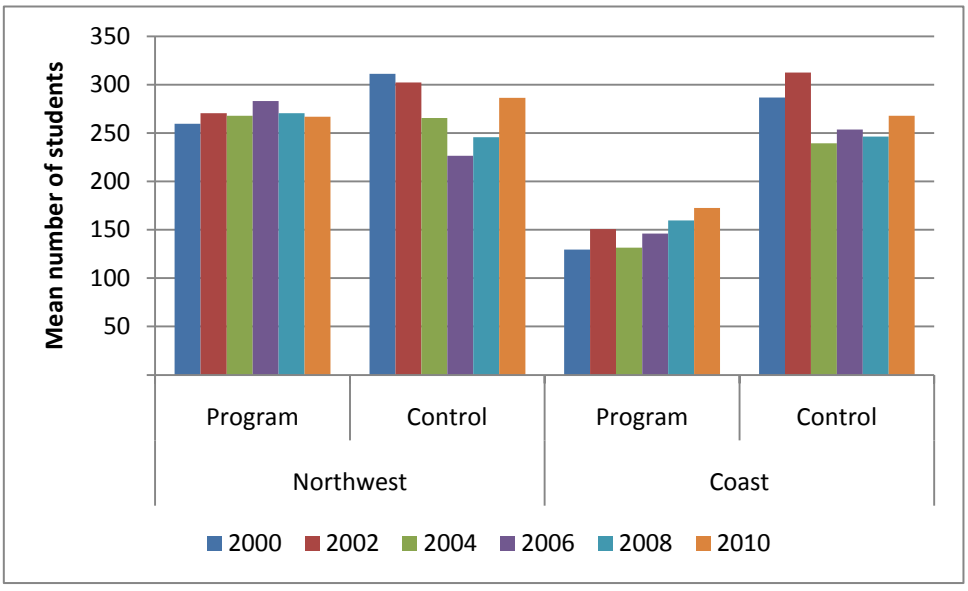
[29] Schools included under this EMOP were expected to be included in the CO from 2010 (SPR, 2009).
[30] Total years of operation in Barguna and Patuakhali from discussions with WFP Dhaka and SPRs.
[31] Per discussions with WFP sub-office in Rangpur.
[32] The Southern districts are criss-crossed with many rivers and 'khals' (small feeder rivers and streams, channels), which are impassable to primary school-age children. Thus, smaller schools are set up on different sides of these rivers and khals to enable children to access schools.

Figure 2. Average number of students enrolled per school, 2000-2010



50. Figure 2 illustrates changes in enrolment in programme and control schools over time. Overall, average school enrolment has ranged between 200 and 300 students per school (however, enrolments in the government schools are significantly higher than in non-government ones). In both NW and Southern coastal schools, the average student population dropped between 2002 and 2004, but after that enrolments have steadily increased. When programme effects are considered for the NW, from 2000-2010 average school size increased slightly (3 percent) in the schools with the biscuit. In the Southern Coast, the biscuit was introduced in 2008 and average school size increased by 8 percent. The control group, however, also experienced a significant increase (9 percent). It is interesting that the inter-annual variation in school numbers is smaller in the programme schools in both regions; programme schools show growth without the wide swings that the control schools display.

Figure 3. Average number of students by region: programme vs control



51. A closer focus on programme impacts is presented in Table 2 which presents both average enrolment counts and grade attrition rates from Class 2 through 5 (in red).[33] For the

[33] *Grade attrition rate* is an estimate of the percentage of children who drop out of school from one grade to another. It is calculated as the percentage decline in enrolment counts from one grade (e.g. Class 1) to the next (e.g. Class 2).

NW, Class 1 enrolments increased over the last 10 years in both the programme and control schools, while Class 4 and Class 5 average enrolments have decreased through time, and at a higher rate in the programme areas. The grade attrition rate is particularly marked in Class 4 and Class 5 in both programme and control schools over the last three years. In the Southern coastal schools, Class 1 enrolments have also increased, but in the programme schools, since 2008, the grade attrition rates have decreased relative to the control schools, especially in Class 2 and Class 4. It is quite possible that the presence of the biscuit has contributed to this reduction; however, the attrition rate at Class 5 is similar to that of the NW (a decline of one-third) with no difference between programme and control schools. All in all, these findings indicate that the attrition rate is a major educational challenge and in every year, biscuit or not, fewer students are enrolled in the subsequent grade. The averages over the six years show that approximately 75-85 students begin Class 1 in the NW and about 60-75 in the Southern Coast; however, between 30 and 45 are in Class 5 in the NW and between 25 and 35 in the Southern Coast.

Table 2: Average enrolment counts, by region, class, and programme (grade attrition rates in parentheses)

Northwest							
		2000	2002	2004	2006	2008	2010
Programme	Class 1	74	75	83	85	78	87
	Class 2	64(.13)	67(.10)	70(.15)	68(.20)	71(.09)	64(.27)
	Class 3	58(.09)	61(.08)	60(.15)	57(.16)	60(.15)	57(.11)
	Class 4	52(.11)	50(.19)	47(.21)	46(.20)	48(.21)	47(.17)
	Class 5	46(.10)	41(.17)	37(.20)	35(.23)	33(.31)	30(.36)
Control	Class 1	75	78	71	68	69	83
	Class 2	68 (.09)	70(.10)	64(.10)	56 (.18)	64(.07)	63(.24)
	Class 3	65(.04)	59(.15)	57(.10)	49(.11)	55(.15)	59(.07)
	Class 4	56(.14)	51(.13)	52(.09)	43(.13)	44(.20)	48(.18)
	Class 5	48(.14)	43(.16)	46(.11)	37(.14)	33(.24)	34(.30)
Coast							
		2000	**2002**	**2004**	**2006**	**2008**	**2010**
Programme	Class 1	37	39	38	40	46	49
	Class 2	27(.27)	32(.18)	31(.17)	32(.19)	38(.17)	41(.17)
	Class 3	30(-.10)	34(-.07)	29(.07)	30(.05)	32(.15)	36(.12)
	Class 4	27(.11)	26(.23)	23(.21)	27(.10)	30(.05)	33(.10)
	Class 5	20(.26)	23(.13)	21(.08)	17(.39)	19(.38)	21(.37)
Control	Class 1	78	96	81	74	74	84
	Class 2	65(.17)	72(.25)	59(.27)	58(.22)	56(.24)	61(.27)
	Class 3	62(.03)	65(.10)	50(.15)	50(.13)	50(.10)	53(.14)
	Class 4	47(.24)	46(.29)	43(.14)	39(.22)	41(.19)	43(.19)
	Class 5	39(.17)	32(.30)	31(.29)	32(.19)	25(.38)	28(.34)

52. In Table 3, the analysis considers the progress of four cohorts (2000, 2002, 2004, 2006) for which data were available at schools. The cohort attrition rates were calculated as the percentage decline in enrolment counts for those students who entered in Class 1 relative to enrolments for that cohort in Class 5.[34] Table 3 reveals that over time, between 50-65 percent of the boys in NW programme schools have not enrolled in Class 5; for girls, the results show between 54 and 66 percent. In both cases there is no measurable impact of the biscuit for this outcome. In the Southern coastal schools, between 56 and 62 percent of the

[34] In this evaluation, data were not available to observe a single cohort through five years of primary school (which would require besides enrolment counts, transfers in and transfers out, and dropouts—either within a school year or between school years).

boys and 57 to 61 percent of the girls who started in Class 1 were not enrolled in Class 5. It is relevant that the cohort attrition in both regions is more marked in the two cohorts finishing in 2008 and 2010.

Table 3: Cohort grade attrition rate by region, gender, and programme

	Northwest				Coast			
	Programme		Control		Programme		Control	
	Cohort attrition rate							
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Cohort 2000-04	.50	.54	.31	.25*	.48	.24*	.56	.57
Cohort 2002-06	.53	.60	.57	.51	.63	.40	.60	.59
Cohort 2004-08	.62	.66	.49	.56	.60	.46	.62	.61
Cohort 2006-10	.65	.58	.53	.51	.64	.52	.62	.60

* p<=0.05

53. Overall, the gender patterns for educational outcomes suggest that the presence of the biscuit has contributed to female primary education. From 2000 to 2010 in programme schools, the gender ratio (females to males) increased from .93 to 1.06 while in the control areas, the increase was from .80 to 1.01. In the Southern Coast, the gender ratio has been consistently above parity in the programme schools and since 2006, in the control schools. With respect to the grade attrition rate, however, it appears that girls are as likely as boys to cut short their education prior to finishing primary school, regardless of the presence of the biscuit.

Table 4: Profiles of enrolment and school dropout patterns at the household level

	Northwest			Coast		
	Programme	Control	Sig.	Programme	Control	Sig.
HH net enrolment for ages 5-18 (%)	82.7	87.6	**	89.7	83.5	**
Children never attended school (%)	11.3	7.4	**	4.3	6.3	*
Children dropped out (%)	5.5	5.1	ns	5.9	9.7	**
Average starting age for school	6.1	5.9	**	5.4	5.9	**
n	473	470		471	476	

* p<=0.05; ** p<=0.01; ns=not significant

54. As shown in Table 4 above, in the household survey, educational "history" of all family members between five and 18 years of age were recorded in terms of when they started school, if they were still in school, or if they had never gone to school. In effect, these results are interpreted as household level enrolment rates and dropout rates.

55. In the case of the NW households that received biscuits, an average of 83 percent of children ages 5-18 were in school, while the control households had an enrolment rate of 88 percent. In the Southern Coast, the programme schools had an enrolment rate of almost 90 percent, and the control households 83.5 percent.

56. Vulnerability levels significantly affect net enrolment rates at the household level. In the most vulnerable households of the NW, only 80 percent of children ages 5-18 are in school, while in the least vulnerable, almost 97 percent of these children attend school. Five percent of the households had no school-age children in school, and these were concentrated in the most vulnerable categories. In the Southern Coast, on the other hand, enrolment is higher, and the data suggest that vulnerability has no impact on whether children are in school or not.

57. When school-age members of families are not in school, either they never enrolled in the first place, or they began school and stopped. Overall, 9.4 percent of the children in NW households never started school compared to a little over 5 percent in the Southern Coast.

58. There are significant differences with regard to programme impact, but not in the expected direction. In the NW, 11 percent of school-age children in households participating in the school biscuit never went to school, while only 7 percent of the children in control households never started school. In contrast, 4 percent of the children in Southern Coastal households receiving the biscuit never went to school compared to 6 percent of the control households. In both regions, families stated that they did not send their children to school either because of economic reasons, admittance standards imposed by the school, or perceived lack of interest on the part of the child. In the NW, the economic constraints appear the most binding. Here, the children who never went to school are found predominantly in the two highest vulnerability classes (over 80 percent), suggesting that household poverty poses too great a barrier for SF and other school-based incentives to overcome. In the Southern Coast, household vulnerability is a lesser factor.

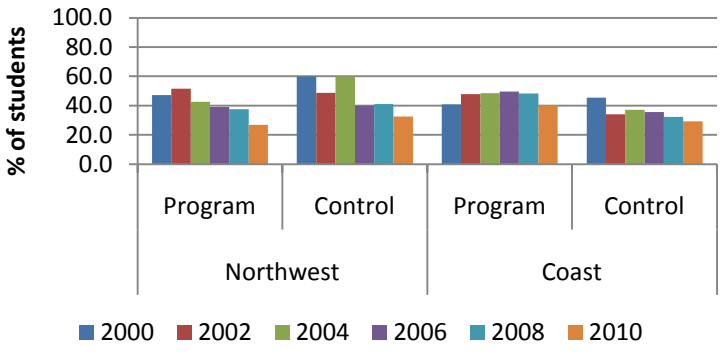
59. With regards to the household dropout rate, around 8 percent of the NW households have at least one child who has dropped out of school. The dropout rate of all school-age students (regardless of household) was 5.5 percent in the programme schools, and 5.1 percent in the control group. As is the case above, vulnerability carries significant explanatory weight in this region, since the dropout rate in the least vulnerable households is less than 1 percent, while the average for the most vulnerable households is more than 7 percent.

60. In the Southern Coast, 14 percent of households report at least one child who has stopped going to school, and the overall rate (for all students) is 5.9 percent for programme children, compared with 9.7 children in the control group. Here, the presence of the biscuit contributes to the decision of children to stay in school. Consistent with the above, vulnerability status has no impact on whether children stay in school or not.

Completion and transition rates

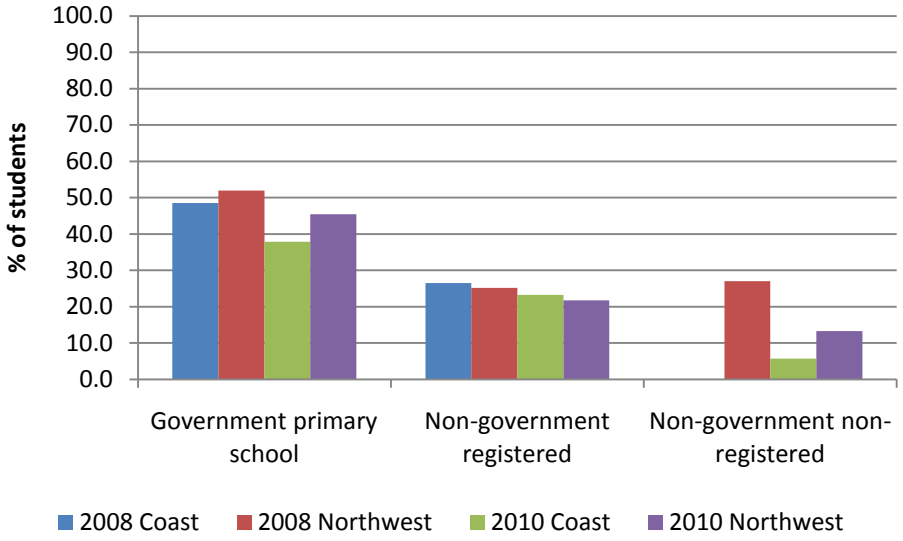
61. The primary completion rate is not the inverse of the dropout rate, because not all Class 5 students complete primary. Figure 4 illustrates that the primary completion rate has deteriorated since 2000 in both the programme and control schools of the NW and in the control schools of the Southern Coast. Completion rates in Southern Coast programme schools have remained relatively stable and are substantially above the rates in the control schools of that region. The data do not, however, clearly identify the biscuit as a significant factor in this outcome, since programme schools had higher completion rates prior to the introduction of the biscuit intervention.

Figure 4. Primary completion rates by year, region, and intervention



62. An analysis of completion rates by school types for the years 2008 and 2010 (Figure 5) demonstrates that a larger percentage of children in the government schools on average complete primary school when compared to the registered non-government schools.[35] Also, completion rates decreased from 2008 to 2010 in all school types in the sample, as predicted by the trend in dropout rates. The reasons for the low completion rates are not clear and were not adequately identified in the qualitative interviews. When asked about low completion rates, school personnel tended to blame parents for not valuing education, or to deny that their school had a problem in this area. A few School Management Committees (SMCs) admitted to the practice of not allowing children to move up to Class 5 if they thought the child could not pass the national primary completion exam, as low pass rates reflect unfavourably on the school. Other SMCs stated that many children left the GPS and RNGPS to complete their education in madrasahs, either because the parents desired a religious education or because the madrasah provides all school materials and uniforms free, making it attractive to poor families. The household data, however, suggest that the children who fail to complete primary school are concentrated in the most vulnerable households.

Figure 5. Percentage of students completing Class 5, by school type and region

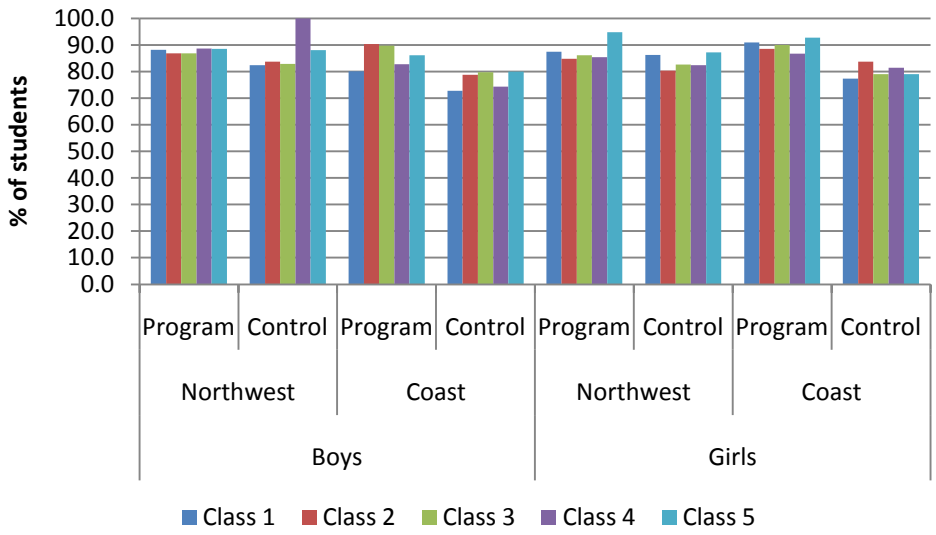


Attendance rates

63. Past studies (Ahmed 2004; Mustafa 2010) have concluded that attendance rates improve (by around 6 percent) with the presence of the school biscuit and the qualitative interviews suggested that such was the case, particularly for younger children. Daily attendance data are routinely recorded at each school, and the average monthly attendance levels for 2010 were used to calculate an attendance rate (monthly average attendance as a ratio of annual enrolment numbers for each class). Figure 6 summarizes these 2010 attendance rates by class, gender, region, and intervention group.

[35] It is difficult to interpret the case of the non-registered, non-government schools because the educational model is unique and there are only three such schools in the sample.

Figure 6. 2010 attendance rates by class, gender, region, and programme



64. In the NW, attendance rates generally lie between 85 and 90 percent for both boys and girls in the programme schools, on average about 6-8 percentage points higher than control schools. This result is consistent with previous studies as cited above. There are no statistical differences between the attendance of boys and girls in this region, except for Class 5, where girl's attendance rates are well above average. These differences, however, are not statistically significant and there is no significant difference between classes. Attendance rates for Class 5 girls are above 90 percent in the intervention schools, but there are no significant statistical differences between intervention and control schools for girls overall.

65. In the Southern Coast, attendance levels in the programme area are significantly higher than in the control area, particularly for girls. Here the impact of the biscuit is more marked, and the programme rates are nearly 10 percent higher than control schools, again with the contribution to girl attendance even more clearly in evidence. These results add credence to the argument that the biscuit helps maintain a more stable attendance throughout all grades.

66. With regard to the type of school, attendance rates do not vary significantly from the GPS to the RNGPS schools. There is much higher attendance, however, for the several non-registered, non-governmental schools, which is explained by that particular school model, with its single cohort and controlled enrolment numbers.

67. Seasonal variation in the lives of people living in the NW and Southern Coast is substantial and could be a source of variation in school attendance. During the monsoon season, rainfall is heavy, roads become muddy and difficult to negotiate, even on foot, and flooding is common. Also, there are distinct hunger periods (monga) during which work is not available and some households out-migrate for several months. During such times of stress, it is possible that children are expected to play an economic role in the household, perhaps foregoing school. Qualitative interviews revealed that among the poorest families, slightly older children (primarily from Classes 3 and 4) are enlisted during peak programme times such as harvest, and may miss one or two days of school a week for several consecutive weeks to participate in various agricultural tasks.

68. Monthly attendance rates, however, did not pick up strong seasonal differences related to climate variability or to domestic programme requirements. The data do suggest a slightly greater variation in attendance from January through March, one of the monga periods in

the agricultural calendar. There is also a slight trough for all classes in both regions from May-July, when the brunt of the monsoons is felt, but the differences are less than two percentage points. There are seasonal illnesses, especially during the post-monsoon and dry seasons, which cause children to miss school. This was brought out in two seasonal calendars done at Kurigram. There were virtually no differences between programme and control schools.

69. Household interviews on student attendance generally corroborated the school level patterns. Around 3 percent of NW families reported children staying home during February and March and then again in September and October, another monga season in the char region; this also corresponds with the seasonal illness periods mentioned above. Nonetheless, the attendance records do not show systematic reductions in attendance due to seasonal factors—natural or economic.

70. In qualitative interviews, the majority of students and schools reported that monsoon rains may affect attendance for a few days but did not constitute a significant disruption. Several NGO schools (for example, the AID Comilla NGO school in Kurigram district) reported that one of the primary reasons for their establishment was that children could not reach the government school during the monsoons, so the community established an alternative school to ensure the children's safety and uninterrupted access to education.

Educational Progression

71. It is generally accepted that educated household members will value and promote the education of their children, although the value of education must be placed within the context of a household livelihood (Ahmed et al. 2007). In a livelihood reality deeply etched by crisis, mobility, and uncertainty, the continuous progression toward a conventional (primary) education may not be possible. In the household analysis, each member over age five was evaluated as someone who is following or did follow an age-appropriate normal educational sequence until finishing school. Thus, a five- to seven-year-old was assumed to have finished Class 1 (or better), if following an age-appropriate progression, an eight to nine year old, Class 2, and so on. Furthermore, it was assumed that anyone over 19 having progressed through school "normally" would have finished secondary school (Class 10). Each household member was assessed a '1' for achieving a normal progression and a '0' if such was not the case. If a school-age child has repeated several years or has dropped out entirely, a normal progression has not been followed; if an adult left school after primary or never attended school, normal progression was not achieved. The resulting household level "educational progression score" (EPS) provides a general indication of the commitment to education throughout the life of the household.

72. In both the NW and the Southern Coast, considering all members above age five, the average household score was 15 percent both in the intervention and control groups (Table 5), however this is only statistically significant finding in the Southern Coast. This outcome suggests that less than one-sixth of household members above age five have started school, progressed in an age-appropriate way and, if now adults, finished Class 10.

Table 5: Educational progress of households by region and intervention

Household Educational Progress	**Northwest**			**Coast**		
	Programme	Control	Sig.	Programme	Control	Sig.
EPS for all HH members (%)	15.1	15.0	ns	16.5	13.2	**
EPS for primary aged children (%)	43.2	41.7	ns	47.4	33.9	**
n	473	470		471	476	

* p<=0.05; ** p<=0.01; ns=not significant

73. If only the household members ages 6-12 are considered,[36] the EPS represents age-appropriate increases to around 43 percent for the programme households in the NW, compared to 42 percent for the control households. In the Southern Coast, the EPS rate is 47 percent for programme households and 33 percent for the control households. (Again, findings have statistical significance for the Southern Coast.) These outcomes are worrisome in the sense that more than half of all the children ages 6-12 have either repeated more than one year, started school at a later age, not attended school, or dropped out. On the other hand, the results suggest that (1) children are following a much more normal progression relative to their older family members and (2) in the Southern Coast, the biscuit has contributed to this educational progress in a significant way.

74. The level of vulnerability does not affect these educational progression profiles in the NW, but it does in the Southern Coast. The EPS is significantly lower for the two most vulnerable classes in the latter region. When, however, the 6-12 age group is considered, there are significant differences by vulnerability category in both the NW and the Southern Coast. These outcomes support the claim that for younger children (of primary age) progression in school is a factor of importance (see also, Ahmed et al. 2007).

75. Parents were asked what affects the decision to stay or not stay in school. In the NW, the responses clustered around three factors: parental support and promotion of education (reflecting a positive value for schooling), individual abilities and interests of the child, and quality of the school learning environment. Nearly half the families indicated parental support, about a quarter spoke of the child's performance or interest, and about 12 percent mentioned the learning environment and quality of the school/teachers. For those whose children attended programme schools, more than one-fifth (23 percent) mentioned the presence of food at school as a primary factor. These households were concentrated in the two most vulnerable groups.

76. In the Southern Coast, nearly 60 percent of families pointed to parent encouragement as the determining factor that kept a child in school, followed by 20 percent who indicated the learning ability/interest of the child, and about 10 percent mentioned the learning environment. Of the households whose children received the biscuit, 18 percent cited the presence of food as a primary motivation for staying in school. As in the NW, these households are mostly in the more vulnerable categories. Qualitative interviews in both regions added validity to the importance of parental support for education; when asked why children drop out of school, school personnel and focus groups often cited the parents' own lack of education and corresponding lack of value for education as a primary factor. Non-literate parents' inability to help children at home with their studies is another key reason why children from these families drop out. These parents are often not able to afford private tuition for their children.

Transition to secondary school

77. It is encouraging that the transition rates to secondary school for those who do complete primary education are very high (Table 6). In both regions, transition rates have increased since 2000 from around 90 percent (85 percent for the NW intervention schools) to 99 percent in the control schools and to 94 percent in the programme schools. These results do not identify a biscuit impact, but they do suggest that children who complete primary tend to continue their education.

[36] This age group is analyzed because to achieve a '1' in the EPS, a child must have finished primary school by age 12, although, officially the age group 5-10 is considered "primary school age".

Table 6. Percentage of students completing Class 5 and continuing to secondary school, by region

	Northwest		Coast	
	Programme	Control	Programme	Control
	% (n)			
2000	85.3(11)	91.6(6)	92.6(7)	92.1(10)
2002	95.3(11)	83.9(9)	91.9(7)	95.3(14)
2004	95.5(15)	83.8(9)	92.0(7)	94.8(14)
2006	96.1(15)	95.6(10)	84.2(11)	94.8(16)
2008	93.6(14)	98.3 (10)	85.5(14)	96.3(16)
2010	93.4(16)	99.3(14)	94.3(16)	99.4(18)

78. When household interview data are considered, the transition to secondary school appears strongly influenced by two factors: education level of household head, and vulnerability status. Overall, 50.5 percent of the households in the NW and 50.9 percent in the Southern Coast had members who transitioned to secondary school. About 20 percent of household heads in both regions had transitioned to secondary school, and for this group, 77 percent of NW and 83 percent of Southern Coast households had other members who had attended or finished secondary school. In those cases where the household head had not entered secondary school, only 37 percent of the household (in either region) had other members who had transitioned.

79. Table 7 examines whether the presence of the biscuit influences the percentage of households with members who either transitioned to or finished secondary school (Class 10/Secondary School Certificate (SSC). In the NW, the presence of the biscuit does not have a statistically significant impact, although in the Southern Coast, a higher percentage of households in the programme areas have a member who transitioned to secondary. While in the Southern Coast, a more educated household head plus the biscuit produce the greater likelihood that the household will have members who transition to secondary school; however in the NW, this does not seem to have an effect.

80. With regard to vulnerability status, 68 percent of the most vulnerable NW households had no member who had ever transitioned to secondary while in the least vulnerable households, 96 percent had at least one person with secondary experience, and 85 percent had two or more persons who had transitioned. The most vulnerable households in the Southern Coast also tended to have no members with secondary schooling (68 percent) while 89 percent of the least vulnerable households had at least one member who had transitioned. The data suggests that where a household that has a member who transitioned to or finished secondary school, this represents an enabling factor for younger children to achieve a normal progression through school.

Table 7. Percentage of households with members who transitioned to or finished secondary school by region and programme

	Northwest		Coast	
	Programme	Control	Programme	Control
Households with members who:	%			
Transitioned to secondary	48.5	51.5	53.9	47.9 *
Household head transitioned	74.5	79.4 **	86.3	81.6 **
Most vulnerable households	34.1	29.6 **	34.1	28.6 **
Finished secondary	14.6	18.7	19.3	15.1 *
Household head transitioned	75.4	65.9 **	70.3	73.6 **
Most vulnerable households	3.7	4.5 **	4.9	1.3 **

* p<=0.05; ** p<=0.01

Success in secondary school

81. Success in secondary school is defined as finishing Class 10 or the (SSC). The team did not interview secondary schools as part of the survey, but there is information available from the household interviews. Overall 16.7 and 17.2 percent of households in the NW and Southern Coast, respectively, had members who had finished secondary school. The statistical impact of the biscuit on this outcome is weak, albeit a bit stronger in the Southern Coast. Again, success at the household level appears to be driven by the educational level of the household head and the level of vulnerability. As Table 7 indicates, in 75 percent of households in the NW and 66 percent of those in the Southern Coast where a member has finished secondary school, the household head transitioned to secondary (but had not necessarily completed it). In the NW, this result is more pronounced in the households in programme areas. With regard to vulnerability status, few of the most vulnerable households have anyone who had completed secondary school. The financial burden of secondary school is a seemingly binding constraint on continuing the education of the poorest children.

Impact on children not in school

82. Finally, it is relevant to ask not only what are the factors that affect biscuit impact—i.e., whether children participate in school effectively or not—but also what happens to the children who do not go to school at all. The questionnaire asked households to relate the experiences of those who have left the household, that is, to identify where they had gone, what they did, and how they related back to the sending family and community. The quantitative results were ambiguous in that the number of household members who have left the household was far smaller than expected, given the dropout rates in primary schools.

83. Regarding those who were currently of secondary school age, 40-50 percent had married and become housewives. The others were distributed across a set of unskilled occupations such as private sector labourers, rickshaw and van pullers, and unskilled programme. The qualitative interviews focused on this topic with teachers, parents, and school headmasters, and there was a certain sense of awkwardness in the responses. Some stated that indeed when children become old enough to earn a living and their family is poor, they go to work. Many are integrated into the households of wealthier families or work in restaurants and tea shops (which any visit to a NW tea shop confirms) or even in hazardous employment in welding shops, car garages, and rock quarries. One family reported that when a man and his wife seasonally migrate in search of wage earning opportunities, the children accompany the family in order to seek employment in the garment factories (if old enough). This qualitative information points to a certain group of children who because of the web of factors that define the reality of vulnerable households (economic crisis, spatial mobility, low aspiration, poor performance, and little hope in the transformative value of education) never start school or abandon their education early on. This is reinforced by the quantitative evidence collected during the evaluation about household livelihoods that highlighted the level of poverty of many families in the areas surveyed, the cost of educating a child, including extra investments in tutoring needed to get a quality education, and the opportunity costs of keeping a child in school as compared to working.

2.2. Nutrition and Health Outcomes and Impacts

84. Studies have shown that provision of micronutrient-fortified biscuits in SF can lead to a significant improvement in micronutrient status of primary school children and reduce the prevalence of anemia, as well as enhance the effect of deworming.[37]

85. Micronutrient deficiencies raise the risk of mortality from diarrhea, measles, malaria and pneumonia[38] and are responsible for a large proportion of infections, poor physical and mental development, and excess mortality in the developing world. Iron deficiency increases

[37] Van Stuijvenberg 1999; Nga 2009.

[38] Black, R., L. Allen, Z. Bhutta, L. Caulfield, M. de Onis, M. Ezzati, C. Mathers, and J. Rivera. 2008. Maternal and child undernutrition: Global and regional exposures and health consequences. *The Lancet* 371 (9608): 243–260

the risk of maternal mortality by 20 percent and reduces child IQ by 1.73 points for every 10 g/L decrease in hemoglobin concentration.[39]

86. WFP's impact and outcome studies (Ahmed 2004 and Mustafa 2010) found significant differences in nutritional status of beneficiaries in comparison with control groups. The Ahmed impact report[40] found that calories consumed from SF biscuits were almost entirely (97 percent) additional to the child's normal diet and that after rice, these biscuits were the most important source of energy, protein and iron in the diet of programme participants. The SFP improved child nutritional status, increasing their BMI by an average 0.62 points, representing a 4.3 percent increase compared to the average BMI of schoolchildren in the control group. Average energy intake and energy adequacy ratios were considerably higher for SF participating students than for the control group – 11 percent higher in rural areas – indicating that SF improved net food consumption. The study also found that mothers reported their children were livelier, happier and more physically active than before, with improved health status and reduced incidence of illness.

87. The FFE outcome survey 2010[41] found the prevalence of anemia in SF primary schools to be less than half that in non-programme schools. The survey was not able to make firm conclusions about programme outcomes in relation to nutritional status due to lack of inclusion of nutritional indicators in the baseline survey; however, programme-control comparisons on the prevalence and extent of anemia suggested that FFE activities were negatively associated with the prevalence of anemia in programme areas. Eleven percent of boys in the programme group were anemic while 21.4 percent from the control group were (a statistically significant difference); the same was true for girls, with 9.3 percent programme girls found to be anemic, compared to 22.4 percent in the control group.

88. The study also found a statistically significant difference in the proportion of underweight children between programme and control areas for both boys and girls: 10.0 percent prevalence for boys in the programme area compared to 17.1 percent in the control area; and 8.1 percent for girls in the programme area compared to 13.6 percent in the control area.

89. FFE activities incorporated de-worming as part of the "essential package." The 2010 outcome study found that the prevalence of worm infestation was much lower in programme areas than control areas (5.2 percent of boys and 4.2 percent of girls infested, compared with 15.8 percent and 13.8 percent, respectively, in control areas) and statistically significant.

90. The current evaluation of WFP's SF sought to strengthen the evidence for SF impact on nutrition through collecting dietary information on school-age children using 24-hour dietary recall and anthropometric data, interpreted using BMI-for-age.

91. For the dietary recall component, 1,092 records were analyzed in the NW, of which 562 were from intervention areas and 530 from control areas. In the Southern Coast, 1113 records were analyzed, of which 538 were from intervention areas and 575 from control.

92. The energy requirement of a school-aged child ranges from 1,428 kcal per day to 2,341 kcal per day depending on age, gender, activity levels and infection,[42] therefore it can be clearly seen that school-aged children's diets are highly deficient in energy (Table 8). In the NW, only 8.5 percent of the control group children (n=530) and 2.7 percent of the programme area children (n=562) consumed 1428 kcal or more on the day of recall.

[39] Stoltfus, R., L. Mullany, and R. Black. 2004. Iron deficiency anaemia. In *Comparative quantification of health risks: Global and regional burden of disease attributable to selected major risk factors*, ed. M. Ezzati, A. Lopez, A. Rodgers, and C. Murray. Geneva: World Health Organization.
[40] Ahmed, AU (2004).
[41] Mustafa, S (2010).
[42] Human energy requirements. Report of a Joint FAO/WHO/UNU Expert Consultation, Rome, 17-24 October 2001

Table 8. Average macronutrient consumption for surveyed children, by region and treatment

	Energy (Kcal)	Protein (g)	Fat (g)	Carbohydrate (g)
Northwest				
Programme	730.3	24.4	17.5	117.9
Control	842.1	25.4	20.2	137.9
Southern Coast				
Programme	1147.4	40.8	28.0	182.4
Control	1004.5	39.3	27.2	150.6

93. In percentage terms, the data reveal that in programme areas in the NW, 13 percent of energy was derived from protein, 21 percent from fat and 66 percent from carbohydrate. Protein requirements for school-age children (5-10 years) are estimated between 19.8 and 33 g for boys and 19.3 to 32.6 g for girls, increasing with age and growth. Forty-six percent of children in programme areas and 44 percent in control areas did not meet the lowest of that range, with protein intakes below 19.3 g. Fat requirements (25-35 percent of total energy[43]) were not met either, confirming that the diet consists predominantly of carbohydrates.

94. On the coast, only 23.2 percent of children in intervention areas and 15.5 percent of control children consumed a diet meeting at least 1,428 kcals. The average protein consumption meets requirements, but 20 percent of programme children and 18 percent control children did not meet the lowest level of the range (19.3-33 g). Average fat consumption, at 22 percent in programme areas and 24 percent in control areas, is proportionally just below the recommendation, however since the majority of diets are deficient in energy, they may also be deemed deficient in fat.

Table 9. Average consumption of selected micronutrients for surveyed children, by region and treatment

	Vitamin A (µg Retinol equivalents (RE))	Vitamin B1 thiamine (mg)	Vitamin B2, riboflavin (mg)	Vitamin C (mg)	Iron (mg)
RNI	500*	0.9	0.9	35	13.4
Northwest					
Programme	333.6	0.55	0.34	34.2	8.5
Control	245.9	0.56	0.32	32.3	8.6
Southern Coast					
Programme	328.6	0.63	0.44	43.71	10.02
Control	240.6	0.6	0.40	34.0	9.7

Recommended Nutrient Intakes for children 7-9 or 7-10 years, WHO/FAO (2004), Vitamin and mineral requirements in human nutrition, 2nd edition. (Assumption: iron bioavailability is 7.5 percent).
*For Vitamin A the figure represents recommended safe intake

95. In both regions, significant deficiencies in vitamins A, B1 and B2 and iron are evident in children in programme and control groups (Table 9). A 75 g daily portion of WFP-fortified biscuits in Bangladesh contains roughly 66 percent RNI of common vitamins and minerals for a school-age child, including: 217.5 mg vitamin A, 0.59 mg B1, 0.54 B2, 15.75 mg vitamin c, and 9.6 mg iron.

96. At the time of the evaluation, a pipeline break meant that children were not receiving SF. However, it is clear that daily consumption of these biscuits would boost substantially

[43] Fats and fatty acids in human nutrition, Report of an expert consultation, FAO Food and Nutrition Paper 91, FAO, Rome 2010 (final report)

the vitamin and mineral quality of the diet and contribute a significant value in terms of energy intake. The biscuits provide 338 kcal per pack, including 7.5 g protein and 10.5 g fat. Those 338 kcal would boost the energy intake of the average child in programme areas in the NW by 46 percent and improve his/her protein consumption by 31 percent, as well as raise his/her micronutrient status to substantially improved levels. In the Southern Coast, consumption of the biscuits would increase the average child's energy consumption by 29 percent.

97. BMI-for-age showed no significant differences between programme and intervention groups, as expected due to non-receipt of the biscuit (Table 10). However, in the NW, 22.9 percent of children in control areas and 21.0 percent in programme areas were found to be thin, with 3.5 percent of those in the control area and 4.5 percent of those in the programme area suffering from severe thinness.

Table 10. BMI-for-age of school-aged children by region and treatment group

	BMI-for-age (%)					
	<-2 z-scores[44]			**<-3 z-scores**		
	Total	Boys	girls	**Total**	boys	Girls
Northwest						
Programme (n=547)	21.0	22.6	19.1	4.5	5.5	3.3
Control (n=510)	22.9	24.5	21.1	3.5	3.7	3.3
Southern Coast						
Programme (n=520)	25.9	23.9	28.2	5.8	5.4	6.3
Control (n=558)	17.3	20.4	14.0	2.3	2.4	2.2

98. Similarly, there were no significant differences between programme and intervention groups in BMI-for-age along the coast (Table 10). However, girls in the programme area were significantly more malnourished than those in control areas. In coastal areas, 17.3 percent and 25.9 percent of children were thin in control and programme areas, respectively, with 2.3 percent of those in the control area and 5.8 percent in the programme area suffering from severe thinness. There were no statistically significant differences seen in thinness between girls and boys in either region.

99. There was a general consensus from schools, SMC and mothers in the NW that the biscuit reduces hunger for children at school. WFP partners, teachers, SMC and parents noted that the health of the children had improved since the introduction of SF, in particular referring to skin diseases that have lessened, as well as more vibrant and lively children who previously suffered from "weakness" or "dizziness." They made the link that if children are attentive and cheerful, the quality of learning improves. Parents and teachers all considered the biscuits to be nutritious and good for their children, some describing them as a helpful substitute to fish and meat that they were unable to provide for them.

100. Since the biscuit provides a package of micronutrients, it is likely to have contributed to these changes. Skin diseases may be related to vitamin B group deficiencies, which are exhibited here and are not uncommon in populations consuming a diet predominantly of polished rice. While green leafy vegetables are widely consumed and are a good source of B vitamins, food preparation methods may result in significant nutrient loss. "Minerals and vitamins, especially B-complex vitamins are lost (40 percent of thiamine and niacin) even during the washing of rice before cooking. Boiling rice and then discarding the water results in even more nutrient losses. The manner of washing and cooking vegetables leads to considerable loss of vitamin C and B-complex vitamins."[45] Additionally, the average

[44] A z-score describes how far and in what direction a child's anthropometric measurement deviates from the median in the 2006 WHO Child Growth Standards by gender, indicating how malnourished he or she is. A score of <-2 reflects moderate chronic or acute malnutrition, or thinness; a score of <-3 reflects severe chronic or acute malnutrition, or severe thinness.

[45] Bhattacharjee, L., Saha, SK. and Nandi, BK. In collaboration with the Project Team, Department of Agricultural Extension, Ministry of Agriculture, The People's Republic of Bangladesh and FAO Regional Office for Asia and

consumption of fruit and vegetables per capita is reportedly poor in Bangladesh at 126 g daily (23 g leafy vegetables, 89 g non-leafy vegetables and 14 g fruit[46]), and far below the minimum daily consumption of 400 g vegetables and fruit recommended by the Food and Agriculture Organization of the United Nations (FAO) and WHO.[47]

101. In the Southern Coast there was an overall consensus from school staff, SMC and mothers that the biscuit reduces hunger for children at school. However, unlike the NW, most respondents did not cite changes in the health or physical status of the children, although a few reported fewer episodes of illness in children.

102. There was a significant range of dietary habits within each community visited, based on socioeconomic status. The better-off who owned cows or poultry were often able to give their children milk or eggs on a daily/almost daily basis, while the poorest could not remember the last time they tasted milk. When asked whether their children consume milk or eggs, female focus group members in Patuakhali district in the South responded, "we don't know what is milk" and "from where will we get egg?" It was evident that there is a lack of animal protein in the diet of the poorest, with few mentioning meat or chicken consumption at all.

103. Meals were largely composed of rice supplemented with vegetables. In many communities visited mothers cooked once or twice a day and the food was then divided and eaten in 2-3 meals. In the NW, lentils were considered too expensive at the time of the survey and potato dhal was consumed in place of them. In the Southern Coast, on the other hand, lentils were being harvested during the survey, so the poor who engaged in day labour were paid in lentils, which provided a source of protein through regular consumption of dhal. There were also several communities engaged in fishing, as day labour or through a system of loans and virtually bonded labour, and these families were able to eat fish more regularly than others.

2.3. Outcomes on the School Management and Environment

Essential Package

104. WFP and UNICEF, in partnership with the Government, other United Nations (UN) agencies, and donors, have promoted a comprehensive package of interventions to complement the school meal programme that addresses issues related to health, nutrition, hygiene, and girl's education. Referred to as the Essential Package (EP), this intervention set seeks to improve the school environment. The school survey looked for key elements of the EP in the school services provided to students. Figure 6 demonstrates that the EP underlies the importance of health and hygiene as key components of food security. Part of this approach is to provide de-worming services and Vitamin A supplements; the other is to provide classroom orientation in health and nutrition as well as in personal hygiene.

105. There is little difference between regions and between intervention and control schools in access to EP services because they are provided as Government policy. De-worming reached 70 percent of the schools and health education was provided in 60-70 percent. Personal hygiene (hand-washing, latrine use, food washing) was promoted in 50-70 percent of schools. Vitamin A supplements and nutritional orientation were available in nearly half the schools, and malaria prevention was promoted in around one third of the schools. School gardening, an activity that is integrated with nutritional and environmental messages and agricultural skill-building, was present in about 40 percent of the schools, more so at the intervention schools where WFP has more contact.

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the Pacific (2007). *Food-based nutrition strategies in Bangladesh, Experience of integrated horticulture and nutrition development*.

[46] *Ibid*

[47] FAO/WHO. 2003. *Diet, nutrition and the prevention of chronic diseases. Report of a joint FAO/WHO. Expert Consultation*. WHO Technical Report Series 916. Geneva. World Health Organization

Figure 6. Percent of school receiving elements of the Essential Package, by region and treatment group

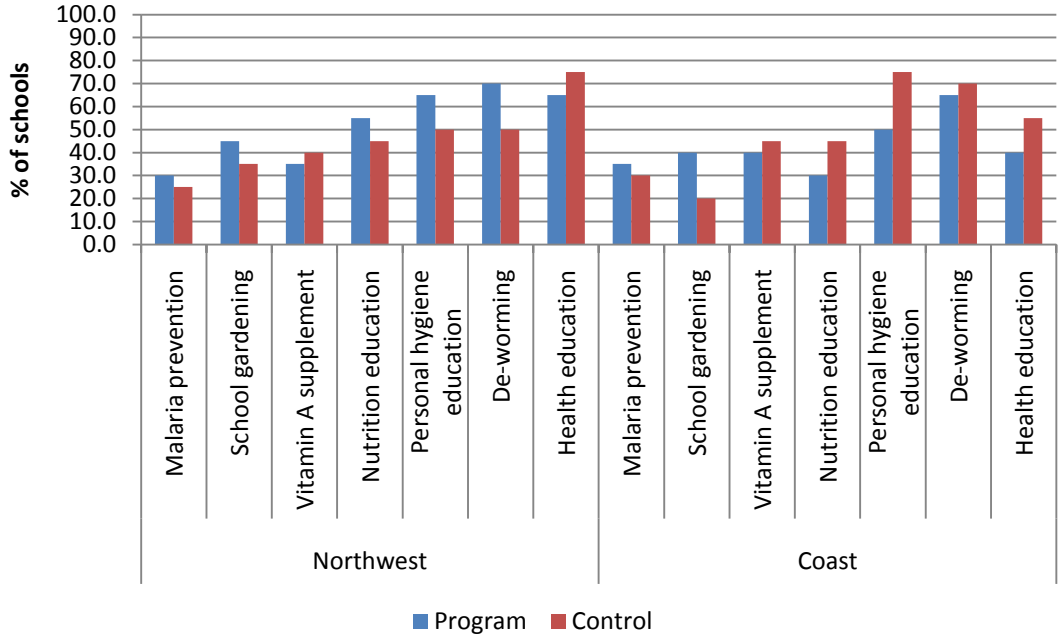
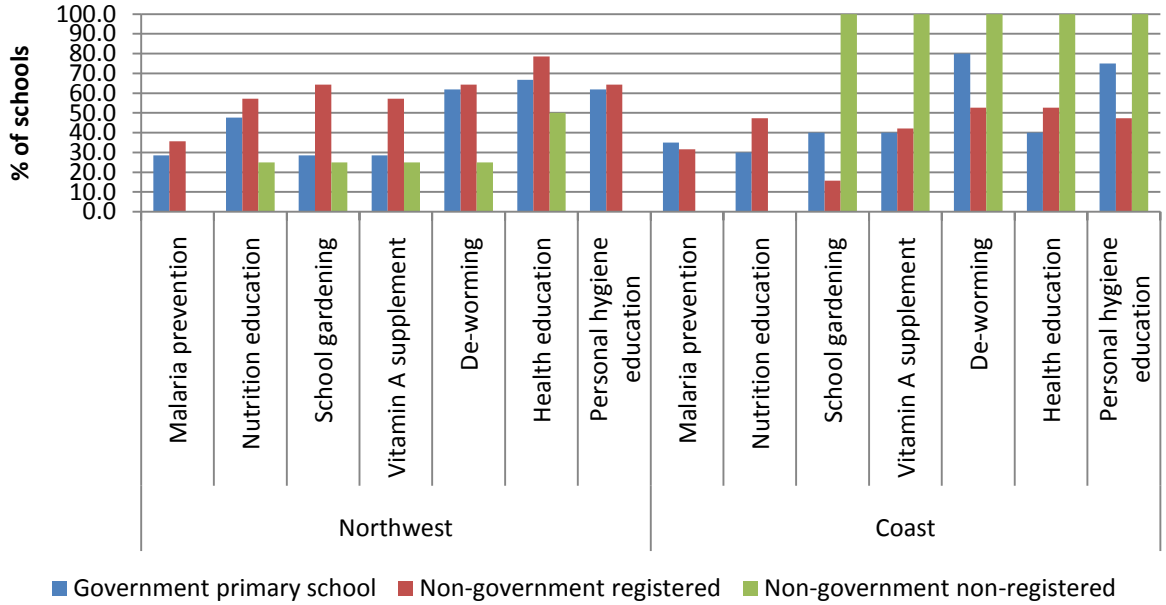


Figure 7: Percent of schools receiving elements of the Essential Package, by region and school type



106. There are interesting differences in the EP pattern of services among the school types (Figure 7). Particularly in the NW, the non-Government schools are more involved in providing health and nutrition-related programmes, while in the Southern Coast, the Government schools are more active in this regard. All the non-registered schools in the coastal region provide these services.

School Management

107. In accordance with Government educational policy, all the schools have an SMC, which is the principal strategy for community involvement in the school. The SMC is meant to be representative of the households in the catchment area, but the qualitative team observed that community elites were heavily represented on the SMCs interviewed. It was noted that school teachers, head teachers, imams, and landowners were almost always the majority of SMC members, and in the NGO schools, the benefactor who provided the land or the building was also a key SMC member. The activities of the SMC include the handling of the school biscuit (making sure it gets to their school from the "mother" school distribution point), organizing improvements in school infrastructure, fund-raising for school needs, organizing cultural events at the school, dealing with student behavioural issues and garnering support for the poorest parents so that their children can continue at school (purchasing supplies or uniforms, etc.).

108. In the qualitative visits, the team documented the presence of some SMCs with a solid vision and commitment, high levels of initiative, and an ability to attract both government and private resources. These SMCs were the exception rather than the rule. In many schools, the SMC reflects the local stratification, and the interests of the school do not appear to be well-served. Within the SMC, local gender dynamics dominated and reflected the same stratification. In order to support gender equity, the Government has established that all SMCs must have at least three female members, and in each visit, at least one female teacher was present and in some cases female community members were also present. For the most part, the female teachers participated in the qualitative interviews, though some were silenced by the SMC head if they said something he did not agree with (all the Head Teachers visited except one control school were male and all SMC chairs were male). In both programme and control areas, some but not all female SMC members were present at all meetings; their participation in the discussions was mixed, as generally one joined in while the others remained silent.

109. The SFP has enhanced the number of women who sit on SMCs. In 2007, the proportion of women in leadership positions in food management committees under FFE activities was 15 percent, increasing slightly to 20 percent in 2008. In 2009, the proportion of women in leadership positions in food management committees showed a significant increase to 65 percent, which was maintained in 2010.[48] This was achieved through gender sensitization sessions held by WFP to raise awareness of women's roles in SMCs.

110. While the Government is working to build capacity of SMCs, WFP has undertaken some initiatives through the SFP. In 2010, the SF component delivered an "Essential Learning Package" for parents, community members and teachers. A total of 149 community mobilization workshops and 76 leadership development trainings were organized for SMC members.[49]

2.4. Household level outcomes and impact

111. In their everyday lives, most poor families in Bangladesh engage in the unyielding challenge of assuring their own survival in the face of tremendous uncertainty. People manage by negotiating the limited opportunities that exist and creating a routine as predictable as possible—a month of work in the paddy harvest, two months in Dhaka, preparing and selling manure sticks, raising a cow, fishing a local canal, allocating scarce food so that all are fed, caring for children, washing clothes on Friday. All household members have roles in this repeated dynamic. Among poor families' opportunities are public resources, either through government or development agencies. The biscuit is one of the resources families incorporate into their routine, making slightly different decisions because of its availability.

[48] SPRs, 2008, 2009, 2010. WFP Bangladesh.
[49] SPRs 2010.

112. The wider impact of the biscuit must therefore be understood in terms of the daily routines and choices of households facing different levels of vulnerability. The benefits of the biscuit are predictably integrated into these routines and come to influence overall livelihood success as defined by food and income security.

Impacts on household resource allocation

113. Information about food preparation routine derived from the qualitative interviews suggests that mothers seek to provide substantially with something to eat three times a day. As the dietary discussion demonstrates, rice is the core element in every daily meal, and it is cooked once or twice a day. Rice left over from the evening meal is mixed with water to form a type of gruel. Rice provides the energy component of the meal, while the accompanying curries are the source of protein and critical micro-nutrients. At the time of the interviews, the poorer families were consuming a mixed vegetable curry from locally-collected green leaves, since the common ingredients – lentils, dried fish, and chickpeas – were too expensive.

114. In the NW, 94 percent of the households prepare a breakfast meal, although in many cases it might be only tea and chapatti (unleavened bread) or rice gruel. On the other hand, nearly 90 percent of the households stated that the child receiving the biscuit in school does not eat breakfast at home. Sixty percent of the households in the region prepare a lunch for the family, and in this case, children eat lunch before going to school (in more than 80 percent of the cases), even if they receive the biscuit in the second shift. When a child does not eat lunch, food is saved for when school is over, as a rule. There was very little evidence that children bring the biscuit home to share or to eat later.

115. In the Southern Coast, a similar pattern is documented. Most families seek to partake of food three times a day, although quality and quantity appear to differ between meals. In contrast to the NW, only about half the families prepare a breakfast, and when there is a biscuit, the child goes to school without breakfast (90 percent of households). Virtually all households prepare a meal for lunch, and 21 percent stated that a child will not eat lunch if a biscuit is offered in the afternoon shift.[50] Food from lunch, however, is saved for the child for after school. In the Southern Coast, about 40 percent of the parents stated that the child brings home the biscuit or part of it at least some of the time.

116. In both regions, then, the majority of households reported that they prepare less food in the household if their children receive the biscuit in school. And, while food preparation patterns are slightly different between the two regions, there is evidence of the substitutability of the biscuit with food (breakfast or snacks/tiffin from home). The data suggest that the most vulnerable households have a lower tendency to prepare breakfast and lunch daily and a higher tendency to reduce food preparation when the biscuit is available.

117. Both the qualitative and quantitative data point to a common theme. Food security is unstable and uncertain, and, particularly in the NW, the diet varies widely according to the daily circumstances (i.e. food availability, work/income availability, presence or absence of husband, wild food availability, etc.). In this context, the biscuit performs an important function by alleviating child hunger with a nutritious alternative that would otherwise not be there. To a large extent, the certainty of the biscuit allows mothers to alter the feeding pattern for other children and to reduce food expenses, if necessary (remembering that food is not always scarce). A major benefit of the biscuit is, therefore, the reduction of food security instability.

Transfer Value to the Household

118. School feeding programmes provide a value transfer to poor households. From the qualitative focus group interviews with (vulnerable) mothers, it was determined that the

[50] There are valid reasons why mothers may not feel the need to prepare food for children if they are already full or going to be fed at school: some "better-off" families in the Southern Coast complained that children did not eat lunch after school because they felt full from the biscuit.

average household per capita preparation of rice was approximately 400 grams per day. For the average household of five (with adults), 2 kg of rice are prepared per day (1.5 kg in the morning and 0.5 kg in the evening, typically). The average price of rice paddy at the time of the survey was 45 taka, and if one assumes that rice is 70 percent of the household expenditure for food (the other items being oil, spice, sugar, tea, and sauce ingredients), the daily food bill for this family would be approximately 128 taka.[51] The daily wage rate for men in the two regions varied by task and season, but averaged between 120-150 taka. Under the lower wage, the daily food costs are not met; under the higher wage, food accounts for around 85 percent of the daily wage. By comparison, women's wages are between 80 and 100 taka. It is important to note that work is not available consistently; work is highly seasonal for the majority, especially for women.

119. The value of the biscuit is best understood in the context of these precarious food security conditions. The Boston Consulting Group calculates the US dollar value of the biscuit at US$0.06, or six cents, per day per beneficiary, which converts to 4.5 taka. In the household survey, the average number of school-going primary-age children in the household was 1.2, which means a daily value transfer of 5.5 taka to the household, which represents around a 4.4 percent contribution to the daily food bill.

120. When the biscuit is available, its contribution to the household economy is non-trivial. In Bangladesh, classes are held 24 days a month; the projected annual number of "biscuit-days" is 240, allowing for summer vacation, Ramadan, and the two Eid festivals. For 2010, during the first two school terms, encompassing January through August, there were approximately 153 biscuit days, but schools reported around 130 for the two terms. In November, all biscuits were discontinued for the rest of the year (and for the first term of 2011). Thus, for calendar 2010, there were approximately 180 biscuit beneficiary days throughout the two regions[52], thus a 25 percent loss of value due to the pipeline break that occurred over two months. That loss in value will be higher in 2011 since no biscuits were available for the first term.

121. Using these numbers as the basis for the value transfer calculation, Table 11 shows that the annual value of the biscuit transfer ranged from 1055 to 1154 taka in the NW and from 954 to 1123 in the Southern Coast. The contribution of the biscuit on an annual basis was calculated as a percentage of annual household income estimates and of reported annual household expenditures on education (books, tuition, uniforms, supplies, etc.). For the most vulnerable groups in the NW and Southern Coast, the biscuit contributes to around 4 percent of annual stated income, while for the less vulnerable groups, the biscuit share is nearly negligible. As a percentage of educational expenses, the two more vulnerable categories spend far less on education than the value of the biscuit—for the most vulnerable group, the transfer value of the biscuit is three times higher than household educational expenses. For example, in 2010 the transfer value of 180 days of SF amounted to an average 329 percent of what the most vulnerable families spend on education.[53] This indicator suggests that the biscuit not only provides a contribution to household income, but one that is net of the cost of the children's education (although not of their opportunity cost).

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[51] This figure represents that outcome of FGDs held with mothers from different wealth groups. It is not the actual food bill, but a minimum amount that would have to be "set aside" to meet cultural preferences with regard to daily diet. It further follows that the monthly minimum requirement per person would be 768 taka (128 divided by five and multiplied by 30 days). This is simply an indicator figure and not derived from the quantitative data set.

[52] The precise figure reported in the SPR was 182 actual feeding days in 2010 or 75.8 percent of actual versus planned.

[53] It must be noted that these figures represent averages of the household percentages and not percentages of the average values themselves. The median value for the household percentages in the most vulnerable category is 75 percent for the NW and 68 percent for the South, meaning that half the individual household percentages lie above these levels. In effect, many vulnerable households spend very little on educational expenses.

122. When the value of the biscuit and the annual stipend are combined, the educational incentive for the most vulnerable families rises to 10 percent of annual income in the NW and 8 percent of annual income in the Southern Coast.

Table 11: Social transfer indicators, by vulnerability group and region

	Least vulnerable	On the edge	Vulnerable	Most vulnerable
Northwest				
Average number of beneficiaries	1.17	1.02	1.27	1.17
Transfer value to household (240 projected days)	1407	1429	1539	1499
Transfer value to household (180 projected days)	1055	1072	1154	1124
Annual income from all sources (taka)	157588	82646	59227	42436
Amount spent on education per household(taka)	14495	5270	2727	1883
Transfer value as% of annual income	1.1	1.8	3.3	4.5
Transfer value as% of educational expenses	26	78	135	329
Southern Coast				
Average number of beneficiaries	1.11	1.27	1.24	1.29
Transfer value to household (240 projected days)	1273	1472	1416	1488
Transfer value to household (180 projected days)	954	1104	1070	1123
Annual income from all sources (taka)	237228	94054	62082	40257
Amount spent on education per household(taka)	11926	6155	3561	3032
Transfer value as% of annual income	0.5	1.6	2.4	3.7
Transfer value as% of educational expenses	37	48	72	118

123. Does the presence of the biscuit have a social protection effect for households as a whole? The survey responses show that the advantages of the biscuits fit into three major categories. First, the biscuit saves food and money. In the NW, 40 percent of households cited this benefit, while in the Southern Coast, more than 52 percent did. Second, the biscuit promotes the health of younger siblings of the child in school, most likely due to the food savings or the additional time for child care. This benefit was indicated by 40 percent of the households in the NW and 22 percent in the Southern Coast. The third was the savings in time, which was cited by 14 percent of NW households and 40 of Southern Coast households in the quantitative survey. The difference in time saving helps to explain how more households in the South perceive the biscuit as an opportunity to earn income (15 percent). It is likely that the time savings is more easily converted to income in the Southern Coast compared to the relatively poorer NW region. However, this may be related to the time of year the survey took place: at the time of the survey, the lentil harvest was ongoing in the Southern Coast, and much work was available women. At other times of the year, this may not apply.

124. The data show that the time saved from food preparation is primarily reallocated to other household chores (75 percent in the NW and 80 percent in the Southern Coast), childcare (around 20 percent of the households), income-earning (less than 10 percent) and, deservedly, rest. In the Southern Coast, around 20 percent of households also reallocated

time to their farming activities. In both regions, the most vulnerable groups were more likely to devote saved time to income-earning activities, while more households in the least vulnerable group used the extra time to rest.

125. With regard to household expenditures, the household interviews identified an income effect on the household in the sense that less money is spent on food when the biscuit is available for the children. In both regions, slightly more than half of households reported spending less, and within the vulnerability categories, the least vulnerable households were less likely to reduce expenditures on food—i.e., the income effect was more modest.

126. Overall, it is possible to say that, while difficult to measure, benefits perceived as significant, accrue to households in the biscuit programme. Certainly, while the benefit would be marginal in economic terms, it is critical to emphasize that these households live on the edge of marginality where small sum of money saved indeed does make a difference in the lives of both children and parents. Pipeline breaks notwithstanding, the biscuit is a much more stable and reliable resource than the availability of day programme. The vulnerable households face daily challenges, and the assurance that a child will receive a nutritious bit of food in school is highly important.

127. The school biscuit has been integrated as a resource into the household economy. As such, it becomes one of the many strategies that vulnerable households juggle to survive. For these households, minimal amounts of cash have a significant impact, and the biscuit does reduce the overall food bill of households.

3. How Does School Feeding Create Impact?

3.1. The Role of Contextual Factors

128. The previous section has suggested some areas where the biscuit appears to have contributed to educational, nutritional, and safety net impacts, but also makes clear that the biscuit is a small piece of a complex socio-economic reality that constrains choices about education and child-rearing. The qualitative interviews with teachers, staff, and students consistently reported that children enjoy the biscuit and look at it as a positive feature of going to school. It is equally clear that students do not go to school only for the biscuit, i.e., the biscuit is a valued but not a sufficient incentive to attract and keep students in school.

129. The three factors that influence the decision to stay in school are, generally, economic pressures (related to seasonal issues and which in turn affect among other factors, parental commitment to the education), the quality of the learning experience in the school, and the individual ability and interest of the child to pursue studies (i.e. how "fulfilling" school is to the student). This section describes these contextual factors and how they inter-relate.

Poverty and Household Economic Pressures

130. Major decisions must be made at the household level regarding the education of the children. Poverty remains a significant factor that influences the achievement of educational outcomes and impacts. When parents were asked what factors led their children to either leave school or to never enrol, 55 percent of the households in the NW and 45 percent in the Southern Coast cited economic reasons and the need to work.

131. The data confirm that the most vulnerable children are the ones more likely to not enrol in school or to drop out. As indicated, in Northwest households there is a significant difference between the vulnerability categories, with more than 13 percent of the most vulnerable children never enrolled in school, while the level falls to 2 percent among better-off households. Although the Government's current effort to achieve 100 percent enrolment in all schools is often cited by school personnel in the qualitative interviews as an important factor, it would appear from the data that the 100 percent enrolment initiative is more successful in reaching the less vulnerable children. And boys are more prone than girls to not enter school or to drop out before finishing primary school.

132. The vulnerability characteristics in Table 12 support the importance of this contextual factor. The more vulnerable households do not have the monthly income, the wealth, or the food to be able to invest in their children's education. Assuming as above a minimum food requirement of 768 taka/person (for rice and sauce), the average monthly food requirement would range from 4655 taka to 3401 taka in the NW and from 4557 taka to 3468 taka in the South. Table 12 demonstrates that for the more vulnerable households little of monthly income is available to invest in education once food costs are accounted for. In fact, the percentage of monthly household income required to meet monthly combined costs of food and education is between 25-45 percent for the least vulnerable households but more than 100 percent for the most vulnerable households in both regions.

Table 12: Vulnerability Indicators, by group and region

	Least vulnerable	On the edge	Vulnerable	Most vulnerable
Northwest				
Household monthly income from all sources (taka)	13132	6887	4935	3536
Minimum monthly household cost for food (taka)	4655	3853	3539	3401
Monthly amount spent on education (taka)	1208	439	227	157
Tutoring costs (% HHs)	78	61	56	39
Monthly tuition cost (taka)	581	212	121	126
Total asset value (taka)	169098	72391	33528	15799
Food Consumption Score[54]	90.9	84.4	66.7	44.7
Own agricultural land (decimal)	160.1	70.0	24.9	10.1
South				
Household monthly income from all sources (taka)	19769	7838	5174	3355
Minimum monthly household cost for food (taka)	4557	4049	3711	3468
Monthly amount spent on education (taka)	994	513	297	253
Tutoring costs (% HHs)	80	63	55	43
Monthly tuition cost (taka)	518	249	174	186
Total asset value (taka)	143527	54994	26027	14697
Food Consumption Score	95.5	87.9	70.3	48.0
Own agricultural land (decimal)	254.8	59.0	22.8	10.8

133. Children's learning and promotion to upper grades (and therefore their chance of success in employment) is heavily dependent on parents' ability to provide private tuition. The cost of a private tutor for children is one of the major educational expenses cited by households as shown in Table 12. Around 40 percent of the most vulnerable households paid for tutoring services and, of those that did, the amount averaged between 126 taka in the Northwest and 186 taka in the Southern Coast. These are significant costs for poor families, which explains why a lower percentage of the most vulnerable were able to make this investment. Even poor households reported spending Tk. 100-500 per month for each child, depending on the grade of the child.

134. The need for private tuition to pass exams is related to the school environment whose overcrowded classrooms prevent teachers from providing individual attention to students, and the inability of parents to assist their children with their studies. The schools contribute

[54] The Food Consumption Score used in this evaluation as a principal component to derive vulnerability categories from principal components analysis. It is not meant here to assess local diet diversity against international standards, but rather to compare scores across the sample of households. The food consumption score as an absolute score without any other contextual information should be interpreted with great caution.

to this problem by forcing children to repeat grades if teachers do not think a child can pass the national primary school completion exam, whose results have a bearing on government resources provided to the school.

135. The diets of school-aged children in the Northwest programme area are highly deficient in energy, protein and fats, and consist mainly of carbohydrates. On the coast, the diets of school-aged children are deficient in energy and fat, and while the average protein consumption meets requirements, around 20 percent do not get the minimum amount required. In both regions, significant deficiencies in vitamins A, B1 and B2 and in iron are evident in primary school children. Poor nutritional status affects a child's health and ability to concentrate and learn.

136. Poverty is also a key factor, though not the only factor, in what could be a small but significant number of students leaving government-supported schools for madrasahs. Madrasahs provide educational materials for free and do not require extra tuition or fees which is especially appealing to poor families seeking an education for their children. Madrasahs are not required to follow the basic government curriculum, though many of the well-established ones do.

137. Neither the qualitative nor the quantitative information suggested that households pulled their children from school to work on household tasks. For the vulnerable households, domestic chores are somewhat limited. It is true that a young girl can help with childcare, for example, allowing a mother to work in the rice mill, but generally speaking there does not appear to be a demand for child programme within the household per se. There is a demand for child wage programme outside the household (discussed in paragraph 173).

Affect of Seasonal Variability on Education-related Decision Making

138. The quantitative data from households and schools did not identify a strong seasonal trend in biscuit impact on educational, nutritional, or safety net outcomes. The qualitative data were more informative in that interviews with parents and teachers confirmed three important aspects of seasonality in both the NW and Southern Coast including seasonal migration, seasonal variation in food security and seasonal nature of disaster occurrence.

139. In search of opportunities for employment, in parts of the NW, the entire family out-migrates on a periodic or seasonal basis. Such mobility is a fully integrated livelihood strategy among the landless char dwellers in the NW and in parts of the Southern Coast. When men leave, their families stay behind and children stay in school. Sometimes man and wife both leave and the children stay with other family members and continue their education. In other cases, the entire family leaves and the children may or may not go to school in the receiving community. In at least one focus group, the parents stated that the children work when away.

140. Food security also varies by season. During the monga season families have to adjust to make ends meet. Day-programme opportunities become scarce, and in some cases it was stated that children will miss school to earn whatever they can to support the family. The quantitative data did not capture this pattern, likely because parents are reluctant to report absenteeism from school.

141. The third dimension of seasonality is nature-related. The annual arrival of the monsoon season can bring storms, cyclones, and flooding. In parts of both regions, there is substantial riverbank and char erosion every year, and the subsequent loss of cultivated land requires a permanent shift in population from these areas to protected ones. This seasonal factor can require a shift of students from one school to another. Also, flooding can isolate schools making them inaccessible or even dangerous to travel to (i.e. crossing rivers and flooded areas). In most places, schools have been located spatially so that children are not exposed to such physical risk, and teachers stated that they will sometimes go to homes to accompany children to school when flooding is widespread.

142. The role of seasonality in determining the impact of the biscuit can be summarized as follows. Biscuits do not overcome the economic imperative. If children have to move with their parents, either in search of programme opportunities or because lands have been lost to the river, the biscuit does not provide an adequate incentive to keep the child in school. On the other hand, the nutrition value and the hunger mitigation effect of the biscuit are heightened when the household is in a food security crisis (such as monga). Attendance at school is not affected systematically by the natural cycle of climate and flooding with regard to school access. Such attendance can be affected by the mobility of the household.

Parental encouragement and support of education

143. Nearly half the households in the NW and 60 percent in the Southern Coast indicated that parental support was a major factor in whether children enrolled in school, attended class, completed primary, and transitioned to secondary. In part, such encouragement is the result of the value placed on education by the household head and others. As seen above, the probability of transition to secondary school is directly related to whether the household head had attended secondary school. The other, perhaps more influential determinant of parental support is the economic status of the household. In effect, parents that encourage the education of their household are not only those who recognize the value but those who can "afford to" put their children in school. These two dimensions of parental encouragement, in fact, co-vary. For example, more than 60 percent of the most vulnerable household heads in the NW are illiterate, while this is true for only 9 percent of the least vulnerable group. In the Southern Coast, 38 percent of the most vulnerable and 12 percent of the least vulnerable household heads are illiterate.

The School Environment and Overall Quality of the Learning Experience

144. Past SF evaluations (WFP 2010) have concluded that the learning environment is an important factor in attracting and retaining children, even at the primary level. The team visited the prize-winning Shibram Model GPS in Sundargonj upazila, which rivals most primary schools in the developed world in terms of its learning outcomes and innovative approaches. It is free to all students in the catchment area, but also boards hundreds of students (for cultural reasons, mostly boys) who come from far away. This school demonstrates that where children are provided a secure and comfortable environment with adequate supplies and a committed and talented teaching staff, attendance and completion rates are high, learning success is achieved, and more students go on to build fulfilling lives, despite the underlying poverty constraints.

145. An adequate school learning environment is defined here in terms of quality/number of teachers, gender ratios, number of classrooms, presence of supporting infrastructure, presence of the EP components, participation of parents in the school, and the nature of school management (although this defies easy measurement). The following analysis focuses on the quality of the learning environment, comparing different types of schools.

Student numbers

146. It is often asserted that the school meal (in this case, biscuits) attracts so many students that the teaching staff and the physical infrastructure of the school are put under increasing stress. This has been addressed in Bangladesh in previous studies (Ahmed and Arends-Kuenning 2003). In this analysis, the student/teacher ratio was estimated for each school. In addition, based on the hypothesis that the level of training is associated with the teaching skills of the teacher, the formal training of the teaching staff was analyzed.

147. In both regions, GPS are larger than the non-Government schools (Figure 8), which is to be expected. With regard to the intervention and control upazilas, the schools are approximately the same size in the NW, while in the Southern coast the control schools are significantly larger than the intervention schools. Student numbers, however, must be matched to the available number of teachers and the adequacy of the infrastructure. Figure 9 shows that with 59 students per classroom, the programme schools in the NW have about

seven more students than the control schools. In the Southern Coast, the control schools have significantly more pressure on each classroom.

148. In most schools, there is more than one shift in the same classroom. To keep up with primary school enrolment and make up for the insufficient number of schools and teachers, about 92 percent of all GPS and almost all the RNGPS run on double shifts, which results in reduced contact hours. In the GPS, the average student/teacher ratio is 64:1 while in RNGPS, the ratio is 53:1 (CREATE, 2007). The morning shift with the lower grades (Classes 1 and 2) is usually in session for two-and-a-half hours, while the upper grades (Classes 3, 4 and 5) attend the afternoon shift for four hours. The same teachers take classes in both shifts in a double-shift school. Many (not all) NGOs follow the one-school-one-teacher model (the BRAC model), with 30 to 33 students to one teacher and one three- to four-hour shift. Community primary schools usually follow the government school model, but may not run double shifts.

Figure 8. Average school size, by school type and region

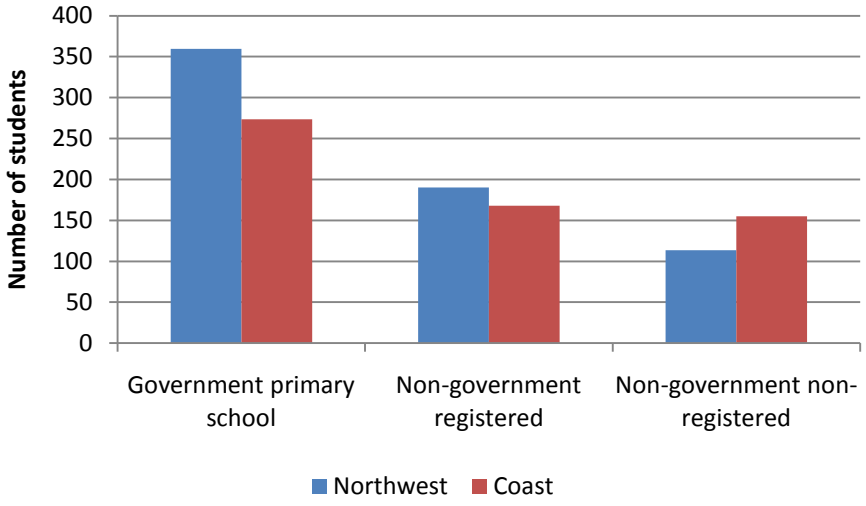


Figure 9. Average number of students per classroom, by treatment group and region

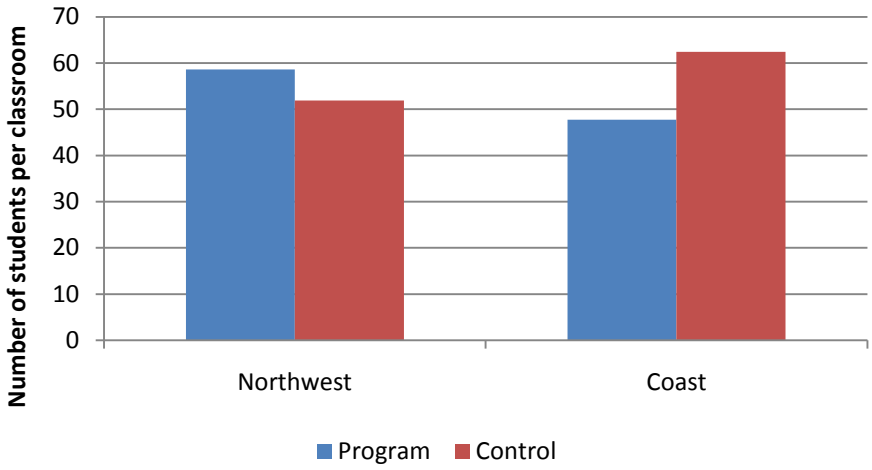
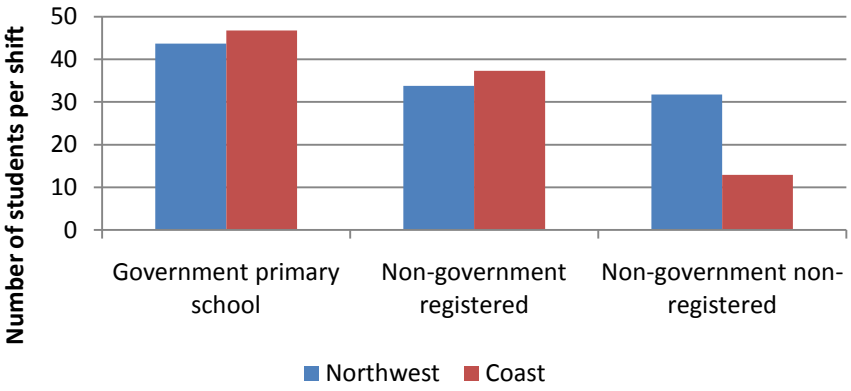


Figure 10. Average number of students per shift, by school type and region



149. From the school survey data, the number of students per classroom per shift is around 45 students in the GPS and around 30 students per shift in the other school types (Figure 10). These averages, however, camouflage the fact that enrolments are much higher in the early grades, and classroom size varies according to this reality. Most schools have a single classroom devoted to one or two grades; the qualitative survey team observed classroom sizes in GPS and RNGPS with up to 70 students. The presence of the biscuit does not seem to affect average classroom size. In the NW, there were 40 students per shift in the biscuit schools compared to 38 in the control schools. In the Southern Coast, the classrooms in the control upazila accommodate on average nine more students than the biscuit schools, although school enrolments are consistently larger in the control upazila.

150. The overall student-teacher ratio in a school is also a significant indicator of the learning environment, since a lower ratio allows more individual contact time between teacher and student. It is important to state that average student-teacher loads are independent of average classroom size since staff often teach multiple shifts. As Table 13 summarizes, the overall student/teacher ratio is high, implying heavy student loads per teacher. Moreover, the ratio is significantly higher in the programme than in the control schools in the NW, which could partially reflect the influence of the biscuit. In the Southern Coast, the control schools have a higher student load per teacher compared to the programme schools. The qualitative survey observed that many Government schools, although fully staffed, were functioning below their full complement of teachers due to in-service training requirements, maternity leave, and other factors. Still, parents largely expressed satisfaction with the quality of the school and the teachers, with whom they maintain frequent contact.

Table 13. Learning environment data: number of teachers, gender ratios and student- teacher ratios, by treatment group

	Northwest		Coast	
	Programme	Control	Programme	Control
Mean number of teachers	4.6	6.3	4.4	5.4
Student/ teacher ratio	58.1	44.4	39.3	51.5
Percentage of female teachers	53.6	50.4	44.9	40.2
Student gender ratio	1.0	1.0	1.0	1.1
	20	20	20	20

Gender ratios and participation of female teachers

151. There is widespread evidence from the literature on girls' education (e.g. Sukontamarn 2003; Kirk, 2006) that girls feel more comfortable when there are female teachers in the school and, further, that female teachers often provide effective role models for young girls in primary school, often being the first non-family females that they come to know. As Table 14 indicates, about half the teachers in the NW are females, and slightly more so in the programme schools. In the Southern Coast, a more conservative region, only around 40-45 percent of the teaching staff is female. With regard to the students, the student gender ratio (number of girls for each boy) is parity. The qualitative team did not observe nor hear of cases of sexual harassment of girl students either by teachers or by male students, and it appeared that female education is an accepted component of community life for the most part.

Table 14. Learning environment indicators: number of teachers, gender ratios and student: teacher ratios, by school type

	Northwest			Coast		
	Gov't Primary	Non-Gov't Registered	Non-Gov't Non-registered	Gov't Primary	Non-Gov't Registered	Non-Gov't Non-registered
Mean number of teachers	7.1	3.8	2.8	6.1	3.6	4.0
Student teacher ratio	53.0	52.8	39.5	45.0	46.3	38.8
Percentage of female teachers	54.2	35.7	88.3	53.8	28.9	75.0
Student gender ratio	1.1[a]	1.0	0.9	1.0	1.1	1.2
	21	14	5	20	19	1

Gender ratio: number of girls to each boy

There are, as expected, more teachers in the GPS schools compared to the non-Government schools. In the government schools, the student/teacher ratio is over 50 in the NW and around 45 in the Southern Coast. The registered non-government schools also have a high student teacher ratio. The non-registered schools have a lower ratio. The government schools have slightly more female than male teachers in both the NW and Southern Coast, but the non-government registered teaching staff are heavily weighted toward males, with the non-registered school staff predominantly female.

Teacher quality

152. Teacher qualifications were assessed in four groups: teachers having a secondary school education (Grade 10/SSC), higher secondary education (Grade 12/Higher Secondary Certificate), Bachelor's degree (BA/BSc/BCom), or Master's degree (MA/MSc/MCom). As Figure 11 indicates, the majority of teachers have either a secondary degree or a higher education degree. In the NW, training through the Bachelors and Masters level accounts for roughly 50 percent of the intervention and control schools; in the Southern Coast, the predominant level of training is a completed secondary degree.

153. When school type is examined, it is clear that the GPS teaching staff have higher credentials than the non-Government schools. As Figure 12 shows, in the NW, 70 percent of GPS teachers have a Bachelors or Masters degree, while non-government schools rely on teachers with secondary education. A similar pattern is seen in the Southern Coast schools. This pattern was confirmed by the qualitative visits to schools. Many non-government schools, and especially non-registered ones, appeared to be staffed by teachers with minimal formal training.

Figure 11. Teacher education levels, by region and treatment group

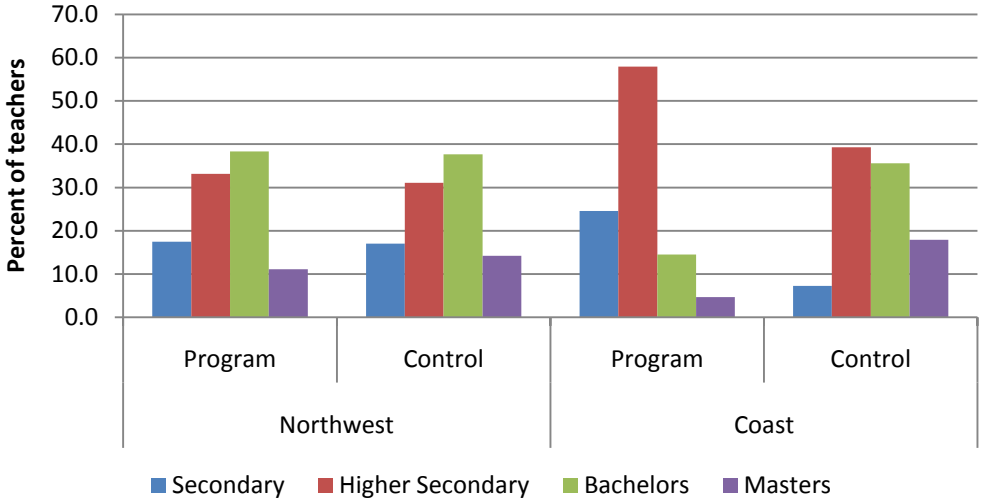
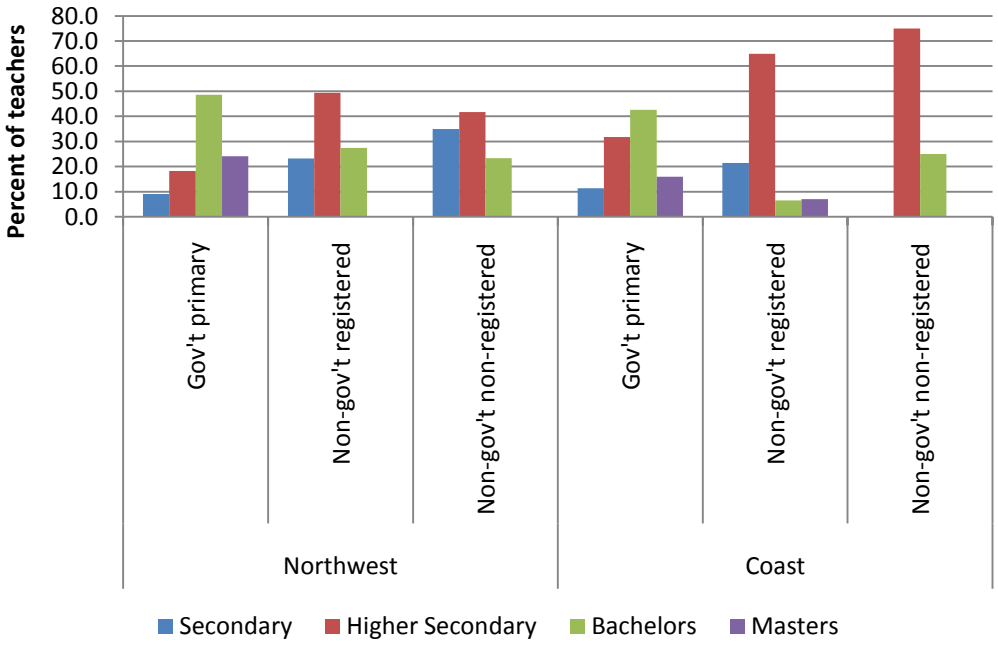


Figure 12. Teacher education levels, by region and school type



Physical infrastructure

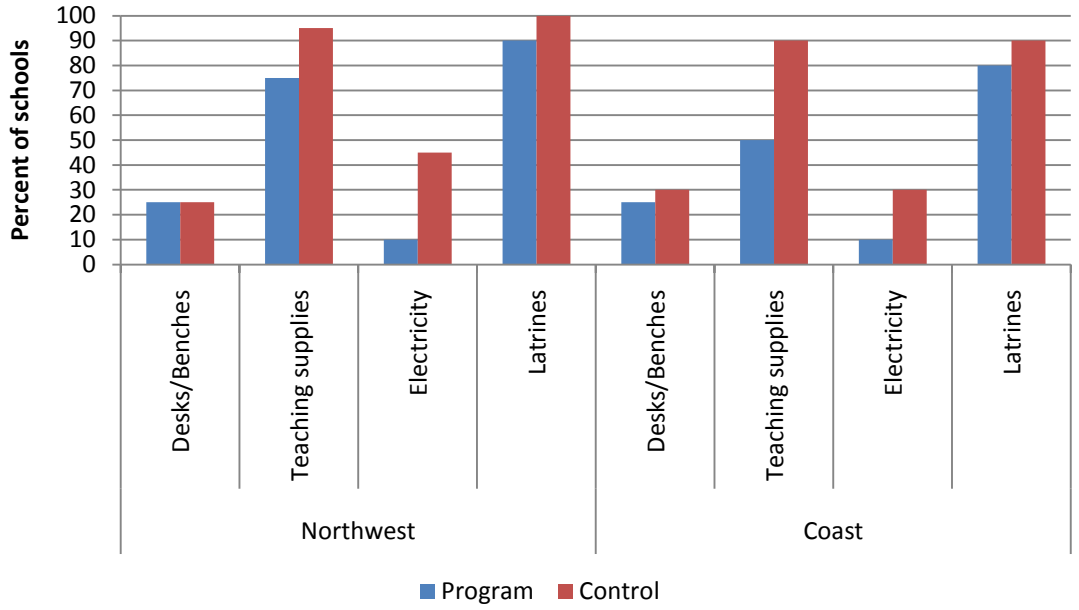
154. The physical environment of the school also contributes to the learning environment. Physical discomfort, lack of security, and lack of hygiene facilities can undermine the efficiency and effectiveness of learning. Figure 13 displays a pattern in which the number of desks and benches is seen as being inadequate in most schools in both regions. Children were frequently observed cramped together, four or five to a bench, in classrooms built to accommodate smaller numbers of students. The absence of electricity is the norm.

155. On the other hand, most schools have adequate teaching supplies and, as per government policy, textbooks are available to all children. Most or all schools have latrines, usually separate facilities for boys and girls, and the qualitative team observed the latrines to be clean and functional at all of the schools visited. When the data are disaggregated by school type, the GPS schools have significantly more access to adequate benches and desks, as well as to electricity. For example, 42 percent of the NW GPS schools had electricity, compared to 14 percent for the RNGS schools and 0 percent for the non-registered schools.

In the Southern Coast, 35 percent of GPS schools had electricity while only 5 percent of registered non-government schools did. A similar pattern was identified for benches and desks.

156. The qualitative interviews support this pattern. First of all, there was wide variability in the quality of schools. Some government schools appeared poorly maintained and in a state of disrepair (an opinion shared by many headmasters). The team observed many schools with 50 or more children squeezed together on benches in classrooms designed for far fewer students. But the GPS schools are far more permanent than the non-government alternatives. The non-government schools tend to be wooden structures with zinc roofs located on land provided by a community member and with limited infrastructure in terms of benches/desks (if any) and space for the teachers to work. In some cases, the students sit on the floor and there is no blackboard and very few teaching aids.[55]

Figure 13. Percent of schools with adequate access to essential school materials, by region and treatment group



Child interest and academic ability

157. About one-fifth of the households stated that their children do not enrol or stay in school for lack of interest or because they do not perform well in school. Of the children who had never enrolled in the NW, over 40 percent asserted that the school had not allowed entrance. That only half the school-going children are in the age-appropriate class provides further evidence of either late starts in primary school or repeated grades. In either case, it suggests that a significant number of children are not prepared for school at the age they should be entering.

158. WFP is implementing pre-primary SF on a small scale, and the draft CP 200243 (2012-2016) proposes to expand the programme to pre-primary schools in select areas. Interviews with parents and schools, a strong interest in providing biscuits to pre-primary children as a means of helping to better prepare children for primary school, by introducing them to the learning environment earlier so they can adjust. The pre-primary age group often falls into a coverage gap in terms of nutrition interventions. The National Strategy for Anemia Prevention and Control in Bangladesh identifies children aged two to five years of age (along with children aged five to 11) as medium risk groups, who should be targeted through iron-

[55] Classrooms are often hot and uncomfortable, and in one school when asked what could be done to improve the school environment, the Class 5 students unanimously responded: a fan!

folate or multiple micronutrient supplements[56] as they are not covered by the National Nutrition Programme. Another rationale was the increased income-earning opportunities that may be accessible to some mothers when younger children are sent to school thus freeing up mothers' time.

159. Children may also not succeed in school because of factors related to the home environment or their own perceptions of the future value of school. The qualitative teams observed that when children were asked what they would like to be in life (i.e. a sense of career ambition), few had a ready answer. Most of the time, the response—looking expectantly at the teacher—was "teacher." There was not a strong sense of career choices, even for Class 5 students who soon would be making decisions about continuing school or not. The relevance of this is that these children are likely correct in their assessments. There are very few options available to them as primary students and their parents seldom project the desired role model. The lack of interest and the poor academic performance appear related to the uncertainty and precariousness of the lives that they live. If the parents face severely constrained livelihood options, it is difficult to in still a broad aspiration horizon in the children.

160. Another key contextual factor influencing the impact of the school biscuit that has been highlighted throughout the report is the difficulty for children to obtain a quality education in the poor quality of the school environment. A child who does not readily grasp the lessons taught in a crowded classroom and cannot get individualized attention from an overburdened teacher may not learn and be unable to progress normally, eventually becoming discouraged enough to leave school.

161. Education quality issues have led to a widespread informal system of private tuition, without which a child may be unable to pass exams and thus will eventually drop out. This situation places an additional education related financial burden on families, which the poorest cannot meet, thus affecting most adversely the children from the poorest households.

3.2. The Role of Implementation Factors

162. The consequences of WFP's choice of the biscuit modality have been largely positive in terms of facilitating wide coverage, prevention of leakage, and ease of storage, handling and transportation.

163. As noted, the Government carried out a FFE programme (described in section 1.2) that was discontinued due to leakage problems. The Government's experience with cereal-based FFE underlines an advantage of the biscuit: it is a nutritious supplement that lacks market appeal. The qualitative study found little leakage in the current biscuit-based programme.

164. The biscuit modality is streamlined and thus relatively easy for NGO partners to manage compared to alternative modes involving food rations or locally prepared meals. Partner NGO implementing partners (IPs) appear to be well established, well organized and capable organizations and they are one key to the effectiveness of the programme. Local NGO staff are familiar with the programme schools and knowledgeable about the local context in terms of livelihoods as well as education and nutrition, and appear to monitor the schools on a regular basis. IPs conduct joint monitoring with the Government but only related to the biscuit programme and not on educational quality. IPs report problems related to school quality that affect SF to local education officials (e.g., when a teacher's absence hampers distribution to students) but have no role in addressing those problems.

165. WFP Field Monitors do monitoring based on a random sample selection of schools and are always accompanied by an education officer; however they are able to cover far fewer schools than the IPs. There is an issue of transport for Government education officers;

[56] National Strategy for Anemia Prevention and Control in Bangladesh. Feb 2007. Institute of Public Health Nutrition, Ministry of Family Health and Welfare.

without WFP they would probably not be able to monitor at all in some areas due to lack of transport and fuel.

166. Logistically, the ease of transport to remote locations and simplicity of distribution are major advantages of the biscuit. While other modalities such as a hot school meal may potentially achieve greater impact, the biscuit is well suited to the demands of a large distribution network with limited infrastructure. Some partners such as Rangpur Dinajpur Rural Services in the Northwest are quite large organizations that manage multiple programmes and likely have the capacity to manage more complicated SFPs.

167. The biscuits have already proven to be a suitable modality for use in natural disasters in the Southern Coast, where post-disaster emergency biscuit distribution paved the way for the current SFP.

168. Overall the benefit to cost ratio of biscuits is positive when viewed in terms of costs of production, transportation and delivery, limited disruption of teaching, nutritional value, and its contribution to the poorest households (discussed in detail in the section of this report on value transfer). Evidence from this evaluation is generally consistent with the conclusion of a recent study by Boston Consulting Group that the Bangladesh WFP SFP had a benefit to cost ratio 4:1[57] for the most vulnerable households.

169. Given the limited contact hours in primary schools due to the double shift system, the biscuit is a suitable modality in that it takes little time to distribute, does not disrupt class, does not draw teachers away from their duties, and can be consumed during class over a period of hours.

170. Many SMCs and school staff, who sought to minimize their responsibility in the programme and diversion from school duties, stated their belief that the biscuits are well suited to the double shift system, whereas offering a hot meal would be disruptive. Similarly, most local education officials endorsed the biscuit modality, though in qualitative interviews, a few local education officials thought they would be instructed by the Government in the near future to pilot a hot meals programme. Parents interviewed during focus groups were not aware of the discussion about introducing a hot meal.

171. The ease of logistics of the streamlined biscuit modality is offset by the narrow opportunities for community participation in the programme. Families do participate in education in other ways, such as mothers' meetings and frequent checking on children's attendance at school, and a more material contribution may be beyond the resources of the majority of families.

172. The programme has experienced pipeline breaks due to funding shortfalls, local production problems, and problems with importation of foreign-manufactured biscuits. School feeding achieved 182 (75.8 percent) of its target 240 feeding days in 2010; 178 days (74.2 percent) in 2009, 91.8 percent of target in 2008, and 89.7 percent in 2007.[58] Reasons for not reaching targets include Government delays in finalizing pre-school data and school lists; reduced coverage of pre-school children due to lack of funding, and unsubstantiated media reports that the biscuit had caused children to fall ill after problems with product quality caused a temporary suspension of distribution in November-December 2010. Distribution was resumed after laboratory results confirmed that there was no contamination in the WFP-produced biscuits. The most severe pipeline break occurred in 2011, and as of the end of April 2011, schools reported to the qualitative team they had no biscuits since January.

173. Funding shortfalls are not related to the specific SF modalities. There was little disruption reported as a result of seasonal factors or natural disasters.

[57] Boston Consulting Group presentation to World Bank 2010
[58] SPRs 2010, 2009, 2008, 2007. WFP Bangladesh.

174. Previously, the local procurement of biscuits in Bangladesh constituted a contribution to the local economy because it stimulated local production. However, at the time of this evaluation, the biscuits were being manufactured in India, therefore the economy and local producers do not benefit as before. There have been delays in the delivery of Indian biscuits because of government restrictions on letting them in.

3.3. The Interaction between Factors

175. There are many factors at play in the economic, nutritional, and institutional environment surrounding school feeding which this report has highlighted. Biscuits attract young children to school and support regular attendance in Classes 1 and 2. By the time children reach Classes 3 and 4 some begin to realize that a good education is desirable "to learn, become a good citizen, and get a good job" and so are more inclined to stay in school. It is, however, also at this point that many children confront the economic and institutional challenges that constrain their ability to succeed and remain in school.

176. The impact of poverty cannot be underestimated. Poverty affects educational, nutritional, and livelihood outcomes in a complex and multi-dimensional manner. Inspired by the second MDG, the Government has made universal primary education a major sectoral policy objective, and its efforts have raised a widespread awareness of the importance of early education for children. The biscuit is part of this overall incentive package. Thus, the efforts of the headmaster and teaching staff, the educational stipend, and the biscuit all work to bring children to the classroom. Parents welcome this opportunity to put their children in school, in large part because it brings a stable and predictable benefit to a household livelihood otherwise uncertain and insecure.

177. The value of the biscuit, small as it is, makes a difference in the lives of poor families. Many poor children, however, find it difficult to see rewards for continuation in school, and the lack of a home environment conducive to learning reduces the chances of success in school. As the child grows, the income earning potential overcomes the value of the biscuit, and the vast majority of poor students know that continuation after primary is not an option, so the motivation to stay in school becomes increasingly diluted. The biscuit cannot overcome this confluence of factors that characterizes the experience of the most vulnerable.

178. When asked about the relative value of the biscuit and the education stipend, parents tended to value the cash input of the stipend more, while children perceived the biscuit as a greater incentive because of its immediacy and because they receive it directly. Parents stated that both inputs were valued and helped in different ways, illustrating the combined importance that relatively small inputs have for parents from poor households.

179. With regard to promoting equitable access gender equity in education, much has been done by government to provide an education stipend, free tuition and books, and to increase awareness about the importance of girls' education. The biscuit is a complementary input to these efforts in that it helps attract girls (as well as boys) to school. Providing good nutrition to children and an input to stave off hunger in class was reported throughout as helpful to the learning process, children's attention capacity and happiness in class.

3.4. Alignment with national strategies, policies and priorities

Education Sector

180. The current PRS aims to reduce by half the number of poor people and includes "quality education" as one of eight priority areas. The Ministry of Primary and Mass Education's National Plan of Action (II) 2003-2015 includes a "phased SFP for primary education based on nutritionally-relevant meal content, cost-effectiveness, decentralized supply chains and a management strategy which avoids vesting responsibilities on teachers."

181. The Government has provided strong policy support to education and has taken many positive steps including the 100 percent enrolment initiative, and during interviews, many

school officials talked about their work to achieve the 100 percent enrolment goal. Government policy and programme interventions undertaken with development partners include the appointment of qualified teachers, arranging modern in-service training, improving the teacher-student ratio, introducing an effective monitoring, supervision and evaluation mechanism, curriculum development, provision of free textbooks, FFE and stipend for the poorer students, activating the SMCs and improvement of physical facilities of schools under PEDP II. Many of these initiatives were observed during the qualitative survey, and while some have a negative short-term effect, such as the absence of teachers for the year-long in-service training, it is likely that the education sector will benefit in the long run.

182. Despite its advances, Bangladesh still has far to go to achieve the Education for All goals. For example, the Government annual budgetary support for education has remained around 14 percent, below the 20 percent target of Education for All, and many schools suffer from overcrowding and poor infrastructure. The education stipend has not been increased since its inception and thus has not kept pace with increasing costs, gradually eroding its benefit to families.

183. The major concerns now are how to improve the quality of education with equitable access, meaningful participation, and improved learning in the classroom. Education sector reviews and Education Watch reports indicate that there is are still great challenges in the primary education system with grade repetition, dropout, and low achievement of competencies by those completing the five-year cycle. The quantitative data from this evaluation support those findings. Improvements to the education system are critical, but the total learning environment must take into account that students' learning achievements depend more on their background characteristics (parental education, belonging to families from marginalized groups such as ethnic minorities, occupations with low status) and private tutoring than on the school-related factors, and this perpetuates inequities in access and participation in the system.

184. The double shift system results in reduced contact hours[59] and compromises the teacher's ability to successfully teach the curriculum, affecting student performance and progression. The Government aims to eventually convert all schools to a single shift system to increase contact hours, but progress is slow. Only one of the schools observed by the qualitative team, a GPS in Latachapli, Kuakata upazila, was operating one shift. The change to a full-day system has some implications for the biscuit programme, in that a packet of biscuits may not be sufficient to sustain a child throughout a full school day (as noted now by some teachers during the qualitative study). A full school day may require some kind of supplemental meal for children who do not receive lunch at home.

185. The participation and involvement of communities is a key requirement for improving the provision of quality education for their children. Towards this end, school feeding can provide opportunities for communities to coalesce and ensure their children's best interests in the process. Although this may require more investment in terms of time, resources, capacity building and organization, alternatives such as a cooked meal or other locally made or procured tiffin (e.g., kitchuri[60] or an egg and banana) can be a venue for increasing school-community partnership and help parents to become a stakeholder with a voice in their children's learning and education.

186. WFP maintains important partnerships with government departments and external agencies in the education sector for the SFP. It has good relations with the DPE, the primary stakeholder in the school biscuit programme, who clearly feels ownership of the programme. WFP is a member of PEDP-II and has official observer status at the consortium's meetings. Thus WFP appears to have the necessary partnerships to support the programme, though

[59] CREATE, 2007.
[60] *Kitchuri* is a traditional Bangladeshi dish, a cooked porridge of vegetable, lentil and rice.

major stakeholders stated during qualitative interviews that WFP could play a more visible role in partner forums.

187. The scalability of the biscuit modality has been accepted by government. Under the current Government SFP, primary school children receive 75 grams of fortified biscuits in eight poverty-stricken upazilas in three selected districts. Under the new CP, WFP Bangladesh will work with the Ministry of Primary and Mass Education as it launches and expands it programme to remote schools in poverty-prone areas of the country in 2011[61].

188. The Government is planning to pilot a hot meals programme, but such a change in modality would take several years to test and then to scale up. It would be practical to pilot a cooked meal in schools with double and single shift systems to examine the consequences of changing modalities. The change to a single shift system is proceeding slowly, and thus its effect on WFP's intervention is not known.

189. Currently WFP is providing capacity building support to Government. The purpose of the capacity building effort over the 2012-2016 period is to enable the Government to plan and manage a SFP independently from WFP. A WFP funded 3 person Project Liaison Unit (PLU) is in the process of being established. This unit will be based within the DPE, adjacent to the Project Management Unit the Government has established (with 16 staff).

190. Capacity building to MoPME and DPE officials, local level government officials and school management committees focuses on: planning; monitoring systems; reporting; development and management of computerized databases; procurement and tracking of commodity; warehouse management; food storage; handling and delivery; complete and accurate record keeping; and quality control, reporting. WFP – jointly with Government – will develop a hand-over strategy maintaining capacity building support. Final hand-over will start after the next country programme.

Nutrition Sector

191. WFP's targeting strategy and school feeding modality is aligned with the Government's policy priorities and supports its goals in the nutrition sector. The Government 2005 PRS stipulated that consideration be given to introducing a SFP in order to improve child nutrition.[62] The revised PRS currently in effect includes a target to ensure a minimum daily intake of 2,122 kcal of food for all by the year 2021.[63] It recommends the reduction of the prevalence of iodine deficiency of all school children and notes that the challenge of improving nutrition will require sustained coordinated multi-sectoral interventions.

192. WFP's SFP responds to three of the five themes within the National Plan of Action for Children 2005-2010,[64] namely Food and Nutrition, Health, and Education and Empowerment of Girls. Programme objectives under food and nutrition include a reduction in the prevalence of micronutrient deficiencies, including vitamin A deficiency, iodine deficiency disorders and iron deficiency anemia amongst children and adolescent girls. Major interventions include social safety net programmes under which SFPs should provide energy-rich micronutrient fortified biscuits to primary school children.

193. This study further notes that poor nutritional status and vulnerability to diseases threaten the survival of children five to nine years of age. Thus, it also endorses the School Health Programme, where school health clinics have responsibility to orient primary school children on worm infestation and organize distribution of de-worming drugs. However,

[61] The CP states that Madrasah Islamic schools that follow the government school curriculum will be included [in the SFP] in recognition that they often have a significant proportion of ultra poor students.
[62] Bangladesh, Unlocking the Potential. National Strategy for Accelerated Poverty Reduction. General Economics Division, Planning Commission, Government of the People's Republic of Bangladesh, October 16 2005.
[63] Steps Towards Change. National Strategy for Accelerated Poverty Reduction 2 (Revised), FY 2009-11. General Economics Division, Planning Commission, Government of the People's Republic of Bangladesh, December 2009.
[64] Bangladesh National Plan of Action for Children 2005-2010. Ministry of Women and Children Affairs, Government of the People's Republic of Bangladesh.

Bangladesh has only 26 such clinics, only three of which are in rural areas, and utilization is poor.[65]

194. In 2001, the Government's Institute of Public Health Nutrition developed National Guidelines for the Prevention and Treatment of Iron Deficiency Anemia, which recommends iron supplementation, dietary improvement, food fortification and helminth control in pre-school-age and school-age children, adolescent girls and women of reproductive age.[66] In addition, the National Strategy for Anemia Prevention and Control (2007)[67] recommends targeting school-age children ages 5-11 for interventions including fortification with iron and other micronutrients provided through development and emergency response programmes, including SFPs.

Donor support to school feeding

195. During the evaluation, donors interviewed voiced strong support for WFPs SFP. The United States Department of Agriculture (USDA), one of the main donors, endorsed the programme as currently implemented, and believes that the biscuit provides an incentive to attend school, has health benefits, and encourages retention. The biscuit modality does not provide any scope for misappropriation and quality control can be maintained. USDA is pleased with the Government commitment to take over the programme per the WFP model.

196. The Australian Agency for International Development (AusAID) funds the programme because it supports two of AusAID's priority areas, nutrition and school retention. It is satisfied that WFP provides good services and has a good relationship with the Government, though the recent prolonged pipeline break is a matter of concern.

197. Other agencies that are major stakeholders in the education sector but not donors to WFP, such as PEDP II and CAMPE also voiced support for the programme, though with some reservations. One agency feels that school feeding should be highly targeted and not expanded to a national programme; another feels that alternative modalities should be tried.

4. Conclusions and Recommendations

4.1. Overall Assessment

Education outcomes

198. The biscuit is perceived as an important input to the school environment by teachers and parents, helps attract children to school and contributes towards Government efforts to attain 100 percent enrolment and increase attendance. Attendance rates are generally high, but are 6-8 percent points higher in programme schools in the NW than controls. In the coastal areas, programme schools have 10 percent higher attendance rates than control, with girl's attendance even higher still. This effect is seen across all grades. The gender ratio has improved to parity in both programme and control schools but more girls are enrolled in programme schools relative to boys.

199. Grade attrition rates by cohort have increased over the past 10 year period, for example, in the NW from 50 percent in 2000 to more than 60 percent in 2010. Although the gender ratio overall has improved, attrition rates affect both boys and girls. In the southern coast, children in programme schools show more "normal progression" throughout primary school, yet grade attrition continues high.

200. As this shows, there is inconsistent evidence of uniformly strong educational impacts in programme schools as compared to control schools, and for several indicators the results

[65] Health, Population and Nutrition Sector Strategic Plan (HPNSSP) 2011-2016. Planning Wing, Ministry of Health and Family Welfare, Government of the People's Republic of Bangladesh. Third draft, September 2010.
[66] Institute of Public Health Nutrition. (2001) National Guidelines: Prevention and Treatment of Iron Deficiency Anaemia. Institute of Public Health Nutrition, Dhaka, Bangladesh.
[67] National Strategy for Anaemia Prevention and Control in Bangladesh. Institute of Public Health Nutrition, Ministry of Health and Family Welfare, Government of the People's Republic of Bangladesh. February 2007.

were less positive in programme schools than control schools. Because of the overall quality of the educational and economic environment (small number of contact hours, high student teacher ratios, high numbers of students per classroom), the biscuit is unlikely to be the driving factor for educational performance.

201. In spite of the commitment to education expressed by most households, children drop out because they are needed to contribute to the precarious household economy especially for the most poor and vulnerable families. There are significant differences in attendance by vulnerability category in both the NW and the Southern Coast. In the most vulnerable households of the NW, only 80 percent of children ages 5-18 are in school, while in the least vulnerable, almost 97 percent of children attend school. Five percent of the households had no school-age children in school, and these were concentrated in the most vulnerable categories. In the Southern Coast, enrolment is higher, and the data suggest that vulnerability has no impact on whether children are in school or not.

202. Thus, the value of the biscuit is diminished as the child grows and becomes a more important economic asset to the household. This livelihood reality presents a major challenge because while the biscuit attracts students to school, it does not keep them there. Additional measures that address the household economic issues (for example a food transfer in the form of a take home ration for older children conditioned on school attendance) will be needed to address this problem in the higher grades. The quality of the school environment also affects children's success in school. WFP can leverage its role in school feeding to advocate for improvements.

203. Schools and parents have expressed strong interest in introducing biscuits in the pre-primary grades, to attract children to school, alleviate their hunger, improve attentiveness and learning, and improve their health. By encouraging attendance in pre-primary level, children are introduced to the learning environment earlier and thus become adjusted to it before being introduced to the more intensive demands of primary school.

204. The completion of primary school is an important milestone because those children who do complete it, tend to transition to secondary school, and households whose heads have successfully transitioned to secondary school are more likely to have other household members who also make this transition, thus there appears to be an intergenerational benefit.

205. Education outcomes are the result of an entire set of interrelated factors, of which WFP's school biscuit is one element in a larger picture. The biscuit is, however, one small positive input into an education system that faces severe challenges in delivering a quality educational environment.

206. The evaluation team was sensitive to the possibility of an unintended outcome in education: namely, that increased student enrolment due to the presence of biscuit might overburden existing staff and infrastructure. This potential unintended result was analyzed but found not to be significant.

Nutrition

207. The biscuit provides an important nutritional boost to children attending school and supplements a diet that is woefully inadequate for the majority of children. Only 23.2 percent of children in programme areas on the coast and 2.7 percent in the NW consumed a diet meeting the lowest of the range of the energy requirements. 46 percent of the children in programme areas in the NW did not meet the lowest of the range for protein requirements. On the coast the average of the children met protein requirements, but 20 percent did not meet the lowest level of the range. In the NW, 21 percent of the children in the programme areas were found to be thin (BMI for age) with 4.5 percent severely thin. In the coastal area, 25.9 percent of the children were thin and 5.8 percent severely thin. Significant deficiencies in vitamins A, B1 and B2 and iron were found in the diets of children in programme areas in both regions.

208. The consumption of the biscuits on a daily basis would boost the vitamin and mineral quality of the diet substantially and contribute a significant value in terms of energy intake. The current composition of the biscuit provides 66 percent of the daily requirement, which is below WFP's standard of 70 percent. The kcals provided by the biscuit boosts the energy intake of the average child in programme areas in the NW by 46 percent and in the southern coast by 29 percent. In the NW protein consumption is improved by 31 percent. Particularly in the NW, children receiving biscuits were reported by their parents and schools as benefitting from improved health and attentiveness.

209. The biscuit has several benefits over alternative modalities for implementing agencies, school staff and SMC members as well as pupils themselves. From the nutritional point of view this product has a high micronutrient content that would be difficult to emulate with a cooked meal and arguably presents a more effective vehicle for ensuring that the appropriate balance of micronutrients reaches each individual child as it is a ready-prepared food and will not be affected by imbalances in distribution of commodities or cooking methods. Hygiene and food safety issues may be less of a concern when dealing with a product that is centrally produced in conditions that adhere to standard procedures and can be easily monitored by WFP quality control specialists. Diversion of the food commodity appears to be less of a concern with a less highly valued product than rice and other foods that are more desirable to the community at large.

Value Transfer

210. The school biscuit programme has a small but important transfer value for the poorest. Households identified three major advantages of the biscuit: it saves food and money; it promotes the health of younger siblings of the child in school; and it saves time. The biscuit provides a daily value transfer to poor households of around 4.4 percent of the daily food bill. This amounts to around 4 percent of annual stated income for the most vulnerable groups in the NW and Southern Coast, but is a negligible input for the less vulnerable groups. When the value of the biscuit and the annual primary school education stipend are combined, the educational incentive for the most vulnerable families rises to 10 percent of annual income in the Northwest and 8 percent of annual income in the South.

211. The survey found a steep and steady erosion in enrolment in both programme and control areas in the Northwest and in control areas in the southern coast. While it is recognized that Bangladesh suffers from very high dropout rates, the reasons for low completion remain unclear. The household data suggest that the children who fail to complete primary school are concentrated in the most vulnerable households.

212. The major problem identified in this evaluation has been the lack of impact of school feeding on dropout in the higher grades, completion rates and transition to secondary school. It is true that the biscuit is perceived as a positive intervention for several reasons, but it is not adequate to keep children in school once children are able to make a significant contribution to household livelihoods. In order to keep children in school under these difficult economic conditions, a transfer of a greater value would be needed.

Summary of Areas of Impact

213. The following table summarizes the areas of impact on both regions under examination.

Table 15: Bangladesh school feeding evaluation: summary of areas of impact

Education: *Impacts*	**Both NW and Coast**	
	• Less variation in enrolment • Biscuits are a motivating factor for parents to keep children in school • Biscuit a motivating factor to get children to go to school willingly • Improved transition to secondary school for children from most vulnerable HH • Some components of EP: school gardening, malaria prevention	
	NW	**Coast**

	• Slight increase in enrolment
	• Reduced dropout except Year 5
	• Attendance higher
	• Class 5 girls attendance well above average
	• Some components of EP
	  ○ Nutrition education
	  ○ Personal hygiene education
	  ○ Deworming
		• Dropout reduced relative to control especially for Years 3-4
		• Reduced dropout for girls
		• Attendance higher for both boys and girls, but especially for girls
		• Educational Progression Score higher
		• Fewer HH have no school age children in school

Education: *No Impacts*	**Both NW and Coast**	
	• Dropout in Years 4-5 • Deterioration in primary completion rates • Overall transition to secondary school • Classroom size	

Nutrition and Health	**Both NW and Coast**	
	• 66% RNI micronutrient boost • Reduced hunger reported • Reduced food security instability	
	NW	**Coast**
	• 31% protein boost • 46% energy boost • Reduced morbidity reported	• 29% energy boost

Household Economy	**Both NW and Coast**	
	• Meal substitution • Theoretical 4.4% reduction in daily food bill • 4% contribution to HH annual income • Time saved • More food for younger siblings	
	NW	**Coast**
	• 10% annual income value transfer to most vulnerable HH when combined with government stipends	• 8% annual income value transfer to most vulnerable HH when combined with government stipends

School Management	**Both NW and Coast**
	• More women on School Management Committee

4.2. Recommendations

214. **Recommendation 1: The CO and its partners should continue to develop integrated and complementary programmes that target the poorest households in the school feeding areas, in alignment with WFP's CP.** School feeding alone will not ensure that school-aged children receive an adequate diet and maintain a good nutritional status, nor it is enough to counter the economic pressures on poor households even when they want to keep children in school. WFP and its partners should consider targeted integrated development support to the poorest households in SFP areas. Such support should target the most vulnerable households through a variety of activities that combines school feeding related activities with activities that provide other types of income transfer to the poorest households.

215. **Recommendation 2: The CO should use policy dialogue to support a strategy designed by the Government and other education bodies to address the issue of quality in the schools.** To optimize the positive contribution of the biscuit, greater attention should be given to improving the quality of education in the schools. This means ensuring not only that all children are in school, but they are actively learning in the classrooms a meaningful curriculum that promotes knowledge and skills relevant for their lives. Fostering more meaningful community involvement, through greater efforts to inform and involve parents and other community members about issues of school quality, and to train and motivate SMCs to become more active in improving the school environment are important aspects of such a strategy. WFP should support the development of a clear strategy by government and other key stakeholders in the education sector to address this key problem in education. As a partner with the Government in furthering the goals of Education for All, WFP should use its position to advocate with government and other UN agency partners to strengthen the quality of education in schools. WFP should also continue its commitment and efforts for the most vulnerable and marginalized groups in society to participate meaningfully in all opportunities to develop themselves, their children, and their communities.

216. **Recommendation 3: The CO should develop a hand over strategy for school feeding, in cooperation with the Government**. WFP's SFP is well aligned with the Government priorities and activities, with the aim of handing over the school feeding component to the government by 2016. At the same time, the Government has recognized capacity limitations to manage school feeding in light of the other issues related to education that are its core mandate. In addition, the Government is considering making adaptations that would have a significant effect on how school feeding is done, possibly making it even more costly and challenging to manage, namely going to a one shift programme and providing hot meals. Such a hand over strategy should address these issues and ensure a step wise progression between 2012 and 2016 towards full government ownership. Full government ownership will be built gradually after the next country programme.

217. **Recommendation 4: The CO should adopt a comprehensive approach to school feeding in primary education, with targeted goals for different age groups, including pre-primary, primary and older students in classes 4 and 5.** A pre-primary biscuit programme should be provided to pre-primary schools that are feeder schools for WFP targeted primary schools. The objectives of providing biscuits to the group would be to attract children's and parents' interest in school, enable young children to start to adapt to the school environment, and provide a nutritional supplement to a group that is not targeted by other programmes. It also provides a small but important contribution to the household economy.

218. The primary school biscuit programme should be continued but with understanding of its limitations. The biscuit is a small but important input aimed at improving the overall attractiveness and quality of the educational environment and supporting the poorest households to maintain their children in primary school. It is well suited to the challenges of delivering a regular nutritional food supplement to schools in the Bangladesh context, but

the biscuit modality is not sufficient to accomplish all of the current objectives around school feeding, particularly those related to primary completion and transition to secondary school.

219. A component targeting older students in Grades 4&5 should be developed. The lack of impact of the biscuit on primary completion rates should motivate a review by WFP of the strategy of the biscuit with regard to the higher primary grades. WFP should review other possible strategies that can be combined with biscuits to offset the economic pressures, especially on poor households, that exert a negative influence on attendance and retention among older primary school students. Such a new programme would have the objective of reducing drop out in grades 4 and 5 and increasing the number of students who complete primary school. WFP should consider an additional transfer, probably a take home ration or food voucher that would offset some or all of the economic gains of sending children out to work. If this ration were based on pulses it would also address the overall lack of protein in the diet.

220. The draft CP for WFP Bangladesh 200243 (2012 – 2016) already plans to expand biscuit distribution to pre-primary schools in priority areas. This and the proposed additional transfer to households with year 4&5 students would need to be done by expanding the current programme rather than by providing fewer inputs to more students. If additional resources cannot be acquired, WFP should put the priority on providing something to year 4 and 5 students in the same geographic areas.

221. **Recommendation 5: The CO should support the Government's design of a specific strategy to assist children to transition to secondary school; it should include a FFE component.** The vast majority that finishes primary school continue on to secondary school. Given the Government success in enrolling children in primary school, WFP should encourage the Government and other actors in the education sector to address the binding constraints in the last three grades of primary school in order to ensure that children complete primary school and transition to secondary school. This could involve using a combination of food and cash incentives for families that keep their children in school throughout primary grades. This FFE goal will require a set of interventions, not just the biscuit and EP, and a number of institutional partnerships with UN agencies, NGOs, and the Government. The objective of this programme is to ensure that poor children transition to secondary school, where the opportunities for livelihood transformation and wellbeing success are greater.

222. **Recommendation 6: The CO should ensure that the micronutrient content of the biscuit meets the WFP objective that 70 percent of the recommended nutrient intake be provided.** If the objective of the school biscuit programme is to provide an adequate micronutrient supplement to primary school-aged children, WFP should review the biscuit content and ensure that micronutrients (currently at 66 percent) meet the 70 percent requirement for a nutritional indicator. This would be relatively simple and would enable WFP to incorporate an important nutritional objective in the SFP.

223. **Recommendation 7: The CO should work with the Government to give full consideration to expanding provision of school biscuits to schools outside of the current coverage area, including to religious schools (primarily madrasahs) and ethnic-minority schools.** Religious schools (primarily madrasahs) and ethnic minority schools enrol the poorest children and those who are most discriminated against in the government education system. These schools do not participate in the school biscuit programme as they are normally outside the government system. Since their student population is among the most vulnerable both nutritionally and educationally yet still show a desire for an education, WFP and the Government should consider extending the school biscuit programme to these schools. WFP Bangladesh already plans to extend the programme to madrasahs that follow the government curriculum in its draft CP for WFP Bangladesh 200243 (2012 – 2016).The new CP strategy also plans to expand biscuit distribution to pre-primary schools in priority areas. This would need to be done by expanding the current programme rather than by providing fewer inputs to more students.

The implications of such an expansion, such as for associated resource and management requirements, should be considered in designing the hand-over strategy.

224. **Recommendation 8: The CO should expand its monitoring and evaluation system to focus on grade attrition in primary school and the reasons for low primary completion rate**. The major finding of this evaluation is that the school feeding incentives are not powerful enough to keep children in primary school for five years. It is recommended that, consistent with Recommendation 4, the monitoring and evaluation system begin to monitor grade attrition, transition to secondary, and primary school exit destinations (i.e., where children who finish primary school go). An independent study is needed to determine where children who drop out of school end up—married, programme market, at home—and what would be the appropriate incentive to keep students in a school system until viable livelihood skills are acquired. This information is needed if WFP continues to expect that school feeding can break the intergenerational cycle of hunger.

Annexes

Provided as a separate volume

Acronyms

BMI	Body Mass Index
CP	Country Programme
CREATE	Consortium for Research on Educational Access, Transitions and Equity
DPE	Directorate of Primary Education
EB	Executive Board
EMOP	Emergency Operation
EPS	Educational Progression Score
EP	Essential Package
FAO	Food and Agriculture Organization of the United Nations
FFE	food for education
FFT	food for training
FFW	food for work
GDF	Gross Domestic Product
GPS	Government Primary School
NW	Northwestern
NGO	Non-Governmental Organization
PEDP	Primary Education Development Programme
PRRO	Protracted Relief and Recovery Operation
PRS	Poverty Reduction Strategy
PRSP	Poverty Reduction Strategy Paper
PTA	Parent Teacher Association
RNGPS	Registered Non-Government Primary School
RNI	Recommended Nutrient Intake
SF	School Feeding
SFP	School Feeding Programme
SMC	School Management Committee
SPR	Standardized Project Report
SSC	Secondary School Certificate
TOR	Terms of Reference
UN	United Nations
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
VAM	vulnerability analysis and mapping
WFP	World Food Programme

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