EVALUATING THE REACHING OUT-OF-SCHOOL CHILDREN PROJECT IN BANGLADESH: A BASELINE STUDY

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In memory of

Miss Salma Begum (field researcher),

Mrs. Shandya Rani Ghosh (field researcher), and

Mr. Mizanur Rahman (survey supervisor)

who died in a tragic road accident on their way to a field-site

to carry out surveys for this study

ACRONYMS AND ABBREVIATIONS

CMC	Center Management Committee
DPE	Directorate of Primary Education
EFA	Education for All
ESP	Education Service Provider
ERP	Education Resource Provider
FFE	Food for Education
GER	Gross Enrollment Rate
GoB	Government of Bangladesh
GR	Gratuitous Relief
HSC	Higher Secondary Certificate
IFPRI	International Food Policy Research Institute
LC	Learning Center
LFP	Labor Force Participation
MoPME	Ministry of Primary and Mass Education
NER	Net Enrollment Rate
PD	Project Director
PEDPII	Second Primary Education Development Program
PESP	Primary Education Stipend Program
PKSF	*Palli Karma Sahayak* Foundation
PPS	Probability Proportional to Size
PTI	Primary Training Institute
ROSC	Reaching Out-of-School Children
SDC	Swiss Agency for Development and Cooperation
SFP	School Feeding Program
SKT	*Shishu Kallyan* Trust
SSC	Secondary School Certificate
TR	Test Relief
UEO	Upazila Education Officer
VGD	Vulnerable Group Development
VGF	Vulnerable Group Feeding
WFP	World Food Programme

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1. INTRODUCTION

Achieving universal primary education is one of the key Millennium Development Goals. In Bangladesh and other developing countries, providing universal primary education connotes a great opportunity to reduce poverty and to promote economic growth. Quality primary education would equip children from poor families with literacy, numeracy, and basic problem-solving skills to move out of poverty.

The Government of Bangladesh (GoB) has devoted a significant share of its budget to providing incentives to families to send their children to school for over a decade. In an effort to increase primary school enrollment of children from poor families, the GoB had launched the Food for Education (FFE) program in 1993. The FFE program provided a free monthly ration of foodgrains (rice or wheat) to poor families in rural areas whose children attended primary school. A number of studies suggest that the FFE did raise primary school enrollment (Ahmed 2000; Ahmed and Billah 1994; Ahmed and del Ninno 2002; Khandker 1996; Meng and Ryan 2004; Ravallion and Wodon 1997). The Primary Education Stipend Program (PESP), which replaced the FFE program in 2002, provides cash assistance to poor families who send their children to primary school. GoB also provides cash assistance to girls in secondary schools. These cash stipend programs aim to increase the enrollment and retention rates of students in primary and secondary schools throughout rural Bangladesh. Recent studies indicate positive effects of these programs on educational attainment (Ahmed 2004a; Ahmed 2005a). In 2002, in order to diminish hunger in the classroom as well as to promote school enrollment and retention rates, GoB and the World Food Programme (WFP) launched the School Feeding Program (SFP) in chronically food-insecure areas of Bangladesh. An impact evaluation of the program suggests that the SFP significantly increases rates of enrollment and attendance, and reduces dropout rates. SFP also improves academic performance and nutritional status of children (Ahmed 2004b).

As a result of these educational investments, Bangladesh has made commendable progress in the education sector over the past decade. Over 90 percent of children eventually enroll in school, and few disparities now exist between boys and girls. A World Bank report on poverty in Bangladesh notes that Bangladesh and Sri Lanka are the only countries in South Asia that have achieved gender as well as urban-rural parity in school enrollments (World Bank 2002).

While the achievements of the education interventions have been impressive, a significant fraction of children, particularly from poor families, do not attend school. Further, about one third of children drop out before completing the five-year cycle of primary education. Children in remote rural areas have very limited access to education.

A new project has recently been designed to attract the most disadvantaged children into primary education. The Reaching Out-of-School Children (ROSC) Project has developed interventions to encourage out-of-school children to attend Learning Centers (LCs) providing primary education, and improve the quality of education in these

LCs. The LCs are called "*Ananda* Schools." *Ananda*, a Bangla word, means joy. A detailed description of the ROSC Project is provided in the next section of this report.

A thorough evaluation of the ROSC Project will allow the GoB to learn from ROSC interventions and, thereby, make informed policy choices from alternative practices and methods in the delivery and management of primary education.

The World Bank commissioned the International Food Policy Research Institute (IFPRI) to conduct a baseline study as a part of an evaluation of the ROSC Project. The baseline study was specifically designed to permit a scientific and rigorous evaluation of impacts of the ROSC Project through follow-up studies. This report presents the findings drawn from baseline surveys undertaken in Bangladesh in 2006.

The report is organized into seven sections. Following this introduction, Section 2 provides an overview of the ROSC Project in Bangladesh. Section 3 discusses the data used in the empirical work. Section 4 presents the findings from village census data. Section 5 portrays the profile of households and educational attainment of children in ROSC Project and control areas. Section 6 reports on an early assessment of performance of the ROSC program. Section 7 presents a summary of the findings and the conclusions.

2. SALIENT FEATURES OF THE ROSC PROJECT

This section provides a description of the ROSC Project in Bangladesh. The description is mainly adapted from the project appraisal document (World Bank 2004), and the implementation guidelines for the ROSC Project (MoPME 2005).

2.1 Rationale

Bangladesh has made commendable progress in promoting primary and secondary education, yet significant challenges remain. Over three million primary-school age children were out of school in 2001. They include children who have never enrolled in school, those who had enrolled and dropped out from the formal primary education system, and street children and children of displaced families who have migrated from rural to urban areas. About one-third of children drop out before completing the five-year cycle of primary education. Children in remote rural areas have very limited access to education. Further, there are high levels of student and teacher absenteeism.

GoB is fully aware of these challenges and is taking steps to address these problems. GoB has recently completed the 2001-2015 National Plan of Action for Education for All (EFA) which incorporates all of the goals of EFA for making education compulsory, accessible, and all-inclusive. From July 2003, the Ministry of Primary and Mass Education (MoPME) has begun implementing the Second Primary Education Development Program (PEDPII), aimed at improving the quality of education, enhancing access to schooling, and ameliorating overall management and oversight of formal primary education.

In Bangladesh, non-formal schools, known as Learning Centers (LCs), provide primary education to children who are mostly from the poorest segments of society. However, these schools are outside the domain of PEDPII. Currently, LCs enroll about 8-10 percent of students at the primary level. In addition, the *Shishu Kallyan* Trust (SKT) schools operated by the MoPME also cater to the disadvantaged and aim at providing primary education to working children in urban areas. However, significant resource constraints inhibit the ability of LCs and SKT schools to grow, attract the most disadvantaged, and provide good quality education. As these schools were not formally recognized by GoB they have not been included in PEDPII and thus there is a gap that hinders GoB's progress in reaching its EFA goals as stated in the National Plan of Action. The ROSC Project has been designed to close this gap. The project complements PEDPII by developing demand-side interventions to: (i) encourage out-of-school children to attend LCs (including SKT schools); and (ii) improve the quality of education in these LCs.

2.2 Description of the ROSC Project

The key objective of the ROSC Project is to reduce the number of out-of-school children through improved access, quality, and efficiency in primary education, especially for disadvantaged children, in support of GoB's national EFA goals. To achieve this objective, the project provides grants to assist in the establishment of LCs at the local community level and provides educational allowances to increase student enrollment. In addition, the project aims to strengthen the capacity of communities and local level institutions and to empower them to organize and manage the provision of quality education.

The ROSC Project was implemented with a grant of $51.0 million from the World Bank, $6.0 million from the Swiss Agency for Development and Cooperation (SDC), and GoB financing of $5.9 million; totaling $62.9 million for the six-year life of the project (July 2004 to June 2010).

The ROSC Project LCs are called "*Ananda* Schools." Project coverage commenced with targeting 60 Upazilas out of a total of 460 rural Upazilas in Bangladesh.[1] Upazilas were selected for the project from those with poor performance on the following indicators: (a) net enrollment rates; (b) the gender gap in enrollment; (c) the primary cycle completion rates; and (d) poverty levels.

The project is designed to support schooling for out-of-school children and facilitate their completion of quality primary schooling through: (a) educational allowances for eligible students; and (b) grants to *Ananda* schools where these children enroll. In 60 percent of the selected Upazilas, both educational allowances to eligible children and grants to schools are provided. In the remaining 40 percent of the Upazilas, only grants to *Ananda* schools are provided.

The annual education allowance per student ranges from Tk 800 ($12.02) for Grades 1-3 (a stipend of Tk 600 and a clothing allowance of Tk 200) and Tk 970 ($14.57) for Grades 4-5 students (a stipend of Tk 720 and a clothing allowance of Tk 250).[2] Educational allowances are channeled to qualifying children through bank accounts managed by their mothers or guardians and established with the national Sonali Bank. Educational allowances are disbursed twice a year: first payment in March/April and second in September/October.

Each *Ananda* school is managed by a Center Management Committee (CMC) composed of 5 parents or guardians, 1 female ward member, 1 Upazila Education Office

[1] The administrative structure of Bangladesh consists of divisions, districts, upazilas, and unions, in decreasing order by size. There are 6 divisions, 64 districts, 489 upazilas (of which 29 are in four city corporations), and 4,463 unions (all rural).

[2] The official exchange rate for the Taka (Tk), the currency of Bangladesh, was Tk 66.57 per US$1.00 on January 23, 2006.

(UEO) representative, 1 Education Service Provider (described below), 1 head-teacher of a formal primary school in the locality, and 1 person interested in promoting education in the community, with the *Ananda* schoolteacher as the member secretary to the CMC.

Ananda schools receiving educational allowances receive grants based on specific criteria to enable them to deliver quality education to students. These grants range from Tk 25,700 ($386) per year for Grades 1-3 to about Tk 31,000 ($466) per year for Grades 4-5. *Ananda* school grants are disbursed twice a year through accounts established with the national Sonali Bank and managed by CMCs. A portion of the grants are earmarked for quality enhancements and improving school management and the remainder can be used at the discretion of the CMC for teachers' salaries, LC maintenance and renovations, improved sanitation and provision of safe drinking water, extra-curricular activities, etc.

In Upazilas where *Ananda* schools receive only grants, the grant per school is between Tk 55,000 - 65,000 ($826-976) per year (by incorporating the average value of the education allowance into the grant).

The project finances grants to SKT schools and educational allowances to working children enrolled in these schools. The education allowance is meant to meet the direct and indirect costs of schooling and to compensate for a portion of the opportunity costs for working children. The grant, to be provided on a per capita basis, covers a part of SKT program management expenditures. The annual educational allowances are Tk 1,400 ($21.03) for each student. Grants are in the range of Tk 25,000-30,000 ($376-451) per year.

2.2.1 Institutional and Implementation Arrangements

At the national level, MoPME is responsible for oversight of the ROSC Project. Directorate of Primary Education (DPE) is the implementing agency of MoPME for the Project. GoB established a ROSC Committee to oversee overall project implementation, carry out joint annual reviews, and resolve implementation issues.

A ROSC Unit, established by MoPME and headed by a Project Director (PD), is directly responsible for day-to-day implementation. Five Assistant Directors (ADs) support the PD, each heading a section. ADs are responsible for implementing various project activities relating to: (a) provision of educational allowances and LC grants; (b) training and education development; (c) monitoring, evaluation, and research; (d) communications and social awareness; and (e) finance and administration. The PD and the five ADs, operating as a unified team, are supported (as appropriate) by a procurement officer, project officers, computer operators, and other required support personnel. In implementing the project, the ROSC Unit follows the policy directives of the ROSC Committee.

At the Upazila level, the Upazila Education Office (UEO) processes applications for establishing *Ananda* schools, facilitates disbursements of educational allowances and

grants, and coordinates monitoring of teacher and student attendance at *Ananda* schools. The UEO reports directly to the ROSC Unit PD on project related matters, and shares project related information with the District Primary Education Officer.

At the local community level, CMCs are responsible for managing the *Ananda* schools with support from Education Service Providers (ESPs) that are agencies (e.g., NGOs) selected by CMCs to assist in the day-to-day running of *Ananda* schools. The ESPs lead community mobilization efforts to identify the target population, encourage the CMC to start a school, and help organize the appropriate *Ananda* schools. To support quality improvement of the *Ananda* schools, CMCs can seek assistance from Education Resource Providers (ERPs), which are agencies selected by CMCs to carry out educational technical services in accordance with agreed terms, conditions, and criteria. ERPs could be NGOs or other educational institutions that have a multi-district or national presence and extensive experience in primary education, teacher training, and curriculum development. The ROSC Unit initiates these activities at the community level.

The process of establishing and operating new *Ananda* schools involves four steps: (a) community mobilization, supported by communications and social awareness activities, prepare the way for establishing the CMC, which include training of its members; (b) once established, the CMC is responsible for setting up new *Ananda* schools, recruiting teachers, identifying ERPs with the help of ESPs for teacher training, and acquiring other educational services; (c) CMCs, through the UEOs, submit an application to the ROSC Unit for participation in the Project; and (d) CMCs then open an account with the local Sonali Bank and all project financial transactions are channeled to *Ananda* schools (grants) and to parents/guardians (education allowances) through the bank.

The ROSC Project was implemented on a limited scale in 20 Upazilas in 2005. By early 2006, the project had expanded to all 60 planned Upazilas, establishing 7,909 *Ananda* schools (LCs). Table 2.1 presents the list of ROSC Upazilas and the number of *Ananda* schools set up in 2005 and 2006.

Table 2.1—List of ROSC Project Learning Centers (LCs) in 60 Upazilas

Division	District	Upazila	Number of Learning Centers		
			2005	2006	Total
Barisal	Bhola	Charfashion	92	110	202
Chittagong	Brahmanbaria	Sarail	20	58	78
Chittagong	Brahmanbaria	Nabinagar	-	100	100
Chittagong	Chandpur	Chandpur Sadar	-	100	100
Chittagong	Chittagong	Bashkhali	-	104	104
Chittagong	Noakhali	Noakhali Sadar	-	124	124
Chittagong	Comilla	Chandina	80	37	117
Chittagong	Comilla	Nangalkot	60	126	186
Dhaka	Jamalpur	Dewanganj	-	176	176
Dhaka	Jamalpur	Islampur	-	192	192
Dhaka	Jamalpur	Sharishabari	-	74	74
Dhaka	Kishoreganj	Bajitpur	-	194	194
Dhaka	Kishoreganj	Karimganj	21	117	138
Dhaka	Kishoreganj	Katiadi	-	124	124
Dhaka	Kishoreganj	Nikli	-	66	66
Dhaka	Kishoreganj	Tarail	20	115	135
Dhaka	Madaripur	Madaripur Sadar	-	100	100
Dhaka	Manikganj	Daulatpur	-	195	195
Dhaka	Manikganj	Harirampur	-	79	79
Dhaka	Manikganj	Saturia	-	113	113
Dhaka	Manikganj	Shibalay	-	191	191
Dhaka	Shariatpur	Jajira	-	90	90
Dhaka	Sherpur	Sherpur Sadar	-	100	100
Dhaka	Sherpur	Sreebordi	-	149	149
Dhaka	Narsinghdi	Narshingdi Sadar	-	48	48
Dhaka	Netrokona	Khaliajhuri	19	187	206
Dhaka	Tangail	Bhuapur	-	82	82
Dhaka	Tangail	Gopalpur	-	120	120
Dhaka	Tangail	Kalihati	-	137	137
Dhaka	Mymensingh	Trishal	-	145	145
Khulna	Kushtia	Daulatpur	22	94	116
Khulna	Kushtia	Mirpur	-	151	151
Khulna	Chuadanga	Alamdanga	-	117	117
Khulna	Meherpur	Gangni	-	154	154
Rajshahi	Kurigram	Rajibpur	20	30	50
Rajshahi	Kurigram	Kurigram Sadar	-	204	204
Rajshahi	Kurigram	Chilmari	-	183	183
Rajshahi	Joypurhat	Joypurhat Sadar	-	142	142
Rajshahi	Bogra	Bogra Sadar	40	93	133
Rajshahi	Bogra	Gabtoli	25	196	221
Rajshahi	Dinajpur	Parbatipur	16	156	172
Rajshahi	Gaibandha	Gobindaganj	20	130	150
Rajshahi	Gaibandha	Shaghata	19	200	219
Rajshahi	Gaibandha	Shundargnaj	60	96	156
Rajshahi	Rangpur	Kaonia	-	204	204

(continued)

Table 2.1— List of ROSC Project Learning Centers (LCs) in 60 Upazilas (continued)

			Number of Learning Centers		
Division	**District**	**Upazila**	**2005**	**2006**	**Total**
Rajshahi	Lalmonirhat	Hatibandha	-	109	109
Rajshahi	Noagaon	Atrai	-	89	89
Rajshahi	Noagaon	Manda	-	160	160
Rajshahi	Noagaon	Porsha	-	43	43
Rajshahi	Noagaon	Raninagar	-	81	81
Rajshahi	Natore	Bariagram	20	69	89
Rajshahi	Natore	Lalpur	75	0	75
Rajshahi	Natore	Natore Sadar	20	46	66
Rajshahi	Nawabganj	Shibganj	-	221	221
Rajshahi	Sirajganj	Belkuchi	-	139	139
Rajshahi	Rajshahi	Bhaga	-	123	123
Sylhet	Sunamganj	Jamalganj	-	147	147
Sylhet	Habiganj	Azmiriganj	-	119	119
Sylhet	Moulvibazar	Moulvibazar Sadar	26	9	35
Sylhet	Moulvibazar	Kamalganj	52	124	176
Total			727	7,182	7,909

Source: ROSC Project Unit.

3. EVALUATION DESIGN AND THE DATA

Evaluation activities of the ROSC Project include this baseline study and follow up studies to assess the impact of the project. This section presents an outline of the evaluation design for the ROSC Project and describes the data collection process for the baseline study.

3.1 Evaluation Design

Evaluation is the process of periodically gathering and analyzing information to determine whether a project is achieving its expected effects as per its stated goals. Valid evaluations determine (a) the extent to which desired changes have occurred, and (b) whether the project has caused such changes. The evaluation design for the ROSC Project entails data collection and analysis procedures that generate useful and valid information on the effects of the Project.

An experimental design provides the most irrefutable conclusions on project impact. This design requires three factors: control, randomization, and pre-post analysis. "Control" refers to a group that is similar to the group that participates in the program with one key difference: the control group does not participate. "Randomization" is the process of assigning people to the project or control group where each person has an equal probability of being assigned to either group. If the selection into the treatment group (i.e., the group that participates in the project) is random, then there will be no difference on average between the treatment and control groups besides the fact that the treatment group got the program. "Pre-post analysis" means that baseline data (which determine the pre-project status) are compared with data collected at some point after project implementation. An estimate of program impact by comparing the outcome indicators between the treatment and control groups will be biased if there is a difference between these two groups in outcomes without the intervention. A pre-post analysis for control and treatment groups would eliminate the bias.

A true experimental design, however, is rarely possible. The ROSC project evaluation intends to use a quasi-experimental design, as randomization is not feasible. This is so because, like many social programs, the project targets communities that are in greatest need of assistance in attaining education. This targeting creates endogeneity of selection into the project. Targeting leads to a negative correlation between participation in the ROSC project and the Upazila characteristics outlined above. This leads to a downward bias in measuring the impact of the project if the differences in characteristics between participating and control Upazilas are not accounted for in the evaluation.

The ROSC evaluation would attempt to remove this bias by using two alternative estimators of project impact. The first is a difference-in-differences estimator, which measures the difference in the outcome variable (e.g., the enrollment rate) in project Upazilas arising from the introduction of the project, and subtracts off the difference in

the outcome before and after the project in Upazilas without the project. This approach removes any bias in measuring the impact of the project brought on by the use of targeted selection criteria or by unobservable Upazila characteristics that do not change over the period. The second approach to measuring program impact is to use matching techniques to compare changes in outcomes among matched pairs of treatment and control groups with comparable observable characteristics, except for the presence of the ROSC project.

3.2 Data for the Baseline Study

3.2.1 Sampling Design

Before conducting a baseline survey, it was necessary to determine the minimum program impact that can be identified with the planned evaluation design and sample size, given the available budget for data collection. Changes in primary school enrollment rates were used as the outcome variable for determining minimum effect size because increasing school enrollment is the primary objective of the ROSC Project.

The minimum sample size calculation determines the smallest change in outcome indicators that could be identified (using a Pearson's chi-square test) between intervention and control groups. We followed the standard practice to find the sample size that gives an 80 percent chance (the power of the test) of rejecting the null hypothesis of zero change in school enrollment at the 0.05 level of significance. The design effect for clustered random sampling was taken into account in determining sample size.

We assumed the budget would support data collection on 1,500 households and worked backward to determine the minimum change in enrollment rates that could be identified at that sample size for alternative baseline enrollment rates (and variance), number of clusters, and intracluster correlation, at the assumed power and significance level.

The sample size estimates suggest that, with a sample of 1,500 households, the study should be able to identify a minimum increase in enrollment rates of between 10 and 15 percentage points. However, it is worth noting that the matching methodology for evaluation described above would increase the power of the evaluation design. The power calculations used here are based on the assumption of a randomized trial, so the effects of the matching on the power calculations are not taken into account. As a result, we believe these estimates of minimum effect size are conservative in that it may be possible to identify effect sizes smaller than those presented here because of the matching.

A stratified random sampling technique has been adopted for the baseline surveys. The sampling process and survey administration included the following steps:

1. First, the sampling process randomly selected 14 treatment Upazilas from the list of 60 ROSC Project Upazilas.[3] The probability proportional to size (PPS) method of random sampling was used, based on Upazila level population data from the 2001 national population census.
2. Six control Upazilas were randomly selected with PPS from the list of non-ROSC Project Upazilas. Before selecting the control Upazilas, ROSC Project Upazilas and non-project Upazilas were matched by comparing the overall program eligibility ratings of Upazilas between ROSC Project Upazilas and non-project Upazilas.[4] This matching of overall rating produced a list of 98 non-ROSC Project Upazilas, out of which 6 control Upazilas were randomly selected.
3. Three unions from each of the 20 selected Upazilas were randomly selected with PPS using union-level population data from the 1991 national population census.[5]
4. One village from each of the 60 selected unions was randomly selected with PPS using village-level population data from the 1991 national census.
5. A complete census of households was carried out in each of the 60 selected villages (42 villages in project Upazilas and 18 villages in control Upazilas).
6. From the village census list of households, 25 households that have at least one primary school-age child (aged 6–14 years) were randomly selected from each of the selected villages. A household survey was administered on the selected households.
7. Eight LCs from each of the selected villages were selected for the LC school survey.
8. A community survey was conducted in the 60 selected villages to collect primary data on village-level contextual variables.

Table 3.1 presents the list of survey locations, and indicates whether or not *Ananda* schools existed in the survey villages at the time of the survey. Out of the 60 survey villages in 20 Upazilas, 24 villages (40 percent) are in ROSC Project's grant-plus-

[3] The ROSC Project provides education allowance to students and grant to LCs in 37 Upazilas, and only grants to LCs in 23 Upazilas.

[4] IFPRI received the ratings from the World Bank. The overall rating for each Upazila has been constructed from the following Upazila-level indicators: (a) net enrollment rates; (b) gender gaps in enrollment; (c) primary school cycle completion rates; and (d) poverty levels.

[5] The 2001 national population census data were used for the PPS selection of Upazilas. However, the 2001 national census data at the union and *mouza* (village) levels were not published at that time of drawing the sample. Therefore, the 1991population census data were used for the PPS sampling of unions and villages. It was assumed that demographic changes among unions and villages within an Upazila were not significant between the 1991 and the 2001 national population census.

allowance areas, 18 villages (30 percent) are in grant areas, and 18 villages (30 percent) are in control areas.

Of the total sample of 42 ROSC Project villages, 71.4 percent had *Ananda* schools at the time of the survey—61.1 percent of the grant villages and 79.2 percent of the grant-plus-allowance villages (Table 3.1). Virtually all (98 percent) ROSC unions in the sample had *Ananda* schools during the survey, except for 1 grant-area union in Noakhali district.

3.2.2 Data Collection

In order to establish a baseline for the evaluation of the ROSC Project, information was gathered from households, schools, service providers, and communities. Gender disaggregated information was collected wherever it is meaningful. In addition, academic achievement tests were given to school children and test scores were calculated. Table 3.2 provides an outline of the types of information collected for the baseline study and methods of information collection.

The baseline surveys were carried out from February to April, 2006. In total, 15,382 households were interviewed in the village census (11,632 households in ROSC Project areas and 3,750 households in control areas). The household survey included 1,500 households (1,050 program and 450 control households). In addition, an achievement test was administered to 5,036 grade 2 students. The test was a standard academic achievement test designed to assess the quality of education received by students attending *Ananda* schools and formal primary schools. An expert from the Institution of Education and Research at the University of Dhaka developed the achievement test. Table 3.3 provides the actual sample size for each of the data collection activities.

Table 3.1—Baseline survey locations

District	Upazila	Union	Village	*Ananda* school in the village
Grant areas				
Noakhali	Noakhali Sadar	Char Bata	Char Majid	No
Noakhali	Noakhali Sadar	Ewazbalia	Char Sulukia	No
Noakhali	Noakhali Sadar	Noannai	Shibpur	Yes
Madaripur	Madaripur Sadar	Ghatmajhi	Ghatmajhi	Yes
Madaripur	Madaripur Sadar	Kunia	Tribhagdi	Yes
Madaripur	Madaripur Sadar	Sirkhara	Kuchinmora	Yes
Kushtia	Mirpur	Barui Para	Aam Konthnlia	Yes
Kushtia	Mirpur	Kursha	Kursha	Yes
Kushtia	Mirpur	Sardarpur	Nadda Azampur	Yes
Kushtia	Daulatpur	Adabaria	Garura Darer Para	Yes
Kushtia	Daulatpur	Hogalbaria	Chamnai	No
Kushtia	Daulatpur	Pearpur	Konroilpur	No
Naogaon	Raninagar	Bargachha	Safikpur	Yes
Naogaon	Raninagar	Kaligram	Silmadar	No
Naogaon	Raninagar	Parail	Chalk Parail	No
Natore	Lalpur	Duaria	Ahammadpur	Yes
Natore	Lalpur	Ishwardi	Gauripur	No
Natore	Lalpur	Walia	DhupaiI	Yes
Grant-plus-allowance areas				
Sirajganj	Belkuchi	Bhangabari	Nishiboyra	Yes
Sirajganj	Belkuchi	Daulatpur	Gopalpur	No
Sirajganj	Belkuchi	Rajapur	Bhaturia	Yes
Dinajpur	Parbatipur	Belaichandi	Sonapukur	Yes
Dinajpur	Parbatipur	Hamidpur	Dakshin Palashbari	No
Dinajpur	Parbatipur	Mominpur	Tera Ania	Yes
Manikganj	Saturia	Baliati	Bhangabari	Yes
Manikganj	Saturia	Dhankora	Khurdakhola	Yes
Manikganj	Saturia	Hargaz	Madhyakandi	Yes
Jamalpur	Dewanganj	Bahadurabad	Char Bahadurabad	Yes
Jamalpur	Dewanganj	Chikajani	Paschim Kazia Para	Yes
Jamalpur	Dewanganj	Dewanganj	Noya Para	Yes

(continued)

Table 3.1—Baseline survey locations (continued)

District	Upazila	Union	Village	*Ananda* school in the village
Sherpur	Sreebordi	Goshaipur	Gilagachha	Yes
Sherpur	Sreebordi	Rani Shimul	Dakshinpurba Bhyadanga	Yes
Sherpur	Sreebordi	Tantihati	Bhatpur	Yes
Chuadanga	Alamdanga	Belgachhi	Bil Chakila	No
Chuadanga	Alamdanga	Gangni	Mochainagar	Yes
Chuadanga	Alamdanga	Khadimpur	Chitila	Yes
Gaibandha	Gobindaganj	Gobindaganj	Chhoto Sohagi	Yes
Gaibandha	Gobindaganj	Katabari	Kholoni	Yes
Gaibandha	Gobindaganj	Shalmara	Haitpur	No
Comilla	Chandina	Dakshin Barakarai	Kailain	Yes
Comilla	Chandina	Dakshin Gallai	Surikhola	No
Comilla	Chandina	Purba Suhilpur	Uttar Padua	Yes
Control areas				
Feni	Feni Sadar	Barahipur	Barahipur	No
Feni	Feni Sadar	Fazilpur	Purba Shibpur	No
Feni	Feni Sadar	Panchgachhiya	Uttar Kashimpur	No
Rajbari	Baliakandi	Baharpur	Ilishkhol	No
Rajbari	Baliakandi	Islampur	Bara Mallik	No
Rajbari	Baliakandi	Narua	Char Bildhamu	No
Tangail	Mirzapur	Banail	Nordana	No
Tangail	Mirzapur	Gorai	Gorai	No
Tangail	Mirzapur	Mahera	Aag Chowali	No
Bogra	Adamdighi	Adamdighi	Kesarta	No
Bogra	Adamdighi	Chhatiangram	Kashimalkuri	No
Bogra	Adamdighi	Nasratpur	Haludghar	No
Kurigram	Ulipur	Bazra	Paschim Bazra	No
Kurigram	Ulipur	Durgapur	Paik Para	No
Kurigram	Ulipur	Tabakpur	Miah Para	No
Sylhet	Jaintiapur	Darbasta	Chakta	No
Sylhet	Jaintiapur	Fatehpur	Hemu Majh Para	No
Sylhet	Jaintiapur	Nijpat	Nayaghat	No

Table 3.2—Information collected for the baseline study and mode of collection

Type of information	Mode of collection
Demographic composition of households; individual level literacy, school enrollment status, and educational attainment; and household welfare indicators.	Village census
Household-level information on demographic composition; level of education, enrollment status, and factors affecting schooling; direct and indirect costs of education, and individual-level time-use data for estimating opportunity costs of attending school; food and nonfood expenditures; occupation and employment; dwelling characteristics; assets; land ownership; access to facilities; remittances and transfers; benefits from social programs; shocks and coping mechanism; and participation in the ROSC program.	Household survey
School enrollment and attendance; teacher's academic qualification, training, and salary; building and facilities; resources and expenditures; and CMC interview on ROSC Project activities.	*Ananda* school and Center Management Committee (CMC) survey
Academic achievement test (Bangla, English, and arithmetic) for *Ananda* school and formal primary school second grade students.	Achievement test
School building and facilities; teachers' qualification and salary, enrollment.	Primary school interview
Number of students, school building, teacher's qualification.	NGO (BRAC and Proshika) school interview
ESP characteristics (relevant experience, staffing, resources); ESP selection process; involvement in ROSC Project activities.	Education Service Provider (ESP) interview
ERP characteristics (relevant experience, staffing, resources); ERP selection process; involvement in ROSC Project activities.	Education Resource Provider (ERP) interview
Community-level infrastructure (roads, electricity); education, health, banking, and other facilities; level of agricultural technology and irrigation; wage rates; disaster proneness.	Community survey

Table 3.3— Actual sample size

Survey	Sample size
Village census (number of households)	15,382
ROSC Project areas	11,632
Control areas	3,750
Household survey (number of households)	1,500
All ROSC Project areas	1,050
Grant areas	450
Grant-plus-allowance areas	600
Control areas	450
Achievement test (number of students)	5,036
Ananda school	2,658
Primary school	2,140
Test given at home	238
Ananda school survey (number of schools)	333
Grant	142
Grant-plus-allowance	191
Formal primary school survey (number of schools)	63
NGO school survey (number of schools)	107
Center Management Committee (number of CMCs)	333
Education Service Providers (number of ESPs)	41
Education Resource Providers (number of ERPs)	8
Community survey (number of villages)	60

4. VILLAGE CENSUS RESULTS

This section presents the findings from the village census of households and individuals, disaggregated by gender and ROSC Project and control locations. The data from the census of all households—carried out in all 60 sample villages in 20 Upazilas and covering 15,382 households—were used for random selection of sample households for the household survey. The data were also used to estimate literacy rates, enrollment rates (gross and net), and the highest levels of educational attainment of individual household members in ROSC Project and control areas. Educational attainment of a total of 69,580 people by age and gender was recorded in the village census. The census dataset has the advantage of being a large sample, but it has the disadvantage of not being able to be linked directly with the detailed information collected in the household survey.

4.1 Age Distribution of the Census Population

Table 4.1 presents the age distribution of the census population by gender and ROSC Project and control locations. The pattern of age distribution is similar among the three locations: ROSC grant areas, ROSC grant-plus-allowance areas, and control areas. Overall, child population (children aged 0 to 16 years) comprises about 40 percent of the total population. Primary school-age children (aged 6-10) and secondary school-age children (aged 11-16) account for about 13 percent and 14 percent of the population, respectively. The pattern of gender composition of the older population indicates that males live slightly longer than females in rural areas.

4.2 Literacy

A person who can read and write a sentence in Bangla is considered to be literate. Table 4.2 presents the literacy rates in ROSC Project and control areas for two population groups, one aged 7 and over and the other aged 15 and over. While literacy rates are quite similar between the two types of ROSC Project areas, the rate is considerably higher in control areas than that of ROSC Project areas.

The female population has a lower literacy rate than the male population in all areas. Nevertheless, a comparison of the male-female gaps in literacy between the two population groups—one aged 7 and over and the other aged 15 and over—shows that, over time, the female literacy rate has been improving more rapidly than that of males.

Table 4.1—Percentage distribution of population by gender and age group, 2006

	Age in years								
	0 - 5	**6 - 10**	**11 - 16**	**17 - 24**	**25 - 34**	**35 - 44**	**45 - 59**	**>=60**	**Total**
	(percent of total population)								
Grant areas									
Male	14.7	12.8	13.7	13.5	14.9	12.1	11.4	7.0	100.0
Female	14.5	12.9	13.4	16.2	15.9	11.7	9.8	5.6	100.0
Both sex	14.6	12.8	13.6	14.8	15.4	11.9	10.6	6.3	100.0
Grant-plus-allowance areas									
Male	14.1	12.4	14.0	13.9	13.5	12.8	12.4	6.9	100.0
Female	13.7	12.7	13.2	15.8	15.6	12.9	10.3	5.8	100.0
Both sex	13.9	12.5	13.6	14.9	14.5	12.9	11.4	6.4	100.0
Control areas									
Male	13.9	12.4	14.5	14.5	13.6	12.3	11.4	7.3	100.0
Female	13.4	12.3	13.2	16.0	16.4	11.8	10.2	6.7	100.0
Both sex	13.6	12.3	13.9	15.3	15.0	12.1	10.8	7.0	100.0
All areas									
Male	14.3	12.5	14.0	13.9	14.1	12.4	11.8	7.0	100.0
Female	13.9	12.7	13.3	16.0	15.9	12.2	10.1	6.0	100.0
Both sex	14.1	12.6	13.7	15.0	15.0	12.3	10.9	6.5	100.0

Source: Based on data from IFPRI's "ROSC Baseline Study, 2006: Village Census," Bangladesh.

Table 4.2—Literacy rates in ROSC Project and control areas, 2006

District	Upazila	N	Population aged 7 and over			Population aged 15 and over		
			Male	Female	All	Male	Female	All
			(percent)					
Grant areas								
Kushtia	Daulatpur	937	54.5	47.0	50.9	52.0	42.0	47.1
Kushtia	Mirpur	821	48.1	47.8	48.0	45.2	42.9	44.1
Madaripur	Madaripur Sadar	993	56.2	48.5	52.2	55.8	45.6	50.5
Naogaon	Raninagar	772	51.5	43.5	47.6	48.6	36.5	42.8
Natore	Lalpur	1163	56.5	54.2	55.4	52.9	47.8	50.4
Noakhali	Noakhali Sadar	1116	53.2	47.2	50.2	53.5	42.7	48.0
All		5,802	53.4	48.0	50.7	51.3	42.9	47.1
Grant-plus-allowance areas								
Chuadanga	Alamdanga	601	48.9	49.1	49.0	41.2	40.4	40.8
Comilla	Chandina	764	59.0	57.8	58.4	57.6	53.0	55.2
Dinajpur	Parbatipur	903	66.9	57.4	62.2	63.6	51.1	57.5
Gaibandha	Gobindaganj	689	58.1	46.8	52.3	57.8	41.7	49.6
Jamalpur	Dewanganj	610	44.7	37.8	41.4	46.7	35.4	41.3
Manikganj	Saturia	659	51.8	42.0	46.8	47.8	33.9	40.7
Sirajganj	Belkuchi	655	58.2	51.9	55.1	58.8	46.6	53.0
Sherpur	Sreebordi	909	44.2	38.9	41.7	45.9	36.5	41.3
All		5,790	54.0	47.7	50.9	52.4	42.3	47.4
Control areas								
Bogra	Adamdighi	682	70.3	64.3	67.3	70.5	60.3	65.5
Feni	Feni Sadar	685	66.7	58.5	62.6	65.0	54.3	59.5
Kurigram	Ulipur	640	61.3	52.7	56.9	57.7	45.7	51.6
Rajbari	Balia Kandi	755	58.4	53.6	56.1	55.9	47.9	52.1
Sylhet	Jaintapur	426	56.0	46.7	51.2	52.5	36.1	44.1
Tangail	Mirzapur	561	68.2	57.9	62.8	65.1	52.3	58.2
All		3,749	63.5	55.6	59.5	61.1	49.4	55.2
All areas		15,341	56.6	50.2	53.4	54.7	44.6	49.7
Standard deviation			7.5	7.0	7.0	7.6	7.2	7.1
Coefficient of variation (percent)			13.2	13.9	13.1	14.0	16.1	14.3

Source: Based on data from IFPRI's "ROSC Baseline Study, 2006: Village Census," Bangladesh.
Note: A person who can read and write a sentence in Bangla is considered to be literate.
N = Total number of households in the 3 sample villages in each of the Upazilas. Census covered 3 unions from each of the Upazilas and 1 village from each of the unions.

4.3 Primary School Enrollment

Table 4.3 presents three types of enrollment rates for primary education: the gross enrollment rate, the net enrollment rate 1, and the net enrollment rate 2.[6] The definitions of these three types of enrollment rates are provided in the footnote of the table. The results of the disaggregated analysis show that enrollment rates are higher in ROSC Project areas than those in control areas; and higher in grant-plus-allowance areas than in grant areas. Gross enrollment rates in grant, and grant-plus-allowance areas, respectively, are 8.0 percentage points and 13.3 percentage points higher than control areas, which indicate the influence of the ROSC Project on primary school enrollment. It is important to note that the surveys for this baseline study were carried out from February to April, 2006. In 36 percent of the baseline survey areas the ROSC Project was implemented in July 2005; and in the remainder 64 percent of the survey areas the project began in early 2006.

Primary school enrollment rates in both of the ROSC Project areas and in control areas are higher for girls than those for boys, except for gross enrollment rate in grant areas where there is virtually no difference in the rate between boys and girls.

About 29 percent (in ROSC Project areas) and 31 percent (in control areas) of the children aged 6–11 are enrolled at their proper-age grade in primary school. This is evident in "net enrollment 2." In all areas, more girls are enrolled in primary school at their proper age-grade than boys are.

There is considerable variation in enrollment rates across locations. For example, primary gross enrollment rates range from 70.7 percent in Jaintapur Upazila of Sylhet district (a control area) to 115.2 percent in Chandina Upazila of Comilla district (a grant-plus-allowance area). These findings indicate substantial scope for increasing primary school enrollment through geographic targeting of education interventions at the upazila level.

[6] The net enrollment rate (NER) is the ratio of enrollment by children of the official targeted age (e.g., aged 6-11 for the 5-year primary school cycle) in a given level of schooling (e.g., primary) to the total number of children of the official targeted age. The NER excludes under-age and over-age children. The gross enrollment rate (GER) is the ratio of total enrollment for a given level of schooling to the total number of children of the official age. GER can be greater than 100 percent and is heavily influenced by the extent of under-age and over-age of enrolled children.

Table 4.3—Enrolment rates in primary schools in ROSC Project and control areas, 2006

Upazila	N	Gross			Net 1			Net 2		
		Boys	Girls	All	Boys	Girls	All	Boys	Girls	All
						(percent)				
Grant areas										
Daulatpur	937	113.4	109.4	111.4	83.9	90.6	87.2	27.8	30.9	29.3
Mirpur	821	109.0	115.0	111.7	87.2	93.1	89.8	32.1	35.7	33.8
Madaripur Sadar	993	109.7	104.8	107.2	82.2	82.0	82.1	28.3	28.5	28.4
Raninagar	772	95.1	94.1	94.6	75.6	79.8	77.9	27.6	29.5	28.7
Lalpur	1163	89.4	86.6	88.0	76.8	79.0	77.9	27.2	32.9	30.1
Noakhali Sadar	1116	93.6	98.3	95.9	69.0	76.6	72.8	22.0	24.5	23.3
All	5,802	101.7	101.4	101.5	79.1	83.5	81.3	27.5	30.4	28.9
Grant-plus-allowance areas										
Alamdanga	601	109.7	114.8	112.1	88.4	91.9	90.0	27.5	31.2	29.2
Chandina	764	113.8	116.4	115.2	83.5	87.1	85.4	28.5	28.9	28.7
Parbatipur	903	106.1	105.0	105.5	89.0	88.5	88.7	34.5	35.7	35.1
Gobindaganj	689	112.1	114.1	113.1	85.3	95.1	90.1	31.1	30.5	30.8
Dewanganj	610	102.9	109.2	106.0	82.1	89.3	85.6	22.2	29.7	25.8
Saturia	659	112.7	106.6	109.4	90.5	94.0	92.4	30.8	35.8	33.4
Belkuchi	655	89.8	104.0	96.7	70.2	75.6	72.8	23.7	27.0	25.3
Sreebordi	909	101.0	108.4	104.4	82.8	92.4	87.3	23.0	29.2	25.9
All	5,790	106.0	109.8	107.8	84.0	89.2	86.5	27.7	31.0	29.3
Control areas										
Adamdighi	682	95.5	98.0	96.7	83.2	91.4	87.3	32.8	38.1	35.4
Feni Sadar	685	101.2	111.8	106.0	82.1	88.2	84.9	31.4	34.3	32.7
Ulipur	640	100.0	101.0	100.5	85.5	89.2	87.5	33.1	39.9	36.7
Balia Kandi	755	94.1	93.7	93.9	75.9	83.1	79.4	26.0	30.1	28.0
Jaintapur	426	67.7	73.5	70.7	58.8	62.6	60.8	21.1	23.9	22.5
Mirzapur	561	87.1	100.8	92.9	82.0	89.3	85.1	30.8	31.9	31.3
All	3,749	90.9	96.5	93.5	77.9	84.0	80.8	29.2	33.0	31.1
All areas	15,341	100.2	103.3	101.6	80.7	85.9	83.2	28.1	31.4	29.7
Standard deviation		11.6	10.6	10.7	7.7	8.0	7.7	4.1	4.2	4.0
Coefficient of variation (percent)		11.5	10.3	10.6	9.6	9.3	9.3	14.4	13.4	13.4

Source: Based on data from IFPRI's "ROSC Baseline Study, 2006: Village Census," Bangladesh.

N = Total number of households in the 3 sample villages in each of the Upazilas. Census covered 3 unions from each of the Upazilas and 1 village from each of the unions.

GROSS enrollment rate: All primary-school-going children/all children aged 6-11 years.
Net enrollment rate 1(NET1): All primary-school-going children aged 6-11 years old/all children aged 6-11 years.
Net enrollment rate 2 (NET2): Enrolled in each grade at the proper age for that grade. That is, all children aged 6-7 years and enrolled in grade 1/all children aged 6-7 years; and so on up to grade 5.

4.4 Educational Attainment

About half of the population aged 15 and over in both of the ROSC Project areas and about 58 percent in control areas have never attended school, and females have been particularly disadvantaged (Table 4.4). However, a comparison with the population aged 5 and over with the population aged 15 and over indicates that, the share of the female population that never attended school declined at a faster rate than that of the male population over a decade.

Table 4.5 provides information on the highest education levels completed by males and females aged 25 and over. The levels of educational attainment are low in general, and extremely low for the female population. The levels are, however, relatively high in control areas compared to ROSC Project areas.

Table 4.4—Share of population that never attended school in ROSC Project and control areas, 2006

Upazila	N	Population aged 5 and over			Population aged 15 and over		
		Male	Female	All	Male	Female	All
		(percent)					
Grant areas							
Daulatpur	937	58.9	52.9	56.0	51.5	42.3	47.0
Mirpur	821	56.1	55.8	55.9	47.3	45.6	46.5
Madaripur Sadar	993	66.8	59.3	62.9	61.1	49.5	55.0
Raninagar	772	55.7	49.5	52.6	51.0	39.6	45.5
Lalpur	1163	59.6	58.0	58.8	54.7	50.5	52.6
Noakhali Sadar	1116	62.1	56.8	59.4	57.0	46.7	51.7
All	5,802	59.9	55.4	57.6	53.8	45.7	49.7
Grant-plus-allowance areas							
Alamdanga	601	53.3	52.8	53.1	43.6	42.5	43.1
Chandina	764	66.5	65.1	65.8	60.0	54.8	57.3
Parbatipur	903	72.0	64.1	68.1	66.3	54.9	60.8
Gobindaganj	689	68.5	60.1	64.3	63.3	50.1	56.6
Dewanganj	610	56.0	51.1	53.7	48.1	38.9	43.7
Saturia	659	58.8	48.7	53.6	50.5	35.9	43.1
Belkuchi	655	61.9	55.6	58.9	59.5	47.5	53.8
Sreebardi	909	54.7	49.3	52.1	45.0	35.7	40.4
All	5,790	61.5	55.9	58.7	54.5	45.0	49.8
Control areas							
Adamdighi	682	79.0	71.8	75.4	77.0	66.8	72.0
Feni Sadar	685	70.7	63.4	67.1	67.4	56.4	61.8
Ulipur	640	68.7	58.7	63.6	63.4	49.6	56.4
Balia Kandi	755	64.0	58.4	61.3	59.3	50.1	54.9
Jaintapur	426	55.3	46.8	50.9	52.6	36.2	44.2
Mirzapur	561	68.6	59.3	63.7	64.3	52.9	58.2
All	3,749	67.7	59.7	63.7	64.0	52.0	57.9
All areas	15,341	62.9	56.9	59.9	57.1	47.3	52.2
Standard deviation		7.0	6.3	6.5	8.6	8.0	8.0
Coefficient of variation (percent)		11.2	11.1	10.9	15.0	16.9	15.3

Source: Based on data from IFPRI's "ROSC Baseline Study, 2006: Village Census," Bangladesh.
N = Total number of households in the 3 sample villages in each of the Upazilas. Census covered 3 unions from each of the Upazilas and 1 village from each of the unions.

Table 4.5—Highest level of education attained by population aged 25 and over in ROSC Project and control areas, 2006

	Grant areas	Grant-plus-allowance areas	Control areas	All
		(percent)		
No schooling				
Male	55.6	56.1	45.0	52.6
Female	69.9	70.5	61.7	67.7
All	62.6	63.1	53.4	60.0
Below primary				
Male	7.2	7.5	8.9	7.8
Female	6.9	8.1	7.9	7.7
All	7.0	7.8	8.4	7.7
Primary passed				
Male	24.1	24.5	30.7	26.3
Female	19.7	18.1	25.7	20.9
All	21.9	21.4	28.2	23.6
Secondary passed				
Male	6.2	5.3	7.1	6.1
Female	2.3	2.0	3.0	2.4
All	4.3	3.7	5.0	4.3
Higher secondary passed				
Male	3.3	3.7	4.1	3.7
Female	0.6	0.8	0.9	0.8
All	2.0	2.3	2.5	2.3
Received bachelor's degree				
Male	2.4	2.1	2.9	2.4
Female	0.5	0.4	0.6	0.5
All	1.5	1.3	1.7	1.5
Received master's degree				
Male	1.0	0.6	1.1	0.9
Female	0.2	0.1	0.1	0.1
All	0.6	0.3	0.6	0.5

Source: Based on data from IFPRI's "ROSC Baseline Study, 2006: Village Census," Bangladesh.

5. PROFILE OF HOUSEHOLDS AND EDUCATIONAL ATTAINMENT OF CHILDREN IN ROSC PROJECT AND CONTROL AREAS

Using household survey data, this section provides profiles of households living in ROSC Project areas and compares the profiles with those of households in comparison or control areas. The analysis then focuses on household- and child-level issues relating to primary education. As noted in Section 3, the sample of households was randomly drawn from the village census list of households with at least one primary school-age child (aged 6-14 years).[7]

Consumption expenditures are used in this study as the principal indicator of household welfare. Per capita expenditure is used as a proxy for income for two reasons. First, expenditures are likely to reflect permanent income, and hence are a better indicator of consumption behavior (Friedman 1957). Second, data on expenditures are generally more reliable and stable than income data. Because expenditures are intended to serve as a proxy for income, the terms "expenditure" and "income" are used interchangeably.

The measure of total consumption expenditure is quite extensive and draws upon responses to several sections of the household survey. In brief, consumption is measured as the sum of total food consumption, and total nonfood (nondurable and durable) good expenses. Expenditures on individual consumption items were aggregated to construct total expenditures. Quantities of goods produced by the household for home consumption were valued at the average unit market prices of commodities.

Much of the household-level analysis in this section disaggregates the sample households into per capita expenditure quartiles. Quartiles are based on household quartiles ranked by total per capita expenditures. Households in the first quartile represent the poorest 25 percent while those in the fourth quartile represent the richest 25 percent of all households in the income distribution. Quartiles are constructed for the total sample of survey households. Households belonging to each of the two ROSC Project areas (i.e., grant, and grant-plus-allowance) and to control areas are distributed among the quartile groups according to their per capita expenditures and the quartile cutoff point expenditures.

[7] In Bangladesh, primary education (grades 1-5) is of 5-year duration and it is generally meant for children in the age group of 6-11 years. However, the ROSC Project targets out-of-school children aged 7 to 14 years. Therefore, the household survey included households with at least one child aged 6 to 14 years.

5.1 Profile of Survey Households

5.1.1 Household Characteristics

Disaggregated by per capita expenditure quartiles, Tables 5.1-5.3 present the characteristics of survey households living in grant, grant-plus-allowance, and control areas, respectively; and Table 5.4 shows the characteristics of the total sample of households in the 60 survey villages. Although the expenditure quartiles are ranked from the "lowest" to the "highest" per capita household expenditures, most households in rural Bangladesh are poor. According to the latest poverty estimates, 53.1 percent of the rural population was below the poverty line in 2000 (BBS 2003). Moreover, the sample households are expected to be poorer than the average rural households in Bangladesh, because the selection of ROSC Project areas used Upazila poverty levels as one of the targeting criteria. As mentioned in Section 3, control Upazilas were matched with ROSC Project Upazilas by comparing the overall program eligibility ratings. Indeed, per capita consumption expenditure of 55 percent of the total sample households in the survey villages is less than half-a-dollar-a-day (Table 5.4).[8]

The results in Tables 5.2 and 5.3 however indicate that the grant-plus-allowance areas are poorer than the control areas. The average per capita monthly consumption expenditure of households in grant-plus-allowance areas is 14.3 percent lower than that in control villages, and this difference is statistically significant at the 1 percent level. Further, the average per capita monthly expenditure of households in grant-plus-allowance areas is statistically significantly lower (14.0 percent) than that of the households in grant areas (Tables 5.1 and 5.2). These findings suggest that the geographic targeting of grant-plus-allowance areas is quite good.

There is a strong and negative relationship between income and primary-school-age children (aged 6-11) who do not go to school. In each of the 3 areas, the percentage of households with primary-school-age children who do not send their children to school declines sharply as household income rises (Tables 5.1-5.3). To compare and contrast these results, Figure 5.1 illustrates the shares of out-of-school children in the 3 areas—grant, grant-plus-allowance, and control areas. Among the poorest 25 percent of all households (the lowest quartile) in control areas, 23 percent of households with primary-school-age children do not send their children to school. This rate is lower by 8.5 percentage points in grant-plus-allowance areas and 3.2 percentage points in grant areas, than control areas. On the average for all 4 income groups, the rate is lower by 6.5 percentage points in grant-plus-allowance areas and 4.9 percentage points in grant areas, than control areas. These findings suggest that the prevalence of primary school-aged out-of-school children is considerably lower in grant-plus-allowance areas than the other two areas (grant and control), particularly among the poorest section of the population. Is this due to the cash incentive the grant-plus-allowance component of the

[8]Calculated at the official exchange rate prevailing at the time of the survey.

ROSC Project provides to families to send their children to *Ananda* school? This question is addressed through proper analytical methodology in Section 6 of this report.

Figure 5.1—Primary-school-age children not in school

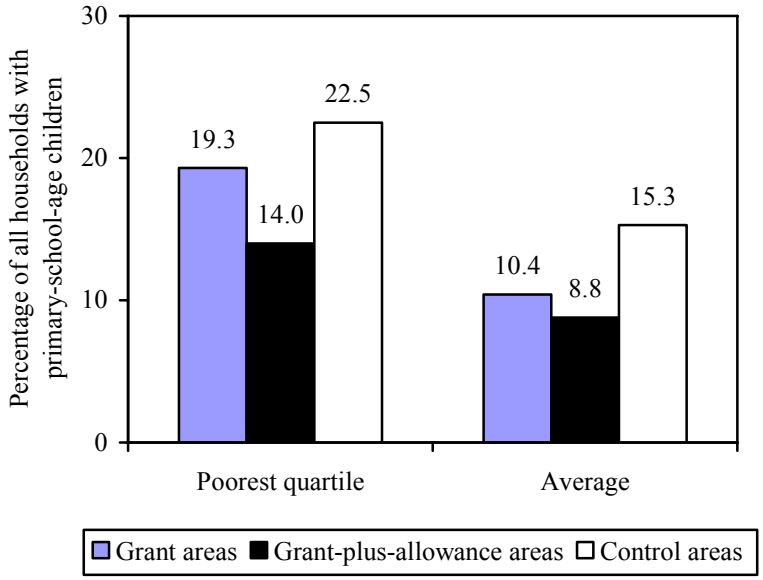


Table 5.1—Characteristics of respondent households, by expenditure quartile: Grant areas

Description	Per capita expenditure quartile				
	Lowest (1)	(2)	(3)	Highest (4)	All
Household size (persons)	5.8	5.0	4.9	4.8	5.1
Primary-school-age children (6-11 years) who do not go to school (percent of all households with primary-school-age children)	19.3	10.8	7.3	3.8	10.4
Secondary-school-age children (12-17 years) who do not go to school (percent of all households with secondary-school-age children)	55.8	40.0	31.0	19.5	34.7
Years of schooling, male household head	1.7	1.6	2.3	4.6	2.5
Years of schooling, wife of household head	1.3	1.8	2.1	3.5	2.2
Years of schooling, adult male aged 15 and above	2.2	2.6	4.1	6.0	3.8
Years of schooling, adult female aged 15 and above	1.9	2.6	2.9	4.7	3.1
No schooling, adult male (percent)	58.3	64.2	48.4	37.5	51.9
No schooling, adult female (percent)	69.2	62.8	63.5	46.8	60.0
Age at first marriage of men, currently aged <30 (years)	21.1	20.6	20.1	21.7	20.8
Age at first marriage of women, currently aged <30 (years)	15.5	15.6	15.6	16.4	15.8
Female-headed household (percent)	11.8	5.6	10.8	20.0	12.2
Less than 0.5 acre of owned cultivable land (percent)	80.4	66.7	58.3	37.5	59.8
Per capita monthly expenditure (Taka)	585	841	1,139	2,358	1,267
Per capita monthly expenditure on education (Taka)	12	22	38	99	45
Percent of households with per capita expenditure less than $1 a day	100.0	100.0	100.0	65.0	90.7
Percent of households with per capita expenditure less than $0.50 a day	100.0	100.0	18.3	0.0	51.6
Principal occupation of household head (percent):					
Salaried	3.9	6.5	5.8	10.0	6.7
Day-laborer	42.2	33.3	14.2	6.7	23.1
Farmer	15.7	24.1	40.0	38.3	30.2
Business/trade	10.8	13.0	17.5	20.0	15.6
Rickshaw/tricycle van puller	6.9	11.1	6.7	2.5	6.7
Other self employed work	6.9	5.6	6.7	0.8	4.9
Non-income earning occupations	10.8	3.7	7.5	15.8	9.6
Other	2.9	2.8	1.7	5.8	3.3

Source: Based on data from IFPRI's "ROSC Baseline Study, 2006: Household Survey," Bangladesh.

Table 5.2—Characteristics of respondent households, by expenditure quartile: Grant-plus-allowance areas

Description	Per capita expenditure quartile				
	Lowest (1)	(2)	(3)	Highest (4)	All
Household size (persons)	5.0	4.8	4.7	4.4	4.8
Primary-school-age children (6-11 years) who do not go to school (percent of all households with primary-school-age children)	14.0	7.6	5.1	3.1	8.8
Secondary-school-age children (12-17 years) who do not go to school (percent of all households with secondary-school-age children)	55.8	33.6	30.8	24.7	37.1
Years of schooling, male household head	1.4	2.1	3.1	4.7	2.5
Years of schooling, wife of household head	0.9	1.7	1.9	2.7	1.7
Years of schooling, adult male aged 15 and above	2.1	3.0	4.3	5.7	3.5
Years of schooling, adult female aged 15 and above	1.3	2.4	3.2	4.2	2.6
No schooling, adult male (percent)	68.9	60.5	44.5	29.0	53.8
No schooling, adult female (percent)	79.4	70.8	57.5	49.3	66.3
Age at first marriage of men, currently aged <30 (years)	19.8	20.3	21.4	22.4	20.6
Age at first marriage of women, currently aged <30 (years)	15.5	15.7	15.9	16.3	15.8
Female-headed household (percent)	9.9	5.2	10.2	20.2	10.5
Less than 0.5 acre of owned cultivable land (percent)	81.7	69.8	57.8	38.5	65.3
Per capita monthly expenditure (Taka)	563	833	1,135	2,360	1,089
Per capita monthly expenditure on education (Taka)	10	22	39	84	33
Percent of households with per capita expenditure less than $1 a day	100.0	100.0	100.0	62.4	93.2
Percent of households with per capita expenditure less than $0.50 a day	100.0	100.0	21.1	0.0	65.0
Principal occupation of household head (percent):					
Salaried	3.7	3.5	7.9	10.2	5.7
Day-laborer	47.9	40.1	19.7	10.2	32.8
Farmer	12.6	26.2	29.9	35.2	24.3
Business/trade	11.1	14.5	21.3	20.4	15.9
Rickshaw/tricycle van puller	8.9	4.7	0.8	0.0	4.4
Other self employed work	7.4	6.4	8.7	5.6	7.0
Non-income earning occupations	5.8	2.3	7.9	17.6	7.4
Other	2.6	2.3	3.9	0.9	2.5

Source: Based on data from IFPRI's "ROSC Baseline Study, 2006: Household Survey," Bangladesh.

Table 5.3—Characteristics of respondent households, by expenditure quartile: Control areas

Description	Per capita expenditure quartile				
	Lowest (1)	(2)	(3)	Highest (4)	All
Household size (persons)	5.2	5.4	5.0	4.7	5.0
Primary-school-age children (6-11 years) who do not go to school (percent of all households with primary-school-age children)	22.5	12.2	20.2	7.5	15.3
Secondary-school-age children (12-17 years) who do not go to school (percent of all households with secondary-school-age children)	51.3	56.4	44.0	31.7	43.0
Years of schooling, male household head	1.4	2.7	3.7	4.3	3.2
Years of schooling, wife of household head	1.4	2.2	2.7	3.2	2.5
Years of schooling, adult male aged 15 and above	2.6	3.5	4.4	5.5	4.2
Years of schooling, adult female aged 15 and above	1.9	3.1	3.2	4.4	3.4
No schooling, adult male (percent)	66.3	44.8	38.7	33.9	43.5
No schooling, adult female (percent)	72.0	57.1	53.9	46.2	55.5
Age at first marriage of men, currently aged <30 (years)	19.9	21.4	21.6	20.8	21.0
Age at first marriage of women, currently aged <30 (years)	15.8	15.7	15.9	16.3	15.9
Female-headed household (percent)	11.0	7.4	13.4	18.5	13.3
Less than 0.5 acre of owned cultivable land (percent)	90.2	78.9	59.1	58.2	68.7
Per capita monthly expenditure (Taka)	556	840	1,132	2,074	1,271
Per capita monthly expenditure on education (Taka)	15	27	44	93	51
Percent of households with per capita expenditure less than $1 a day	100.0	100.0	100.0	60.3	87.1
Percent of households with per capita expenditure less than $0.50 a day	100.0	100.0	20.5	0.0	45.1
Principal occupation of household head (percent):					
Salaried	1.2	4.2	6.4	11.3	6.6
Day-laborer	46.9	25.3	18.4	9.2	22.2
Farmer	6.2	25.3	30.4	22.0	22.2
Business/trade	11.1	17.9	20.8	25.5	19.9
Rickshaw/tricycle van puller	9.9	9.5	2.4	2.1	5.2
Other self employed work	8.6	10.5	7.2	8.5	8.6
Non-income earning occupations	8.6	5.3	10.4	16.3	10.9
Other	7.4	2.1	4.0	5.0	4.5

Source: Based on data from IFPRI's "ROSC Baseline Study, 2006: Household Survey," Bangladesh.

Table 5.4—Characteristics of respondent households by expenditure quartile: All areas

Description	Per capita expenditure quartile				
	Lowest (1)	(2)	(3)	Highest (4)	All
Household size (persons)	5.2	5.0	4.9	4.7	4.9
Primary-school-age children (6-11 years) who do not go to school (percent of all households with primary-school-age children)	17.2	9.7	10.7	5.1	11.2
Secondary-school-age children (12-17 years) who do not go to school (percent of all households with secondary-school-age children)	54.8	40.9	35.3	25.9	38.2
Years of schooling, male household head	1.5	2.1	3.0	4.5	2.7
Years of schooling, wife of household head	1.1	1.9	2.2	3.2	2.1
Years of schooling, adult male aged 15 and above	2.2	3.0	4.3	5.7	3.8
Years of schooling, adult female aged 15 and above	1.6	2.6	3.1	4.4	3.0
No schooling, adult male (percent)	65.2	57.4	43.8	33.6	50.1
No schooling, adult female (percent)	74.6	64.8	58.2	47.3	61.0
Age at first marriage of men, currently aged <30 (years)	20.4	20.8	21.0	21.4	20.8
Age at first marriage of women, currently aged <30 (years)	15.5	15.7	15.8	16.4	15.8
Female-headed household (percent)	10.7	5.9	11.5	19.5	11.9
Less than 0.5 acre of owned cultivable land (percent)	83.2	71.2	58.4	45.9	64.7
Per capita monthly expenditure (Taka)	567	837	1,135	2,248	1,197
Per capita monthly expenditure on education (Taka)	12	23	40	93	42
Percent of households with per capita expenditure less than $1 a day	100.0	100.0	100.0	62.4	90.6
Percent of households with per capita expenditure less than $0.50 a day	100.0	100.0	20.0	0.0	55.0
Principal occupation of household head (percent):					
Salaried	3.2	4.5	6.7	10.6	6.2
Day-laborer	46.1	34.4	17.5	8.7	26.7
Farmer	12.1	25.3	33.3	31.2	25.5
Business/trade	11.0	14.9	19.9	22.2	17.0
Rickshaw/tricycle van puller	8.6	7.7	3.2	1.6	5.3
Other self employed work	7.5	7.2	7.5	5.1	6.9
Non-income earning occupations	7.8	3.5	8.6	16.5	9.1
Other	3.8	2.4	3.2	4.1	3.4

Source: Based on data from IFPRI's "ROSC Baseline Study, 2006: Household Survey," Bangladesh.

Highlights of other results from Tables 5.1-5.4 are presented below:

- Larger households are poorer than smaller households in all areas.

- Proportion of secondary school-aged children (aged 12-17) who do not go to school is high in general in each of the 3 areas, and extremely high for children from the poorest families. In the first quartile group, over half of the households with secondary school-aged children have out-of-school children aged 12-17.

- Educational attainment of parents and other adult family members is positively associated with income in all areas.

- On average, for women aged less than 30 at the time of survey, their age at first marriage is around 16, across income groups and areas.

- Contrary to general perception, the results show a positive relationship between income and households headed by females. This could be due to the fact that husbands of many women in rural areas work and live outside their villages, within Bangladesh or abroad, and send remittances to their wives. These households are classified as female-headed by definition. Due to private income transfers, these households are likely to belong to richer income groups. Survey results on private transfers provided in Section 5.1.4 below support this premise.

- A household with less than half an acre of cultivable land is defined as a functionally landless household in rural Bangladesh. Survey results reveal that, on average, about 65 percent of all survey households are functionally landless. The results also show a strong and negative association between landlessness and income, suggesting that landlessness is a major determinant of rural poverty. Landlessness ranges from 80 percent of all households in the poorest quartile group in grant areas to 82 percent in grant-plus-allowance areas to 90 percent in control areas.

- Since the majority of households in the lowest quartile group are landless, daily-wage-laborer is by far the major occupation of the heads of households in each of the 3 survey areas.

5.1.2 Food and Nonfood Budget Shares

Table 5.5 shows the shares of total household expenditures on major consumption items. Expenditure patterns are quite similar across the 3 survey areas. Food accounts for 62 percent of total household expenditures in grant and control areas, and 64 percent in grant-plus-allowance areas. As household income rises the share spent on food falls conforming to the Engelian relationships.

While budget shares for education and health expenses are positively related to income, the share of expenses on clothing and footwear declines slightly as income rises. Unlike urban dwellers, people living in rural Bangladesh are not expected to increase their budget share on clothing and footwear with the increase in income. In absolute terms, however, richer households spend considerably higher amounts of money on clothing and footwear than do poorer households.

Table 5.5—Budget share of food and nonfood expenditures, by expenditure quartile

	Per capita expenditure quartile				
	Lowest			Highest	
	(1)	(2)	(3)	(4)	All
Grant areas					
Monthly per capita total expenditure (taka)	585	841	1,139	2,358	1,267
Budget share of food and nonfood items:			(percent)		
Food	67.4	66.4	62.5	52.7	61.9
Clothing and footwear	5.3	5.7	5.2	4.2	5.1
Health	3.4	2.8	3.9	4.8	3.8
Education	2.1	2.6	3.3	5.0	3.3
All other nonfood expenditures	21.9	22.5	25.2	33.3	26.0
Total	100.0	100.0	100.0	100.0	100.0
Grant-plus-allowance areas					
Monthly per capita total expenditure (taka)	563	833	1,135	2,360	1,089
Budget share of food and nonfood items:			(percent)		
Food	69.4	66.2	62.9	53.7	64.2
Clothing and footwear	5.6	5.4	4.8	3.7	5.0
Health	1.9	3.2	4.0	5.5	3.4
Education	1.7	2.6	3.4	4.0	2.8
All other nonfood expenditures	21.4	22.6	24.8	33.1	24.6
Total	100.0	100.0	100.0	100.0	100.0
Control areas					
Monthly per capita total expenditure (taka)	556	840	1,132	2,074	1,271
Budget share of food and nonfood items			(percent)		
Food	68.1	65.1	61.0	55.8	61.5
Clothing and footwear	4.7	5.3	4.8	4.1	4.6
Health	2.8	4.1	4.7	6.6	4.9
Education	3.0	3.1	3.9	4.4	3.7
All other nonfood expenditures	21.3	22.4	25.7	29.1	25.3
Total	100.0	100.0	100.0	100.0	100.0

Source: Based on data from IFPRI's "ROSC Baseline Study, 2006: Household Survey," Bangladesh.

5.1.3 Participation in Public Intervention Programs

Bangladesh possesses a wealth institutional diversity and a wide range of experiences in providing assistance to its population. The country has food-based and cash-based programs, self-targeted programs, non-targeted distribution for disaster mitigation, and geographically targeted programs to help vulnerable women.

The Primary Education Stipend (PES) program provides cash assistance to poor families who send their children to primary school. GoB also provides cash assistance to girls in secondary schools. Together with the ROSC Project, these programs aim to increase the enrollment and retention rates of students in primary and secondary schools throughout rural Bangladesh.

The Vulnerable Group Development (VGD) program exclusively targets poor women who receive a monthly free food ration and skill development training for income generation. There are a number of labor-intensive public works programs that provide food or cash wage payments to workers. One of such interventions is the Test Relief (TR) program that pays foodgrains as wage. The food-based Vulnerable Group Feeding (VGF) and the Gratuitous Relief (GR) programs are designed as a mechanism for mitigating the disaster consequences, such as floods, cyclones, and other natural calamities (Ahmed 2005b).

Table 5.6 shows the incidence of participation of survey households in GoB's assistance programs in the year previous to the time of the survey. Among all programs reported, the rate of participation in the PES program is the highest—20 percent in grant areas, 27 percent in grant-plus-allowance areas, and 24 percent in control areas. About 12 percent of all households in grant-plus-allowance areas receive allowances from the ROSC Project's *Ananda* school.

Among all the GoB programs, *Ananda* school allowances appear to reach the poorest most effectively. While the PES program shows a moderately pro-poor targeting, the distribution of secondary school stipends for girls seems regressive. The VGD program targets the poor well.

5.1.4 Private Transfers and Remittances

Table 5.7 shows that about 13 percent of all survey households received private assistance from within Bangladesh and about 6 percent received remittances from abroad. A higher percentage of households in control areas received private transfers and remittances than those living in ROSC Project areas. However, households in grant areas received the highest total amount of private transfers and remittances, followed by those living in control areas. The incidence of receiving remittances from abroad increases sharply as household income rises. On average for the recipient households in all areas, total amount of transfers and remittances received by households in the richest quartile is 16.3 times higher than the amount received by households in the poorest quartile.

Table 5.6—Households receiving public assistance, by expenditure quartile

	Per capita expenditure quartile				
	Lowest			Highest	
	(1)	(2)	(3)	(4)	All
	(percent of all households in each quartile group)				
Grant areas					
Primary education stipend	22.5	25.9	21.2	11.7	20.1
Stipend for secondary school girls	2.0	5.6	10.2	9.2	6.9
Gratuitous relief	9.5	3.9	6.7	5.0	6.3
Test relief	24.3	14.5	8.0	3.3	13.0
Vulnerable group feeding (VGF)	14.9	11.8	21.3	20.0	16.8
Vulnerable group development (VGD)	5.4	9.2	5.3	1.7	5.6
Allowance for widows and elderly people	4.1	2.6	2.7	6.7	3.9
Ananda school allowance	-	-	-	-	-
Grant-plus-allowance areas					
Primary education stipend	25.7	27.9	31.3	22.0	26.8
Stipend for secondary school girls	4.2	5.2	7.8	12.8	6.8
Gratuitous relief	7.6	1.8	3.2	-	4.0
Test relief	4.5	2.8	1.1	-	2.6
Vulnerable group feeding (VGF)	25.5	23.9	16.8	9.5	20.8
Vulnerable group development (VGD)	6.4	3.7	3.2	1.6	4.2
Allowance for widows and elderly people	3.2	1.8	4.2	6.3	3.5
Ananda school allowance	19.9	8.1	10.2	5.5	11.8
Control areas					
Primary education stipend	28.0	29.5	18.9	21.2	23.6
Stipend for secondary school girls	4.9	5.3	6.3	11.0	7.3
Gratuitous relief	7.3	4.3	4.1	-	3.8
Test relief	2.4	5.4	-	1.1	2.2
Vulnerable group feeding (VGF)	25.6	21.5	14.4	12.0	18.1
Vulnerable group development (VGD)	8.5	4.3	5.2	6.5	6.0
Allowance for widows and elderly people	7.3	4.3	5.2	5.4	5.5

Source: Based on data from IFPRI's "ROSC Baseline Study, 2006: Household Survey," Bangladesh.

Table 5.7—Private transfers and remittances received, by expenditure quartile

	Per capita expenditure quartile				
	Lowest			Highest	
	(1)	(2)	(3)	(4)	All
Grant areas					
Transfers from within Bangladesh (% of households)	13.7	4.6	9.2	15.8	10.9
Remittance from abroad (% of households)	0.0	3.7	4.2	17.5	6.7
Total amount received (taka/household/year)[a]	1,142	2,574	3,000	32,273	10,283
Grant-plus-allowance areas					
Transfers from within Bangladesh (% of households)	7.3	10.5	14.8	18.3	11.8
Remittance from abroad (% of households)	2.1	2.3	4.7	9.2	4.0
Total amount received (taka/household/year)[a]	1,281	1,174	5,338	12,280	4,114
All ROSC Project areas					
Transfers from within Bangladesh (% of households)	9.6	8.2	12.1	17.0	11.4
Remittance from abroad (% of households)	1.4	2.9	4.4	13.5	5.1
Total amount received (taka/household/year)[a]	1,232	1,714	4,207	22,756	6,758
Control areas					
Transfers from within Bangladesh (% of households)	17.3	10.5	13.4	17.7	14.9
Remittance from abroad (% of households)	2.5	1.1	8.7	19.0	9.3
Total amount received (taka/household/year)[a]	1,749	2,748	7,634	20,493	9,744
All areas					
Transfers from within Bangladesh (% of households)	11.2	8.8	12.5	17.3	12.5
Remittance from abroad (% of households)	1.6	2.4	5.9	15.7	6.4
Total amount received (taka/household/year)[a]	1,344	1,976	5,367	21,871	7,653

Source: Based on data from IFPRI's "ROSC Baseline Study, 2006: Household Survey," Bangladesh.
[a] Average amount for the recipient households.

5.1.5 Assets and Dwelling Facilities

Table 5.8 presents the ownership status of some selected assets and dwelling facilities of households in survey areas. Although there is considerable variation between the 3 areas, relatively more households in grant and control areas seem to own the selected assets and have better dwelling facilities than those in grant-plus-allowance areas.

As expected, the relationship between asset ownership and household income is positive for all selected assets. Among the poorest quartile groups, 77 percent of households in grant areas, 80 percent in grant-plus-allowance areas, and 87 percent in control areas do not have electricity. Virtually all households in the 3 areas have access to drinking water from hand-pumps.

Table 5.8—Selected household assets and dwelling facilities

	Per capita expenditure quartile				
Description	**lowest (1)**	**(2)**	**(3)**	**Highest (4)**	**Total**
	(percent of households)				
Grant areas					
Radio	9.8	9.3	16.7	18.3	13.8
Color television	0.0	2.8	3.3	20.0	6.9
Mobile telephone	0.0	4.6	5.0	36.7	12.2
Bicycle	13.7	32.4	29.2	40.8	29.6
No private latrine	10.8	6.5	7.5	0.0	6.0
Sanitary latrine	5.9	9.3	13.3	35.8	16.7
Electricity	23.5	31.5	43.3	67.5	42.4
Drinking water from hand-pump	100.0	100.0	98.3	100.0	99.6
Grant-plus-allowance areas					
Radio	3.1	10.5	11.7	21.1	10.3
Color television	0.5	0.6	0.8	6.4	1.7
Mobile telephone	0.0	2.3	8.6	13.8	5.0
Bicycle	16.2	27.3	34.4	45.0	28.5
No private latrine	25.7	15.7	3.9	8.3	15.0
Sanitary latrine	12.0	20.3	28.9	43.1	23.7
Electricity	20.4	32.0	46.9	49.5	34.7
Drinking water from hand-pump	97.4	98.3	99.2	99.1	98.3
Control areas					
Radio	4.9	7.4	14.2	12.3	10.4
Color television	1.2	1.1	0.8	10.3	4.0
Mobile telephone	1.2	0.0	7.9	21.2	9.3
Bicycle	13.4	24.2	22.8	27.4	22.9
No private latrine	29.3	12.6	9.4	4.1	12.0
Sanitary latrine	8.5	10.5	15.0	29.5	17.6
Electricity	13.4	34.7	41.7	58.2	40.4
Drinking water from hand-pump	100.0	93.7	98.4	97.9	97.6

Source: Based on data from IFPRI's "ROSC Baseline Study, 2006: Household Survey," Bangladesh.

5.2 Educational Attainment and Related Issues

5.2.1 Type of Primary School Attended

Primary schools in rural Bangladesh include government school, registered non-government school, non-registered non-government school, Primary Training Institute (PTI) school, community school, high school-attached primary school, *madrassa* (Islamic education school), kindergarten, nonformal schools run by BRAC and other NGOs, and the recently introduced *Ananda* school.

Table 5.9 shows the percentage of all primary-school students in each income group attending different types of primary school. About 11 percent of all students in all ROSC Project areas go to *Ananda* school—7.7 percent of all students in grant areas and 14.3 percent of all students in grant-plus-allowance areas. ROSC allowances probably attract more children to attend *Ananda* school in grant-plus-allowance areas than grant areas. Further, one-fifth of all primary school students from families in the poorest quartile group go to *Ananda* school in grant-plus-allowance areas.

Table 5.10 shows the percentage distribution of all primary-school students in each type of school among the 4 income groups. While the distribution of *Ananda* school students is progressive in both grant and grant-plus-allowance areas, relatively a higher percentage of students (46.4 percent) belong to the poorest quartile group in grant-plus-allowance areas compared to 35.9 percent in grant areas. Indeed, *Ananda* schools and NGO-run schools (BRAC and other) are most well-targeted to the poor among all types of schools. In contrast, children from relatively affluent families are over-represented in *madrassas*.

5.2.2 Primary School Enrollment, Completion, and Attendance Rates

In Section 4, Table 4.3 provides primary school enrollment rates in the 3 survey areas estimated from village census data. In this section, enrollment rates are estimated from household survey data and classified into expenditure quartile groups. Table 5.11 presents the results. Although the rates estimated from household sample data vary slightly from those estimated from the census data, the patterns are similar among boys and girls and among the 3 survey areas.

Net enrollment rates, generally considered better indicators of educational attainment than gross rates, are the highest for grant-plus-allowance areas, followed by grant areas and control areas—a pattern similar to that evidenced by the gross rates. Girls overtake boys in terms of net enrollment in ROSC Project areas.

Gross and net enrollment rates show a positive relationship with income; school enrollments are lower among the poor. The rich-poor gap in enrollments is the highest in grant areas. The net enrollment rate for students from households in the poorest quartile is 20 percentage points lower than those belonging to the richest quartile in grant areas, 10 percentage points lower in grant-plus-allowance areas, and 11 percentage points lower in control areas.

Table 5.9—Type of primary school attended, by expenditure quartile

	Expenditure quartile				
	Lowest			Highest	
	(1)	(2)	(3)	(4)	All
	(percent of all primary students in each quartile)				
Grant areas					
Government school	46.1	38.7	41.1	46.2	43.1
Non-government registered school	8.6	18.5	11.3	15.9	13.6
Madrassa	10.9	15.3	22.6	20.5	17.3
BRAC and other NGO school	9.4	8.1	8.9	2.3	7.1
Ananda school	10.9	10.5	8.1	1.5	7.7
All other schools	14.1	8.9	8.1	13.6	11.2
Total	100.0	100.0	100.0	100.0	100.0
Grant-plus-allowance areas					
Government school	44.5	48.0	44.3	45.1	45.6
Non-government registered school	15.3	7.5	11.4	12.7	11.8
Madrassa	6.1	13.0	10.1	16.7	10.6
BRAC and other NGO school	11.4	12.5	4.0	3.9	9.0
Ananda school	19.7	12.0	13.4	7.8	14.3
All other schools	3.1	7.0	16.8	13.7	8.8
Total	100.0	100.0	100.0	100.0	100.0
All ROSC Project areas					
Government school	45.1	44.4	42.9	45.7	44.5
Non-government registered school	12.9	11.7	11.4	14.5	12.5
Madrassa	7.8	13.9	15.8	18.8	13.5
BRAC and other NGO school	10.6	10.8	6.2	3.0	8.2
Ananda school	16.5	11.4	11.0	4.3	11.4
All other schools	7.0	7.7	12.8	13.7	9.8
Total	100.0	100.0	100.0	100.0	100.0
Control areas					
Government school	62.2	62.8	57.0	55.5	59.1
Non-government registered school	7.1	8.8	8.3	8.0	8.1
Madrassa	15.3	12.4	9.9	16.1	13.4
BRAC and other NGO school	14.3	6.2	12.4	5.1	9.2
All other schools	1.0	9.7	12.4	15.3	10.2
Total	100.0	100.0	100.0	100.0	100.0
All areas					
Government school	48.8	49.2	47.2	49.3	48.6
Non-government registered school	11.6	11.0	10.4	12.1	11.3
Madrassa	9.5	13.5	14.0	17.8	13.5
BRAC and other NGO school	11.4	9.6	8.1	3.8	8.4
Ananda school	13.0	8.5	7.6	2.7	8.2
All other schools	5.7	8.2	12.7	14.3	10.0
Total	100.0	100.0	100.0	100.0	100.0

Source: Based on data from IFPRI's "ROSC Baseline Study, 2006: Household Survey," Bangladesh.

Table 5.10—Percentage distribution of all primary-school students in each type of school among expenditure quartile groups

	Expenditure quartile				
	Lowest			Highest	
	(1)	(2)	(3)	(4)	All
	(percent of students in each type of school)				
Grant areas					
Government school	26.9	21.9	23.3	27.9	100.0
Non-government registered school	15.9	33.3	20.3	30.4	100.0
Madrassa	15.9	21.6	31.8	30.7	100.0
BRAC and other NGO school	33.3	27.8	30.6	8.3	100.0
Ananda school	35.9	33.3	25.6	5.1	100.0
All other schools	31.6	19.3	17.5	31.6	100.0
Grant-plus-allowance areas					
Government school	32.9	31.0	21.3	14.8	100.0
Non-government registered school	43.8	18.8	21.3	16.3	100.0
Madrassa	19.4	36.1	20.8	23.6	100.0
BRAC and other NGO school	42.6	41.0	9.8	6.6	100.0
Ananda school	46.4	24.7	20.6	8.2	100.0
All other schools	11.7	23.3	41.7	23.3	100.0
All ROSC Project areas					
Government school	30.4	27.2	22.1	20.2	100.0
Non-government registered school	30.9	25.5	20.8	22.8	100.0
Madrassa	17.5	28.1	26.9	27.5	100.0
BRAC and other NGO school	39.2	36.1	17.5	7.2	100.0
Ananda school	43.4	27.2	22.1	7.4	100.0
All other schools	21.4	21.4	29.9	27.4	100.0
Control areas					
Government school	22.0	25.6	24.9	27.4	100.0
Non-government registered school	18.4	26.3	26.3	28.9	100.0
Madrassa	23.8	22.2	19.0	34.9	100.0
BRAC and other NGO school	32.6	16.3	34.9	16.3	100.0
All other schools	2.1	22.9	31.3	43.8	100.0

Source: Based on data from IFPRI's "ROSC Baseline Study, 2006: Household Survey," Bangladesh.

Table 5.11—Primary school enrollment rates, by expenditure quartile

	Per capita expenditure quartile				
	Lowest			Highest	
	(1)	(2)	(3)	(4)	All
	(percent)				
Grant areas					
Net enrollment	74.4	85.8	90.3	94.4	85.2
Boys	72.1	75.6	86.8	92.5	80.6
Girls	77.0	93.4	95.0	96.0	89.6
Gross enrollment	89.1	105.7	115.1	122.2	106.2
Boys	82.4	104.4	115.1	130.0	104.9
Girls	96.7	106.6	115.0	116.0	107.5
Grant-plus-allowance areas					
Net enrollment	86.3	83.5	90.7	96.4	90.0
Boys	81.7	79.6	90.9	94.8	88.8
Girls	90.4	87.0	90.6	98.1	91.1
Gross enrollment	98.5	115.2	116.4	116.9	109.3
Boys	92.9	124.2	122.4	113.3	110.5
Girls	103.7	108.2	109.6	123.1	108.1
All ROSC Project areas					
Net enrollment	80.0	88.7	93.6	95.7	87.9
Boys	76.5	84.7	91.0	95.3	85.2
Girls	83.4	91.8	96.7	96.1	90.5
Gross enrollment	94.9	111.3	115.8	119.9	107.9
Boys	88.6	116.2	118.9	121.2	108.0
Girls	101.2	107.5	112.0	118.4	107.9
Control areas					
Net enrollment	79.1	87.6	76.5	90.0	83.3
Boys	77.5	86.0	77.4	89.4	83.0
Girls	80.4	89.4	75.5	90.9	83.6
Gross enrollment	94.5	99.0	90.4	101.8	96.4
Boys	100.0	94.0	91.9	93.9	94.5
Girls	90.2	104.3	88.7	113.6	98.5

Source: Based on data from IFPRI's "ROSC Baseline Study, 2006: Household Survey," Bangladesh.

Note: Gross enrollment rate = All primary-school-going children/all children aged 6-11 years. Net enrollment rate = All primary-school-going children aged 6-11 years/ all children aged 6-11 years.

Gross and net enrollment rates show a positive relationship with income; school enrollments are lower among the poor. The rich-poor gap in enrollments is the highest in grant areas. The net enrollment rate for students from households in the poorest quartile is 20 percentage points lower than those belonging to the richest quartile in grant areas, 10 percentage points lower in grant-plus-allowance areas, and 11 percentage points lower in control areas.

Enrollment rates are only one indicator of educational achievement, and can mask other problems in education. One vital indicator is the rate of school completion, or, conversely, dropouts. Table 5.12 presents the findings on primary education completion rates in the 3 survey areas by expenditure quartile groups. Household incomes tend to have a positive influence on completion rates. In both grant and grant-plus-allowance areas, around 84 percent of children who had entered primary school completed it, making the primary school dropout rate at 16 percent. In control areas, 17 percent of children who entered school dropped out before completing grade 5. The overall completion rate for girls is 11.5 percentage points higher than that for boys.

Does the age of entry into school have any effect on the completion rate? The relationship shown in Figure 5.2 indicates that late entry into school tends to bring down the rate of completion of primary education. Of those children who entered grade 1 at age 6—the appropriate entry age—89 percent of them completed grade 5. The rate drops to 71 percent for those who entered school at age 8.

Figure 5.2—Age of first enrollment and primary education completion rate

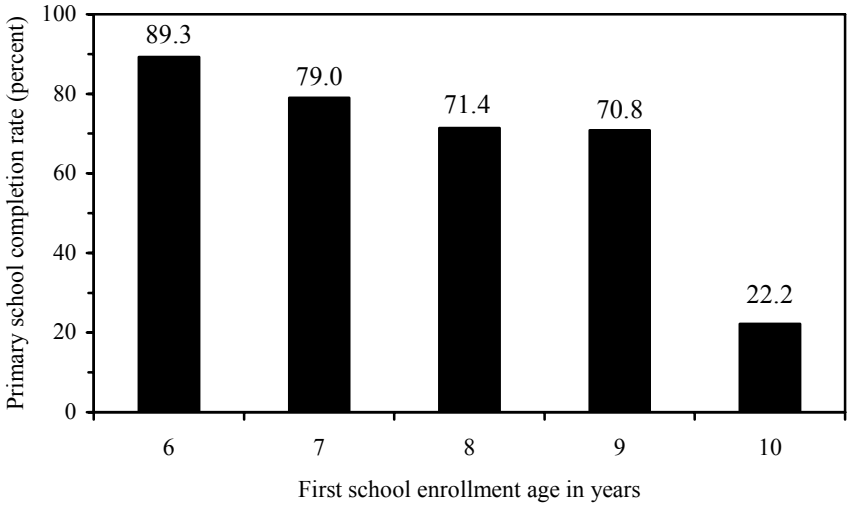


Table 5.12—Primary education completion rates, by expenditure quartile

	Per capita expenditure quartile				
	Lowest (1)	(2)	(3)	Highest (4)	All
	(percent)				
ROSC Project and control areas					
Grant areas	57.8	87.5	87.3	92.5	83.8
Grant-plus-allowance areas	75.6	80.7	91.3	90.8	84.1
All ROSC Project areas	69.3	83.6	89.3	91.7	84.0
Control areas	76.0	83.6	81.4	86.8	83.0
All areas by gender					
Boys	64.6	75.2	79.7	86.3	77.8
Girls	76.8	91.1	94.2	92.8	89.3
Boys and girls	71.2	83.6	86.3	89.6	83.6

Source: Based on data from IFPRI's "Reaching Out-of-School Children Study, 2006: Household Survey," Bangladesh.

Note: Completion rates are calculated for the cohort of children aged 10 to 16 years in 2006.

The findings illustrated in Figure 5.2 have important implications for the ROSC Project. Survey data suggest that most students in *Ananda* schools begin school late. Only 9.6 percent of *Ananda* school students enrolled in grade 1 at the age of 6. In other formal primary schools in ROSC Project areas, this rate is 31 percent. Indeed, about 10 percent of all sample students in *Ananda* schools (12 percent of all boys and 7 percent of all girls) entered in grade 1 by the age of 10 (Figures 5.3 and 5.4). As Figure 5.2 indicates, children in other primary schools who had entered school at age 10, about 78 percent of them dropped out before completing primary education. Future studies will be able to examine whether *Ananda* schools are successful in retaining children in school, and thereby, improving their completion rate, despite their older-than-prescribed entry age.

Primary school attendance rates for students are calculated from the household survey data. The attendance rate for a student represents the total number of days the student attended school in a month as percentage of the total number of school days in that month. The reference period was January 16 to February 15 of 2006. Table 5.13 presents the results.

Attendance rates are quite high (85-91 percent) among students in each of the 3 survey areas. High attendance rates are probably due to good weather (dry and cool) during the reference month and the beginning of the school session. In grant-plus-allowance areas, school attendance rates are higher for *Ananda* students (91 percent) than for students in other primary schools (86 percent). However, there is no noticeable difference in the rate between boys and girls.

Figure 5.3—Age distribution of grade 1 boys in *Ananda* schools and other formal primary schools in ROSC Project areas

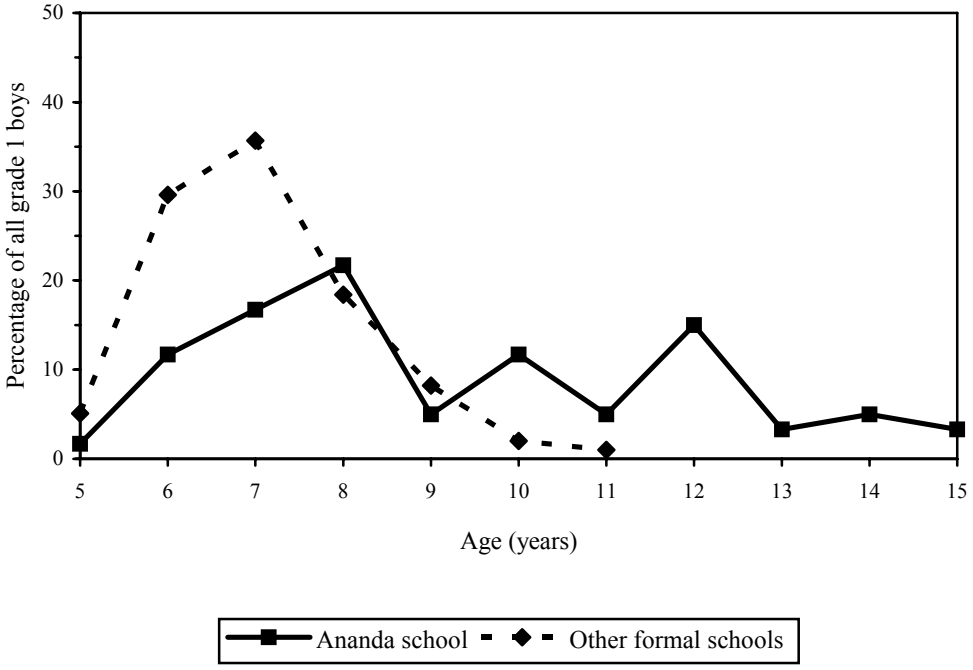


Figure 5.4—Age distribution of grade 1 girls in *Ananda* schools and other formal primary schools in ROSC Project areas

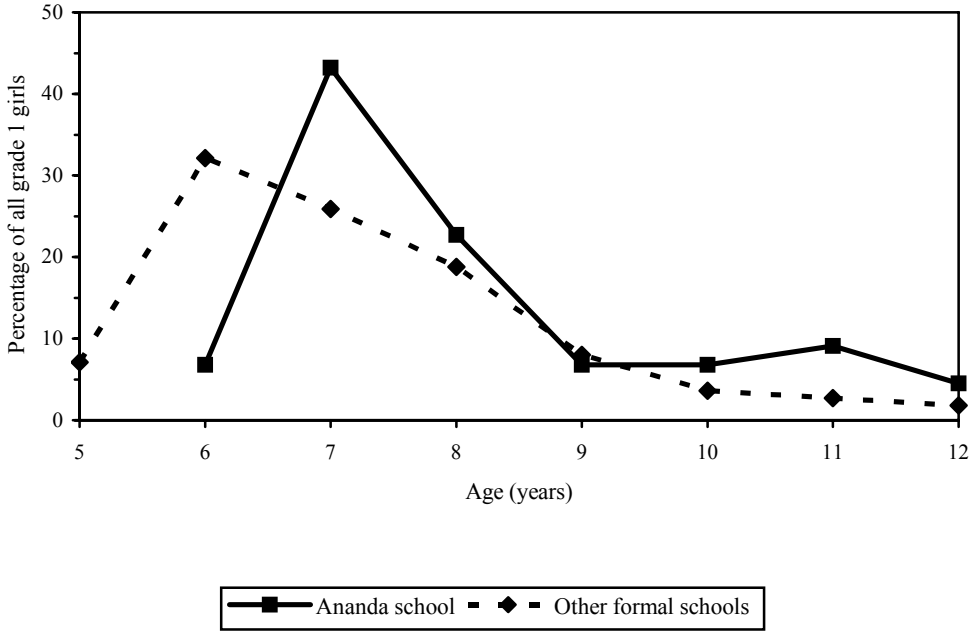


Table 5.13—Primary school attendance rates

	Boys	Girls	All
	(attendance as percent of total school days in a month)		
Grant areas			
Ananda school	87.4	88.7	88.1
Other formal primary schools	88.2	87.4	87.8
Grant-plus-allowance areas			
Ananda school	91.2	90.1	90.7
Other formal primary schools	85.4	86.1	85.8
All ROSC Project areas			
Ananda school	90.3	89.7	90.0
Other formal primary schools	86.6	86.7	86.7
Control areas			
Formal primary schools	88.2	87.3	87.8
All areas			
Ananda school	90.3	89.7	90.0
Other formal primary schools	87.2	86.9	87.0

Source: Based on data from IFPRI's "ROSC Baseline Study, 2006: Household Survey," Bangladesh.
Note: Formal primary schools include government, non-government registered, non-government non-registered, PTI, and high-school-attached primary schools.

5.2.3 Direct and Indirect Costs of Primary Education

Tables 5.14 and 5.15 provide estimates of annual direct and indirect costs of education, respectively, at the primary level. Compositions of direct and indirect costs are provided in the tables. Education costs are calculated only for children attending "regular" primary schools. NGO schools, *madrassas*, kindergarten, and *Ananda* schools are excluded from the calculations because of incompatibility and small sample size for disaggregated analysis.

Table 5.14—Average annual direct cost of education for primary school students

Grade	Gender	Fees			Contribution			
		Admission and registration	Examination	Sports	Cultural programs	Donation to school	Other payments to school	Total direct costs
		(Taka per student per year)						
All ROSC program areas								
Grades 1-3	Boys	5.3	34.2	2.9	1.7	0.1	5.3	49.5
	Girls	5.5	31.5	2.4	2.3	0.1	3.8	45.7
	Total	5.4	32.8	2.7	2.0	0.1	4.5	47.5
Grades 4-5	Boys	11.6	52.9	3.9	2.4	0.3	11.6	82.6
	Girls	6.0	55.5	3.2	2.2	0.0	7.7	74.7
	Total	8.7	54.3	3.5	2.2	0.2	9.6	78.5
Average for	Boys	7.2	39.9	3.2	1.9	0.2	7.2	59.6
Grades 1-5	Girls	5.7	39.0	2.7	2.3	0.1	5.0	54.7
	Total	6.4	39.4	2.9	2.1	0.1	6.1	57.1
Control areas								
Grades 1-3	Boys	11.6	34.1	2.3	3.7	0.0	12.0	63.8
	Girls	4.9	30.1	0.8	2.4	0.9	4.1	43.2
	Total	8.4	32.2	1.6	3.1	0.4	8.2	53.9
Grades 4-5	Boys	3.4	53.2	2.9	3.4	-	7.3	70.2
	Girls	0.4	49.3	2.6	1.5	0.7	24.0	78.5
	Total	1.7	51.1	2.7	2.4	0.4	16.4	74.7
Average for	Boys	9.4	39.2	2.5	3.6	0.0	10.8	65.5
grades 1-5	Girls	3.5	36.2	1.4	2.1	0.8	10.5	54.5
	Total	6.4	37.7	1.9	2.9	0.4	10.6	60.0
All areas								
Grades 1-3	Boys	7.4	34.2	2.7	2.4	0.1	7.5	54.3
	Girls	5.3	31.1	1.9	2.3	0.3	3.9	44.9
	Total	6.4	32.6	2.3	2.3	0.2	5.7	49.6
Grades 4-5	Boys	9.2	53.0	3.6	2.7	0.2	10.3	79.0
	Girls	4.3	53.6	3.0	1.9	0.3	12.8	75.9
	Total	6.6	53.3	3.3	2.3	0.2	11.6	77.3
Average for	Boys	7.9	39.7	3.0	2.4	0.1	8.3	61.5
grades 1-5	Girls	5.0	38.2	2.3	2.2	0.3	6.7	54.7
	Total	6.4	38.9	2.6	2.3	0.2	7.5	58.0

Source: Based on data from IFPRI's "ROSC Baseline Study, 2006: Household Survey," Bangladesh.

Excluding *madrassas*, *Ananda* schools, KG schools, and BRAC and other informal NGO schools.

Table 5.15—Average annual indirect cost of education for primary school students

Grade	Gender	Text Books	Stationery	School Uniform	School bag	Private tutor	Hostel expenses	Transport	Tiffin	Pocket money	Umbrella	Other indirect costs	Total Indirect Costs
							(Taka per student per year)						
All ROSC project areas													
Grades 1-3	Boys	21	184	63	31	187	11	13	28	197	9	6	749
	Girls	19	191	90	22	205	0	1	28	155	9	2	722
	Total	20	188	77	26	196	6	7	28	175	9	4	735
Grades 4-5	Boys	89	267	116	40	576	0	21	46	252	20	8	1435
	Girls	61	229	117	24	362	1	0	25	158	23	6	1005
	Total	74	247	117	32	464	1	10	35	203	22	7	1210
Average for	Boys	41	209	79	34	305	8	15	34	214	12	7	957
grades 1-5	Girls	32	203	99	23	254	0	1	27	156	13	3	810
	Total	37	206	89	28	279	4	8	30	184	13	5	881
Control areas													
Grades 1-3	Boys	21	275	101	37	286	0	14	40	251	28	0	1055
	Girls	30	239	120	28	243	0	19	8	215	26	1	931
	Total	26	258	110	33	265	0	16	25	233	27	1	995
Grades 4-5	Boys	84	324	93	31	533	0	12	23	254	22	0	1376
	Girls	63	396	158	45	529	0	0	45	247	36	1	1520
	Total	73	364	128	39	531	0	5	35	250	30	0	1454
Average for	Boys	38	288	99	36	352	0	14	35	252	27	0	1140
grades 1-5	Girls	41	289	132	34	334	0	13	20	225	29	1	1119
	Total	39	289	116	35	343	0	13	28	238	28	1	1130
All areas													
Grades 1-3	Boys	21	214	76	33	220	8	13	32	215	15	4	851
	Girls	22	206	99	24	217	0	6	22	173	14	1	785
	Total	22	210	88	28	218	4	10	27	194	15	3	818
Grades 4-5	Boys	87	284	109	38	564	0	18	39	253	21	6	1418
	Girls	62	281	130	30	414	1	0	31	185	27	4	1166
	Total	74	282	120	34	484	0	8	35	217	24	5	1284
Average for	Boys	40	234	86	34	320	5	15	34	226	17	5	1016
grades 1-5	Girls	35	230	109	26	279	0	4	25	177	18	2	905
	Total	37	232	98	30	299	3	9	29	201	17	3	959

Source: Based on data from IFPRI's "ROSC Baseline Study, 2006: Household Survey," Bangladesh.

Note: Excluding *madrassas*, *Ananda* schools, KG schools, and BRAC and other non-formal NGO schools.

Both direct and indirect costs of education are higher for boys than for girls, and higher for grades 4-5 students than for grades 1-3 students. For the entire sample of students, the average annual indirect cost (Tk 959 per student) is about 17 times higher that the average annual direct cost (Tk 58 per student). Among all indirect cost items, the cost for private tutors is the highest. Cost for private tutors accounts for 27 percent of total indirect costs for students in grades 1-3, and 38 percent for students in grades 4-5. The high level of costs incurred by households for private tutors is indicative of the poor quality of education provided by rural primary schools and the inability of parents to help their children in studies due to their own low level of education.

The gap between the rich and the poor is reflected not only in the enrollment and completion rates, but also in the level of spending on education, as evident from Table 5.16. For instance, in ROSC Project areas, households in the richest quartile on average spend about 3 times more to cover indirect education costs of their children than do the households in the poorest quartile. In control areas, households in the richest quartile spend double the amount the households in the poorest quartile spend on indirect costs. The difference between the two areas is due to the lower level of spending by the poorest households in ROSC Project areas (about 26 percent lower) than that of the poorest households in control areas.

In grant-plus-allowance areas, the ROSC Project provides an annual education and clothing allowance, Tk 800 per student for those in grades 1-3 and Tk 970 per student for those in grades 4-5, to cover the indirect costs of education (including school uniform) of children from poor households. Unlike "regular" primary schools, students in *Ananda* schools are not expected to spend on direct education costs payable to school.

5.2.4 Schooling and Child Labor

A rich body of literature exits on the issue of child labor and schooling in developing countries. For example, a study examined how parents' choices between sending their children to school versus work in rural Bangladesh are affected by the Food for Education Program. It found that the incentive provided by the program in terms of free food ration for school participation reduced the incidence of child labor. However, this effect accounts for a small proportion of the increase in school enrollment due to the program (Ravallion and Wodon 2000). It is beyond the scope of this baseline study either to provide a literature review or to undertake a rigorous analysis of the issue of child labor and schooling in Bangladesh. Rather, simple comparisons are made here between school enrollment and working children in survey areas.

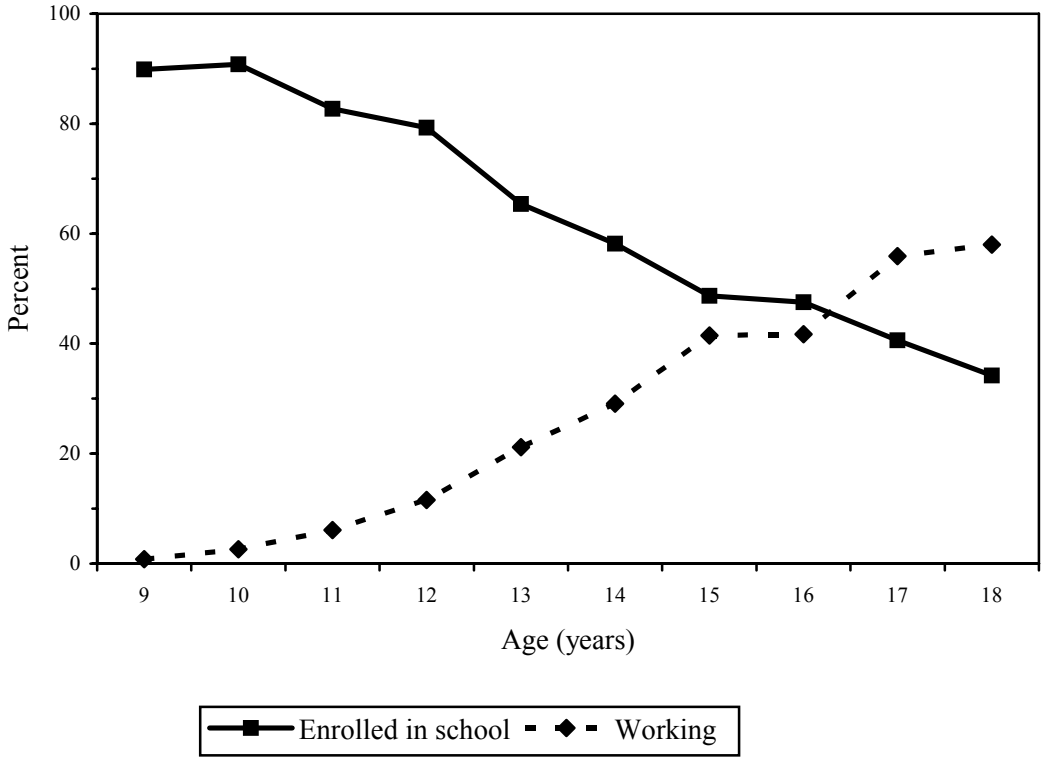
Table 5.16—Annual direct and indirect education costs for students in grades 1 - 5, by expenditure quartile

	Per capita expenditure quartile				
	Lowest			Highest	
	(1)	(2)	(3)	(4)	All
	(Taka per student per year)				
All ROSC Project areas					
Direct education costs	47	52	63	72	57
Boys	40	55	65	81	60
Girls	51	50	60	63	55
Indirect education costs	543	673	863	1,618	881
Boys	566	717	889	1,740	957
Girls	525	637	830	1,489	810
Control areas					
Direct education costs	61	55	65	59	60
Boys	77	63	59	67	66
Girls	45	48	73	52	55
All					
Indirect education costs	729	851	1,170	1,636	1,130
Boys	830	851	1,302	1,466	1,140
Girls	631	851	992	1,776	1,119
All areas					
Direct education costs	50	53	64	67	58
Boys	50	57	63	76	61
Girls	50	49	65	58	55
Indirect education costs	586	726	976	1,625	959
Boys	634	759	1,043	1,648	1,016
Girls	548	699	889	1,602	905
All					

Source: Based on data from IFPRI's "ROSC Baseline Study, 2006: Household Survey," Bangladesh.
Note: Excluding *madrassas*, *Ananda* schools, KG schools, and BRAC and other non-formal NGO schools.

Based on the household survey data, Figures 5.5 and 5.6 show, respectively, the relationship between school enrollment and child labor for boys and girls aged 9-18.[9] For boys, the relationship is strong and negative (Figure 5.5). The Pearson correlation coefficient (r) between enrollment and child labor is -0.61 (n = 1,426) and is statistically significant at the 1 percent level. For instance, 83 percent of boys aged 11 are enrolled in school and only 6 percent of boys at that age in the sample reported working. The enrollment rate declines to 65 percent and the rate of child labor increases to 21 percent for 13-year-old boys. At age 17, only 41 percent of boys are enrolled and 56 percent are employed.

Figure 5.5—Patterns of school enrollment for boys and incidence of child labor



[9] Child labor includes work for pay or other remuneration outside the home, as well as unpaid labor in family enterprises such as agriculture or small business. Data on child labor cover the previous 7 days from the time of the survey.

Figure 5.6—Patterns of school enrollment for girls and incidence of child labor

In contrast, there is only a weak relationship ($r = -0.22$, $n = 1,353$) between enrollment and child labor among girls (Figure 5.6). While the pattern of girls' enrollment by age is similar to that of boys, girls' child-labor rates are very low, ranging from 2 percent at age 11 to 7.5 percent at age 16. Girls' child-labor rate declines to 3 percent at age 17 and 2 percent at age 18, probably due to marriage; as Table 5.4 above suggests, women's average age at first marriage is around 16 years across income groups and survey areas.

Why do girls drop out of school persistently as they grow older despite their very low incidence of child labor? A few case studies from an IFPRI study in rural Bangladesh by Ahmed (2004) may shed some light on this puzzle. While poverty is a major factor in girls' drop-outs (Box 5.1), there are social factors that may force girls to leave school and get married even if they come from wealthy families (Box 5.2). Further, girls are often in a more disadvantaged situation than boys when poverty interacts with cultural practices such as the dowry system for marriage (Box 5.3). Nevertheless, some girls are able to overcome the curse of poverty and continue their schooling through their determination and with assistance from the government, namely, the girls' secondary school stipend program (Box 5.4 and 5.5).

The household survey carried out for this study included a module on time use. This module contains data on time allocated by children aged 6-14 for 60 different activities during the previous day. Based on these data, hours of work per day (work outside the home and household work) by enrolled and out-of-school boys and girls are estimated. Figures 5.7 and 5.8 illustrate the patterns of children's time use for work.

Figure 5.7—Hours of work outside the home by boys

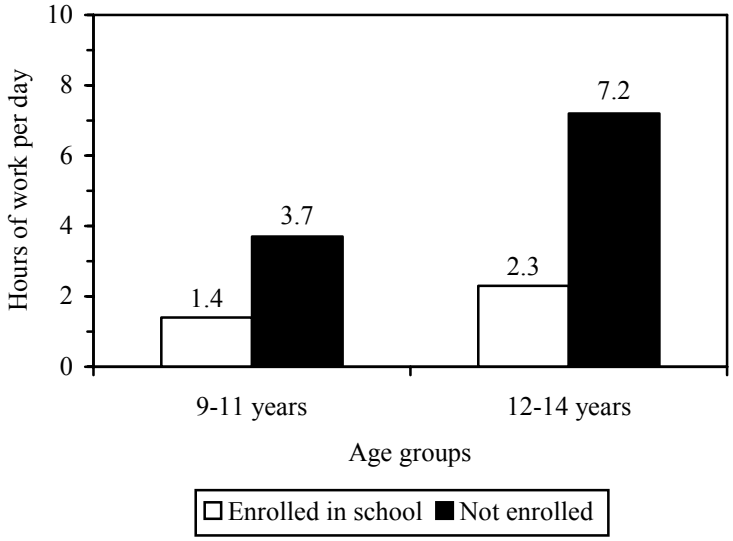
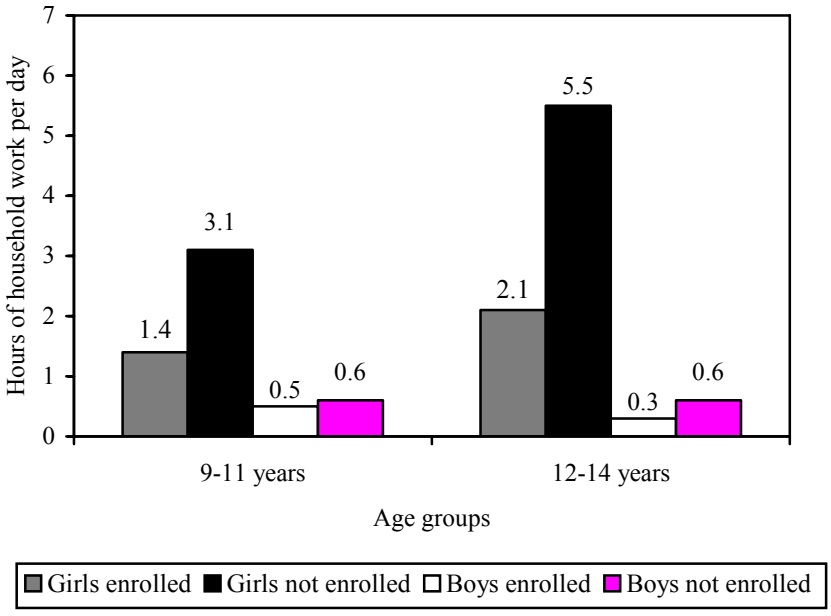


Figure 5.8—Hours of household work by girls and boys



Both enrolled and out-of-school boys are engaged in work outside their home on agricultural and non-agricultural activities. However, out-of-school boys aged 12-14 years work almost full-time (7.2 hours a day), and about 5 hours more per day than do the boys in the same age group who attend school. Even younger boys aged 9-11 years who do not go to school, work half-a-day outside the home (Figure 5.7).

On the other hand, out-of-school girls who may not be working outside the home (as discussed above), do not sit idle at home either. For example, girls aged 12-14 years work at home for 5.5 hours per day on average cleaning their house, washing clothes, doing dishes, cooking, and taking care of younger children, particularly when their mother works outside the home. In contrast, boys hardly do any household work regardless of their age and school enrollment status (Figure 5.8).

Box 1—Abject poverty causes school dropout

MUNNI, 15, dropped out from school when she was in grade 7. Munni comes from an ultra-poor family of Rasulpur village under Santhia Upazila of Pabna district. She has two younger brothers and a sister. Her father divorced her mother two years ago. Munni is living at her maternal aunt's home with her mother, brothers, and sister. Her uncle is a very kind man. Despite living in abject poverty, he took responsibility for Munni's family. Munni's mother works as a maidservant in neighbors' houses.

Munni's uncle got her admitted into the local high school after hearing that the government would provide her with stipend and free education in school. "I heard in the TV, 'it is the responsibility of the government to educate your daughter'." "But whose daughters?" Munni asked. "The amount of stipend money is too small to buy even a set of old textbooks. How could I buy a school uniform? Our family is so needy that I can't even get a taka for my educational expenses. Tell me how could I continue my study?" she asked grimly.

Munni's uncle is a rickshaw puller. It is extremely hard for him to provide his family and Munni's family with two meals a day, let alone bear educational costs of children from the two families. Often they have nothing to eat. According to Munni, the stipend is helpful for those families who can provide at least some money for their children's education. She also alleged that the government changed the syllabus and books after she had gotten enrolled in class 6. As a result, it was not possible for her to study with old books. "When I went to school without new books the teachers scolded me. Since I couldn't afford a school uniform, I went to school wearing my old clothing. Other girls in my class always ridiculed me. I told this to my class teachers, but they warned me instead. They told me that they would not allow me to come to school without wearing the uniform."

Munni finally left school with tears in her eyes, realizing that she could not afford the cost of education even with the stipend money. She had a great desire to pass the higher secondary certificate (HSC) exam, but this would never happen. She is now struggling to survive in a world of hunger, frustration, and uncertainty.

Source: Ahmed (2004a).

Box 2—Majeda dropped out from school due to her father's stubbornness and social pressure

MAJEDA is a 21-year old married woman of Malbhanga village under Kurigram Sadar Upazila. She dropped out of school due to adverse circumstances. In 1995, Majeda was enrolled in Mogalbasha High School in grade 6. She had a dream to be a self-reliant and respected woman through education, but her dream did not come true. On the pretext of trifling social factors, her father forced her to leave the school and get married while she was studying in grade 10.

Majeda's father, Khaibar Ali, is a teacher of a *dakhil madrassa* (secondary-level religious school). He has three sons and five daughters. Majeda is the eldest among her brothers and sisters. Khaibar Ali has five *bighas* (1.7 acres) of land and is economically quite well off. He has the ability to bear Majeda's and his other children's educational expenses.

When Majeda studied in Mogalbasha High School, she sometimes used to come home from school walking with her other classmates including boys. "Talking with my male classmates was the main reason for my early marriage, as this became a spicy topic of gossip of my neighbors—both men and women. They convinced my father that he should stop me from going to school, and arrange for my marriage immediately," Majeda explained.

Khaibar Ali married Majeda to a man who had completed his HSC. Khaibar paid Tk 40,000 in cash to Majeda's father-in-law as dowry, along with jewelry and other things. After her marriage Majeda wanted to continue her study and to complete at least secondary school. But this did not happen. "All my in-laws are educated, yet they didn't allow me to sit for the SSC examination," Majeda said with disappointment.

Now Majeda has to do the household work in her husband's joint family. She has to work hard from morning to evening every day. When we asked Majeda about her status in the family, she said, "I have no freedom at all to even express my opinion, let alone take any decision on family matters. My husband's younger brother has married a BA-passed woman who is a primary school teacher. She doesn't do any household work—I have to do everything. She gets priority over me in every family affair. Even my husband doesn't listen to me. If I had more education, I could get more respect from my family members and my neighbors."

Source: Ahmed (2004a).

Box 3—Halima had to stop her schooling and get married at the age of 13

HALIMA is a 13-year-old who just got married. She comes from an ultra-poor family. Her father, Mohammad Ali, is a tricycle van puller. He earns Tk 40-50 per day, and five members of his family depend on this meager income.

Halima was enrolled in grade 6 in 2002. She received two installments of stipend money while she was studying. But now she does not go to school because she has gotten married, and therefore her stipend was stopped. "Government's stipend of Tk 150 after six months was not enough to bear my daughter's educational expenses. So I took her out of school and arranged her marriage," said Halima's father. "If my daughter got more education, then I would have to pay more money as dowry for her marriage. This is so because she would not agree to marry an uneducated man, and an educated man would ask for more dowry, which I don't have. So I thought that it was better to get her married at a young age and with less education in order to pay less for dowry."

Source: Ahmed (2004a).

Box 4—A strong-willed girl reached her goals by overcoming poverty

SULTANA is a 17-year old girl of Mogalbasha village under Kurigram Sadar Upazila, one of the most distressed areas of Bangladesh. She is the second daughter of her parents' four children. Sultana belongs to a very poor family. Her father, Joynul Abedin, is a marginal farmer, owning only two *bighas* (two-thirds of an acre) of land. He has to struggle to earn his family's livelihood because he loses crops almost every year—mostly due to floods and sometimes due to drought.

Sultana's elder sister, Salma, dropped out from school while studying in grade 6. She is now married and has two children. Joynul arranged Salma's marriage because he could not afford her education expenses. He wanted to do the same for Sultana after she had completed her primary school. But Sultana was determined to continue her study. One afternoon in January of 1997, she went to see a girl who was studying at Mogalbasha High School in grade 9. That girl told Sultana that she would get money from the government if she gets herself enrolled in school. Hearing this, Sultana became very hopeful about her studies. That night, Sultana told her parents that the school was giving money to girls for their education, and she assured her parents that she would not take any money from them if they could just buy her some books for grade 6. Sultana's parents finally agreed to enroll her into Mogalbasha High School.

Sultana had three hens and they used to lay eggs. She saved Tk 80 by selling eggs. Her mother had some savings, and she gave Sultana Tk 125 for her studies. With Tk 205 Sultana was able to pay the admission fee for grade 6 and to buy some used textbooks, one pencil, and one notebook. However, she could not afford to buy her school uniform. She promised her class teacher that she would buy the uniform after receiving the stipend money. Her class teacher agreed to let Sultana attend classes without the uniform for six months. After six months of her school enrollment, Sultana received the first stipend installment of Tk 150, and she immediately bought her school uniform and some school supplies with the money. She was very happy to get that money and started studying harder to get good grades.

The stipend money, however, was not enough to cover Sultana's educational expenses, and her parents could not give her any money. Her father slaughtered two of her three hens to entertain some relatives who visited them from another village. After getting promoted to grade 7, Sultana began to teach some BRAC and primary school students, and earned Tk 100 per month from private tutoring. Sultana was a good student and passed the SSC exam in 2002 from Mogalbasha High School with an overall B average.

Sultana's dream came true. She is now a student of the Kurigram Government Girls' College. At the same time, she is employed in the nonformal primary education program of BRAC as a supervisor. She gets Tk 600 monthly salary with additional benefits. She has been doing this job for about a year. She visits 6-8 BRAC schools per month riding a bicycle. She has to check student attendance, group identity, evaluate quality of teaching, arrange parents' meetings, and write up reports and submit them to the concerned BRAC office. Sultana is ecstatic with her present situation. She told us that her father now feels extremely proud of her. "My father receives *salams* and respect from every one in our village—rich and poor alike," she said. Sultana believes that the stipend money paved the way for continuing her study and it played a key role in her life to come to this position by overcoming all the sorrows and hardships. "Since I am earning money, I am free to buy anything I want. If I did not study, I would not be able to remain unmarried till now, not to ride bicycle, acquire a job, earn money, and go to Kurigram for shopping with my college friends," Sultana concluded.

Source: Ahmed (2004a).

Box 5—The secret behind Selina's success

SELINA is 18 years old. She hails from Daragaon village under Chunarughat Upazila of Habiganj district. Selina comes from a poor family. There are seven brothers and sisters in her family, and Selina is the third oldest. Her father, Abdur Razzak, is a retired guard of the Daragaon Tea Estate. He has a piece of land that he cultivates, but this land is too small to support his family. Abdur Razzak has always been eager to educate his children, but he has not been able to afford to educate his first 2 children up to SSC level. The girls' stipend project renewed his optimism that he will be able to provide Selina with an SSC-level education.

Selina was enrolled in Mirpur Girls High School in 1995, which is about 5 km from her home. She received a regular stipend while attending grades 6-10. She used a part of the stipend money to pay for her commute to school; she had to walk about 1.7 km to the Kamaichauri Police Box, from where she would catch a bus to the school. The commute was hard for Selina, but she knew that she had to maintain 75 percent attendance in school to continue getting the stipend, so she was seldom absent. Because of her regular attendance, she was able to improve her results every year; when she was first enrolled in grade 6 she was 72nd in her class, in grade 7 she was 6th, and in grade 8 she was 5th. In 2000, Selina passed the SSC exam in Humanities with a B average.

According to Selina, although the amount of stipend is small, it played a crucial role in terms of enabling her to pursue education. "If I didn't get the stipend, then it would have been impossible for me to continue schooling," said Selina. Although Selina's father is very poor, he never asked Selina to use some of the stipend money for household expenses, because he knew that the stipend money was too little to cover all her educational expenses. Selina pointed out that "it is impossible for a very poor student to continue her study depending solely on the stipend money." She suggests that the government should provide very poor students with books and school uniform along with the stipend money.

Selina knows tailoring. The manager of the tea estate gave her an old sewing machine and she began taking orders from her neighbors and from some of the tea estate officials to sew blouses, *shalwar, kameez,* and other dresses for them. She has had to spend most of the money she earns to support her education.

Selina appeared in the HSC examination in 2003. At the time of our interview, Selina was waiting for her HSC results. She was confident that she would pass the HSC exam. Selina wants to be a primary school teacher after passing HSC. This job appeals to her because she thinks it is a hassle-free and well-respected profession. "Besides, it's fun to teach small kids," Selina said with a smile.

Source: Ahmed (2004a).

6. PERFORMANCE OF THE ROSC PROJECT: AN EARLY ASSESSMENT

In the majority of the baseline study areas the ROSC Project started immediately before the baseline surveys carried out from February to April, 2006.[10] In 64 percent of the baseline survey areas the ROSC Project was implemented in early 2006; and in the remaining 36 percent of the areas the project began in July 2005. The implementation of the project prior to the baseline surveys may complicate the follow-up impact evaluations. Nevertheless, the project is expected to roll-out and intensify its coverage in the survey areas over time.[11] On the other hand, the pre-existence of the project in the survey areas allows for a performance assessment of the ROSC Project at an early stage of implementation.

This section presents the findings of the assessment based on surveys of households, *Ananda* and other schools, CMCs and service providers of the project. The analyses include an assessment of performance of *Ananda* schools, CMCs, and service providers, in terms of selected performance indicators; an academic quality assessment based on achievement test scores of students in *Ananda* and other formal primary schools; and an assessment of impact of the ROSC Project on net enrollments in grant and grant-plus-allowance areas.

6.1 Project Participation by Beneficiaries

During the survey, parents of *Ananda* students were interviewed in grant and grant-plus-allowance areas to get their views about the ROSC Project.

Ananda schoolteachers play a key role in providing information and guidance to poor families to participate in the ROSC Project. Most of the parents surveyed became aware of *Ananda* schools from *Ananda* schoolteachers (Figure 6.1); 95 percent of parents in grant areas and 88 percent in grant-plus-allowance areas reported that an *Ananda* schoolteacher encouraged them to send their children to an *Ananda* school.

According to the information obtained from parents, a sizable share of *Ananda* students (35 percent in grant areas and 29 percent in grant-plus-allowance areas) left other schools to join *Ananda* schools (Figure 6.2). Further, among those students who came from other schools and were admitted in grade 1 in *Ananda* schools, 64 percent of them in grant areas and 68 percent in grant-plus-allowance areas were enrolled in a higher grade in their former schools. If this pattern continues to hold as the project matures, then the ability of the ROSC Project to reduce the number of out-of-school children—the key objective of the project—may be compromised.

[10] Per the project appraisal document, the baseline survey was to be conducted within 3 months of project effectiveness (World Bank 2004).

[11] The ROSC Project plans to establish 15,000 LCs over the life of the project. In January 2006, GoB approved a total of 7,909 LCs for the calendar year 2006 for 60 Upazilas.

Figure 6.1—Source of parents' knowledge of *Ananda* school

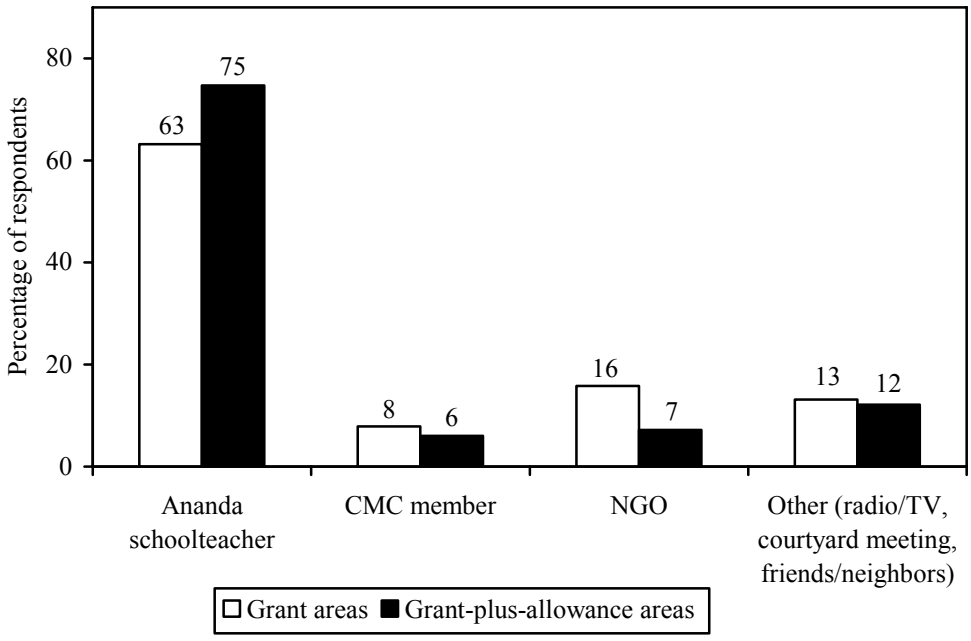
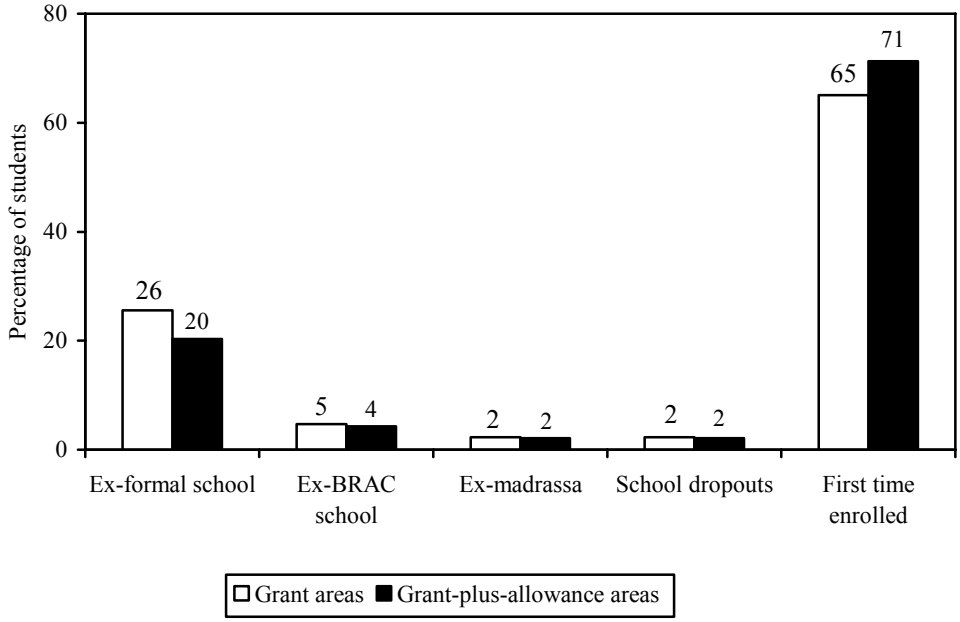
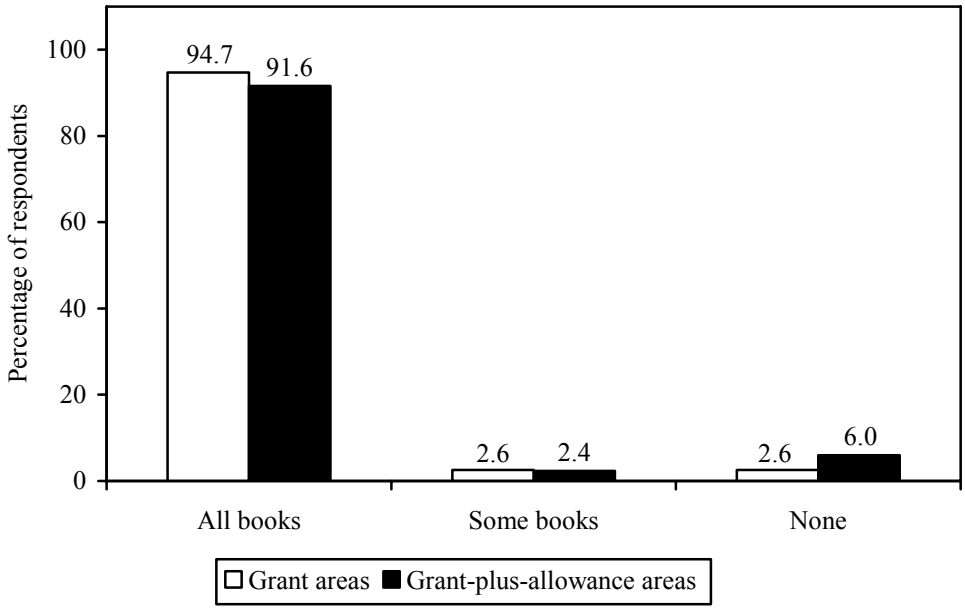


Figure 6.2—Composition of *Ananda* students: First-time enrolled, transferred from other schools, or previously dropped-out



The ROSC Project is designed to provide free textbooks (Bangla, English and mathematics) to all *Ananda* students. About 95 percent of the parents in grant areas and 92 percent in grant-plus-allowance areas reported that their *Ananda* school-going children received all the textbooks (Figure 6.3).

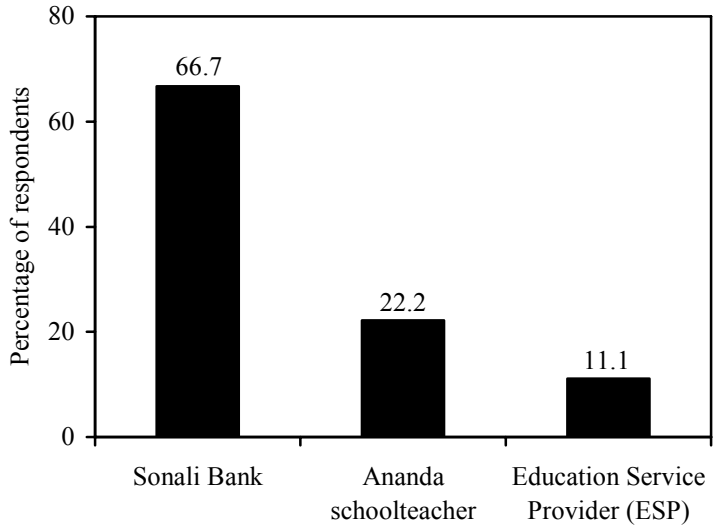
Figure 6.3—Student receipt of free text books from *Ananda* schools



In grant-plus-allowance areas, *Ananda* students should receive education allowances and these allowances are meant to be channeled to the students' mothers or guardians through their accounts established with the national Sonali Bank. While about two-thirds of the parents reported that they received the allowance from Sonali Bank, others received them either from *Ananda* schoolteachers or from ESPs (Figure 6.4). According to the parents, students' mothers collected the allowances in 89 percent of the cases. The majority of the parents (78 percent) would prefer to receive the allowances for their children on a monthly basis.

The ROSC Project stipulates that education allowances are to be disbursed twice a year: the first payment in March/April and the second in September/October.

Figure 6.4—Source of receipt for education allowances



6.2 Profile of *Ananda* Schools

The sources of information on *Ananda* schools are *Ananda* schoolteachers and survey enumerators' own observation. The characteristics of *Ananda* schools in both grant and grant-plus-allowance areas are quite similar. *Ananda* schools are single-classroom, single-teacher schools. The average size is 27 students in both grant and grant-plus-allowance areas. About 47 percent of all *Ananda* students in grant areas and 48 percent in grant-plus-allowance areas are girls.

Table 6.1 presents the characteristics of *Ananda* schoolteachers in grant and grant-plus-allowance areas. In both areas, over three-fourths of the teachers are female and about 62 percent of the teachers are aged 25 years and under. *Ananda* schoolteachers in grant-plus-allowance areas have slightly higher education levels and have more teaching experience than the teachers in grant areas. Alarmingly, among those *Ananda* schoolteachers who joined the school in 2005, about 80 percent of them in grant-plus-allowance areas and 78 percent in grant areas reported that they did not receive their salary regularly.

In addition to *Ananda* schools, the school survey included BRAC and other formal schools in the surveys areas. All teachers in BRAC schools are female. The proportion of female teachers among all teachers is 78 percent in *Ananda* schools and only 41 percent in formal primary schools. Teachers in formal schools however have higher education levels than *Ananda* schoolteachers. BRAC schoolteachers have the lowest levels of education among the 3 types of schools—22 percent of BRAC schoolteachers have less than Secondary School Certificate (SSC) level of education (Table 6.2).

Table 6.1—Information about *Ananda* schoolteachers

Information	Grant areas	Grant-plus-allowance areas
N	145	205
	(percent)	
Female teachers	75.2	80.5
Age range:		
less than 20 years	24.1	22.9
21-25 years	37.9	39.5
26-30 years	19.3	22.9
31-35 years	14.5	7.8
36 years and above	4.1	6.8
Educational qualification:		
S.S.C.	67.6	58.5
H.S.C.	24.8	31.7
B.A./ B.A. B.Ed	7.6	8.3
Other	0.0	1.5
What did the teacher do before joining Ananda school?		
Taught in a government primary school	0.7	1.0
Taught in a private School	3.4	6.3
Taught in a *Madrassa*	2.8	0.0
Taught in an NGO school	20.7	23.9
Private tutor	25.5	16.6
Non-teaching occupation	29.0	26.8
Unemployed	17.9	25.4
Teaching experience:		
No previous experience	18.6	8.3
1-6 months	42.1	26.3
7-12 months	11.7	23.9
13 to 24 months	3.4	13.7
25-36 months	2.1	8.8
More than 36 months	22.1	19.0
Received ROSC teachers' training	37.2	20.0
Received salary regularly:		
Joined in 2005	18.4	20.1
Joined in 2006	0.9	1.9
Main source of income:		
Salary from *Ananda* school only	46.9	52.7
Salary from *Ananda* school plus private tutoring	22.8	30.7
Farming	13.1	6.3
Small business	9.0	5.4
Other	8.3	4.9
Teacher hails from:		
This village	89.0	83.9
This Upazila, outside this village	8.3	14.1
This Upazila, outside this union	1.4	2.0
Outside this Upazila	1.4	0.0
Salary (taka per month)	1,225	1,253

Source: Based on data from IFPRI's "ROSC Baseline Study, 2006: School Survey," Bangladesh.
N = Number *Ananda* schoolteachers interviewed.

Table 6.2—Gender and qualification of *Ananda*, BRAC, and other formal primary schoolteachers

	Ananda schools	BRAC schools	Other formal primary schools
		(percent)	
Female teachers	78.3	100.0	40.8
Academic qualification:			
Less than S.S.C	0.0	22.1	0.0
S.S.C	62.8	64.4	36.6
H.S.C	29.1	12.5	21.1
B.A./B.A. B.Ed and above	8.1	1.0	42.3
Number of schools surveyed	333	63	104

Source: Based on data from IFPRI's "ROSC Baseline Study, 2006: School Survey," Bangladesh.

A higher percentage of *Ananda* schools in grant areas received text books and school supplies for students from ROSC Project than those in grant-plus-allowance areas. However, in both areas, much smaller proportions of schools received other school supplies (Figure 6.5).

Figure 6.5—Receipt of text books and school supplies for ROSC Project students by *Ananda* schools

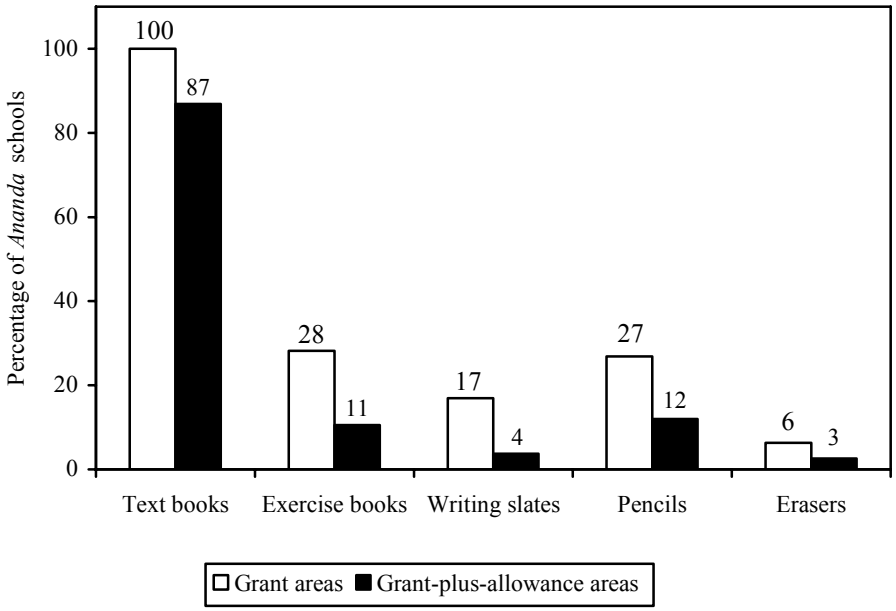


Table 6.3 shows the status of facilities in and structures of *Ananda* schools. About 60 percent of *Ananda* schools in grant-plus-allowance areas and 40 percent in grant areas have no blackboards—an essential tool for imparting lessons. A study in Bangladesh (Ahmed and Arends-Kuenning 2006), and studies by Glewwe and Jacoby (1994) in Ghana and Michaelowa (2001) in five sub-Saharan African countries have found positive and significant impacts of blackboards on student achievement.

About 97 percent of *Ananda* students in grant areas and 88 percent in grant-plus-allowance areas sit on the floor (on mat, jute burlap, or bare floor). The floor is earth in most schools. The average size of classroom is 14 square feet bigger in grant-plus-allowance areas than in grant areas. Since the average number of students per school (i.e., classroom) is the same in both areas but classroom size in grant-area schools tend to be smaller, a higher percentage of grant-area students must sit on the floor in two rows along the walls. Although there are chairs for teachers in 57 percent of the schools in grant areas and 51 percent in grant-plus-allowance areas, less than a quarter of the schools in both areas have desks for teachers. About 13 percent of schools in grant-plus-allowance areas and 10 percent in grant areas have no walls, and 8 percent of schools in both areas do not even have a roof (Table 6.3).

However, survey data indicate that several facilities of *Ananda* schools have improved over time. The school survey included 333 *Ananda* schools—191 schools in grant-plus-allowance areas and 142 schools in grant areas—and 60 percent of grant-plus-allowance schools and 75 percent of grant-only schools were established in mid-2005 and the remainder in early 2006. Figure 6.6 shows that, in grant areas, *Ananda* schools established in 2005 had better facilities at the time of the survey than those established in 2006. Similar patterns are also observed for *Ananda* schools in grant-plus-allowance areas, except for students' toilet facilities (Figure 6.7). It thus appears that improvements have been made quite rapidly—over a period of less than a year.

Figure 6.6—Comparing facilities of *Ananda* schools established in 2005 and 2006 in grant areas

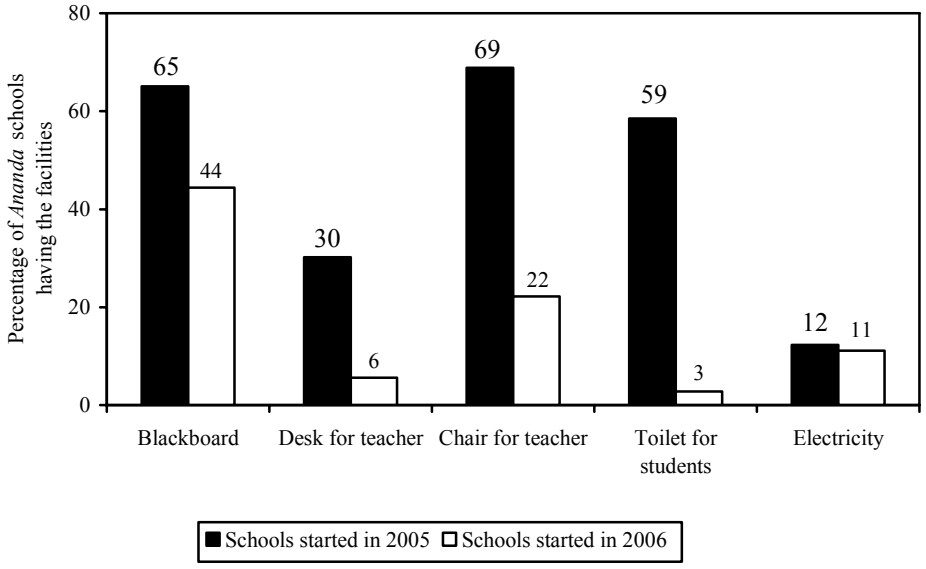
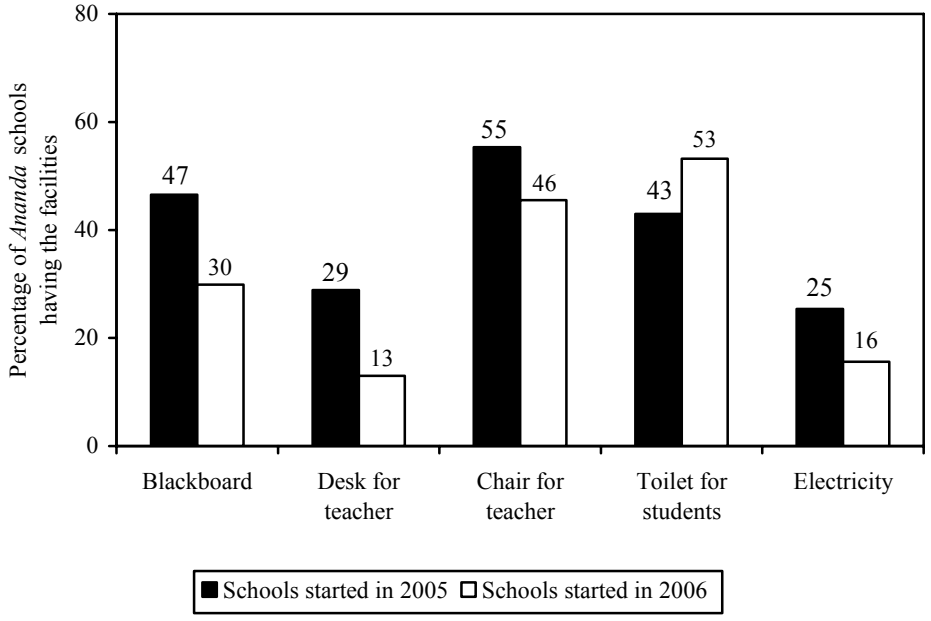


Figure 6.7— Comparing facilities of *Ananda* schools established in 2005 and 2006 in grant-plus-allowance areas



6.3 Activities and Performance of Center Management Committees

At the local community level, a CMC is responsible for managing *Ananda* schools.[12] During the survey, 333 CMCs were interviewed—142 in grant areas and 191 in grant-plus-allowance areas. Two members of each CMC (in most cases, the chairperson and the treasurer) were interviewed to collect information on CMC activities and performance. Table 6.4 provides the responses to the questions, which are self-explanatory.

The performance of CMCs is rather unsatisfactory. Less than a quarter of all CMCs properly monitor the utilization of *Ananda* school grants. Over three-fourths of the CMCs do not have any receipts for the use of grant money. Only about a quarter of all CMCs maintain register books for grant expenses. And less than one-third of them conduct school inspections on weekly basis—a requirement of the project.

[12] Each CMC is composed of 5 parents or guardians, 1 female ward member, 1 Upazila Education Office representative, 1 ESP staff, 1 head-teacher of a formal primary school in the locality, and 1 person interested in promoting education in the community; with the *Ananda* schoolteacher as the member secretary to the CMC.

Table 6.3—*Ananda* School facilities and structure

Information	Grant areas	Grant-plus-allowance areas
N	142	191
	(percent)	
School facilities:		
Electricity	12.0	21.5
Electric fan	2.1	4.2
Blackboard	59.9	39.8
Map	2.8	8.4
Chair for teacher	57.0	51.3
Desk for teacher	23.9	22.5
Toilet for students	44.4	47.1
If school has no toilet then where do the students go?		
Neighbor's house	90.8	85.9
Open field	4.9	6.8
Other	4.2	7.3
Own drinking water source		
Hand-pump (tubewell)	47.9	62.3
School has no drinking water source	50.0	37.2
Classroom size (square feet)	217	231
Sitting arrangements for students in classroom:		
Sit on the floor in one row along the wall	36.1	65.3
Sit on the floor in two rows along the wall due to shortage of space	61.1	23.1
Materials to sit on:		
Bare floor	2.8	4.9
Jute burlap	30.6	63.1
Mat	66.7	32.0
Construction material of classroom walls:		
Jute-stick/straw/bamboo	26.8	12.0
Earth	23.9	6.3
Tin	15.5	53.4
Brick	23.9	15.7
No walls	9.9	12.6
Construction material of classroom roof:		
Tin	89.4	85.9
Other materials	2.8	6.3
No roof	7.7	7.9
Classroom floor is cement-finished (i.e., not earth)	12.7	12.0

Source: Based on data from IFPRI's "ROSC Baseline Study, 2006: School Survey," Bangladesh.
N = Number *Ananda* schools surveyed.

Table 6.4—Information about Center Management Committee

Information	Grant areas	Grant-plus-allowance areas
N	142	191
	(percent)	
Sources of prior information about the ROSC Project (multiple responses)		
Radio	31.7	12.6
Television	62.7	41.4
Street drama	4.2	2.1
Mobile broadcasting units	1.4	1.6
Courtyard meeting	1.4	2.6
Upazila Education Office	33.8	30.9
Education Service Provider (ESP)	26.8	42.4
Newspaper	23.2	24.1
Friends/relatives/neighbors	47.2	51.3
Other	21.8	12.6
Who selected the CMC chairperson?		
Upazila Education Officer (UEO)/Assistant Upazila Education Officer (AUEO)	2.1	3.1
ESP	2.1	8.9
Guardian members of CMC	67.6	69.1
Ananda schoolteacher	8.5	4.2
Guardians of students (non-CMC members)	19.0	13.1
Other	0.7	1.6
How frequently do CMC meetings take place?		
Weekly	4.9	6.3
Bi-weekly	6.3	4.7
Monthly	57.7	72.3
Quarterly	2.1	2.6
Irregular (no specific interval)	28.9	14.1
Who were present in the last CMC meeting?		
CMC president	82.4	94.2
Ananda schoolteacher	97.9	97.4
Primary school head teacher	45.8	54.5
Guardian representatives	96.5	96.9
Persons interested in education	74.6	83.8
UP ward member	55.6	57.1
ESP representative	52.1	59.7
UEO/AUEO	13.4	9.9
CMC has signed a contract with ESP	57.7	78.5

(continued)

Table 6.4— Information about Center Management Committee (continued)

Information	Grant areas	Grant-plus-allowance areas
If the CMC has not signed a contract then why not?		
Ananda school just started, will sign soon	88.3	41.5
Discussion going on with ESP	1.7	43.9
Other	10.0	14.6
Who gave permission for CMC to operate?		
ROSC Project Unit	2.8	13.6
UEO	88.0	62.8
ESP	4.9	18.3
Do not know	4.2	4.7
CMC got support from local people to establish Ananda school	97.9	97.4
CMC faced problems in establishing Ananda school	13.4	11.0
Types of problem faced:		
Objection from BRAC	15.8	33.3
Objection from other local NGOs	0.0	4.8
Objection from local primary school	26.3	38.1
Some people wanted the school in a different location	47.4	9.5
Other	10.5	14.3
How did the CMC assist in identifying poor out-of-school children?		
Informally discussed with parents of eligible students	87.3	86.9
Arranged formal meetings with parents of eligible students	28.9	51.8
Made list of eligible students	73.2	74.3
Other	10.6	4.2
Who selected the Ananda school location?		
ESP	0.0	19.9
Ananda schoolteacher	8.5	11.5
CMC	66.9	51.3
Local elites	19.7	14.1
Formal primary schoolteachers	3.5	1.6
Other	1.4	1.6
Main reasons for establishing the Ananda school at this location (multiple responses)		
High concentration of disadvantaged out-of-school children	93.7	91.6
Area prone to river erosion	8.5	15.2
Backward/remote area	23.2	14.1
Area where socially deprived people live	9.2	1.6
Areas separated from main village	1.4	3.7
Other	36.6	38.7

(continued)

Table 6.4— Information about Center Management Committee (continued)

Information	Grant areas	Grant-plus-allowance areas
How was the Ananda schoolteacher selected? (multiple responses)		
CMC made list of potential male and female teachers in the area	15.5	26.2
Interviewed candidates/gave tests	55.6	45.5
Did not follow any selection procedure	38.0	50.3
Main people responsible for selecting the Ananda School teacher:		
ESP members	2.8	22.5
CMC members	64.1	31.9
UEO	22.5	30.4
Local primary schoolteacher	3.5	4.2
Local elites	6.3	9.9
Other	0.7	1.0
Did CMC assist in the selection of Education Resource provider (ERP) for this Ananda school?		
Yes	8.5	16.8
No	57.7	69.1
ERP was pre-selected for this *Ananda* school	33.8	14.1
What did CMC do for arranging training of Ananda schoolteacher with ERP?		
New school, not yet time for training	19.0	51.8
Applied to ESP	1.4	3.1
Applied to ERP/UEO office	0.0	5.8
Did not do anything	79.6	39.3
How frequently does the CMC monitor students' school attendance?		
Daily	16.9	28.3
3 days in a week	27.5	24.1
2 days in a week	16.2	22.5
Weekly	19.0	16.8
Biweekly	2.8	2.1
Monthly	2.8	1.0
Irregular	3.5	4.7
Do not monitor	11.3	0.5
How frequently does the CMC monitor teacher's school attendance?		
Daily	21.1	34.0
3 days in a week	26.1	24.6
2 days in a week	12.7	18.3
Weekly	18.3	15.7
Biweekly	2.1	1.0
Monthly	4.2	0.5
Irregular	3.5	5.2
Do not monitor	12.0	0.5

(continued)

Table 6.4— Information about Center Management Committee (continued)

Information	Grant areas	Grant-plus-allowance areas
CMC prepared a work plan for the year for running *Ananda* school	11.3	11.5
CMC prepared a list of work needed for the year	37.5	68.2
CMC specified the work schedule	56.3	68.2
CMC identified necessary resources for the work	93.8	72.7
CMC assigned responsibilities to members for doing the work	81.3	68.2
CMC made plans for solving problem	87.5	77.3
CMC prepares meeting agenda	72.5	79.6
CMC prepares minutes of meeting	57.7	70.2
CMC pays teacher's salary	22.5	19.9
CMC inspects school on weekly basis	35.9	27.2
CMC prepares educational progress report	6.3	18.8
CMC maintains a register book to record grant expenses	22.5	24.6
CMC maintains a register book for visitors	42.3	39.8
CMC monitors proper utilization of grant	23.9	18.3
CMC received grant for the current semester	17.6	23.6
Does the CMC have the receipts for all expenditures made?		
Have all the receipts	16.2	15.2
Have some receipts	3.5	12.0
Does not have any receipt	80.3	72.8
ESP is located in this Upazila	95.8	83.2
ERP is located in this Upazila	35.2	3.1
How does the ESP assist the CMC/Ananda school?		
Assists in identifying out-of-school and hard to reach children	31.0	39.3
Assists in children's enrolment	21.1	20.9
Provides support to the CMC in running *Ananda* school	16.2	13.6
Has not given any assistance so far	14.8	4.7
How does the ERP assist the CMC/Ananda school?		
Assists in developing educational curriculum	11.3	6.8
Provides teacher's training	27.5	16.2
Has not given any assistance so far	50.7	56.5
ERP has not been selected yet	8.5	19.9

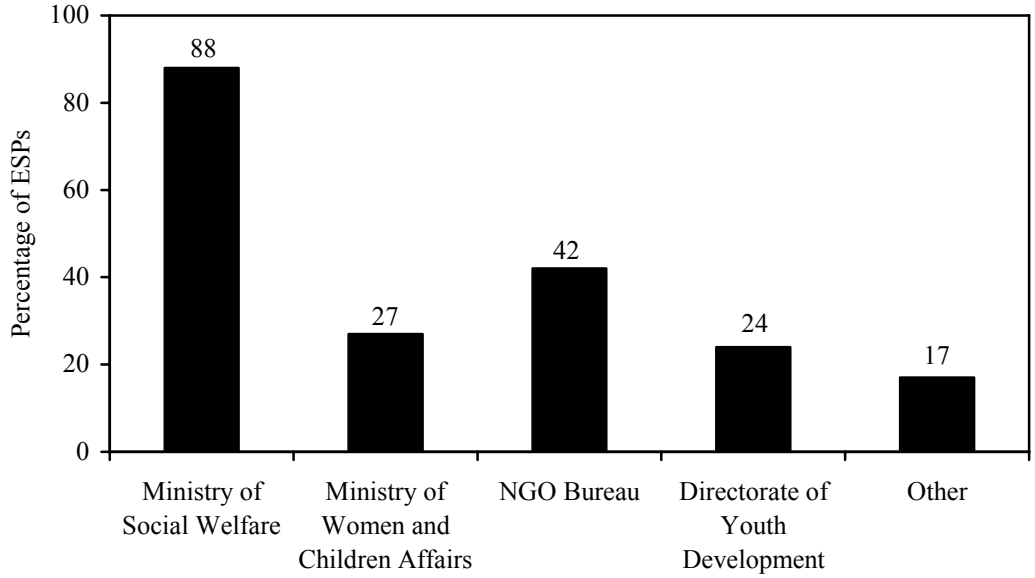
Source: Based on data from IFPRI's "ROSC Baseline Study, 2006: CMC Survey," Bangladesh.
N = Number of CMCs surveyed.

6.4 Activities and Performance of Education Service Providers

Per the ROSC Project document, ESPs are agencies (e.g., NGOs) selected by the CMCs to assist in the day-to-day running of *Ananda* schools. The ESPs are expected to lead community mobilization efforts to identify the target population, encourage the CMC to start a school, and help organize the appropriate *Ananda* schools.

The survey interviewed the managers of 41 ESPs in grant and grant-plus-allowance areas. On average, there are 45 *Ananda* schools per ESP in the 14 survey Upazilas in ROSC Project areas. While many ESPs are registered with multiple GoB agencies, 88 percent of them are registered with the Ministry of Social Welfare, followed by the NGO Bureau (Figure 6.8). The duration of registration with a GoB agency is 11 years on average. Virtually all ESPs (98 percent) are NGOs.

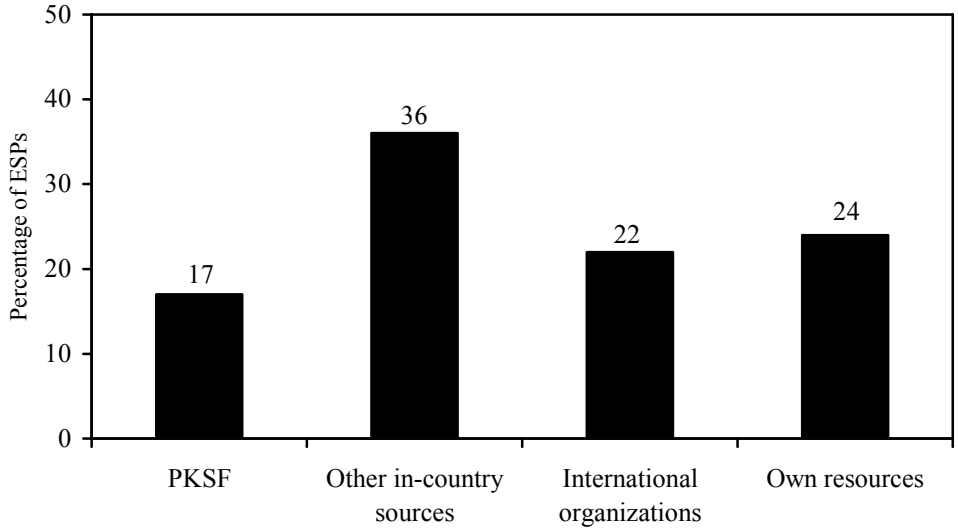
Figure 6.8—Government agencies with which ESPs are registered



The main source of funding for the majority of ESPs (53 percent) is from within Bangladesh. The *Palli Karma Sahayak* Foundation (PKSF) is the single most important national source. Nevertheless, over one-fifth of the ESPs receive funds from various international organizations (Figure 6.9).

On average, ESPs have 11 years of experience working in educational sector, ranging from 4 to 25 years. About 95 percent of the ESPs had experience in providing educational services before their involvement with the ROSC Project.

Figure 6.9—Source of funding for ESPs



The ROSC Project design enables CMCs to select ESPs. In practice, however, it is the Upazila Education Officer (UEO) who selects the ESPs in most cases (56 percent). In 39 percent of the cases local people (including CMC members but also others) selected the ESPs.

The ROSC Project pays fees to ESPs for their service. In areas where ROSC Project began in 2005, about 77 percent of ESPs reported receiving at least one installment of service charge. All ESPs received a service fee of Tk 100 per student per month—double the amount of allowance an *Ananda* student in grades 1-3 is entitled to receive in grant-plus-allowance areas. On average, an ESP received Tk 55,445 since it joined the project, and the amount ranged from Tk 3,500 to Tk 265,100 per ESP.

What services should the ESPs provide and to what extent do they provide these services? Table 6.5 presents a list of services an ESP is responsible for and the percentages of ESPs who actually provided each of those services. Over 90 percent of the ESPs reported that they assisted in making lists of out-of-school children in communities, monitored *Ananda* schools and ensured attendance of teachers and students in school. However, the majority of the ESPs did not provide some of the required services such as selecting ERPs at the Upazila level with CMC's assistance, maintaining liaison with ERPs, facilitating the training of teachers and supervisors, monitoring and forwarding *Ananda* school progress reports to Upazila Education Offices and ERPs, and ensuring proper use of *Ananda* school grants.

Table 6.5—Services provided by ESPs

Required services	Services provided
	(percent of ESPs)
Assist CMCs in sending *Ananda* school progress reports to Upazila Education Office	87.8
Assist CMCs in making lists of disadvantaged and out-of-school children	92.7
Assist CMCs in selecting *Ananda* schoolteacher	68.3
Assist CMCs in enrolling identified children	80.5
Participate in selecting ERPs	36.6
Communicate with ERPs to arrange training for teachers and project staff	39.0
Advise Upazila Education Office to establish *Ananda* school	85.4
Send lists of students, teachers and supervisors to Upazila Education Office	92.7
Arrange inauguration ceremony for *Ananda* school	82.9
Routinely monitor *Ananda* school	95.1
Arrange supervisors' training from ERP	46.3
Monitor students' academic performance	82.9
Monitor and forward *Ananda* school progress reports to Upazila Education Office and ERPs	26.8
Assist CMCs to keep *Ananda* school accounts and to prepare financial reports	51.2
Ensure proper use of grant for running *Ananda* school	34.1
Ensure students' school attendance	95.1
Ensure teachers' attendance Upazila Education Office	95.1

Source: Based on data from IFPRI's "ROSC Baseline Study, 2006: ESP Survey," Bangladesh.

6.5 Limited Information on Education Resource Providers

As stated in the ROSC Project document, ERPs are agencies selected by CMCs to carry out educational technical services in accordance with agreed terms, conditions, and criteria. ERPs could be NGOs or other educational institutions that have a multi-district or national presence and extensive experience in primary education, teacher training, and curriculum development. The ROSC Unit initiates these activities at the community level.

Only 8 ERPs could be located and interviewed during the survey, therefore, the findings should be interpreted with caution. On average, an ERP covers 244 *Ananda* schools. All 8 ERPs are NGOs, are registered with the Ministry of Social Welfare and the NGO Bureau, and had experience in providing educational services before their involvement with the ROSC Project. On average, they have 15 years of experience working in the educational sector, ranging from 7 to 25 years. They trained 40 *Ananda* schoolteachers on average since joining the project, ranging from 0 to 103 teachers. Six of the ERPs reported that they organized workshops for developing the quality of *Ananda* schoolteachers.

6.6 Assessing the Quality of Education

The quality of education in *Ananda* schools and other formal primary schools in ROSC Project and control areas is assessed in this study by administering an achievement test to 5,036 grade 2 students. The test is a standard academic achievement test designed to assess the quality of education received by students attending *Ananda* schools and

other primary schools. An expert from the Institution of Education and Research at the University of Dhaka developed the achievement test. The test was given to all grade 2 students in the schools. Because grade 2 students did not complete the grade at the time of the survey, they were given grade 1 standard tests.

The rationale for choosing grade 2 students for the achievement test is as follows. In 36 percent of the baseline survey areas the ROSC Project was implemented in 2005. *Ananda* students who entered grade 1 in 2005 in those areas were promoted to grade 2 in January of 2006, the beginning of school session. Any effect of the ROSC Project on education quality in *Ananda* schools can only be assessed meaningfully for those children at this time.

Ideally, students in grade 5 should be given grade 4 standard tests for assessing the quality of learning at the primary level. Clearly, this was not feasible for this baseline study. Therefore, for a sound assessment of educational quality of *Ananda* schools, a follow-up study needs to be conducted when the recently entered students in *Ananda* schools reach grade 5.

Table 6.6 presents the results of the achievement test. In general, relatively higher standards are maintained in mathematics than Bangla. Girls seem to perform slightly better than boys, but the differences of test scores between boys and girls are not statistically significant.

Interestingly, the findings on average test scores for both subjects suggest that *Ananda* students in grant areas consistently outperformed students in: (a) other formal primary schools in grant areas; (b) formal primary schools in control areas; and (c) *Ananda* schools in grant-plus-allowance areas. All these differences are statistically significant (t-test results are provided at the bottom of Table 6.6). On the other hand, average test scores of *Ananda* students in grant-plus-allowance areas are not statistically significantly different from those in other primary schools in ROSC Project areas, and are significantly lower than those in control areas.

Why do students in *Ananda* schools in grant areas do better in the test than other students? As mentioned in Section 2, *Ananda* schools in grant-plus-allowance areas receive school grants ranging from Tk 25,700 ($386) to Tk 31,000 ($466) per year. In contrast, in Upazilas where *Ananda* schools receive only grants, the grant per school is much higher—between Tk 55,000 and Tk 65,000 ($826-$976) per year—which incorporates the average value of the student education allowances into the school grant. The relatively higher level of resources allocated to *Ananda* schools in grant areas probably contributes to enhancements in the quality of learning in those schools. Follow-up evaluations should be able to draw firm conclusions on the effects of the differential levels of school resources on educational quality.

Table 6.6—Achievement test scores of grade 2 students

	Ananda schools			Other formal primary schools		
	Mean achievement in Bangla	Mean achievement in Mathematics	Mean achievement in both subjects	Mean achievement in Bangla	Mean achievement in Mathematics	Mean achievement in both subjects
	(points obtained as percentage of total points)					
Grant areas	64.5	67.2	66.0	54.0	62.2	58.6
Boys	63.4	68.2	66.1	52.5	61.1	57.3
Girls	66.0	65.9	66.0	55.5	63.3	59.9
Grant-plus-allowance areas	49.6	54.5	52.3	48.3	56.8	53.0
Boys	47.6	54.0	51.1	46.2	58.3	52.9
Girls	52.1	55.1	53.8	50.4	55.3	53.2
All ROSC Project areas	56.2	60.1	58.4	50.7	59.1	55.4
Boys	54.7	60.4	57.9	48.9	59.5	54.8
Girls	58.1	59.8	59.1	52.6	58.7	56.0
Control areas	…	…	…	56.1	63.3	60.1
Boys	…	…	…	55.9	64.2	60.5
Girls	…	…	…	56.4	62.4	59.7

Levels at which mean test scores for all subjects are significantly different:	**Significance level**
Ananda school in grant areas versus other schools in grant areas	0.000
Ananda school in grant areas versus other schools in control areas	0.000
Ananda school in grant areas versus *Ananda* school in grant-plus-allowance areas	0.000
Ananda school in grant-plus-allowance areas versus other schools in grant-plus-allowance areas	n.s.
Ananda school in grant-plus-allowance areas versus other schools in control areas	0.000

Source: Based on data from IFPRI's "ROSC Baseline Study, 2006: School Survey," Bangladesh.
Notes: Ellipsis (…) indicates not applicable.
"n.s" denotes not significant.
Other formal primary schools include government, non-government registered, non-government non-registered, PTI, and high-school-attached primary schools.

6.7 Assessing the Impact of ROSC Project on School Enrollment

The implementation the ROSC Project in the survey areas before the baseline surveys allows for an early assessment of impact of the project on school enrollments. When interpreting the results, some caveats of this assessment to bear in mind are: (a) as this is not a randomized evaluation, the estimated effects may not be directly attributable to the project, as discussed in Section 3; and (b) since the project was in early stage and implemented on a limited scale at the time of survey, the outcomes (and therefore estimated effects) may differ from outcomes for an expanded program at a later stage. However, unlike the educational quality, program effects on enrollment tend to be instantaneous.

6.7.1 Analytical Approach

This study follows the analytical approach used by Maluccio and Flores (2004). The household survey collected information on schooling of children in 2004 (before the ROSC Project) and 2006 (after the project was implemented) based on respondents' recall in all 3 survey areas. The availability of pre- and post-treatment data on the outcome (i.e., school enrollment status of children) from ROSC Project areas and control areas enables the use of the difference-in-differences or the double-difference method to calculate "average program impact" on enrollments.[13] The double-difference methodology is explained below.

In order to distinguish areas with and without the project, let *P* represent ROSC Project areas and *C* represent control areas. Let subscripts *0* and *1* denote, respectively, situations before and after the project. Before the ROSC Project, one would expect the average primary school enrollment rates to be similar in the project areas and control areas, so that $(P_0 - C_0)$ would be close to zero. However, after the project has been implemented, one would expect positive effects of the project on enrollment rates, and hence, the difference between the project and control areas, $(P_1 - C_1)$, to be greater than zero. Indeed, $(P_1 - C_1)$ is a valid measure of the average program effect under randomized evaluation design and is referred to as the first difference. However, if the design is not randomized (as is the case of ROSC Project evaluation) then $(P_1 - C_1)$ would not account for any preexisting observable or unobservable differences between the project and the control areas, therefore, this first difference may not be a valid measure of program impact. A more accurate measure can be obtained by subtracting the preexisting differences between the two areas, $(P_0 - C_0)$, from the difference after the project has been implemented, $(P_1 - C_1)$. Thus, $[(P_1 - C_1) - (P_0 - C_0)]$ is the difference-in-differences or double-difference estimator of program effect.

The above double-difference estimate can be obtained by an alternative approach (which is used in this analysis) as follows. First, the program effect is estimated within

[13] Ravallion (2001) provides a lucid discussion of this method and related evaluation tools.

the project areas by subtracting enrollment rates before the project from those after the implementation of the project, that is, $(P_1 - P_0)$. However, this difference would include all changes in enrollment rates over time in the project areas, regardless of what causes them. For instance, enrollments rates can increase nationally if there is an increase in government investment in primary education. If this happens simultaneously with the implementation of the project, then $(P_1 - P_0)$ can give an overestimation of the true effect of the project. Such nonproject-related changes in enrollment over time can be isolated from program effects by subtracting changes in enrollment rates in the control areas from those in the project areas, that is, $[(P_1 - P_0) - (C_1 - C_0)]$. This yields the same double-difference measure as above.

6.7.2 Empirical Model Specification

The estimating equation for the double-difference estimator for school enrollment is

$$D_{ivt}^{E} = \alpha_1 D_{ig}^{P} + \alpha_2 D_{iga}^{P} + \alpha_3 D^{Y} + \delta_1 D^{Y} D_{ig}^{P} + \delta_2 D^{Y} D_{iga}^{P} + \sum_{k=1}^{K} \beta_k X_{k,i} + \lambda_v + u_i \ , \qquad (1)$$

where

D_{ivt}^{E}	=	enrollment status for child *i* in village *v* at time *t*. D_{ivt}^{E} = 1 if the child is enrolled in school, 0 if not enrolled;
D_{ig}^{P}	=	1 if child *i* lives in a grant village in ROSC Project areas;
D_{iga}^{P}	=	1 if child *i* lives in a grant-plus-allowance village in ROSC Project areas;
D^{Y}	=	1 if Year 2006, 0 if Year 2004;
$\sum_{k=1}^{K} \beta_k X_{k,i}$	=	a set of additional control variables (child, household, and community characteristics) denoted by X, and indexed by k=1, …, K. β is a K x 1 vector of parameters;
λ_v	=	village fixed effect;
u_i	=	child-specific error term representing all unobserved determinants of enrollment.

The parameters of interest are δ_1 and δ_2; δ_1 is the difference-in-differences estimator of the average effect of the ROSC Project for grant areas, and δ_2 for grant-plus-allowance areas. Among others, α_3 denotes the difference in enrollment rates in control areas, *(C1 – C0)*, from 2004 to 2006; $(\alpha_3 + \delta_1)$ represents the difference *(P1 – P0)* in grant areas, and $(\alpha_3 + \delta_2)$ in grant-plus-allowance areas.

The vector of additional control variables, $X_{k,i}$, include age, age squared, gender, and employment status of the child; whether the child is a beneficiary of the Primary Education Stipend Program or not; household size, number of male and female children under 5 years of age in house, and number of male and female primary school-age children in house; father's and mother's years of schooling; total cultivable land holding of the household; whether the land is mechanically irrigated or not; whether the household head is a day-laborer or a low-profession worker or not; and the ownership status of a set of household assets.

Although household income (in terms of expenditure) tends to have a positive relationship with enrollment (as shown in Section 5, Table 5.11), it is not used in this double-difference analysis because it represents the income level for 2006 and not necessarily for 2004. Instead of income, therefore, household asset ownership status is used as a measure of household welfare, with recall data collected for 2004. Follow-up impact evaluations will be able use income data collected in this baseline study through panel surveys.

Furthermore, a set of village dummy variables is used to control for village-level unobserved idiosyncratic (i.e., individual village-specific) factors that could affect enrollment rates. For example, establishing an NGO school in a particular village is likely to increase the enrollment rate for that village. Such factors are controlled for by the use of village dummy variables.

Endogeneity problems could arise in the econometric model specification in equation (1) if child/household characteristics and the outcome variable (i.e., child's enrollment status) are both caused by factors that were not observed by the researcher. It is argued here that endogeneity may not be the problem with the analytical approach used in this study even though it often arises in other settings. Like many social programs, the ROSC project targets communities that are in greatest need of assistance in increasing enrollment rates, which creates endogeneity of selection into the project. Targeting leads to a negative correlation between participation in the ROSC project and the Upazila characteristics. This leads to a downward bias in measuring the impact of the project if the differences in characteristics between participating and control Upazilas are not accounted for in the evaluation.

The double-difference approach used in this analysis removes any bias in measuring the impact of the project brought on by the use of targeted selection criteria or by unobservable Upazila characteristics that do not change over the period. Further, the use of village dummy variables in equation (1) controls for all observed and unobserved characteristics of the villages, including those that are used to select the Upazilas for the project.

6.7.3 Results

The model specified in equation (1) is estimated using a *probit* regression.[14] Two equations are estimated: one for children aged 6-14 and the other for the sub-group of children aged 6-8.

Table 6.7 shows the average effects of the ROSC Project on net enrollment rates, as measured by the double-difference methodology. In grant-plus-allowance areas, the ROSC Project induced statistically significant average net increase in primary school enrollment of 8.9 percentage points for children aged 6-14 (significant at the 5 percent level), and 10.6 percentage points for children aged 6-8 (significant at the 1 percent level). Since the survey was conducted at the early stage of the project, one would expect a higher level of impact at the entry grade for children aged 6-8. While enrollment in control areas increased by 12.1 percent from 2004 (before the project) to 2006 (after the implementation of the project) for children aged 6-14, it increased by 21.0 percent in grant-plus-allowance areas. These results indicate that the education allowances provided to children in grant-plus-allowance areas are an effective stimulus for out-of-school children to go to school.

In grant areas, however, the ROSC Project did not seem to bring about any statistically significant net change in enrollment for primary school-age children (Table 6.7).

Other statistically significant results suggest:

- Younger (i.e., those closer to the proper age for grade) and older children are less likely to be in school, as observed by an inverse U-shaped relationship between the probability of school enrollment and children's age in both equations.

- Child labor has a significant negative effect on the primary school enrollment rate. A working-child aged between 6 and 14 is 13.4 percent less likely to attend school than a child who is not employed.

- Larger household size and more primary school-aged boys in the household reduce a child's chance of attending school. This pattern is reflected in both equations.

[14] Since the parameters α_1 and α_2 cancel out from the double-difference estimator, equation (1) will yield the same results for all other parameters if estimated without the variables D_{ig}^{P} and D_{iga}^{P}.

Table 6.7—Impact of ROSC Project on school enrollment: Probit regression results

	Children aged 6-14		Children aged 6-8	
	dF/dx	z-statistic	dF/dx	z-statistic
Grant areas = 1 (α_1)	-0.106	-0.84	-0.488	-2.24**
Grant + allowance areas = 1 (α_2)	-0.132	-1.09	-0.474	-2.05**
Year 2006 = 1, 2004 = 0 (α_3)	0.121	3.82***	0.204	4.49***
Grant areas x year 2006 (δ_1)	0.034	0.87	0.067	1.55
Grant + allowance areas x year 2006 (δ_2)	0.089	2.58***	0.106	2.78***
Child's age in years	0.443	15.23***	0.880	3.02***
Child's age squared	-0.022	-14.4***	-0.056	-2.69***
Child is a girl = 1	-0.014	-0.61	-0.004	-0.09
Child is employed = 1	-0.134	-3.2***	-	-
Household size	-0.015	-1.95*	-0.016	-2.05**
Boys age 0-5 years in household	-0.001	-0.04	0.009	0.56
Girls age 0-5 years in household	0.003	0.18	0.008	0.44
Boys age 6-8 years in household	-	-	-0.058	-1.89*
Girls age 6-8 years in household	-	-	-0.033	-0.99
Boys age 6-14 years in household	-0.020	-1.45	-	-
Girls age 6-14 years in household	0.006	0.39	-	-
Years of education, father	0.003	0.92	0.006	1.74*
Years of education, mother	0.011	2.69***	0.012	2.3**
Child is a beneficiary of the PES program = 1	0.104	5.21***	0.086	4.42***
Distance of school from home (in 100m)	-0.008	-22.29***	-0.008	-13.81***
Own cultivable land (in decimal)	0.000	0.58	0.000	0.92
Household head is a day labor = 1	0.000	0.01	-0.025	-0.99
Household head is a low profession worker = 1	-0.129	-1.05	0.081	0.89
Household has electricity = 1	0.030	1.47	0.013	0.52
Household has mechanically irrigated land = 1	0.050	2.42***	0.058	2.39**
Household has color television = 1	-0.012	-0.15	0.006	0.07
Household has radio = 1	0.011	0.38	0.004	0.1
Household has cassette player = 1	-0.001	-0.04	0.038	1.17
household has mobile phone = 1	0.033	0.59	0.032	0.42
household has bicycle = 1	0.019	0.83	-0.005	-0.19
Household has agricultural equipment = 1	0.019	0.99	0.003	0.12
Household has hand-pump = 1	0.034	1.87*	0.036	1.64*
Household has milk-cow = 1	0.017	0.8	0.053	2.17**
Location dummy	Yes		Yes	
Pseudo R-squared	0.57		0.53	
Number of observations	2,920		1,302	

Source: Based on data from IFPRI's "ROSC Baseline Study, 2006: Household Survey," Bangladesh.
Notes: Significance levels: * significant at the 10 percent level; ** significant at the 5 percent level; *** significant at the 1 percent level.
Dependent variable is 1 if the child is enrolled in primary school; 0 if the child is not enrolled in school.
dF/dX represents the change in probability for an infinitesimal change in each independent, continuous variable and, by default, the discrete change in the probability for the dummy variables. Standard errors of the coefficients are conventional.
The equation has been estimated using the *'dprobit'* command of the Stata statistical software.

- A mother's education level has a strong and positive impact on enrollment for all primary school-age children (aged 6-14). While both parents' schooling levels have positive effects on younger children's (aged 6-8) school attendance, mother's education has a much stronger effect than that of father's.

- Participation in the Primary Education Stipend Program leads to a considerable increase in the primary school enrollment rate.

- The more distant the school is from the household the lower the participation rate. Both equations show a highly significant negative relationship between distance to school and enrollment.

- Children from households having mechanically irrigated land are more likely to attend school, and this is evident in both equations.

- Among other assets, household's ownership of a hand-pump for water (for all primary school-age children), and the ownership of milk-cows (for children aged 6-8) are positively correlated with school enrollment.

7. SUMMARY AND CONCLUSIONS

The Government of Bangladesh devotes a significant share of its budget to providing incentives to rural families to send their children to school. It has made commendable progress in the education sector over the past decade: more than 90 percent of children eventually enroll in school, and few disparities now exist between boys and girls.

While the achievements of the education interventions have been impressive, a significant fraction of children, particularly from poor families, still do not attend school. A new initiative, called the Reaching Out-of-School Children (ROSC) Project, has developed interventions to encourage the most disadvantaged out-of-school children to attend Learning Centers that are designed to provide quality primary education to these children. The Learning Centers are called *Ananda* schools. *Ananda* in Bangla means joy.

A thorough evaluation of the ROSC Project will allow policymakers to learn from ROSC interventions and, thereby, make informed policy choices from alternative practices and methods in the delivery and management of primary education. IFPRI conducted a baseline study as a part of an evaluation of the ROSC Project. The baseline study was specifically designed to permit scientific and rigorous evaluations of the impact of the ROSC Project through follow-up studies. This report presents the findings drawn from baseline surveys undertaken in Bangladesh in 2006.

The analysis of the village census data indicates that there is considerable variation in enrollment rates across project and control locations. This finding suggests substantial scope for increasing primary school enrollment through geographic targeting of education interventions at the Upazila level.

The results of the household survey indicate that the grant-plus-allowance areas of the ROSC Project are poorer than the grant and the control areas, indicating good geographic targeting of grant-plus-allowance areas.

The prevalence of primary school-aged out-of-school children is considerably lower in grant-plus-allowance areas than the other two areas (grant and control), particularly among the poorest section of the population. This indicates that the incentive the grant-plus-allowance component of the project provides to families to send their children to *Ananda* schools is probably successful in attracting out-of-school children to school. The results of a more rigorous analysis presented below support this finding.

Among all education incentive programs in rural Bangladesh, *Ananda* school allowances appear to reach the poorest most effectively. While the Primary Education Stipend program shows a moderately pro-poor targeting, the distribution of secondary school stipends for girls seems regressive. *Ananda* schools and NGO-run schools (BRAC

and other) are most well-targeted to the poor among all types of schools. In contrast, children from relatively affluent families are over-represented in *madrassas*. The pattern of participation of survey households in social safety net programs suggests that the Vulnerable Group Development Program performs better in reaching the poor compared to other programs.

About 13 percent of all survey households received private assistance from within Bangladesh and about 6 percent received remittances from abroad. A higher percentage of households in control areas received private transfers and remittances than those living in ROSC Project areas. The incidence of receiving remittances from abroad increases sharply as household income rises.

Gross and net enrollment rates show a positive relationship with income; school enrollments are lower among the poor. The rich-poor gap in enrollments is the highest in grant areas. Household incomes tend to have a positive influence on completion rates. In both grant and grant-plus-allowance areas, around 84 percent of children who entered primary school completed it, making the primary school dropout rate 16 percent. The overall completion rate for girls is 12 percentage points higher than that for boys.

Late entry into school tends to bring down the rate of completion of primary education. This finding has an important implication for the ROSC Project. Most students in *Ananda* schools begin school late. Only 9.6 percent of *Ananda* students enrolled in grade 1 at the age of 6. In other formal primary schools in ROSC Project areas, this rate is 31 percent. Future studies will be able to examine whether *Ananda* schools are successful in retaining children in school, and thereby, improving their completion rate, despite their older-than-prescribed entry age.

For boys, the relationship between schooling and child labor is strong and negative. In contrast, there is only a weak relationship between schooling and child labor among girls. A recent IFPRI study in rural Bangladesh shows that, while poverty is a major factor in girls' drop-outs, there are social factors that may force girls to leave school and get married even if they come from wealthy families. Further, girls are often more disadvantaged than boys—even within the same family—when poverty interacts with cultural practices such as the dowry system for marriage.

Both enrolled and out-of-school boys are engaged in agricultural and non-agricultural work outside their home. However, out-of-school boys aged 12-14 work almost full-time, about 5 hours more per day than do the boys in the same age group who attend school. On the other hand, out-of-school girls aged 12-14 work at home for 5.5 hours per day on average, cleaning their house, washing clothes, doing dishes, cooking, and taking care of younger children, particularly when their mother works outside the home. In contrast, boys hardly do any household work regardless of their age and school enrollment status.

In the majority of the baseline study areas, the ROSC Project started immediately before the baseline surveys. The pre-existence of the project in the survey areas enabled a performance assessment of the ROSC Project at an early stage of implementation.

According to parents, *Ananda* schoolteachers played a key role in providing information and guidance to poor families, facilitating their participation in the ROSC Project. However, a sizable share of *Ananda* students left other schools to join *Ananda* schools, and the majority of them were enrolled in a higher grade in their former schools. If this pattern continues to hold as the project matures, then the ability of the ROSC Project to reduce the number of out-of-school children—the key objective of the project—may be compromised.

In grant-plus-allowance areas, *Ananda* students should receive education allowances and these allowances are meant to be channeled to the students' mothers or guardians through their accounts established with the national Sonali Bank. While the majority of the parents reported that they received the allowance from Sonali Bank, about one-third of them received the allowances either from *Ananda* schoolteachers or from Education Service Providers. The practice of distributing education allowances through channels other than the Sonali Bank clearly violates program rules, which may open the door for corruption and perverse discretion.

The characteristics of *Ananda* schools in both grant and grant-plus-allowance areas are quite similar. *Ananda* schools are single-classroom, single-teacher schools with an average size of 27 students, in both grant and grant-plus-allowance areas. In both areas, over three-fourths of *Ananda* schoolteachers are female and about 62 percent of the teachers are aged 25 years and under. Alarmingly, among those *Ananda* schoolteachers who joined the school in 2005, about 80 percent of them reported that they did not receive their salary regularly.

A higher percentage of *Ananda* schools in grant areas received text books and school supplies for students from ROSC Project than those in grant-plus-allowance areas. However, in both areas, much smaller proportions of schools received other school supplies. Sixty percent of *Ananda* schools in grant-plus-allowance areas and 40 percent in grant areas have no blackboards—an essential tool for imparting lessons. However, *Ananda* schools established at the beginning of the ROSC Project in mid-2005 had better facilities at the time of the survey than those established in early 2006. It thus appears that improvements have been made quite rapidly—over a period of less than a year.

At the local community level, a Center Management Committee (CMC) is responsible for managing the day-to-day running of *Ananda* schools. However, the performance of CMCs is rather unsatisfactory. Less than a quarter of all CMCs properly monitor the utilization of *Ananda* school grants. Over three-fourths of the CMCs do not have any receipts for the use of grant money. Only about a quarter of all CMCs maintain register books for grant expenses. And less than one-third of them conduct school inspections on weekly basis—a requirement of the project.

The cost-effectiveness of Education Service Providers (ESPs) must improve. ESPs receive a service fee of Tk 100 per student per month—double the amount of allowance an *Ananda* student in grades 1-3 is entitled to receive in grant-plus-allowance areas. However, the majority of the ESPs failed to provide some of the vital and required services, despite the substantial share of project cost incurred by them. The ROSC Project design enables CMCs to select ESPs. In practice however, it is the Upazila Education Officer who selects the ESPs in most cases.

One of the major objectives of the project is to provide quality education to *Ananda* students. To assess the quality of education at the entry level, a standard achievement test was given to all grade 2 students in the schools in project and control areas. Interestingly, the findings on average test scores suggest that *Ananda* students in grant areas consistently and significantly outperformed students in: (a) other formal primary schools in grant areas; (b) formal primary schools in control areas; and (c) *Ananda* schools in grant-plus-allowance areas. In contrast, average test scores of *Ananda* students in grant-plus-allowance areas are not statistically significantly different from those in other primary schools in ROSC Project areas, and significantly lower than those in control areas.

Why did *Ananda* students in grant areas perform better on the achievement test than students in other schools? In Upazilas where *Ananda* schools receive only grants, the grant per school is much higher than that in grant-plus-allowance Upazilas. The relatively higher level of resource allocated to *Ananda* schools in grant areas probably contributes to enhancements in the quality of learning in those schools. Follow-up evaluations should be able to draw firm conclusions on the effects of the differential levels of school resources on educational quality.

As the title of the project indicates, the key objective of the project is to bring out-of-school children to school. In this study, the average effects of the ROSC Project on net enrollment rates are measured in a multivariate framework and using the difference-in-differences methodology. The results suggest that, in grant-plus-allowance areas, the ROSC Project induced statistically significant average net increase in primary school enrollment of 9 percentage points for children aged 6-14. In grant areas, however, the ROSC Project did not seem to bring about any statistically significant net change in enrollment for primary school-age children. These results indicate that the education allowances provided to children in grant-plus-allowance areas are an effective stimulus for bringing out-of-school children to school.

Some interim conclusions emerge from the results of this early assessment of the ROSC Project. The provision of a higher level of resources to *Ananda* schools in grant areas seems to boost the education quality of the schools, but not necessarily the enrollment rates in the catchment areas. On the other hand, educational allowances to *Ananda* students in grant-plus-allowance areas significantly enhance enrollment rates in the communities, but the amount of grants to schools may not be enough to improve the

quality of education in those schools. Combining educational allowances with higher level grants—the level currently received by *Ananda* schools in grant-only areas—will likely achieve the dual goal of enticing out-of-school children to school and improving their learning.

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