

**Document of  
The World Bank**

**Report No.: 32563**

**PROJECT PERFORMANCE ASSESSMENT REPORT**

**BANGLADESH**

**INTEGRATED NUTRITION PROJECT  
(CREDIT 2735-BD)**

**June 13, 2005**

*Sector, Thematic and Global Evaluation Group  
Operations Evaluation Department*

## Currency Equivalents (annual averages)

*Currency Unit = Bangladesh Taka*

2002	US\$1.00	Tk. 59.93
	Tk. 1	US\$0.01669

## Abbreviations and Acronyms

BINP	Bangladesh Integrated Nutrition Project
BRAC	Bangladesh Rural Advancement Committee
CBNC	Community-Based Nutrition Component
CNC	Community Nutrition Center
CNO	Community Nutrition Organizer
CNP	Community Nutrition Promoter
EPS	Executive Project Summary
GOB	Government of Bangladesh
ICR	Implementation Completion Report
IEC	Information, Education and Communication
IEPS	Initial Executive Project Summary
ICDDR,B	International Center for Diarrhoeal Disease Research, Bangladesh
LBW	Low birth weight
M&E	Monitoring and Evaluation
MCH	Maternal and child health
MTR	Midterm Review
MOHFW	Ministry of Health and Family Welfare
NGO	Nongovernmental Organization
NNC	National Nutrition Component
NNP	National Nutrition Project
OED	Operations Evaluation Department
PPAR	Project Performance Assessment Report
PSR	Project Status Report
SAR	Staff Appraisal Report
SD	standard deviation
SENA	Strengthening Existing Nutrition Activities
TINP	Tamil Nadu Integrated Nutrition Project
VAT	Value added tax
VNMC	Village Nutrition Management Committee
UNICEF	United Nations' Children's Fund

## Fiscal Year

Government: July 1 – June 30

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### About this Report

The Operations Evaluation Department assesses the programs and activities of the World Bank for two purposes: first, to ensure the integrity of the Bank's self-evaluation process and to verify that the Bank's work is producing the expected results, and second, to help develop improved directions, policies, and procedures through the dissemination of lessons drawn from experience. As part of this work, OED annually assesses about 25 percent of the Bank's lending operations. In selecting operations for assessment, preference is given to those that are innovative, large, or complex; those that are relevant to upcoming studies or country evaluations; those for which Executive Directors or Bank management have requested assessments; and those that are likely to generate important lessons. The projects, topics, and analytical approaches selected for assessment support larger evaluation studies.

A Project Performance Assessment Report (PPAR) is based on a review of the Implementation Completion Report (a self-evaluation by the responsible Bank department) and fieldwork conducted by OED. To prepare PPARs, OED staff examine project files and other documents, interview operational staff, and in most cases visit the borrowing country for onsite discussions with project staff and beneficiaries. The PPAR thereby seeks to validate and augment the information provided in the ICR, as well as examine issues of special interest to broader OED studies.

Each PPAR is subject to a peer review process and OED management approval. Once cleared internally, the PPAR is reviewed by the responsible Bank department and amended as necessary. The completed PPAR is then sent to the borrower for review; the borrowers' comments are attached to the document that is sent to the Bank's Board of Executive Directors. After an assessment report has been sent to the Board, it is disclosed to the public.

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**Relevance of Objectives:** The extent to which the project's objectives are consistent with the country's current development priorities and with current Bank country and sectoral assistance strategies and corporate goals (expressed in Poverty Reduction Strategy Papers, Country Assistance Strategies, Sector Strategy Papers, Operational Policies). *Possible ratings:* High, Substantial, Modest, Negligible.

**Efficacy:** The extent to which the project's objectives were achieved, or expected to be achieved, taking into account their relative importance. *Possible ratings:* High, Substantial, Modest, Negligible.

**Efficiency:** The extent to which the project achieved, or is expected to achieve, a return higher than the opportunity cost of capital and benefits at least cost compared to alternatives. *Possible ratings:* High, Substantial, Modest, Negligible. This rating is not generally applied to adjustment operations.

**Sustainability:** The resilience to risk of net benefits flows over time. *Possible ratings:* Highly Likely, Likely, Unlikely, Highly Unlikely, Not Evaluable.

**Institutional Development Impact:** The extent to which a project improves the ability of a country or region to make more efficient, equitable and sustainable use of its human, financial, and natural resources through: (a) better definition, stability, transparency, enforceability, and predictability of institutional arrangements and/or (b) better alignment of the mission and capacity of an organization with its mandate, which derives from these institutional arrangements. Institutional Development Impact includes both intended and unintended effects of a project. *Possible ratings:* High, Substantial, Modest, Negligible.

**Outcome:** The extent to which the project's major relevant objectives were achieved, or are expected to be achieved, efficiently. *Possible ratings:* Highly Satisfactory, Satisfactory, Moderately Satisfactory, Moderately Unsatisfactory, Unsatisfactory, Highly Unsatisfactory.

**Bank Performance:** The extent to which services provided by the Bank ensured quality at entry and supported implementation through appropriate supervision (including ensuring adequate transition arrangements for regular operation of the project). *Possible ratings:* Highly Satisfactory, Satisfactory, Unsatisfactory, Highly Unsatisfactory.

**Borrower Performance:** The extent to which the borrower assumed ownership and responsibility to ensure quality of preparation and implementation, and complied with covenants and agreements, toward the achievement of development objectives and sustainability. *Possible ratings:* Highly Satisfactory, Satisfactory, Unsatisfactory, Highly Unsatisfactory.



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This report was prepared by Howard White, who assessed the project in August 2004, with inputs provided by Edoardo Masset and Hugh Waddington. The report was edited by William Hurlbut, and Soon-Won Pak provided administrative support.

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## Principal Ratings

	<i>ICR*</i>	<i>ICR Review*</i>	<i>PPAR</i>
Outcome	Satisfactory	Satisfactory	Moderately Unsatisfactory
Sustainability	Likely	Likely	Likely
Institutional Development Impact	Modest	Modest	Modest
Bank Performance	Satisfactory	Satisfactory	Satisfactory
Borrower Performance	Satisfactory	Satisfactory	Satisfactory

\* The Implementation Completion Report (ICR) is a self-evaluation by the responsible operational division of the Bank. The ICR Review is an intermediate OED product that seeks to independently verify the findings of the ICR.

## Key Staff Responsible

<i>Project</i>	<i>Task Manager/Leader</i>	<i>Division Chief/ Sector Director</i>	<i>Country Director</i>
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## **Preface**

This project performance audit report (PPAR) covers the Bangladesh Integrated Nutrition Project (BINP, Credit 2735-BD). The US\$67.4 million project was financed by a credit of US\$59.8 million approved in May 1995. The project closed with disbursements of US\$51.6 million in December 2002.

The PPAR was prepared by the Operations Evaluation Department (OED), based upon the Implementation Completion Reports (ICR), project documents, and interviews with government officials and Bank staff with experience of the projects. It also draws on the OED impact study *Maintaining Momentum toward the MDGs? An Impact Evaluation of Interventions to Improve Maternal and Child Health and Nutrition Outcomes in Bangladesh*, including the fieldwork for that study, which took place in November 2003 and August 2004. The assistance of those who met with the study team is gratefully acknowledged.

Following standard OED procedures, the draft of this PPAR was sent to the borrower for comments before finalization, but none were received.



## Summary

The Bangladesh Integrated Nutrition Project (BINP) was initiated in response to the very high level of malnutrition prevalent in the country and the fact that activities explicitly focused on nutrition had been relatively neglected by both government and external agencies. The proposed design drew heavily on the Tamil Nadu Integrated Nutrition Project (TINP) in India, at the heart of which was nutritional counseling to change behavior. The government was initially resistant to the project. The Bank adopted both an advocacy approach and adapted the program design to win government acceptance. The main changes were the scaling down of the project from 70 to 40 thanas, phased in over time with the intention of learning from experience in the earlier thanas, but assurances were also given by the Bank that the community-level workers would not become part of the government service.

The project's long-term goal of reducing malnutrition in Bangladesh to the extent that it ceased to be a public health problem was to be reached through three intermediate objectives:

- (a) to improve the capacity of national level nutrition institutions in Bangladesh in the areas of advocacy, analysis of causation and consequences of malnutrition, policy advice, operational research, and operational support of national programs;
- (b) to improve the capacity of communities, households and individuals in the project area to understand their nutritional problems in practical terms and take appropriate action to address them at their own level; and
- (c) to improve the nutritional status of the population in the project area, with particular emphasis on pregnant and lactating women and on children.

To achieve these objectives, the project had three components:

- National nutrition activities (US\$19 million, 32 percent of the total), including institution building, operational research, and monitoring and evaluation.
- Community-Based Nutrition Component (US\$32.6 million, 56 percent), which used growth monitoring as a framework for nutritional counseling and targeted supplementary feeding for children aged under 24 months, and for pregnant women.
- Inter-sectoral nutrition activities (US\$7 million, 12 percent), programs from other sectors to improve nutrition, such as home gardens and poultry keeping.

Implementation began slowly; service delivery at the community level was delayed by one year. However, once it began, impressive participation levels were achieved, and the monitoring system showed large reductions in severe malnutrition. But evidence from the midterm evaluation and, even more so the endline study, showed the project to be having less impact than had been thought; an impact that was certainly well below target levels. Pregnancy weight gain met the project target, but this was also achieved in the control areas, so that only a small gain can be attributed to the project, and too little to make a large difference to the prevalence of low birth weight, which fell by less than targeted. Outcome data were not collected on anemia and Vitamin A and iodine disorders, though use of mineral supplements did increase in the project area. The Community-Based

Nutrition Component (CBNC) thus had some success in implementation but failed to achieve its objectives in terms of nutritional outcomes.

The other two components suffered from implementation problems, thus compromising the achievement of project objectives. The inter-sectoral component only financed two activities, when more had been planned, and had limited coverage and poor targeting. These activities had limited impact on nutritional outcomes. At the national level, information, education, and communication (IEC) materials were not developed as planned. Capacity building was mixed: whilst there were positive aspects, key institutions were missed. A good monitoring and evaluation system was put in place for the CBNC, though its use for program decisions has been limited.

The three objectives were all highly relevant, but project efficacy and efficiency were modest. Capacity creation at the national level was modest and limited in scope. Capacity building at the community level in project areas was substantial, but with modest efficiency, since the project's infrastructure has proved quite costly. Nutritional knowledge has improved in project areas, but there has been a frequent failure to apply such knowledge in practice. The impact of the project on nutritional status has been limited. Hence, project outcome is rated as moderately unsatisfactory overall.

On balance institutional development has been modest. It has been greatest at the community level, where committees have been established and community workers trained, but far less at the national level, with key institutions ignored by the project. Given the creation of capacity at both national and local levels, sustainability is rated as likely, though concerns are raised regarding financing.

The limited impact of BINP raises serious doubts as to the proposed justification for scaling the project up to the national level, which has already begun. To do so will prove very costly, with limited nutritional gain. However, several lessons for possible future Bank assistance emerge from this assessment:

- Supplementary feeding for children does improve nutritional status, especially for the most malnourished children.
- Supplementary feeding for pregnant women appears an ineffective approach on two grounds: the pregnancy weight gain achieved is mostly too small to have a notable impact on birth weight, though there are important exceptions amongst sub-groups of women for which a substantial impact is found. The program might have been more successful if it had restricted its attention to the most malnourished of women, improving targeting to reduce Type II error, and if it tried harder to discourage leakage and substitution.
- For both types of feeding program, there is evidence of a greater impact in the lean season. There are grounds for considering either increasing the size of the food supplement in this period, restricting it to those months, or adjusting the eligibility criteria by time of year.
- Discouraging women from “eating down” (i.e., less) during pregnancy has some benefit for birth weight. But all forms of knowledge transmitted by the project suffer from a knowledge-practice gap (i.e., not putting knowledge into practice,

though uptake of better practices has increased in project areas). Such gaps are common and have multiple causes. However, paying attention to the causes of the gap can help enhance project effectiveness.

Ajay Chhibber  
Acting Director-General  
Operations Evaluation



## 1. Background

### Nutrition in Bangladesh

1. In the 1980s, malnutrition levels in South Asia were the highest in the world and those in Bangladesh were the worst in the region. Stunting affected two-thirds of Bangladeshi children under five in the early 1980s, a higher proportion than in both India and Pakistan, and far higher than in Sri Lanka (Table 1). This gap had widened by the early 1990s, as there had been virtually no improvement in Bangladesh, whereas malnutrition rates were improving in the other countries in the region.

**Table 1: Anthropometric Outcomes in South Asia (percent of children below -2 standard deviations from the reference median)**

	1975-79	1980-84	1985-89	1990-94	1995-99	2000-04
<i>Stunting (Height for age)</i>						
Bangladesh	..	67.7	67.5	64.4	53.9	44.7
India	72.3	..	..	58.4	44.9	..
Sri Lanka	44.6	36.2	27.2	23.8	20.4	..
Pakistan	67.0	..	57.9	42.9	..	..
<i>Underweight (Weight for age)</i>						
Bangladesh	..	68.0	70.9	67.1	59.2	47.7
India	71.3	..	..	59.4	46.7	..
Sri Lanka	54.3	..	37.3	37.7	32.9	33.0
Pakistan	..	..	..	..	..	..

Source: World Bank, World Development Indicators.

2. This dismal trend in part reflects a lack of serious policy attention to nutrition. The Bangladesh National Nutrition Program was set up in 1975 but carried out a limited range of activities. Policy interventions in support of nutrition palled into insignificance in comparison with the substantial family planning program begun in the 1970s, and compared to the success in raising immunization coverage during the 1980s. It was against this background that the World Bank proposed the Bangladesh Integrated Nutrition Project.

### The World Bank and Nutrition

3. The World Bank began its involvement in nutrition in the 1970s as a part of the new emphasis on basic needs. Three free-standing nutrition projects were initiated in that decade: Brazil (1976), Colombia (1977), and Indonesia (1977). These projects included a broad range of elements on a pilot basis – rural credit; nutrition education; information, education, communication (IEC); food supplementation; child monitoring; school feeding; micronutrients supplementation; processing and marketing of low-cost foods; fruit and vegetable gardens; food storage; supply of potable water; and construction of health posts. The projects gave mixed signals as to what worked and what didn't.

4. The Tamil Nadu Integrated Nutrition Project (TINP), India, begun in 1980, adopted a “medical” approach to malnutrition, relying heavily on nutrition education (or counseling). Community health workers were employed to instruct women on how to make better use of the existing resources. Food was seen as a “medicine” (Berg 1983) provided at community health centers, where children are weighed in order to detect malnourishment. This approach mirrored developments in the economic literature, including research at the World Bank, arguing that income-based improvements in nutrition would be inadequate, so there is a strong case for nutrition education. TINP has been widely held up as a success story, being called one of the “most successful [projects] in the world in reducing malnutrition.”<sup>1</sup> An OED impact study of TINP in 1994 found that the project achieved unprecedented rates of decline in malnutrition in project areas, most of which was attributable to the project (World Bank, 1994). The Bangladesh Integrated Nutrition Project was modeled on TINP.

### **Project Preparation**

5. The Bank’s involvement in the health sector in Bangladesh began in 1975 with the First Population Project. As the name suggests, the focus was on family planning. Subsequent projects were extended to the broader health sector, but with little attention to nutrition.

6. A sector study published in 1985 highlighted the depth of the malnutrition problem: “malnutrition is a widespread, persistent and apparently increasing problem in Bangladesh. Daily per capita caloric consumption has deteriorated significantly in the last two decades – from an estimated 2,301 in 1962-66 to an estimated 1,943 in 1981-82” (World Bank 1985: i). Given the later focus of BINP on behavior change, it should be noted that the sector study argued that “the major determinants of food consumption in Bangladesh are household income and wealth. Malnutrition is, therefore, essentially a poverty and rural employment generation problem” (*ibid.*: i). Although the role of “deleterious food beliefs and practices” are mentioned, nutrition education receives only one paragraph in the 54 pages of the main report, being subsumed under health policies, which are secondary to the report’s main focus on food production and distribution.

7. A joint Bank-UNICEF mission to take forward the nutrition initiative took place in 1989, resulting in a chapter on nutrition being included in the country’s Fourth Five-Year Plan and a draft proposal being prepared by the World Bank.<sup>2</sup> The proposal document indicates that the Bangladesh project was to be based on the Tamil Nadu Integrated Nutrition Project; adopting the central focus on behavior change. A second element of project design, which evolved out of two papers by working groups under the Ministry of Health and Family Welfare (MOFHW), was the need for a multi-sectoral focus.

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1. [http://www.worldbank.org/ourdream/india\\_2.htm](http://www.worldbank.org/ourdream/india_2.htm) (accessed on 04/14/05).

2. The proposal is outlined in the Initial Executive Project Summary (IEPS), a 2-3 page document which describes the proposed objectives and main design features of the project.

8. A mission to prepare the project was planned for the second half of 1992. A background note for the preparation team indicated that the basic package should be built around three elements: growth monitoring, targeted supplementary feeding, and nutrition education to change behavior. The report of the preparation mission, which took place in September 1992, confirmed this view. The importance of the other two determinants of nutrition – food security and health – was acknowledged. But it was argued that programs were in place to address these issues, whereas that was not the case for caring practices. Moreover, it was argued that a substantial proportion of the problem of poor nutrition among children under three could be prevented through appropriate care practices, even in the absence of improvements in food security and disease control. The preparation mission confirmed that the project should have an inter-sectoral component to finance co-ordination activities with other ministries carrying out work important to nutrition, e.g., Ministry of Education to improve nutrition education for adolescent girls in school and Ministry of Women's Affairs to enhance the status of women. These priorities were reflected in the revised proposal of February 1993, which allocated US\$54 million of the total budget of US\$75 million (i.e., 72 percent) to the Community-Based Nutrition Interventions component, and another US\$10 million to Inter-Sectoral Nutrition Program Development.

9. As project preparation proceeded, misgivings began to be expressed by both government (especially the Ministry of Finance) and other donors (notably USAID, but also WHO, UNDP, and UK ODA). The main area of concern was the proposal to create a new cadre of community-level nutrition workers who would be paid for their services. It was felt that this practice might cause ill feeling among existing community-level volunteers, who were unpaid, and be financially unsustainable once government had to assume responsibility for these payments. It was proposed by government that a smaller pilot might be more appropriate. The British raised even more fundamental concerns as to whether the proposed approach was the right one, and that there was a need for a better understanding of malnutrition in Bangladesh before designing a large-scale intervention.

10. Bank staff undertook several activities to address these concerns. A question-and-answer document was prepared to be used in support of the proposal; a video and series of presentations was commissioned to make the case for the project; and key government officials were sent to visit nutrition projects in Tamil Nadu and Indonesia. A program called PROFILES, which projects the various benefits from nutritional interventions, was presented to government officials at various levels to persuade them of the worth of the project.<sup>3</sup> It was argued by the Bank that the project's recurrent costs of US\$10 million a year were far less than the cost of the government's existing nutrition programs – though this argument was disingenuous as existing programs were national whereas the proposed project would benefit less than 10 percent of the country's children. Similarly, the PROFILES projections promised addressing nutrition at the national level, although the project itself was geographically limited in scope. By early 1994, an internal Bank memo noted that acceptance of the project appeared to be growing. The Ministry of Finance

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3. Describing the experience, a staff member from the organization that developed PROFILES, the Academy for Educational Development, wrote that "World Bank officials said that the PROFILES application played a vital part in gaining acceptance of the [project]" Burkhalter et al. (1999).

withdrew its objections once the project was scaled down from the proposed 70 thanas<sup>4</sup> to 40.<sup>5</sup> The community workers were not to be part of the government service, and the intention was that their cost should eventually be absorbed by the community.<sup>6</sup> Finally, rather than agreeing to a smaller pilot, the project was to be phased in over time, with continued expansion dependent on the results of the midterm review. In support of the proposal the Bank also noted that the project design was not entirely novel, since an existing BRAC project in Muktagacha had an approach similar to BINP.

11. The Bank's appraisal report put forward stronger arguments for nutritional counseling: "behaviors relating to the feeding of young children have at least as much (if not more) to do with the serious problems of malnutrition in Bangladesh as poverty and the resultant household food insecurity do... [C]aring practices, culture-specific consumption practices (particularly by women), intra-household food distribution, [and] personal hygiene constitute the most significant, hitherto un-addressed, set of nutritional determinants in Bangladesh" (SAR: 4-5).<sup>7</sup> No substantial changes were made to this design at the negotiations in March 1995. The main change was an increase in the amount allocated to inter-sectoral projects from US\$2.5 to \$7.5 million.

12. Two observations can be made with respect to project identification and preparation. First, Save the Children (2003) has argued that the Bank adopted a "blueprint approach," proposing a design based on the Tamil Nadu project with little effort to adapt the project to local circumstances. There appear good reasons for accepting this critique. The Bank's sector work on nutrition in Bangladesh predated the project by nearly a decade, and argued for a quite different approach to that adopted in BINP. Internal World Bank memos mentioned that studies of nutrition would be carried out before project design, and some studies were indeed commissioned by UNICEF. However, it is not clear how these may have influenced project design, since the basic approach already decided upon was retained, and it is notable that other donors argued that further analysis was needed.<sup>8</sup> Rather, the core features of the design – focused on behavior change for caring practices – were identified early on, with reference to the growing body of international evidence of the weak link from income growth to nutritional improvement and the perceived success of the Tamil Nadu project. Second,

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4. A thana is an administrative unit at the sub-district level. Each thana is further sub-divided into a small number of unions. There are 480 thanas in the country as a whole.

5. Given this reduction, proposed Asian Development Bank cofinancing of US\$20 million (bringing the proposed total budget to US\$95 million) was no longer considered necessary.

6. But the position that these women should be paid was maintained. It was argued that existing volunteers worked only 4-6 hours a week, whereas nutrition counseling would be a full-time occupation, so that payment was a necessary incentive, and would not cause resentment.

7. Additional data analysis was presented to demonstrate the relative unimportance of income factors in nutrition in Bangladesh: (1) that even children of the top 20 percent suffered from poor nutrition, although this is to a lesser degree than that amongst lower quintiles, and (2) that nutritional status improved after 24 months.

8. The only explicit mention of the UNICEF background studies is an annex that lists background documents in project files, which includes as one document in files a summary of the UNICEF studies. It is of course possible that the influence is not explicitly acknowledged. Since the document is no longer in the project file, and could not be traced, it is not possible to make a closer examination.

the Bank adopted a dual-prong strategy toward the misgivings that were expressed regarding the project. One part of this strategy was advocacy to convince government and donor officials that the project design was appropriate. However, there was also accommodation of some of these concerns, notably the scaling back of the project from 70 to 40 thanas.

## 2. Project Objectives and Design

### Objectives

13. The Staff Appraisal Report (SAR) states that “the ultimate goal of the national program would be to reduce malnutrition in Bangladesh to the extent that it ceases to be a public health problem and improve the nutritional status of its population, particularly children under five, women and adolescent girls” (SAR: p.14, para 2.6). This goal was to be reached through three intermediate objectives:

- (a) to improve the capacity of national level nutrition institutions in Bangladesh in the areas of advocacy, analysis of causation and consequences of malnutrition, policy advice, operational research, and operational support of national programs;
- (b) to improve the capacity of communities, households and individuals in the project area to understand their nutritional problems in practical terms and take appropriate action to address them at their own level; and
- (c) to improve the nutritional status of the population in the project area, with particular emphasis on pregnant and lactating women and on children.

14. The following quantitative targets were set for the project with respect to the nutritional impact in the areas covered by the Community Based Nutrition Component (CNBC):

- Reduction of severe malnutrition (weight for age) by 40 percent and moderate malnutrition by 25 percent, among under-two children
- Restoration of the rate of growth as measured by monthly weight gain for at least 50 percent of children under-two
- Reduction of vitamin A and iodine deficiency disorders by 50 percent
- Reduction of iron deficiency anemia by 33 percent among children and pregnant and lactating women
- Reduction of low-birth weight by 50 percent
- Improvement in maternal weight gain by at least 50 percent in at least 50 percent of pregnant women.

### Components

15. The project had three components: (1) national-level nutrition activities; (2) community-based nutrition component (CBNC); and (3) an inter-sectoral nutrition component.

***National-Level Nutrition Activities (US\$19 million, 32 percent of total)***

16. The national-level component comprised the following four sub-components:

- *Program development and institution building (US\$2.7 million):* This sub-component had the objective of maintaining a strong political commitment and building institutional capacity for the successful implementation of the project. The activities consisted of a review of existing capacity, the development of nutritional experts, guiding research for the program, assessing the role of NGOs, and strengthening of the Bangladesh National Nutrition Council.
- *Information, Education, and Communication (IEC, US\$4.4 million):* This sub-component was to develop the messages and material to be used in both the CBNC and separate national advocacy and mass media campaigns.
- *Strengthening of existing nutrition activities (US\$6.4 million):* The project sought to improve the coverage and effectiveness of existing nutrition programs such as the control of nutritional anemia, the breastfeeding program, the “Baby Friendly Hospital Initiative,” and the Vitamin A program.
- *Project management, monitoring, and evaluation (US\$5.5 million):* Evaluation was to be based on three surveys (baseline, midterm at three years and endline at the end of the project), with the baseline already being fielded at the time the SAR was prepared (with UNICEF financing). There would be annual World Bank-UNICEF supervision meetings. Monitoring was to be based on data generated at the thana level.

***Community-Based Nutrition Component (US\$32.6 million, 56 percent)***

17. The core of the project was the Community Based Nutrition Component (CBNC), based on growth monitoring, food supplementation and nutritional counseling. Nutritional counseling was the central part of this plan, with the other activities providing a framework for such counseling.

18. Community Nutrition Promoters (CNP) were to be recruited in each community (at a ratio of one CNP for every 1,000 population in some areas and every 1,500 in others). These were to be women with children and a minimum 8 years of education. The CNPs were responsible for implementation of most project activities at the community level, in collaboration with the *Women’s Group*, and under the supervision of the Community Nutrition Organizer (CNO, each of whom was responsible for 10 CNPs). The work of the CNP was to be supported by the Village Nutrition Management Committee (VNMC).

19. The program adopted two different target audiences, the second of which was a pilot in just one of the initial six thanas. Under the approach used in the majority of thanas, all children aged under two years were intended to be covered by monthly growth monitoring, with feeding supplementation offered to severely malnourished and growth faltering children under two years (meeting criteria based on weight-for-age charts) and

malnourished pregnant mothers (meeting criteria based on midarm circumference). Under the experimental targeting strategy in one thana all newly married couples in the project area were to be provided a special package of health and welfare services.<sup>9</sup> IEC, with particularly strong nutritional counseling focusing on the period from pregnancy to two years after childbirth; preferential treatment at health/family planning facilities with an emphasis on maternal and child health care (MCH) and particular attention to childhood infections, inclusion in a homestead gardening program; special provision to their household in terms of access to safe water supply and sanitary facilities; etc. The couples' first pregnancy was to get extra attention, including supplementary feeding of the mother and/or the child if they meet nutritional criteria, full pre-, intra- and postnatal care, breastfeeding promotion, complete immunization (for the mother and the child). The couples would leave the program when the first child reached two years old.

20. The program was to be implemented in two different ways. Some thanas were to be wholly contracted out to NGOs for the management and implementation of all CBNC activities; in each of these thanas, a selected NGO will take the full responsibility for all activities, including the recruitment and training of the various field personnel; community mobilization; procurement, preparation, packaging, and delivery of food supplements; payment of salaries/honoraria and allowances; procurement of equipment and supplies; quality control; supervision and monitoring; and IEC activities; they would use the existing government systems for the provision of primary health care services as necessary and for inter-sectoral coordination. In the other thanas, the Government of Bangladesh (GOB) was to use its own management structure to run the project activities; NGO support was to be provided in the following key areas: community mobilization, training and technical supervision of field personnel, logistics of preparing, packaging, and supplying food supplements, including quality control.

### ***Inter-Sectoral Nutrition Program Development (US\$7 million, 12 percent)***

21. The objective of this component was to promote activities, outside of health and family planning, which would have a positive health impact. Three sub-projects were under consideration: (1) homestead vegetable production, (2) homestead poultry production, and (3) study of the impact of agricultural programs. If any of these were found to be inappropriate, then alternative proposals were to be sought. A fund was created (the Inter-Sectoral Nutrition Fund) to which NGOs and government departments could apply with proposals for implementation in project areas. These proposals should re-orient existing activities to be more nutritionally relevant.

### **Geographic coverage**

22. Activities at the national level were institution building and IEC development, including use of nationwide media for IEC messages. The field-level activities of the CNBC were to cover 40 of the country's 480 thanas (about 8-9 percent of the

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9. The evaluation data set covers the initial six thanas, but the evaluation study did not consider the question of whether this approach had proved more effective. Even had it done so, since the different approach was used in just one thana it would not be possible to separate the area effect from the design effect.

population). These were to be phased in, beginning with six thanas in the first year, and 17 in the third and fourth years. The project was to operate only in rural areas.

23. The criteria for the selection of the project thanas were:

- At least one district per division
- About half the thanas would be included in each chosen district
- A range of distressed and non-distressed thanas, but excluding thanas that are most disaster-prone or that lack basic health infrastructure
- Only thanas with 80 percent of infants fully immunized were to be included.

24. Nutritional status was not included among the criteria for thana selection. Indeed, the last two selection criteria might have induced a bias toward areas where malnutrition was less of a problem. Table 2 uses DHS data to look at this question. The data are from the second round of the DHS, collected in 1996/97, just before the project became operational at the field level. The table shows the anthropometric status of children aged 6 to 24 months, that is, the BINP target group. In each case nutritional status is, on average, significantly better in the BINP thanas than the non-BINP ones, thus confirming that there was a small bias in favor of better off areas. These differences are all significant at the one percent level.

25. The decision to exclude urban areas might also be criticized. As Table 2 shows, nutritional status in urban areas is, on average, much better than that in rural areas. However, the urban average is misleading, since intra-cluster variation in nutritional status is much greater in urban areas. In slum areas malnutrition rates are very high, easily rivaling those found in rural areas (see, for example, Rahman et al., 2000).

**Table 2: Mean Anthropometric Outcomes (for children aged 6-24 months) in BINP and Non-BINP Areas Prior to the Project**

	<i>Non-BINP</i>	<i>BINP mean</i>	<i>Urban areas</i>
Height for age	-1.86	-1.54***	-1.56
	0.04	0.12	0.07
Weight for age	-2.02	-1.92***	-1.66
	0.03	0.14	0.06
Weight for height	-1.12	-1.25***	-0.90
	0.03	0.15	0.05
No. of observations	2512	534	566
No. of clusters	444	86	60

*Note: figures in parentheses are standard errors. \*\*\* Indicates significant difference from non-BINP mean at 1% level. Source: calculated from DHS data*

## Design Issues

26. Six observations may be made about the project design. First, the targets for CNBC were very ambitious: the targets of a 40 percent reduction in severe malnutrition and 25 percent reduction in moderate malnutrition in project areas might be seen as

unrealistically high, setting the project up to fail to achieve these goals.<sup>10</sup> Certainly these targets are ambitious compared to that contained in the Millennium Development Goals of halving malnutrition over a 25 year period. On the other hand, these figures are not dissimilar to the targets set for TINP, which came close to achieving them (in fact surpassing those for severe malnutrition).

27. Second, the design was complex, not only because of the combination of national and local activities with multiple institutions, but also because of the large variations in design features from thana to thana. Although the intention was to use the evaluation to see which worked best, since only the six thanas for the first phase were covered by the evaluation, this was not possible. For example, married couples counseling was tried in just one thana, so the impact of this design feature cannot be separated from any “area effect” associated with that thana.

28. Third, BINP nutritional counseling activities targeted pregnant and lactating women and adolescent girls, with limited attention to the role of other family members.<sup>11</sup> However, in Bangladesh decisions regarding health and nutrition do not rest solely with the mother, but also the husband and frequently the mother-in-law. Hence, project design and implementation should have sought to broaden the target audience for its nutritional messages. This view was expressed by BINP fieldworkers and women themselves in project areas during field visits.

29. Fourth, the criteria used to admit children into the supplementary feeding program were not sufficiently targeted to the neediest children. Dual criteria were applied: children were to be admitted if they were either severely malnourished or they were growth faltering<sup>12</sup> (whatever their nutritional level). But growth faltering is quite normal, so enrolling growth faltering children regardless of their nutritional level will mean enrolling perfectly well-nourished children.<sup>13</sup> OED analysis of the Save the Children register data show that over 40 percent of those enrolled in the feeding program were not malnourished (i.e., the children were above -2 SDs WAZ). At the same time, a very low threshold was set for malnourished children (<-4 SDs), which is such an extreme level of malnourishment that there are few living children with such values; only 5 percent of program participants qualified by virtue of their level of malnourishment. The implication

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10. Save the Children (2003) alleges that the claims about the project’s potential impact were exaggerated in order to keep the government interested. This point can be made at two levels. The first is that the appraisal document talks about a long-term or ultimate goal of ensuring that malnutrition is no longer a problem, although the specific objectives are more carefully worded to be clear than they only apply to the project areas. As noted in paragraph 10 above there does appear to have been some over-selling of the project. Second the specific targets set for CBNC may have been too ambitious, though as noted in the text, they were based on what TINP had actually achieved.

11. In addition to the adolescent girls’ forum (discussion group led by the CNP), there is a married couples’ forum. However, during fieldwork, only wives were found to be present at the latter. The SAR mentions mothers-in-law once and husbands once (compared to 35 references to mothers).

12. Growth faltering does not mean zero growth, but growth at a lower rate than that in the reference population.

13. One study found that 37 percent of a group of U.S. children from well off backgrounds would qualify for supplementary feeding under the criteria used in the Tamil Nadu Integrated Nutrition Project (Martorell and Shekar 1992).

is clearly that a lower bar could be used (say -2.5 SDs) while not admitting children who are growth faltering but not malnourished. The screening criteria under the follow-on National Nutrition Project (NNP) have been changed from those used under BINP to be closer to the suggestion made here.

30. Fifth, even though the supplementary feeding was offered primarily as a demonstration of the benefits of better nutrition, the protocols called for three months' feeding of those identified as malnourished, leading to the conclusion that *de facto* this was a feeding program for the most malnourished children. The feeding provided was the same special supplement throughout the feeding program, which does not demonstrate the importance of a varied diet.

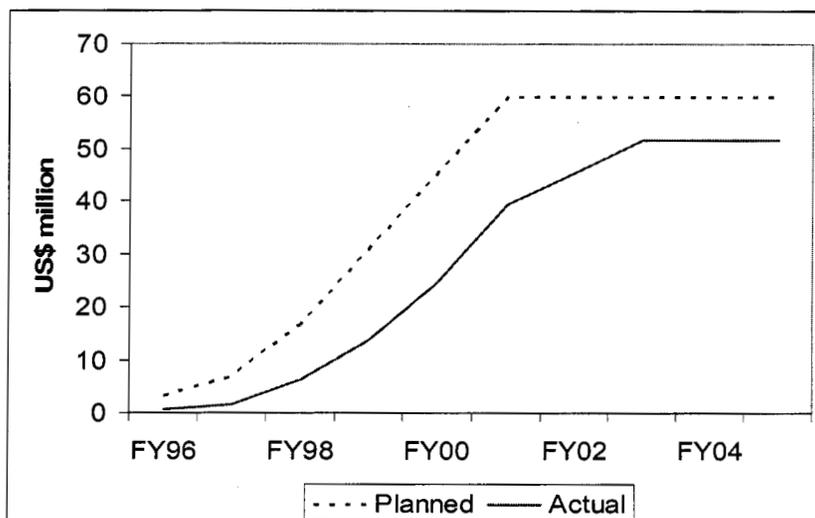
31. A final, minor, point is the poor wording of the target "improvement in maternal weight by at least 50% in at least 50% of women." The literal reading of this target is that of a given group of pregnant women, at the end of the project half of them will have a 50 percent greater pregnancy weight gain than they did at the start. But the same group of women will not be pregnant at the end of the project as at the beginning. Even if the target is applying to different cohorts of pregnant women, which 50 percent should be 50 percent better off? The endline evaluation reworded this target to be "increase in maternal weight gain to 7 kg in 50% of women," which is easy to understand, but there is no information on what percentage of women attained that pregnancy weight gain before the project.

### **3. Implementation**

#### **Overview**

32. Implementation got off to a slow start: in the first two years, disbursements were around 20 percent of the planned amount (Figure 1). The project became effective in July 1995. At the time of first supervision mission nine months later (March 1996), field-level activities had not yet begun. Key constraints were the completion of the Project Implementation Volume, concluding agreements with the NGO selected to implement the project (BRAC), and completing staffing of the project office. However, there had also been progress. BRAC had been selected to implement the project in three of the initial six thanas, with government taking responsibility for the other three. Moreover, BRAC had taken steps toward putting the program in place prior to a formal agreement being reached.

33. After initial delays, CNBC was implemented as planned. Project status reports soon began to record good progress in enrolling children in growth monitoring, and from 1999 reduction in severe malnutrition. The project was eventually extended to 59 thanas rather than the 40 agreed at appraisal. However, disbursement delays were only eliminated toward the end of the project: in FY00, one year before the planned close of the project, actual disbursements were only just over half the planned amount.

**Figure 1 : BINP Disbursement Profile**

34. Many other project components did not go according to plan: only two inter-sectoral project components were implemented, IEC materials were not developed at the national level, and there was little attention paid to some national-level institutions such as the Bangladesh Nutrition Council. Some components were implemented, most notably the monitoring and evaluation system, a review of nutrition-related institutions and a program of operations research.

35. Despite the failure to complete some sub-components and the expansion of coverage of CBNC, the component-wise breakdown of costs did not change much (Table 3). Rather, funds unspent on some national nutrition components were absorbed elsewhere in that component; for example, expenditure on office costs was seven times the amount planned, these increases in decision partly arising from government's decision to impose VAT on NGOs in the project.

**Table 3: Project Costs by Component, US\$millions**

	<i>Appraisal estimate (US\$million)</i>	<i>Actual estimate (US\$million)</i>	<i>Percentage of appraisal</i>
National Nutrition Activities	19.0	18.4	99
Community Based Nutrition Component	32.6	32.3	99
Inter-sectoral Nutrition Program	7.0	6.5	93
Total <sup>1</sup>	67.3	65.7	98

Note: 1/ Total includes contingencies (not shown). Source: ICR Annex 2.

### **Inter-Sectoral Nutrition Program Development**

36. The inter-sectoral program went ahead as planned with the promotion of gardens and poultry keeping. A third planned component was not implemented owing to a lack of interest by the parent ministry. Other activities were also to be identified, but none were. The component was weakly managed at the center, and received little attention during

supervision; the relevant indicators for this component were not reported in the project status reports.

37. At field level, these programs were implemented by different NGOs than those responsible for the CBNC in the same communities, resulting in a lack of co-ordination. The women that benefited from the inter-sectoral programs were not those identified as being in need under CBNC, with the result that a majority were not from the target group (64 percent for gardens and 56 percent for poultry).

### **National Nutrition Component**

38. Implementation of the national nutrition component was mixed, with monitoring and evaluation being the most satisfactory. The main sub-components are reviewed in turn.

39. Review of Major Nutrition Institutions: The review of major nutrition institutions was completed only with considerable delay. There has been only slow, and incomplete, follow-up to the review, with some important institutions (e.g., Bangladesh National Nutrition Council) have received very little attention from the project. However, some other agencies have benefited from technical assistance, e.g., Bangladesh Breastfeeding Foundation and Helen Keller International.

40. Operational Research: Eighteen operational research studies were contracted from the International Centre for Diarrhoeal Diseases Research (ICDDR,B). There is no evidence that these were used to influence the implementation of BINP. The ICR says that no strategy for such influence was developed, but does state that lessons from the research were used in the design of the follow-on NNP. Having said that, current Bank nutrition staff do not appear familiar with the contents of this research.

41. Development of IEC Materials: Central production of IEC materials was not carried out under the project as a result of the Bank declaring mis-procurement on the IEC contract (the Bank had given no objection, but the selected agency was not awarded the contract).

42. Monitoring and Evaluation: a well-functioning monitoring system was put in place for CBNC and was soon being relied upon in supervision reports. Indeed, it was the positive feedback being given from the monitoring systems – notably the high coverage rates and apparent large reduction in severe malnutrition – that resulted in the positive early assessments of the project. Subsequent evaluation data suggested that the monitoring data exaggerated the project benefits, but not to an unusual extent. Monitoring of other components of BINP does not appear to have been carried out in a systematic way.

43. The project evaluation was also of high quality. Bank and project staff ensured that a well-designed evaluation system was put in place, conducting three surveys (baseline prior to the project, financed by UNICEF, midterm and endline), resulting in an impact study after the close of the project. National and international experts were involved in the design of the evaluation and in commenting on findings as they emerged.

The project-financed evaluation of BINP can be pointed to as best practice. The identifiable shortcomings should be seen as caveats on this very positive assessment: (1) different companies conducted different rounds of the survey, resulting in changes in design and so problems of comparability; (2) the control group, especially in the baseline survey, was too small; (3) nutritional outcome measures were restricted to anthropometric measurement, so that the evaluation sheds no light on some project objectives (such as Vitamin A disorders); and (4) outcome data were not collected on children over two (the rationale was to collect data only from the target group, but there should have been some lasting impact on those who had graduated). In addition, the evaluation focused on the CBNC component. This was indeed the largest and most important part of the project; but some formal analysis of other components would have been useful.

44. The final comment on monitoring and evaluation concerns two timing issues. First, given the government's reservations, it was agreed that scaling up would take place in the second phase incorporating lessons learned from the first phase, and after the midterm evaluation for the third phase. Since there were delays in project start-up there was only one year, rather than the planned two, between initiation of the first and second phases. The third phase commenced in March 1999, the same month as the publication of the final draft of the midterm evaluation report. It does not appear that the decision to continue into the third phase was explicitly linked to the positive assessment which emerges from the midterm review, but by that time very positive assessments of project performance were being made on the basis of monitoring data. These positive assessments also lay behind the decision to scale up to the national level, starting preparation of the follow on National Nutrition Project (NNP), even before to the results of the midterm study – let alone the end of project impact study (which was delayed owing to contractual problems), as had been the intention.

#### **Community-Based Nutrition Component<sup>14</sup>**

45. Because of the initial delays in project implementation, the project became effective in the first-phase six thanas only in November 1996. Work was begun in the second-phase 17 thanas one year later on November 1997 and another 17 in March 1999, bringing the total to planned 40 thanas. A further 19 thanas were added in January 2000. So, by project close, BINP was active in 59 thanas. As discussed elsewhere in this report, plans to scale up on the basis of evaluation results appear to have not been adhered to.

46. Project Coverage and Targeting: Ideally, all children in the project area were to participate in growth monitoring. The target set in the project appraisal document was that 80 percent of 0-24 month old children should be registered, and 80 percent of these (i.e., 64 percent of all children) receive at least 18 out of 24 monthly weighings. The evaluation data show that over 90 percent of children were weighed at least sometimes, with 88 percent being weighed on a regular basis. Hence, the project's coverage targets for participation in growth monitoring were met. Factors behind non-participation include

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14. This section, and that on nutritional outcomes below, is based on the OED impact study (World Bank 2005: Chapter 5 and Annex G), where more details can be found.

remoteness and traditional constraints on women's mobility which operate in the more conservative areas.

47. These high participation rates are an impressive achievement. Field and Bank staff say that there was an initial reluctance to have children weighed, or to allow women to attend growth monitoring or counseling sessions. There were also misgivings as to whether the CNPs, as relatively young women, could wield much authority in changing social norms. While these constraints continue to operate in some places, the overall participation levels show that they have mostly been successfully overcome. The support of the Village Nutrition Management Committee (VNMC) is one factor in this success: where local influential figures put their weight behind the work of the CNP (which may extend to the use of the verandah of their house for weighing and counseling sessions), her position becomes easier.

48. Low growth, identified by growth monitoring, was to be addressed in two ways: nutritional counseling and supplementary feeding. The feeding is said to have been intended as an example to mothers, the heart of the strategy being counseling to achieve behavior change. The growth monitoring sessions themselves are too chaotic a setting to provide nutritional counseling. The CNPs work full time in their position and provide advice through different forums, such as the various group counseling sessions or one-to-one meetings with parents. However, data presented in the OED impact study show that over one-third of women whose children were receiving supplementary feeding said that they had neither discussed nutrition directly with the CNP, nor sat in any meeting where it was being discussed.

49. Supplementary feeding also did not reach those intended. Analysis of register and field data shows there was a reasonably low Type II error: only 16 percent of children receiving food supplementation should not have been receiving it.<sup>15</sup> But Type I error was very high: over two-thirds (69.8 percent) of eligible children were not being fed. One reason for this high error rate is the difficulty CNPs have in interpreting the growth charts.<sup>16</sup>

50. Turning to monitoring of pregnancy weight gain, close to three-quarters of pregnant women attended weighing sessions, and just under half received supplementary feeding, with both these percentages being a bit lower at endline than the baseline. OED's analysis shows there is no pattern between attendance at weighing sessions and the mother's nutritional status, which is to be expected. Supplementary food was meant to be received by women with low Body Mass Index. However, by the endline about 60

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15. Type II error is the proportion of those receiving the feeding who are not eligible. Type I error is the proportion of those eligible who do not receive the benefit.

16. Ten CNPs were administered a test as part of OED fieldwork. The test consisted of four hypothetical child growth patterns drawn on the growth charts used by the project. These patterns were taken from a figure from the World Bank Nutrition Toolkit (Chapter 3, page 20), and illustrate different cases: adequate growth, early growth faltering, prolonged growth faltering, and severe growth faltering. The CNPs were asked to interpret the child growth as good, dangerous, or very dangerous. None of the CNPs was able to correctly identify the case of adequate growth. Most charts were interpreted as "dangerous" cases. A few charts were described as "very dangerous," but not always corresponding to the "severe growth faltering" case.

percent of eligible women were not receiving the supplement. On the other hand, 40 percent of those who were receiving the supplement were not eligible.

51. For both children and mothers, the OED analysis finds evidence of both leakage and substitution of the food supplement. For example, 32 percent of women said they had shared their food supplement with someone else. Many of those who were not sharing said they did not eat more during pregnancy than usual, indicating that the BINP provided food was substituting for other foodstuffs. This was possible, since at least half the women and one-quarter of the children, contrary to project design, consumed the food at home rather than at feeding sessions.

52. In summary, enrollment in growth monitoring sessions has been at a high level for both children and pregnant women. However, attendance at these sessions has not provided opportunities for nutritional counseling for a sizeable minority of women. There have been problems in the targeting of feeding programs, especially the exclusion of eligible participants for both children and pregnant women. In the case of pregnant women, a considerable number of feeding beneficiaries are in fact ineligible. Such Type II error is less of a problem for child feeding, though the entry criteria themselves appear inappropriate, and only a minority of enrolled children complete the full three months of feeding.

### **Scaling-up to the National Nutrition Project**

53. Following a visit by the Bank's president in mid-1998 the Bank decided to follow up with a scaled-up, national project, before a thorough evaluation of BNIP could be carried out.

54. One aspect of the preparation and transition from BINP to the National Nutrition Project (NNP) is of relevance for BINP performance. NNP was to encompass the thanas already operating under BINP, though the contracts were to be re-tendered so that the implementing NGO might change. However, the Bank was dissatisfied with the selection process for NGO implementing agencies, and this dissatisfaction delayed the start of NNP. BINP was extended to cover this gap, but in the end there remained a seven-month gap between the closing of BINP and the start of NNP. Where the implementing NGO changed, the actual gap to the resumption of operations at field level was longer.

55. This gap had adverse implications. The NGOs continued to pay their own staff, but CNPs were told they could continue to provide counseling on a voluntary basis only and there was no supplementary feeding. Data from the monitoring system showed the impact of this break through a dramatic fall in breastfeeding rates.<sup>17</sup> Impressionistic evidence from the field is that in many areas new CNPs had to be recruited as the old one would not return. The gap was clearly damaging and would have best been avoided. At the same time, the Bank should not be expected to concede on all points in order to avoid such an occurrence. On the other hand, a further extension of BINP might have been considered in order to continue money flowing to those thanas.

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17. This figure from the monitoring data contrasts with that from evaluation data, which show low rates of breastfeeding. However, the latter refers to exclusive breastfeeding.

56. This discussion should not be taken to mean that there has been no learning from the BINP experience. As mentioned above, the targeting criteria for supplementary feeding for children have been revised and the inter-sectoral component is now more closely coordinated with the CBNC. And NNP is said to be making renewed efforts to reach family members other than mothers.

## 4. Outputs and Outcomes by Objective

### Objective 1: Institution building at national level

57. As described above, implementation of this component was uneven. Important institutions, notably the Bangladesh National Nutrition Council, were little involved in the project so that no institution building took place. Whilst operational research took place it did not influence project design or more general national policy on nutrition.

58. On the positive side, the project established the BINP project office, which has evolved into that for the National Nutrition Program with ambitions to be a directorate of the Ministry of Health and Family Welfare. It is claimed by many associated with the project that it established nutrition on the national policy agenda, though staff of NGOs not associated with the project are skeptical of such claims.

### Objective 2: Improve capacity of communities to understand their nutritional problems and take actions to address them

59. The main channel for improving nutritional knowledge was the CBNC, which is the focus of the discussion in this report. The planned development of IEC materials at the national level did not take place, so that potential channel was lost.

60. Creation of capacity: BINP successfully created a nutrition-oriented structure at the community-level, notably the Village Nutrition Management Committees and the recruitment of the CNP. The CNP operated discussion sessions for targeted women and adolescent girls, and liaised with women's groups which would also sometimes take up nutrition issues. At the national level some credit the project with having placed nutrition on the development agenda.

61. Acquiring knowledge at household and individual level: The central thrust of project design was to change nutritional behavior of child caretakers. There are a number of nutritional practices considered adverse to child nutrition. Some are simple differences in habit, such as cutting vegetables before washing them rather than *vice versa*, which is nutritionally disadvantageous. Others, such as eating less during pregnancy ("eating down"), result from different perceptions of health risks and benefits (mothers perceive the benefit of a lower-risk delivery of a smaller child, discounting the risks to low birth weight children).<sup>18</sup> And others stem from traditional beliefs which appear to have no

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18. Eating down was recommended medical practice in European countries for this reason until the 1940s.

plausible health-related rationale, such as avoiding meat, fish, and eggs during pregnancy.

62. Multivariate analysis shows that attending nutritional counseling indeed has a significant association with a woman's knowledge of various pieces of nutritional information, such as the importance of exclusive breastfeeding, though being in receipt of supplementary feeding does not. However, even when these participation variables are included in the regression equation, the BINP project dummy is still significant: women in project areas have significantly higher nutritional knowledge than those in the control. This means either that there are spillover effects (women who get the knowledge in nutrition sessions communicate it to others) or that other project activities not captured in the participation variables, e.g., women's group meetings, are also channels for communication of nutrition education. According to these regression results, simply living in the project area raises a woman's probability of having a piece of nutrition knowledge by 7 percent, but full participation in project activities increases this probability by between 10-23 percent.

63. Turning knowledge into practice: the knowledge practice gap: Although the project has had success in promoting nutritional information, women do not put into practice things they say they agree with. This gap exists for every practice. For example, 94 percent of women in project areas say they know they should not undertake hard work during pregnancy, but only 53 percent follow this advice. The gap exists in both project and control areas, with little evidence that the gap is any less in project areas than control. Since the project has improved knowledge it has also improved practice. Nonetheless, tackling some of the multiple factors underlying the gap would help improve project effectiveness.

64. OED's multivariate regression analysis and the results of qualitative fieldwork commissioned by OED identify a common set of factors which explain the knowledge-practice gap. Resource and time constraints are foremost among these, although the influence of other decision makers (notably mothers-in-law) also plays a role. Women who have work to do, including children and elderly relatives to care for, are less likely to be able to rest or avoid hard work during pregnancy (Table 4). Women engaged in agricultural work may also not have time to breastfeed, or not able to do so if they are with the child away from the home. Although the project has some effect in reducing the gap, the multivariate analysis shows the magnitude of this effect to be very small. There are other channels – such as increasing education of both males and females – that will also close the gap.

**Table 4: Many Factors Prevent Women from Putting Nutritional Advice into Practice, Though the Project Partially Overcomes Some of These**

<i>Knowledge</i>	<i>Main determinants</i>	<i>Project effect</i>	<i>Moderating project impacts</i>
Rest during pregnancy	Agricultural work, children, elderly male in household, poverty	None	None
Feeding colostrum to the baby*	More children reduces gap	None	None
Breastfeeding (exclusive and/or duration)	Agricultural work	None	Reduces effect of living with mother-in-law and being poor
More food during pregnancy	Poverty, children, having a vegetable garden reduces the gap	Reduces gap	Bigger effect in working season
Avoid hard work during pregnancy	Children, agricultural work (including vegetable garden), but lower for female headed households and women not in paid employment	Reduces gap	Reduction of gap bigger for poor (who have a larger gap than the non-poor), but smaller reduction in working season.

Note: \* Colostrum is the first milk produced by the mother in the early days of breastfeeding. It is low in volume but high in concentrated nutrition for the newborn.

\*The same results are found from OED analysis of both the Save the Children and the BINP data.

65. In summary, the project was associated with an increase in knowledge about nutritional practices and with increased take up of good practices. However, there is a gap between knowledge and practice, and the project does not have an impact in reducing the size of the gap. But since knowledge is more widespread, and the gap the same in project and control areas, then the promoted practices are more widespread in the project area. So, are these practices beneficial to nutritional outcomes?

### Box 1 Studies of BINP Impact

- The project evaluation was contracted out to a team of staff from the Institute of Nutrition and Food Science at the University of Dhaka and the Friedman School of Nutrition Science and Policy from Tufts University. The Endline Evaluation (Karim et al., 2003) analyzes all three BINP surveys (baseline, midterm and endline) for project and control communities at all levels of the causal chain.
- Save the Children conducted a survey of BINP areas and control published in the report *Thin on the Ground* (Save the Children, 2003).
- The Implementation Monitoring and Evaluation Department (IMED) of the Ministry of Planning commissioned a study by READ and Associates, for which a survey of BINP thanas from all three phases of the project, with control thanas, was undertaken. The findings are published in Haider et al. (2004).
- Two PhD doctoral students from Cambridge University have analyzed register data from BINP. The results reported here are from a summary presentation by the supervisor of the PhDs, Professor Mascie-Taylor.
- OED re-analyzed the project evaluation data, together with that of Save the Children. For the former, the quality of the control was improved by using propensity score matching drawing on data from the Nutritional Surveillance Project of Helen Keller International

### Objective 3: Improve nutritional outcomes in project areas

66. There have been a number of studies of the impact of the CBNC: the project endline evaluation (Karim et al.), the survey undertaken by Save the Children, two recent PhDs at the University of Cambridge, a report by the Implementation Monitoring and Evaluation Department (IMED, Haider et al., 2004) and OED's own re-analysis of these various data sets, combined with data from the Nutritional Surveillance Project as a control group (see Box 1). Table 5 summarizes the results from each of these with respect to each target:

- **Reduce child malnutrition:** Only the project evaluation finds a notable impact, and that is only for severe malnutrition at midterm (with moderate malnutrition having risen); Save the Children and IMED find no difference between project and control, and the OED study found significant, but very small, improvements. The target was not achieved.
- **Restoration of rate of growth:** Three studies consider this goal with respect to children enrolled in supplementary feeding – the Cambridge study finds no impact, Save the Children a significant but small impact, and OED an impact only for severely malnourished children. The target was not achieved.
- **Reduce micronutrient-related disorders:** No outcome data were collected by any of the studies for the targets on vitamin A and iodine disorder and reduction on anemia. Though data were collected on mothers taking the appropriate pills, these figures were substantially better in the project area than the control.
- **Reduction of low birth weight:** The project evaluation reports a 38% reduction in low birth weight, compared to the target of 50%. The OED study finds a reduction, but with a similar reduction in control areas, so there is no project effect. The target was not met.
- **Improvement in maternal weight gain:** The Cambridge study (see Box 1) finds a small effect for women receiving supplementary feeding. The project evaluation and OED study find an improvement in pregnancy weight gain in project areas, but an even larger one in the control. Allowing for other factors, the OED study finds a small project effect overall, but a reasonably substantial one for women who are either destitute or of poor nutritional status. The target was met, but the amount attributable to the project appears small.

67. The inter-sectoral nutrition component was also intended to raise nutritional status. However, coverage fell short of the desired 10 beneficiaries per community in many cases – and those who did participate were not always the most needy. The ICR states that the level of inputs was insufficient to bring about any improvement in the nutritional status of children in beneficiary households. Some coordination mechanism would have been desirable, which has been handled through NNP by making the same NGO responsible for implementation of CBNC and inter-sectoral components within a given thana.

**Table 5: Achievement of Project Targets for Improved Nutrition**

<b>Target</b>	<b>Karim et al.</b>	<b>Save the Children</b>	<b>Cambridge study</b>	<b>IMED</b>	<b>OED</b>
Reduction of severe malnutrition (weight-for-age) by 40% and moderate malnutrition by 25%, among under-two children (actually measured for 6-24 months).	61% reduction of severe malnutrition and 21% increase of moderate malnutrition between 1996 and 2003. The difference between BINP and non-BINP areas is significant only at the midterm evaluation	No significant difference between project and control areas in 2002 for severe malnutrition rates (11% in BINP and 12% in non-BINP) and moderate malnutrition rates (35% in BINP and 36% in non-BINP)	Not available	No difference in malnutrition rates of children from project and non-project areas in 2004 (Moderate: BINP 13%, non-BINP 12.9%. Severe: BINP 14%, non-BINP 14%)	Small differences in malnutrition rates between project areas and matched controls. Midterm: 2.5% difference in moderate malnutrition, and 0.5% in severe malnutrition. Endline: 1.2% difference in moderate, and 0.2% in severe malnutrition.
Restoration of standard rate of growth, as measured by monthly weight gain, for at least 50% of under-two children	Not available	Significant, but small, difference in WAZ of children enrolled in the food supplementation program measured before and at the end of the supplementation (-2.48 at the start, -2.37 at the end)	No significant weight gain of children under supplementary feeding.	Not available	Significant weight gain of severely malnourished children under supplementary feeding (no gain for mildly malnourished children).
Reduction of vitamin A and iodine disorders by 50%	Data on disorders not available. But the percentage of mothers taking post-partum vitamin A capsules is 65% at the endline (13% in control areas)	Not available	Not available	Significant difference in the proportion of mothers taking vitamin A between project and control areas.	Not available

<b>Target</b>	<b>Karim et al.</b>	<b>Save the Children</b>	<b>Cambridge study</b>	<b>IMED</b>	<b>OED</b>
Reduction of anemia by 33%	Data on anemia not available. But iron tablets taken during last pregnancy increased to 84% of mothers compared to 17% at the baseline.	Significant difference in women taking iron tablets during pregnancy compared to the control areas (58% in BINP areas and 24% in non-BINP areas)	Not available	Significant difference in the proportion of mothers taking iron folic tablets between project and control areas.	Not available
Reduction of low-birth weight (lbw) by 50%	No baseline data on birth weight is available. The reduction in lbw between endline and midterm is 38%.	Not available	No evidence of an improvement in birth weight, or of a reduction in prevalence of low birth weight.	Not available	Large reduction in LBW prevalence between midterm and endline in BINP areas. Similar reduction observed in control areas. Insignificant project effect over time compared to control areas.
Improvement in maternal weight gain by at least 50% in at least 50% of women	Increase in weight gain between midterm and endline. Improvement is larger, though not significantly, in control areas compared to BINP areas.	Not available	Small but positive correlation with weight gain during pregnancy for food supplemented mothers.	Not available	Increase in gestational weight gain (300 grams per month) between midterm and endline in both project and control areas. Moderate difference (less than 1 kilogram over gestation) in weight gain between project and control areas, but larger impact for malnourished and destitute women.

## 5. Ratings

### Outcome

68. All three project objectives were highly relevant to the country's development objectives at the time and continue to be so today. The efficacy of the project in institution building at the national level – the first objective -- was modest. Capacity building at the community level in project areas, was substantial, contributing toward meeting both the first and second objectives. Efficiency is more doubtful since the project infrastructure has proved quite costly, the knowledge-practice gap is still high, and nutritional gains have been very small. The project outcome rating of satisfactory awarded by the ICR was based on observed nutritional improvements from the CBNC – the third objective.<sup>19</sup> However, these improvements were based on information from the monitoring system, with the ICR itself noting that field observations did not support such a positive view. The view from the endline, reinforced by a number of other studies, is of at best a small nutritional impact, certainly falling far short of the targets set at appraisal. The efficacy of the project in meeting the third objective, therefore, was modest. The overall project outcome rating is Moderately Unsatisfactory.

### Institutional Development Impact

69. Institutional development impact is measured by the extent to which the project enhances the ability of the country to make better use of its resources, in this case in tackling the nutrition problem in Bangladesh. The issue can be looked at from the point of view of government, implementing NGOs and communities.

70. The project was managed by a separate project office, with NGOs responsible for implementation at field level. Hence, the bulk of training has not been to people who are part of government structure. Institutional development activities with a range of national nutrition agencies were only partially carried out. The direct impact on the ability of government to utilize its resources more efficiently in tackling nutrition problems was thus negligible.

71. The NGOs recruited were ones who already had the capacity to implement such programs. Indeed BRAC already had a similar project, so that BINP was learning from BRAC rather than *vice versa*. So it cannot be argued that the project built the capacity of the implementing NGOs at a national level. However, there has been an impact on the nutrition-related knowledge of NGO employees, community workers (CNOs and CNPs) and creation of the VNMCs - at this level there has been considerable capacity creation. Offsetting this assessment is the fact that the NGOs have been very successful in mobilizing women to take part, but have a mixed record in other respects, including the poor performance of some CNPs.

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19. The ICR paid less attention to the other project objectives (none in the discussion of achievement of objectives).

72. At the community level the relevant finding is that the ability to understand nutritional issues (shown by the knowledge measures) has indeed increased, but that there remains a gap between having knowledge and using it. On balance these different considerations indicate that an overall rating of Modest is appropriate.

### **Sustainability**

73. There are both positive and negative factors to take into account in assessing sustainability. On the positive side are the impressive creation of community-level infrastructure for nutritional interventions, growing public and government awareness of the importance of nutrition, and the integration of nutrition into the tasks of the MOHFW under NNP. However, the cost implications of going to scale are large. Moreover, it was originally envisaged that the cost of paying CNP stipends would be borne by communities, not government – it will be recalled that one of government’s concerns about BINP was the creation of a government-financed cadre of community workers. But there is no sign that communities would be willing to take on these costs. In the short-run activities are being sustained through the Bank-financed follow-on project. On balance, sustainability is rated as ‘Likely’, but the concerns raised here should be noted.

### **Bank Performance**

74. Bank performance overall is rated Satisfactory, although there were serious shortcomings in some aspects of both preparation and supervision, both of which would warrant a marginally satisfactory rating were it to be available. The shortcomings on the Bank’s side included were the failure to seriously consider alternative designs, some design flaws (poor targeting criteria for supplementary feeding and inadequate attempts for counseling to reach all decision makers) or to learn from experience as it emerged. On the plus side, the Bank mobilized support for the project, accommodating some concerns on the part of the borrower, and oversaw implementation, including expansion of the project beyond the area originally envisaged.

75. To be fair, the project design was based on a project perceived to be successful (TINP) and the data which initially emerged on BINP, from both the monitoring system and to some extent the midterm review were promising. The process variables look good – unfortunately, the changes in behavior have not proved sufficient to bring about substantial changes in nutritional status. The discrepancy between what an apparently similar approach has achieved in Tamil Nadu but not achieved in Bangladesh points to weak implementation. The OED impact study of the Tamil Nadu project points to the importance of the quality of training for community workers, which appears to have been deficient in Bangladesh; OED found varying ability amongst CNPs in correctly interpreting growth charts.

76. Bank supervision of components other than CNBC appears to have been unsatisfactory with little discussion in the PSRs.

## **Borrower Performance**

77. The Borrower had initial misgivings concerning the project. These should not be seen as poor performance, but as a genuine attempt to engage the Bank in dialogue concerning a project about which it had doubts. Once it was agreed to proceed borrower performance was largely Satisfactory, despite initial delays, the imposition of VAT on NGOs, and a reluctance to accept technical assistance and weakness in some aspects of implementation at the national level.

## **6. Findings and Lessons**

78. There were institutional problems in BINP which hampered implementation. The ICR suggests that the inter-sectoral component should not have been included, allowing resources (including supervision) to focus on the core community component. However, it appears that the more integrated approach to the inter-sectoral programs being adopted under NNP is now, unlike before, reaching the target group.

79. The limited impact of BINP on nutritional outcomes raises serious doubts as to the justification for scaling the project up to the national level. To do so will prove very costly, with limited nutritional gain. Several lessons emerge from this analysis which should be borne in mind:

- Supplementary feeding for children does have a positive impact, especially for the most malnourished children. NNP has revised the eligibility criteria so that only growth faltering children with  $WAZ < -2SDs$  receive feeding, as well all children with  $WAZ < -4SDs$ . The latter group constitutes a very small percentage of children, so there appears to be scope for raising this threshold to, say,  $-2.5SDs$ , to capture more children among whom feeding seems most successful. There is also some mis-targeting, which is likely to be best addressed by further training for CNPs in interpreting growth charts.
- Supplementary feeding for pregnant women appears likely to be an ineffective approach on two grounds: the pregnancy weight gain achieved by most women is too small to have a notable impact on birth weight (though there are sub-groups for which benefits are more substantial) and evidence from elsewhere suggests it is anyhow pre-pregnancy weight which is the more important determinant of birth weight (Kramer, 1987). The program would appear more successful if it restricted its attention to the most malnourished women, improved targeting to reduce Type II error and tried harder to discourage leakage and substitution.
- For both types of feeding program, there is evidence of a greater impact in the lean season. There are grounds for considering either increasing the size of the food supplement in this period, restricting it to those months, or adjusting the eligibility criteria by time of year.

- Discouraging women from eating down during pregnancy has some benefit for birth weight. But all forms of knowledge transmitted by the project suffer from a knowledge-practice gap (i.e., not putting knowledge into practice, though uptake of better practices has increased in project areas). Such gaps are common and have multiple causes. However, paying attention to the causes of the gap can help enhance project effectiveness. In the short-run the gap can also be alleviated through better targeting, although that may not help those who are time constrained.

80. More general lessons can also be drawn about the use of the growth monitoring approach. This approach has proved successful elsewhere, notably in TINP, so it cannot be argued that growth monitoring with counseling is an inherently flawed approach. Indeed, many studies show the role of mother's knowledge in improving child nutrition – including OED's own impact study of basic education in Ghana. There appear two main reasons why the approach has been less successful in Bangladesh: (1) poor implementation, notably training of CNPs; and (2) resource constraints on mothers. Consideration of the context and attention to detail in implementation are, rather needless to say, vital ingredients of program success.

81. A positive lesson from BINP emerges with respect to evaluation. There was a strong commitment to evaluation from the start. Crucially, funds were obtained to conduct the baseline prior to project effectiveness. This is not usually done; in many projects the planned baseline gets delayed given other problems encountered during project start-up. However, it would have been sensible to award a contract for all three studies at the outset, rather than change contractors for the survey during the course of the project.

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## Annex A. Basic Data Sheet

### BANGLADESH INTEGRATED NUTRITION PROJECT (CREDIT 2735-BD)

#### Key Project Data (amounts in US\$million)

	<i>Appraisal estimate</i>	<i>Actual or current estimate</i>	<i>Actual as % of appraisal estimate</i>
Total project costs	67.30	65.74	97%
Loan amount	59.8	58.6	97%
Cofinancing	0.0	0.0	n.a.
Cancellation	--	--	--

#### Cumulative Estimated and Actual Disbursements

	<i>FY96</i>	<i>FY97</i>	<i>FY98</i>	<i>FY99</i>	<i>FY00</i>	<i>FY01</i>	<i>FY02</i>	<i>FY03</i>	<i>FY04</i>	<i>FY05</i>
Appraisal estimate (US\$M)	3.3	6.9	16.5	31.1	45.2	59.8	59.8	59.8	59.8	59.8
Actual (US\$M)	0.6	1.6	6.3	13.8	24.5	39.5	45.4	51.6	51.6	51.6
Actual as % of appraisal	18	23	38	44	54	66	75	86	86	86
Date of final disbursement:	04/06/2003									

#### Project Dates

	<i>Original</i>	<i>Actual</i>
PCD	04/27/1990	04/27/1990
Appraisal	01/10/1994	01/10/1994
Board approval	05/30/1995	05/30/1995
Effectiveness	07/12/1995	07/12/1995
Closing date	12/31/2001	06/30/2002

#### Staff Inputs (staff weeks)

<i>Stage of Project Cycle</i>	<i>Actual/Latest Estimate</i>	
	<i>No. Staff weeks</i>	<i>US\$('000)</i>
Identification/Preparation	122.3	398.6
Appraisal/Negotiation	11.4	30.7
Supervision	292.3	409.1
ICR	10	60
Total	436	898.4

**Mission Data**

<i>Stage of Project Cycle</i>	<i>No of Persons &amp; Specialty</i>	<i>Performance Rating</i>	
		<i>Implementati on Progress</i>	<i>Development Objective</i>
<b>Identification/Preparation</b>			
March 1993	5 Population and Health, Management, Economist, Procurement, Operations Analyst		
<b>Appraisal/Negotiation</b>			
January 1994	5 Population and Health, Public Health, Management (2), Team Leader		
March 1994	4 Population and Health, Legal, Procurement, Operations Analyst		
<b>Supervision</b>			
06/30/1995	PSR initial Summary		S
03/07/1996	5 Procurement; Maternal & Child Health; Public Health; PHN (Mission Leader); Management	U	S
09/29/1996	4 PHN/Technical; Management (M/Leader); Nutrition/Technical; Procurement	S	S
05/13/1997	3 Procurement; Mission Leader; Nutrition/Technical	S	S
12/17/1997	4 Procurement; Disbursement; Audit and Finance; Mission Leader	S	S
07/30/1998	6 Management; Team Leader; Procurement Specialist; Disbursement Specialist; Financial management specialist; Inter Sectoral and WID	S	S
11/22/1999	3 Task Leader; Operations Officer; Operations Analyst	S	S
07/20/2000	5 Nutrition; Operations Officer; Operations Analyst; Procurement ; Financial Management	S	S
05/17/2001	8 Task Leader; Operations ; Training; Procurement ; Disbursement; Financial Management; Management; M&E	S	S
05/23/2002	8 Mission Leader; Technical; Training ; Financial Management; Disbursement; Procurement; Social; Public Health	S	S
<b>ICR</b>			
09/28/2002	4 Social Development (2); Economist (Task Team Leader) (1); Operations Officer (1)		

**Other Project Data**

Borrower/Executing Agency:

**FOLLOW-ON OPERATIONS**

<b>Operation</b>	<b>Credit no.</b>	<b>Amount (US\$million)</b>	<b>Board date</b>
National Nutrition Project	C 3356	124.46	05/25/2000

