Inequality in the Access to Education and Poverty in Bangladesh

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2003

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April 17, 2003

Abstract

Studies on the returns to education in developing countries generally indicate a higher social benefits at primary level compared to secondary and tertiary levels. This paper analyzes private benefits and costs of primary versus secondary education in rural Bangladesh on the basis of household-level data. It indicates that while social benefits for primary education are high in Bangladesh, private benefits are higher for secondary-level education than primary level. On the other hand, private costs are lower for primary education than for secondary education. Poor households in Bangladesh cannot afford to keep their children until they complete the secondary level because of high costs – both direct costs and opportunity costs. Inequality in the access to secondary education is the main cause of persistent poverty in Bangladesh. The recent improvement of female participation rates in both primary and secondary levels confirms the favourable impact of targeted approach. Policies should be directed to both boys and girls from poor households.

JEL classification: I20; I31
Key words: Social returns and private returns to education; poverty; inequality in the access to education.

* The paper is a part of the on-going project "Access to Secondary Education and Poverty Reduction in Bangladesh" financed by SAREC. An earlier version of the paper was presented at the *Poverty Conference*, Stockholm 17-18 October, 2001 organised by Sida. The author gratefully acknowledges the financial assistance provided by Sida, and the comments from the conference participants.

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1. Introduction

Poverty reduction in Bangladesh has been a slow process. From the mid-1980s to early 1990s the poverty situation worsened especially in rural areas. In recent years, different poverty measures indicate some improvement partly due to an acceleration in economic growth. However, the positive impact of economic growth on poverty reduction has remained limited due to increased inequality in the access to secondary education and agricultural land. (Sen and Hossain, 2000). Recent statistics indicates that while the access to primary education has improved (Chowdhury and Choudhury, 2001), the access to secondary education of male children has deteriorated especially among the landless households (Ahmad and Hossain 2001). In Bangladesh, non-farm activities generate higher income than farm activities, and the level of education determines the ability of households to engage in such activities. Unequal access to education has, therefore, serious implications - it perpetuates income inequality, and limits the impact of economic growth on poverty reduction.

There are few studies dealing with the role of secondary education in poverty reduction. Bangladesh being a least developed country with high adult illiteracy, universal primary education has been the focus of researchers so far. Earlier studies on rates of returns to education in developing countries confirm higher social returns to primary-level education compared to higher levels (Psacharopoulos, 1994). However it is the private rate of return that has direct impact on the well-being of individuals, and research needs to focus on the relative private returns to different levels of education and their outreach to the population.

The purpose of this paper is to explore the relationship between levels of education and poverty through an analysis of household-level data from Bangladesh. The relationship between education and poverty is a circular one: the lack of secondary-level education may force poor households to engage in low-productivity activities, and results in poverty. On the other hand, poverty leads to low investment in education. The paper focuses on the access to education among different classes of rural household, variations of income according to occupation and educational level and the main determinants of income. The paper is organised as follows: Section 2 deals with some conceptual issues. Section 3 describes the sources of data, Section 4 documents poverty trends in Bangladesh especially in rural areas, Section 5 presents facts on the progress in education including inequality in the access to education. Section 6 analyses the impact of education on household income and poverty, and

the returns to education at different levels. Section 7 briefly discusses the effects of poverty on educational achievement of children as evidenced in previous studies. Section 8 concludes summary and policy discussion.

2. Conceptual issues relating to poverty and education

The study of poverty and education is difficult not only because of the circular nature of the relationship. It is complex because poverty has many dimensions that are affected by education. Poverty signifies lack of income, and deprivation in terms of political and civil rights, voice, freedom of choice, and the quality of life based on health and education. While education is a goal in itself, it can be instrumental to poverty alleviation working not only through income but through its influence on other dimensions of poverty. There are two approaches - the human capital approach and the human development approach that both emphasize the role of education in human welfare (Tilak, J. B. G. 2001). The human capital approach (Schultz 1961; Becker 1964; Mincer 1972) focuses on the instrumental aspect of education while the human development approach takes a broader view of human welfare and relates education to different dimensions of poverty (UNDP, Sen, 1993). These two views are in no way contradictory since the human capital approach enables one see how education can be used to expand people´s choice through higher productivity and income.

The impact of education on poverty

The impact of education on poverty works through productivity of labour and other effects on the household. The effects on labour productivity are reflected in the wage rates in labour market activities, and income from self-employment. Education increases productivity and earnings potential through different channels. It enhances the ability to perform specific jobs and to search for employment opportunities, etc. It can also serve as a signaling and screening device to the employers. For self-employment, it enables the worker to acquire access to inputs, technology and market information.

Effects of education on household and poverty

Schooling affects the well-being of the household through many other channels than only productivity or income. First of all, knowledge about improved health practices and food/nutrition has strong impact on mortality and morbidity. Education enhances the ability of the individual to access health services provided by the state. The education of women is found to have a greater effect on children´s health and schooling than education of men. It has

significant effects on contraceptive behaviour and fertility (Bledsoe and Casterline 1999). Poverty reduction comes from a lower rate of population growth, another indirect effect of education among the poor. It should be stressed that positive effects of education pass through generations and have long-term consequences for poverty.

Education affects social capital and the ability of individuals to communicate and cooperate to solve collective action problems that have strong impact on poverty alleviation. Membership in associations can have feed-back effects. Belonging to an association promotes literacy through increased awareness and motivation. Poverty alleviation defined in a broader sense such as capability and empowerment is also promoted by education.

The impact of poverty on educational investment

Investment in educational human capital in developing countries may be studied using Becker´s framework for the demand and supply of human capital. The demand represents the present discounted value of benefits (labour market earnings), and the supply represents the present discounted costs of education (school fees, travel costs, opportunity costs in terms of foregone earnings). There are several points attached to the issue of demand that are important.

Earnings possibilities are affected by labour market conditions faced differentially by individuals, for example, male worker may face greater opportunity of work and higher wages than female workers (Mazumdar, 1989). The demand for education is not only determined by productivity and income associated with schooling, but in many cases schooling of children is affected by the individual characteristics of students such as ability, motivation, and family background interacting with each other (Behrman, 1990). Poverty of the households plays an important role in perpetuating low motivations and low demand for education.

Costs representing the supply of education

Private costs both direct and indirect costs are affected by public policies, the incidence of child labour and labour market conditions. If there is a high demand for child labour in the labour market, opportunity costs of keeping children at school will be high for poor families. Gender differences in costs and benefits may also arise depending on the role of women in the economy, society and the family.

The economic rate of returns to schooling can be derived from the correlation between earnings and years of schooling (usually controlling for work experience) from cross-sectional data. This gives an estimate of the private rate of return to the time spent. Social rate of return

to investment in schooling are calculated through an adjustment of other costs. On the social benefit side positive externalities of education have to be adjusted too. It is the private rate of return that is important from poverty reduction point of view.

Since decisions related to investment in education are made in the household, the standard neoclassical household models with common preference or bargaining over allocation of resources may be used. Bargaining within the housheold may be affected by wife´s education. and earnings possibilities (Schultz, 1999). Improved bargaining position of educated women has been found to have strong effect on the investment of human capital especially for girls (Schultz, 2001). Higher participation rates in school, especially of girls, are positively associated with mother´s schooling. Households are assumed to maximize household preferences (an outcome of bargaining) subject to the full-income constraints that include expenditures with money cost and time cost. Poor households are likely to have low demand for education mainly because of high costs of education and low benefits arising from factors like discrimination in the labour market and low motivation for schooling.

3. Data and methodology

The paper is mainly based on household panel data collected by the BIDS (Bangladesh Institute of Development Studies) and IRRI (International Rice Research Institute) over a period of 13 years i. e., from 1987 to 2000. First of all, we draw on the results of previous studies that have analysed the poverty situation in rural Bangladesh.

In order to fulfill the purposes of this paper, that is to explore the relationship between education and poverty, data for the latest year (2000) have been used. The data come from a nationally representative sample survey of 32 villages with a sample size of 956 households. The samples are drawn from the population of the 1987-88 BIDS/IRRI survey described in the appendix. IRRI resurveyed 50 per cent of the villages in 2000 for a study of the impact of improved rice technology on poverty alleviation. The survey covers the same villages but has drawn the sample randomly through an wealth ranking exercise based on PRA (Participatory Rural Appraisal) methodology. Thirty households were selected from each village using a stratified random sampling method by classifying households into four groups, rich, solvent, self-sufficient and poor. The old samples (and their off shorts) were kept to generate panel data, and additional samples were drawn from each cell to make the sample proportional to the weight for each group. In addition to the BIDS/IRRI survey we have used data from other

studies related to returns to education at different levels, the determinants of investment in education and inequality in the access to education.

4. Poverty trends in Bangladesh

Poverty estimates in Bangladesh are available from different sources - national accounts statistics, Household Expenditure Surveys (HES) carried out regularly by the Bureau of Statistics, poverty studies by BIDS and various nutrition surveys by several agencies (see Sen, 1997 for a review). There has been a great deal of controversy regarding the poverty trends in Bangladesh. Controversies specifically relate to the significant improvement of poverty situation in early 1980s and the worsening position of the urban poor compared to their rural counterparts claimed by some studies based on HES. The study (1996) by M. Ravallion and B. Sen refute these results on methodological grounds. According to their revised estimates, "… there was a reduction in poverty incidence, depth and severity around the mid-1980s, but that was not sustained after that" (Ravallion and Sen, p. 786). Moreover, all poverty measures are higher in rural areas. In the beginning of 1990s, the headcount measure of poverty was nearly 50 per cent - 34 per cent in urban areas and 53 per cent in rural areas. The analysis of APT (*Analysis of Poverty Trends Project)* survey data of BIDS from 62 villages corroborate these findings based on HES data - "rural poverty has increased during the period 1985/86 to 1991/2, particularly in terms of the poverty gap and squared poverty gap measures" (B. Sen, 1997, p. 121).

Table 1. Poverty Measures for Bangladesh

	Headcount Index (%)	Poverty-Gap Index (%)	Squared Poverty-Gap Index (%)
Urban			
1983/84	40.9	11.4	4.4
1985/86	30.8	7.3	2.5
1988/89	35.9	8.7	2.8
1991/92	33.6	8.4	2.8
Rural			
1983/84	53.8	15.0	5.9
1985/86	45.9	10.9	3.6
1988/89	49.7	13.1	4.8
1991/92	52.9	14.6	5.6
National			
1983/84	52.3	14.5	5.7
1985/86	43.9	10.4	3.5
1988/89	47.8	12.5	4.6
1991/92	49.7	3.6	5.1

Source: Ravallion and Sen (1996) p. 773

An overall picture of the poverty situation in the 1990s is more complex since different studies present contradictory results (B. Sen 1997). As the studies on urban areas are not comparable due to methodological differences, no national level poverty estimates are derived. On the other hand, the estimation of poverty trends in rural areas is easier because of the availability of comparable data. A recent study (Hossain, Sen and Rahman, 2000) based on the panel data collected under the APT project of BIDS indicates that the rural poverty situation deteriorated since mid-1980s to early 1990s. By 1994, it had improved in terms of different measures. The proportion of households below the line of moderate poverty declined from 58 per cent in 1987-88 to about 52 per cent in 1994-95. There was also a significant improvement in the economic conditions of the poorer group among the poor. The number of extremely poor declined from 26 to 23 per cent and the poverty gap ratio declined from 22 per cent in 1987-88 to 19 per cent in 1994-95. In addition, the decline in the FGT index from 10.9 to 9.0 indicates a slight improvement in the condition of the very poor. Non-income dimensions of poverty such as basic clothing, health, education, child labour and the perception of people

about their own situation also indicate improvement over the period. Two main sources of improvement are the growth of agricultural income that induced growth of non-agricultural income, and migration of rural workers to urban areas.

Table 2. Changes in Poverty Situation, 1987-94

Indicator	1987/88	1994/95
Headcount ratio (per cent of households)		
Extremely poor	25.8	22.5
Moderately poor	31.7	29.2
Extremely and moderately poor	57.5	51.7
Poverty gap ratio (per cent)	21.7	19.2
Distributional sensitive measure (FGT Index)	10.9	9.6

Source: Hossain, Sen and Rahman (2000)

However, the positive impact of growth of the rural economy on poverty has been constrained by increased inequality in the ownership of land and unequal distribution of education that is one of the main sources of non-agricultural income. Let us now to trends of growth in education and its impact on income of the rural population.

5. Progress of education in Bangladesh

Two indicators are used to measure progress in education - the proportion of children and youths enrolled at different levels and the proportion of the adult population having different levels of education. According to our sample survey substantial progress has been made in terms of enrollment in primary school that went up from 66 per cent to 101 per cent (Table 4). The achievement of female children is especially noteworthy, and the fact that the total enrollment rate in secondary schools has gone up from 50 per cent to 61 per cent mainly due to the high enrollment rate among girls. Actually, the enrollment of boys has declined from 60 to 58 per cent. Progress has also been made in college education - from a low 15 per cent to 24 per cent. Here again, the rate of increase in the participation rate is higher among girls than

boys. These results are consistent with national the level achievement on education as evident from Table 3.[2]

Table 3. Progress in Education (national level)

Combined adult literacy rate	Combined gross enrollment ratio
24 (1970)	30 (1980)
39 (1997)	55 (1997)

Source: UNDP, Human Development in South Asia 2000, p.13

Greater progress of girls than boys reflects both the recent education policies of the government as well as the socio-economic reality in rural areas. First, the government of Bangladesh has, supported by donors, invested in girls´ education for more than a decade. Secondly, the opportunity costs of sending girls to school are lower than for boys because of limited participation of girls in market activities especially in rural areas of Bangladesh.

The change in educational attainment among the adult population reflects the effects of education policies in the past, from the 1950s to early 1980s (see Campaign for Popular Education, 1999). The achievement during this period is less impressive than in recent decades. Progress is, however, evident - the proportion of the adult population without formal schooling declined from 67 per cent to 44 per cent (Table 5). Again, progress in secondary education especially for girls is noteworthy. In 1988, the proportion of the female adult population with secondary level education was only 11 per cent compared to 27 per cent in 2000.

Both our survey data and national estimates on educational achievement indicate that Bangladesh has been making some progress in education. The high primary enrollment in recent years can bring down adult illiteracy in the near future provided the quality of education is improved and drop-out/repetition rates are reduced. An analysis of school-level survey data in the mid-1990s indicate that high drop-out rates at upper grades of primary school are closely associated with the quality of schools (Alam, 2000). This is connected with

[2] It should be mentioned that the above estimates are gross enrollment rates that include repetition in the same grade. Achievement in net enrollment rates must have been lower as indicated by other estimates. According to the UNDP Report on South Asia 2000, the net enrollment rates (1997) for boys and girls at primary level are 80 and 70 per cent respectively, and the corresponding figures for the secondary level are 27 and 16 per cent (UNDP. P. 105).

the main problem that is the low enrollment rates in secondary school (declining) and college level. Let us now consider how poor people have benefited from education.

Inequality in access to education

The access of the poor population[3] to education and its changes over time is reflected in enrollment rates at different levels (Table 6). In 1988, a large proportion of children from the landless households was not enrolled in primary school (46 per cent). There is an increase of 44 perccent in 12 years. By 2000, the enrollment rate has reached 98 percent indicating that almost everybody has access to primary level education. We do not have data that differentiate between the enrollment rates at lower and upper grades of primary school, and that consider repetition or dropout rates. Alam (2000) study relating to data in mid-1990s indicate that "rates of dropouts and repeaters (at upper grades) are much higher for the socio-economically disadvantaged if we compare them with other socio-economic groups " (p.57).

Progress has been made with respect to secondary level as well. However, both the level and the rate of progress are lower than the primary level. Only 29 per cent of children were enrolled in secondary school, and the figure went up to 41 per cent in 2000 recording an increase of 41 per cent compared to 44 per cent at the primary level.

Inequality in the access to education is reflected in the lower enrollment of poor children at secondary (41 per cent) than the general level (61 per cent). Similar to the total population, enrollment of boys in secondary school has declined. But the rate of decline among the poor households is greater (7 per cent) than the whole population (3 per cent). Exactly the opposite is true for girls from the landless households. The rate of enrollment of girls has risen rapidly mainly because of the poverty alleviation programmes of many NGOs, and lower opportunity costs of sending girls to school even among poor households.

Inequality is most evident at college level. Only 9 per cent of young people from poor households are enrolled in college compared to 24 per cent of the whole population. Although the rate of progress is high mainly because of the low initial base, there is a wide gap in the access to high education. Unequal access to education at higher level has important implications for poverty alleviation in rural Bangladesh as will be discussed below.

[3] In rural areas of Bangladesh ownership of land is the most important of indicator of well-being.

Table 4. Changes in the school participation rate, 1988 to 2000

[Percent of relevant school age group[1]]

Education level	Male population		Female population		Total population	
	1988	2000	1988	2000	1988	2000
Primary	70	101	61	100	66	101
Secondary	60	58	40	63	50	61
College	25	30	6	17	15	24

Note: [1]The school age group was defined as follows: Primary level 6 to 11; secondary level 12 to 16; and college level 17 to 24 years of age.

Table 5. Educational attainment of adult population (non-student), 1988 and 2000

Education level	Male population		Female population		Total population	
	1988	2000	1988	2000	1988	2000
No formal schooling	55.8	36.6	77.4	52.2	66.7	43.6
Primary level	14.8	16.9	10.6	15.9	12.5	16.5
Secondary level	20.0	30.9	10.7	27.3	15.4	29.2
College level	9.4	15.6	1.3	4.6	5.4	10.7
Total	100.0	100.0	100.0	100.0	100.0	100.0

Table 6. Changes in the school participation rate for the landless and marginal landholding households[1], 1988 to 2000

[Percent of relevant school age group[2]]

Education level	Male population		Female population		Total population	
	1988	2000	1988	2000	1988	2000
Primary	58	99	48	97	54	98
Secondary	39	36	18	46	29	41
College	5	12	0	5	2	9

Note: [1]These households were defined as those with a size of owned land at less than 0.20 hectares. In Bangladesh, this group is defined as "functionally landless". In our sample, the group comprised 49 percent of all rural households.

[2]The school age group was defined as follows: Primary level 6 to 11; secondary level 12 to 16; and college level 17 to 24 years of age.

6. The impact of education on poverty

There are different factors that determine rural income such as the access to land, number of working members in different occupations, education, non-land ssets, infrastructure, etc. Bangladesh is anagriculture-based economy, and traditionally land has been the most important source of income. With the introduction of modern rice technology other factors (that are complementary to land) such as irrigation facilities, credit and education are playing increasingly important roles. Access to non-land resources increases not only the productivity of land but also opens up the possibility for non-farm occupations. Education is particularly important for non-agricultural occupations. In recent years, with the growth of non-farm activities, and declining importance of agriculture, the importance of education has increased. This is clearly reflected in the average income earned in different occupations and the educational attainment of workers in each category (Tables 7 and 8). In 1988, average household income was highest in service followed by farming, trade and business, agricultural labour and non-agricultural labour. By 2000 the situation has changed drastically - service is still the highest income occupation, followed by trade and business that have not only surpassed farming but have come close to service. The declining importance of agriculture is reflected in reduced income for farming and agricultural labour. The significance of education becomes immediately apparent from the years of schooling of workers in different occupations (Table 8). There is a perfect correlation between the level of education and the average incomes for the year 2000 (Tables 7 and 8).

Table 7. Annual Household Incomes for Different Occupations

(Taka at 2000 constant price)

Occupation	1987-1988	1999-2000
Farming	27,292	24,061
Agricultural labour	16,526	8,215
Trade and business	25,266	48,024
Service	50,109	58,040
Non-agricultural labour	13,100	17,262

Source: IRRI- BIDS Household Survey

Table 8. Educational attainment of workers employed in different occupation, 1988 and 2000.

Occupation	1988		2000	
	Percent of workers	Average years of schooling	Percent of workers	Average years of schooling
Crop cultivation	41	3.5	34	3.9
Other agriculture	2	0.3	1	1.4
Agricultural labor	22	1.1	13	1.5
Trade and business	9	3.6	14	5.5
Services	15	6.5	21	8.5
Non-agricultural labor	11	1.9	17	3.0

Determinants of Income

A rigorous analysis is done through a multivariate regression model estimating the contribution of factors determining household incomes. The factors that are considered to affect income are owned land with expected positive effect, rented-in land with less positive impact than owned land, no. of family workers in agriculture and non-agriculture with higher effect for the latter, non-land fixed assets with positive effect, education and electricity with positive effects. Two regression models have been estimated one with all the above factors and one excluding education and electricity.

Explanatory variables	**expected sign**
Own land	+
Rented-in land	+
Agricultural worker	+
Non-agricultural worker	+
Non-land fixed assets	+
Education of worker	+
Dummy for infrastructure	+

The model is in linear form and the coefficient values are marginal increase in incomes in response to one unit of one unit of change in the factors. For example, an increase of one hectare of owned land would increase income by 18,647 that is 29% of mean income, and the variable is highly significant. Average size of land in Bangladesh is small and 1 hectare of land can contribute to income substantially. Hence, this is not an unexpected result. The rented-in land variable is not significant. Having electricity makes a large difference in income (36 per cent increase) and the variable is highly significant. Having one more non-agricultural worker also leads to high increase (27 per cent) in income. Our discussion above also corroborates this result.The education variable is significant, and marginal returns to one additional year of schooling would increase income by 2.9%. This seems to be low return to schooling as the mean years of schooling is 8 years. Studies in other countries indicate higher rate of returns to one additional year of schooling especially at secondary level. An analysis of the contribution of factors (Table 10) to household income indicates that the highest contribution is made by non-agricultural labour closely followed by human capital (education). When education and infrastructure are not controlled for, the contribution of non-agricultural labour goes upto nearly 50 per cent.

Table 9. Contribution of education to household incomes (Taka), 2000

Determinants of household income	**Unit**	**Mean values**	**Regression Eq.1**		**Regression Eq.2**	
			Coeffi-cient	***'t'* value**	**Coeffi-cient**	***'t'* value**
Own land	Hectare	0.573	23,389	9.94	18,647	7.66
Rented-in land	Hectare	0.138	20,726	2.37	18,709	2.20
Agricultural worker	Number	0.854	13,132	5.57	5,364	2.16
Non-agricultural worker	Number	0.933	34,090	18.40	17,694	6.30
Non-land fixed assets	'000 Taka	29.50	120	9.02	119	9.27
Education of worker	No. of years of schooling	8.51	--	--	1,893	5.85
Dummy for infrastructure	Village with electricity=1, otherwise=0	0.47	--	--	23,388	5.63
Value of R^2			0.57		0.60	

Note: The mean household income for the sample was Taka 64,886 (US$ 1,224). The sample size is 965 drawn randomly from 32 villages.

Table 10. Contribution of different factors to household incomes, 2000

Factors	Excluding contribution of human capital and infrastructure	Including contribution of human capital and infrastructure
Land	25.1	20.5
Agricultural labor	17.3	7.0
Non-agricultural labor	49.0	25.4
Non-land capital	5.5	5.4
Human capital	--	24.8
Infrastructure	--	16.9
Total	96.9	100.0

Returns to education at different levels

The impact of education on income should ideally be studied in terms of different levels of education since one additional year may not make a significant difference. Other studies based on APT data indicates a large differences in the returns to education and rapid changes over time. To quote B. Sen (1967)

> "Compared to the households with no formal education, households whose head has had an education up to the primary level commands a 14 per cent (in 1994) higher income compared to 7 per cent (in 1989/90). Those with secondary education now command a 22 per cent higher income compared with only 8 per cent recorded previously. The same applies to the incremental impact of having higher education; the comparative figures are 37 per cent in the first survey and 48% in the second survey. One implication of this finding is that access to education may become(if not already) an increasingly prominent source of income inequality in rural areas." (p. 136)

Recent surveys in rural urban areas indicate returns that are even higher than those quoted above. In rural areas, secondary school dropouts earn 75 per cent more than the primary school leavers. Secondary school gradute earn 39 per cent more than dropouts and those who attended college or university, earn 45 per cent more than the secondary school graduate.
The possibility to earn more is many times greater in urban areas than in rural areas. A secondary school graduate earns almost three times more than secondary school dropouts.

Table 11. Per cent Share of Labour force and Marginal in US$/annum of Education in Rural and Urban Areas (Dhaka City)

	Rural		Urban	
Levels	labour force	marginal	labour force	marginal returns
Primary school	34.4	334	23.7	372
Secondary school dropout	26.6	584	10.1	660
Secondary school graduate	8.2	814	18.8	1962
Attended college university	9.5	1184	23.8	3510

Source: Estimated by fitting income functions with the level data where land, labour and capital are used as major determinants of income, and the level of education of the farm manager was introduced as dummy variables.

Indirect effects of education on wellbeing and poverty

So far we have tried to emphasize the positive impact of years of schooling on productivity and income. It may be useful to keep in mind that in many cases schooling appears to be a proxy for other characteristics, such as ability, motivation and family background, rather than representing purely the effects of schooling per se. Ignoring these factors may indicate exaggerated correlation between schooling and earnings (Behrman, 1990, P. 34).

As mentioned above schooling also affects well-being through many other channels than only productivity or income. The mechanisms through which schooling indirectly affects poverty are

- health and mortality
- children´s schooling having a generation effect
- fertility

In spite of slow progress in reducing poverty in terms of income, Bangladesh has achieved substantial progress in other dimensions of poverty. Total fertility rate has declined from over 6 children per woman in the 1970s to 3.5 in recent years. This has resulted in the slowing down of population growth from 3% annually to 1.8%. Infant mortality has also declined from 130 per thousand to 60 during the same period. The success in Bangladesh in social spheres has achieved largely due to integrated programme where education has played an important part.

7. The effects of poverty on educational attainment of children

As argued in Section 2, investment in education depends on the demand for and supply of education, the demand being affected by benefits of education and supply by costs of education. In Bangladesh, social benefits of education are especially high for primary level, but for individual households in rural areas it is the secondary education that gives high returns (see Table 11 above). Private costs of education at primary level are negligible because of state subsidies and low opportunity cost in terms of foregone earnings of children (Alam, M. 2000). Both direct costs and opportunity costs rise at higher levels. This is evident from our data and previous discussion on the progress of education among the landless households. The higher participation rates of girls may be explained in terms of lower opportunity costs for girls than for boys. However, some researchers claim that the benefits of girls´ education seem to have increased because of improved employment opportunties as well as higher demand for literate girls in the marriage market. Another reason is the public support for female education in Bangladesh that has reduced private costs.

In spite of the positive development inequality in the access to education is acute in rural areas. The negative effects of poverty on education are confirmed by Alam´ study (2000) mentioned above. Poor households find it difficult to keep their children at upper grades of primary school because of the high opportunity costs. According to his multivariate analysis of factors determining the incidence of dropout at grade IV, three variables are found statistically significant - non-existence of child labour with negative sign, State-ownership of schools with negative sign and regular disbursement of teachers´ salary having a positive sign. Poverty also affects the outcome or achievement in school negatively. Again, Alam´s multivariate analysis of the factors determining the performance of children at school finds that tutor´s support at home and owner-farmer status have positve effects and are highly significant (Alam 2000, p. 63).

8. Policy implications

While social benefits of primary education are high in Bangaldesh due to its impact on health, mortality and fertility of the population, private benefits are higher for secondary education than for primary education. The analysis of household-level data indicates that poor households have limited access to secondary education due to high costs, mainly opportunity

costs, of education at upper level. Hence, the rural poor in Bangladesh are trapped in the vicious circle of low education and low income.

Given the increasing importance of education in generating income in the non-farm sector, economic policies should be directed to improve the access of poor households to secondary education. This requires not only targeted subsidies to poor children at secondary level but also measures that would improve the performance of children at the upper level of primary school. Higher achievement at primary level would motivate the poor families to invest in the secondary level of education of their children. The recent improvement of female participation rates in both primary and secondary levels confirms the favourable impact of targeted approach. Policies should be directed to both boys and girls from poor households.

List of references

Ahmad, A. and Hossain, M. (2001) "Education and Poverty in Bangladesh", Paper presented at the Poverty Conference at Sida, Stockholm, October 2001.

Ahmad, M. (1998) "Education and Governance in Bangladesh", in Rahman, S. (ed.) *Crisis in Governance - A Review of Bangladesh´s Development*, Centre for Policy Dialogue and University Press Ltd. pp. 317-332.

Alam, M. (2000) "Development of Primary Education in Bangladesh: The Ways Ahead", The Bangladesh Development Studies, Vol. XXVI, No. 4.

Behrman, J. R. (1990) "The Action of Human Resources and Poverty on One Another - What we have yet to Learn", Living Standard Measurement Study Working Paper No. 74.

Bledsoe, C. H. And Casterline, J. B. (1999) *Critical Perspectives on Schooling and Fertility in the Developing World*, National Academy Press, Washington, D. C.

Campaign for Popular Education (1999) *Hope not Complacency - State of Primary Education in Bangladesh*, University Press Ltd., Dhaka, Bangladesh.

Chowdhury, A. M. R. (2001) "Equity Gains in Bangladesh Primary Education", BRAC, Research and Evaluation Division.

Hossain, M. Sen, B. and Ranman, H. Z. (2000) "Growth and Distribution of Income in Rural Bangladesh", *Economic and Political Weekly*, Mumbai (India), Vol. XXXV, Nos. 52 and 53, Review of Agriculture, December.

Mazumadar, D. (1989) Microeconomic issues of Labour Markets in Developing Countries - Analysis and Policy Implications, World Bank.

Psacharopoulous, George (1994) ”Returns to Investment in Education –A Global Update”, *World Development* 22(9): 1325-43.

Ravallion, M. And Sen, B. (1996) "When Method Matters: Monitoring Poverty in Bangladesh", *Economic Development and Cultural Change*, Vol. 44, No. 4, July, pp. 761-792.

Schultz, T. P. (1999) "Women´s Role in the Agricultural Household: Bargaining and Human Capital", Economic Growth Center, Yale University, Discussion paper No. 803.

Schultz, T. P. (2001) "Why Government should Invest More to Educate Girls", Economic Growth Center, Yale University, Discussion paper No. 836.

Schultz T. W. (1961) "Investment in Human Capital", *American Economic Review,* 51 (1).

Sen, A. (1993) "Capability and Well-being", *The Quality of Life*, edited by M. Nussabaum and A. Sen, Oxford University Press.

Sen, B. (1997) "Poverty Policy" in R. Sobhan (ed.) *Growth or Stagnation? A Review of Bangladesh´s Development 1996*, Centre for Policy Dialogue and University Press Ltd. pp. 115-160.

Tilak, J. B. G. (2001) "Education and Poverty", Keynote address delivered at the Poverty Conference at Sida, Stockholm, October 2001.

UNDP (2000) *Human Development in South Asia 2000- The Gender Question*, Oxford University Press, London.