Identification of the Poorest and the Impact of Credit on Them: The Case of BRAC[1]

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Abstract

This study offers a new approach for identification of the poorest and constructs a poverty profile by integrating four non-impact variables sensitive to poverty. Poverty was found to be highly correlated with all of the variables included in the index namely sex, occupation and education level of the household head, village level economic development and household landholding. Results on the impact of micro-credit programme on the poorest show that the poorest with little asset base received similar amount of credit as other members but invested it in relatively more non-productive activities. The poorest BRAC members consumed more calorie and owned more non-land assets than the poorest of the comparison group. For BRAC members length of membership influenced negatively in their calorie consumption level and asset accumulation.

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Introduction

In Bangladesh, over the last two decades a large number of development organizations have been working with the poor, providing them with credit assuming that the poor are efficient and can use loan in a productive way. In majority cases land ownership is the only criteria of member selection. A number of studies were conducted on the impact of credit on participant households, but very few with a specific focus on the poorest households. Studies revealed that a significant proportion of the poorest were overlooked by the development organizations (Hashemi, 1997, Evans et al, 1995). Hashemi (1997) found that the objectives of financial viability, high repayment rates, increased membership as well as structural features such as the group mechanism of all micro-finance organizations lead to overlook the extreme poor. The household resource constraints i.e. shortage of cash flow for continuing savings, shortage of time to attend meetings and thinking about credit activities were found to be their main reasons for not joining of the poorest to BRAC credit programmes (Evans et al, 1995, MacLean, 1998). The eligibility criterion fixed by most development organizations, that is, ownership of ≤ 50 decimals of land is to some extent also reasponsible for this. Again, there is lack of uniformity in determining the criteria for defining the poorest.

Thus the first part of the paper describes the issues related to identification of the poorest and factors associated with poverty. The second part of the paper focuses on the impact of BRAC's credit programmes on the poorest. The discussions are limited to BRAC and impact of its Rural Development Programme (RDP) on the poorest.

BRAC is the largest multi-dimensional rural development organization in Bangladesh. The RDP, one of the three major programmes of BRAC, launched in 1986 is targeted to the landless households which own less than 50 decimals of land including homestead and sell at least 100 days of manual labour annually for survival. Under the RDP the poor are organized into village organizations (VOs) and are provided with credit, skill

development training and social awareness education and other technical assistance for raising their income and employment opportunities.

Methods and Sources of Data

This is a secondary analysis of selected data taken from the household survey of the second impact assessment study (IAS-II) carried out in 1996-1997. Information were collected on household characteristics, housing, assets, credit, savings, household consumption and expenditure, involvement of BRAC members in income generating activities and training. Data on household consumption were collected twice, once in peak and another in lean season to minimize the error on seasonal fluctuation in the amount of food consumed and consumer price variation. Each household was visited daily for three consecutive days in each season. Data were collected by applying the 24 hour recall method.

The survey focused mainly on material and social well-being of the households and poverty. These information were used to create an index which isolated the extreme poor. Data on credit and training were used to show their impact on the well-being of the household.

Two structured questionnaires were administered on 1,250 BRAC member households and 250 non-member households which were randomly selected from 25 of the 282 BRAC RDP area offices.

A village profile was created to derive village level information. The key informants were basically *Union Parishad* members, elderly persons and village elite who were well informed about their villages. The data from village profiles were used to create a composite variable namely economic vibrancy which determines the level of economic development of the specific villages. Eight indicators like distance to nearest *thana*[2], distance to all weather road, distance to nearest bus stand, distance to nearest hat, *bazaar* and bank, number of shops per household in the village, and ratio of households using

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[2]*Thana is the lowest administrative unit of the government having a population of 200.000 (appx.)*

electricity were used to construct a village level index giving scores of zero to five depending on the variation in information (Husain ed,1998).

For analysis of impact the household instead of an individual was considered as unit of measurement since the final outcome of any development initiative is improvement of household well-being.

Scope and limitation of the study: The data used for this analysis cover a wide range of variables on household well-being and the sample was selected from different regions of rural Bangladesh. The sample size also represents total BRAC member households. That is why, findings of this study will be considered to represent all BRAC poor population.

Since data used for this paper were collected for another study, certain indicators which could have been very useful for in-depth analysis of the issue, were not included in this analysis. For example, we are measuring impact of credit on their livelihood but we did not know the needs of the poor and whether the poor prefer the services provided by development organizations or not. Further study is needed to cover these aspects.

Identification of the Poorest: Constructing a Poverty Index

There is no universally accepted definition of the term 'poorest'. Each and every study uses its own definition. The World Bank (1996) defines the poorest as those who have no land or house of their own, sell manual labour with no other means of income, have no savings, are unable to have three meals a day, can not afford to purchase minimum clothing and have no ability to spend money on education. These poor people have very little asset and suffer from instability and frustration in everyday life.

Alamgir (1998) includes households without any agricultural land or even homestead, widows, women-headed households, households with disabled adult male members, households without any source of income or with very irregular income under the poorest or the hard core poor.

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Land may not be the only criterion of well-being status of a household. Being eligible by landholding a household may have multiple sources of income other than land constituting major part of the household earning. Similarly, female headedness can not be a criterion of the poorest in all cases. Hossain and Huda (1995) found that the process by which women became household heads were not only poverty, loss or disability of adult male income earner but may be also migration of the male income earner. In case of the last one these households are not the poorest. So female-headedness alone also can not be the indicator of extreme poverty.

Rahman et al (1998) found that a single criterion is not enough to define the extreme poor. The definition of the extreme poor needs to be addressed multi-dimensionally. Several indicators such as, income, occupation, housing and physical characteristics, geographical location, sex of the household head and household dependency may also be considered. Sen and Begum (1998) prioritized three indicators: land, housing and occupation, although some other characteristics such as region and ethnicity do also matter.

It is revealed from the above discussion that a single criterion is not enough to identify the poorest. Again, when we consider a number of indicators, their relative importance may also vary from case to case. One possible way is to construct an index by combining a number of variables which will minimize the error in identification. Arguments can arise on the arbitrariness and the subjectivity of the method itself. To minimize subjectivity a cross checking was done in the field to verify the results.

To construct an index, four indicators which are likely to be not influenced by BRAC intervention were considered (Table A1). Each indicator was ranked from 1-5 where 1 is the lowest and 5 is the highest possibility of being the poorest. In this context a household can get a maximum score of 20. The highest score in our case was 20. A household was treated poorest of the poor if it gets at least 65% of the maximum, i.e. scores of 13 and above. The presence of association between the variables included in the index and the

incidence of hard core poverty was assessed by using Chi-square techniques. Pearson's contingency coefficient (C) with a range of 0 to 1.0 was measured to show the strength of association among them. The higher the value of (C) the greater the possibility of a household to fall in the group of the poorest. Results of this test presented in Table A2 indicate that poverty is associated with all these four indicators included in the index. The highest value of C was found for the households with the wage labouring occupational group, illiterate, divorced or separated female household heads, and for households with disabled or unemployed heads. The next highest correlation of poverty was found with absolute landlessness. Low village level vibrancy is also found to be highly correlated with poverty.

Distribution of households by sex and educational status of the household heads show that majority of households with illiterate female heads are very poor. Among the poorest, 34% were headed by female, the rest were male headed ones. If occupational status of the household heads is considered it was found that 77% of the households with disabled or unemployed heads were very poor, while among the wage labouring group 69% belonged to that group. Distribution of all households by different landholding categories shows that only 50% of the absolute landless were among the poorest. Among households with only homesteads, only 28% belonged to the poorest. Among households with lowest village vibrancy level the incidence of extreme poverty was found to be 36%. Results on distribution of the poorest households by sex, education and occupation of the household head, household landholding and village level vibrancy presented in columns 5-7 prove the multidimentionality of poverty.

Distribution of the poorest households of BRAC and comparison groups by indicators included in the index show that among BRAC members, households with illiterate divorced or separated female heads were 27% while for comparison group it was only 9%. Twenty five percent of BRAC poorest member households were with disabled or unemployed heads while for the comparison group it was only 2.3%. The absolute landless households were also proportionately higher among BRAC poorest households.

These results indicate that BRAC covered more households with severe economic condition.

Poverty associated with factors not included in the index: In this sub-section discussions are made on those factors which are also associated with poverty but their association is not always consistent and, therefore, not included in the index. Household size, number of income earner and age of the household head are the variables which were found to be correlated with poverty. The correlation between household size and poverty shows that persons living in small households with 1-3 members had the highest incidence of poverty (Table 1). Higher the number of members the lower the rate of extreme poverty. Generally, households with 1-3 members consist of husband, wife and one small child. Wives with small children or young women/girls in rural Bangladesh do not normally go outside their homestead. Since women are mainly responsible for all household unpaid works including child care, they do not have enough time to get involved in any high return income generating activities. That is why such households are fully dependent on husbands' income. It is likely that with an increase in number of members in the household the number of income earner will be increased. Poverty was found to be strongly correlated with number of income earner in a household which is also shown in Table 1. The incidence of poverty was highest in the household with no income earner. The higher its number the lower the incidence.

The incidence of poverty was also found to be associated with age of the household head. Individuals living in the household with a young head ($\leq$ 25 years) had a higher probability of being poor than those living in a household with an older head (Table 1). With increasing age of the household head children become adults and start to contribute in the household resource pool which affects the poverty status. This result reflects the effect of life cycle factors.

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Impact of BRAC Credit on the Poorest

Eighty-five percent of the poorest households received BRAC loan since joining which was similar to that of the other BRAC members (Table 2). They also borrowed similar amount of loan.

Another important finding on the use of loan was that 15.9% of the poorest spent a portion of their cumulative amount to purchase a piece of land or to release their mortgaged out land. Land is the major source of continuous earning for the rural households. Investment in land market is the safest area of investment. Ownership of land is a prestige issue which also increases the credit-worthiness and status of rural poor.

Table 1. Incidence of extreme poverty by some characteristics of the sample households

Indicators	Poorest n=267	Others n=1,028	% of population in the category n=1,295
Age of the household head			
≤25 years	29.2	70.8	7.4
26-35	22.3	77.7	33.9
36-45	19.2	80.8	30.6
>45	17.9	82.1	28.1
Significance level		$p<0.10$	
Household size			
1-3 members	35.8	64.2	21.8
4-5 members	19.3	80.7	42.1
>5 members	13.0	87.0	36.1
Significance level		$p<0.00$	
Number of income earner			
Nil	77.1	22.9	2.7
1	20.3	79.7	59.8
2	16.9	83.1	25.6
>2	17.5	82.5	11.9
Significance level		$p<0.00$	

Table 3 presents types of activities for which the last loan prior to the interview was used. Sixty-five percent of the amount borrowed by the poorest were used for value added

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activities[3]. Another 35% were spent on food consumption, construction of houses, purchase of non-productive assets and other social needs. For other BRAC members these ratios of productive and non productive activities were 78% and 22% respectively. The poor are always vulnerable to income erosion as a result of contingencies. They need credit for survival and other social and emergency needs which help poor meet their physiological and other social needs while they confront unforeseen contingencies (Rahman, 1998). The restricted savings withdrawal policy of BRAC also affects negatively the use of credit for consumption and other social needs rather than asset accumulation.

Table 2. Distribution of BRAC member households by their level of poverty and loan used for purchasing and mortgaged out land

Indicators	Poorest n=223	Other BRAC members n=849	Total n=1,072
% of households ever received BRAC loan	84.8	84.7	84.8
% of borrowers spent loan money for land purchase or release mortgaged out land	15.9	10.0	11.2

Among the poorest, 83% of male and 69% of female headed-households received the last loan although the average amount was higher for the latter group. Seventy percent of the amount borrowed by male-headed households were spent for value added activities compared to 56% of the female headed ones. The former spent their borrowed money on a more productive way. It is also important to highlight that 28% of the loan money of female-headed households were spent on different social and other household needs. This percentage is nearly two times higher compared to the percentage spent on these heads by male-headed households. It implies that the female-headed households, without any adult male income earner, had relatively less capacity to use their loan for productive purposes.

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[3] *Value added activities included all the activities considered under direct productive investment, food processing , small trading and other services*

Secondly, RDP loan helped them meet their social needs. It is likely that if they did not have access to RDP credit they would have resorted to the money lenders to borrow at an usorious rate of interest.

There was a wide variation in the use of the last loan among the first time borrower and those who received more than one loan (Table 4). There was a rapid growth in the use of loan for food processing activities. Those who borrowed for the first time spent 2.2% of the amount compared to 19.6% of those who received five or more loans. In food processing activities, return from investment comes faster than from any other income generating activity. It does not require any special skill which enables the housewives to carry out it along with other household chores. The reduction of investment in direct production activities explains the resource constraints of the household. Land, working capital for non-farm activities, non-land fixed asset, family labour and skill level of family workers are the most important resources in this context. Although a significant portion of loan were spent on small trading and other service-related activities for all types of borrowers, no consistent trend was found on it. The use of loan for food consumption increased with second loan received.

Table 3. Use of last loan received from BRAC by member category

Use of loan	Poorest n=173	Other members n=667	Poorest n=173	
			Male-headed hhs n=113	Female-headed hhs n=60
Direct productive investment	26.0	28.0	30.6	17.4
Food processing	13.8	11.0	13.1	15.1
Small trading and other services	25.1	39.4	26.0	23.4
Non productive asset purchase	5.9	3.6	6.2	5.3
Housing	5.8	3.3	4.9	7.6
Food consumption	4.8	2.9	5.3	3.7
Others	18.6	11.8	13.9	27.5
Amount of current loan (Tk.)	3910	3966	3818	4083
Percent of current loanee	77.6	78.6	83.1	69.0

Table 4. Use of last loan received from BRAC by numbers of borrowing and members' direct involvement in IGA

Use of loan	Poorest				
	1 loan n=45	2-4 loans n=98	5+ loans n=30	Involved in IGA n=90	Not involved n=83
Direct productive investment	23.7	29.5	18.2	29.4	22.3
Food processing	2.2	17.3	19.6	15.6	11.7
Small trading and other services	32.9	21.0	26.8	21.0	30.0
Non productive asset purchase	4.0	6.1	8.0	6.4	5.3
Housing	8.9	5.1	3.6	7.1	4.5
Food consumption	3.9	5.3	4.1	4.2	5.4
Others	24.3	15.6	19.8	16.2	21.2
Amount of current loan (Tk.)	2,088	4,144	5,880	3,987	3,827

It is worth mentioning that proportion of loan used for social purposes and for food and non-food consumption decreased with an increase in the number of borrowing. Members directly involved in any IGA received relatively higher amount than others. They also used such loan in a relatively more productive way.

The poorest with little resource base are more likely to invest loan in activities which require little fixed capital due to the strickly scheduled repayment period of one year that can not generate high return. Such return in majority cases may not be a better choice than the wage employment opportunities. In some cases minimum loan size exceeds the capacity of the poorest to invest, which leads to consumption use of a part of the money, which will then be difficult to repay (Rahman R, 1998).

Results of another study on the sources of instalment payments of RDP loans show that borrower households' cash flows were not always sufficient to pay the installments. Borrowers often repaid even to the detriment of the economic health of their business even though they had earned little or no revenue. For the enterprises with immediate returns 40% of the installments were paid through sources other than the income generated from present loan. For projects with a gestation gap it was 82%. Although results differ according to particular circumstances, on most counts the husband's income

and other livelihood activities proved to be vital for members' ability to meet instalment payments (Matin and Rab, 1997).

Impact of Programme Participation to major outcome variables: Programme participation is expected to alleviate poverty by increasing consumption as well as savings, assets and net-worth. Table 5 shows that BRAC poorest households with similar amount of pre-BRAC land and percentage of literate household heads of the comparison group consumed more calorie, owned higher assets, savings and net-worth. At the same time the significantly higher poverty scores[4] of BRAC poorest households indicate the lower initial condition of BRAC poorest households. It implies that BRAC membership has made some positive impact for them probably due to the significantly higher amount of institutional loan (mostly from BRAC) they received. The other BRAC members also consumed more calorie and owned higher assets and net-worth compared to the comparison non-poor households although the BRAC non-poor households had higher level of initial endowment.

Results of OLS regressions identified factors contributing to increasing/reducing level of per capita expenditure. Higher level of expenditure per capita of all poorest households was associated with higher level of education of the household head, higher level of non-land asset holding, and higher village vibrancy. Household economic dependency negatively contributed to the per capita expenditure. The female-headed households spent significantly more on food and non-food expenditure than the male-headed ones. Amount of institutional loan irrespective of sources made significant contribution in increasing the household expenditure. The impact of loan from informal sources was found to be negative (Table A.3).

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[4] *The aggregate poverty score is calculated by aggregating scores of four non-impact variables*

Table 5. Mean statistics of BRAC and comparison households by poverty category

Indicators	BRAC		Comparison		BRAC vs comparison (t value)	
	poor n=223	others n=849	poor n=44	others n=179	poor n=267	others n=1028
Average poverty score	14.3	8.8	13.7	9.4	2.37	-3.87
% of literate household heads	13.9	30.4	13.6	20.1	0.05	2.77
Average aggregate household education level (score)	75	105	55	77	1.66	4.40
Pre-BRAC land (dec.)	10	43	10	20	-.06	2.46
Present land (dec.)	22	47	10	20	0.90	3.00
Annual p/c expenditure (Tk.)	8,076	8,282	5,862	6,508	2.22	2.88
P/c calorie consumption (Kcal.)	2,335	2,298	2,133	2,196	2.27	2.46
P/c total assets (Tk.)	7,652	14,634	5,056	10,809	1.24	2.51
P/c non-land assets (Tk.)	2,528	3,793	1,245	2,906	2.85	2.49
Net-worth p/c (Tk.)	7,225	14,282	4,782	10,408	1.16	2.54
Total savings (Tk.)	1,085	1,287	216	703	4.84	4.64
Total amount of institutional loan (Tk.)	6,663	6,852	1,234	5,689	6.11	1.94

For BRAC member households the impact of BRAC loan was found to be positive on the level of expenditure. The length of BRAC membership was found to be negatively correlated with the expenditure although the relationship was insignificant. Among members with different membership length the level of per capita expenditure was highest for members with membership length 12-47 months and lowest for 1-11 months group. It implies that after being involved in development programmes, the per capita expenditure increased for a certain period of time then it started to go down. Households with BRAC training and female members currently involved in any IGA were better-off than others.

The higher consumption level of female-headed households looks contradictory to the results of their loan use pattern. It can be explained by the significantly lower dependency ratio of the female-headed households and the higher involvement of female members from female-headed households in different income generation activities than that of the male-headed ones which were also found to be highly correlated with the level of

expenditure. It is also found that the income of the female members of the household were spent more on the household welfare compared to that of the male members (Husain ed., 1998).

Results of multivariate analysis identifying factors contributing to the per capita asset accumulation of all poorest households (Table A.4) show that the value of assets are highly correlated with average aggregate level of household education. Household total savings also contributed significantly on asset accumulation. The per capita asset holding of female-headed households was higher due to their smaller household size. The wage employed households owned significantly less assets than other employed groups. Higher economic dependency ratio negatively contributed to the asset holding. Amount of institutional loan irrespective of sources made negative impact on asset accumulation although this variable was found as a least important contributing factor in the outcome variable. Village level vibrancy also made negative contribution on the dependent variable for this specific group of households.

For RDP member poorest households it was found that RDP membership and the depth of programme participation made negative impact on the poorest households in asset accumulation. The higher the amount of credit a household borrowed from RDP the greater the possibility of owning less assets. Households who received BRAC training owned less assets than the others.

Asset accumulation was also found to be negatively correlated with membership length. There is a positive correlation between membership length and BRAC inputs received. The greater the membership length the higher the possibility of a household to borrow higher amount of credit and receive skill development training. Negative correlation between membership length and asset accumulation implies that RDP membership made negative impact on the household asset ownership. Results of dummy on different membership length groups indicate that RDP members with 1-11 months of membership owned significantly higher assets than others. Members with 48-83 months of membership performed the worst. The depth of programme participation also showed

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negative impact on asset accumulation. Households who did not receive RDP inputs were better-off than the others. Households with credit and skill training showed the lowest result.

The inverse relationship between asset accumulation and BRAC inputs for the poorest indicate that as the members become more experienced they received more inputs such as credit, skill training and other technical assistance. The poorest without the capacity to handle larger amount of loan spent a significant amount for consumption and other social needs (Rahman, 1998). By borrowing larger amount they had to pay the higher instalment for it. Since majority of the poorest mostly depends on either wage labouring or other low income sources, it is likely that they had to depend mostly on income from activities where loan money were invested. The strict schedule of instalment payment, investment of loan in low return activities, the gestation gap between the investment and income received in the activities where the loan were invested, and of course, small flow of income from other sources put them in a position where they had to sell part of their assets for debt servicing. Results on the impact of BRAC inputs on the major outcome variables mainly per capita expenditure and asset holding raise the general question on the justification of giving higher loans to the poorest in successive years.

Impact of BRAC on the incidence , depth and severity of poverty

This section examines the poverty incidence among BRAC members. It is based on the poverty line expenditure estimated with the cost of basic needs method. This estimate also shows that the poverty incidence was lower among BRAC members for the very poor and others (Table 6). The decomposition of BRAC members by length of membership shows that for the poorest households the incidence of poverty declined from 61% to 44.4% with increasing membership length of 47 months, then started rising again. The declining trend in poverty for other members with increasing membership length indicates that BRAC membership made more positive contribution in reducing poverty

for the relatively better-off households. Results of poverty gap and severity of poverty[5] for different membership length groups show that the gap amongst the poorest was reduced after joining BRAC and then started rising after four years of membership length. Another BRAC study also found that the benefits of BRAC are not evenly distributed among members of different socio-economic groups in favour of relatively less poor households. Even borrowing could have an adverse effect on the welfare of the poorest of the poor (Zaman, 1997). This result supports the view that the poorest of the poor may not benefit as much as the moderate poor from membership in credit programmes (Hulme et al, 1996, Wood et al, 1997). It also indicates that the existing RDP programmes could not be the only alternatives to alleviate the poverty level of the poorest in the long run.

The positive impact of credit programmes was found to be significantly correlated with higher initial endowment, traits of leadership, higher involvement in relatively high return activities, higher entrepreneurial skill and higher social position (Halder and Husain, 1998).

The most important determinants of poverty as found by Rahman (1998) were the resource endowment of a household such as land, working capital for non-farm activities, non-land fixed asset, family labour and skill level of household workers.

Table 6. Incidence, depth and severity of poverty and member category

Membership Status	Poorest			Others		
	Inci-dence	Poverty gap	Severity of poverty	Inci-dence	Poverty gap	Severity of poverty
BRAC	52.0	14.7	5.5	52.1	12.7	4.3
1-11	61.0	20.0	8.1	56.5	14.3	5.0
12-47	44.4	10.6	4.7	52.6	13.4	3.4
48+	55.1	15.6	5.9	45.2	9.4	2.8
Comparison	79.5	23.0	8.3	65.9	17.4	5.9

[5] *Poverty gap is defined by the mean distance below the poverty line as a proportion of that line where the mean is formed over the entire population, counting the nonpoor as having zero poverty gap. The squared poverty-gap index of Foster, Greer and Thorbecke is defined as the mean of the squared proportionate poverty gaps (again the mean is formed over the entire population, counting the nonpoor as having zero poverty).*

Findings of this study and of other studies mentioned earlier indicate that the current package of inputs provided by RDP with the emphasis on micro-credit may not be the answer to the needs of the poorest as has been argued elsewhere. It also raised the question as to what extent micro-finance in the form of loans was an appropriate programme for the poorest at all. Debt on any terms may cause more problems than it solves for the households with very little capacity to earn especially in the absence of any other kind of support. It may be true that microfinance is not the complete answer. The job creation programme of Proshika with the assistance of USAID, Income Generation for Vulnerable Groups Development programme of BRAC and Grameen Bank's experimental programme for the poorest called 'Nishyo project' may be some alternatives directed to the poorest (MacLean, 1998). To implement such programmes in most circumstances subsidy would be necessary. The Micro-Enterprise Lending Assistance (MELA) is an alternative initiative of BRAC launched in 1996 which offers loans ranged Tk. 20,000 to Tk. 200,000 to the RDP graduates. It is hoped that by this programme the enterprising marginal farmers would be involved and they would employ the poorest segment of the population in their enterprises. It will also reduce the displacement effect of resource redistribution. On the other hand, the loan size will reduce the transaction cost of the lending institution which will make lending cost effective.

Conclusions and Policy Decisions

Identification of the poorest often matter for the development practitioners since one of the main objectives of the latter is alleviation of poverty. In this paper different approaches on the identification of the poorest have been discussed and a new approach to construct a poverty profile of the poorest has been suggested by constructing an index for identification of the poorest integrating ten different indicators. Among these are sex and occupation of the household head, wall and roofing materials of the living house, landholding, calorie consumption, other asset base, savings, their self perception on poverty status and village infrastructure. In the construction of this index higher weight

was given to the poorer and lower for the less poor households. The correlation between poverty and indicators included in the index were found highly significant.

The poorest BRAC member households with little asset borrowed similar amount of BRAC loan as other BRAC members. But they also used such loan relatively more on food consumption, construction of living houses, purchase of non-productive assets and other social needs since they had less loan use capacity. But with an increase in numbers of borrowing, proportion of loan used for non-productive activities decreased gradually. Those member women directly involved in any income generating activity used loan in a more productive way than the other poorest households. Multivariate analysis of impact shows that credit made positive contribution in raising their consumption level and negative impact on asset accumulation.

The loan use pattern, the impact of BRAC inputs on consumption expenditure, the incidence of poverty of different membership length group, the poverty gap and the severity of poverty give some indication that at the very beginning of their joining the poorest need some financial support to fulfill their basic needs. Return from any investment take place after a certain period of time. But the weekly[6] loan repayment system of BRAC, like any other NGOs, starts from the end of the first week of borrowing. The poor with limited income cannot manage enough resources to maintain the family and to pay regular instalment. It implies that instead of productive investment, they need to keep part of their loan for regular instalment payment. Part of the amount they also spent to meet other social and emergency needs since they could not withdraw their savings in the BRAC account at any given time. The reduction of investment was also due to the poor resource base of the household.

The present analysis supports the argument that the poor need more comprehensive approaches to financial services, i.e. micro-scale short and long-term savings, investment and consumption loans, and perhaps insurance with other social security mechanisms. In

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[6]*Loan repayment system of BRAC has recently been changed from weekly to bi-weekly instalments*

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the lean season when unemployment and under-employment is higher, creation of wage employment may be another alternative since wage labour was found to be the main occupation of the poorest. The 'food for works' programme implemented in Bangladesh may be an example in this regard. Involvement of more women in different income generating activities may improve their condition since the study found some positive relationship between well-being and women's involvement in different income generating activities.

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Table A.1. Indicators included to identify the poorest and their rank

Indicators	Rank	Indicators	Rank
1. Characteristics of the household head		2. Occupation of the household head	
Female, divorced or separated or widowed and illiterate	5	Disabled or unemployed or household works	5
Female divorced or separated or widowed and literate	4	Wage labour	4
Female married and illiterate	3	Unskilled labour	3
Female married and literate	2	Self employment	2
Else	1	Else	1
3. Pre-BRAC landholding		4. Village vibrancy (scores)	
Absolute landless	5	≤15	5
Household without any cultivable land	4	16-20	4
Agricultural land ≤ 10 decimals		21-25	3
Agricultural land >10 but ≤ 25 decimals	3	26-30	2
Agricultural land >25	2	>30	1
	1		

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Table A.2. Distribution of sample households by the indicators included in the index

Indicators	All households		BRAC	Poor Comparison	Total
	% of hhs n=1295	% of the poorest	n=223	n=44	n=267
1. Characteristics of the household head					
Female, divorced or separated or widowed and illiterate	5.3	94.2	27.4	9.1	24.3
Female divorced or separated or widowed and literate	0.6	87.5	2.7	2.3	2.6
Female married and illiterate	1.9	70.8	7.6	-	6.4
Female married and literate	0.4	20.0	0.4	-	0.4
Else	91.8	14.9	61.9	88.6	66.3
Chi-squre			311.0		
Pearson's contingency coefficient			0.44		
2. Occupation of the household head					
Disabled or unemployed or household works	5.6	76.7	24.7	2.3	21.0
Wage labour	29.0	46.8	61.9	86.4	65.9
Unskilled labour	4.4	28.1	6.3	4.5	6.0
Skill labour	0.3	-	-	-	-
Else	60.6	2.4	7.2	6.8	7.1
Chi-squre			459.7		
Pearson's contingency coefficient			0.51		
3. Pre-BRAC Landholding					
Absolute landless	12.8	50.0	32.7	22.7	31.1
Household without any cultivable land	39.4	27.6	50.7	63.6	52.8
Agricultural land ≤ 10 decimals	15.2	14.7	10.3	13.6	10.9
Agricultural land >10 but ≤ 25 decimals	11.0	4.2	2.7	-	2.2
Agricultural land >25 decimals	21.5	2.9	3.6	-	3.0
Chi-squre			184.4		
Pearson's contingency coefficient			0.35		
4. Village vibrancy (scores)					
≤15	16.8	36.2	25.6	50.0	29.6
16-20	34.8	29.9	52.0	43.2	50.6
21-25	29.4	9.7	15.7	-	13.9
26-30	15.3	7.1	5.8	4.5	5.2
>30	3.6	4.3	0.9	2.3	0.7
Chi-squre			114.0		
Pearson's contingency coefficient			0.28		

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Table A.3. Determinants of per capita expenditure of the poorest

Explanatory variables	All poor n=267		Only BRAC n=223			
	Eq 1	Eq II	Eq I	Eq II	Eq III	Eq IV
Household economic dependency	-4.8 (-1.81)	-5.1(-1.92)	-3.7(-1.15)	-5.1(-1.67)	-5.5(-1.79)	-4.9(-1.57)
Education level of the household head	4.0 (0.77)	4.5(0.86)	0.7(0.12)	0.2(0.04)	0.3(0.04)	-0.2(-0.03)
Occupation of the household head self=1, else=0	7384 (3.55)	7272.5(3.52)	8289.3(3.49)	8843(3.74)	8576.3(3.60)	8805.4(3.72)
Sex of the household head Female=1, else=0	305.8 (0.36)	408.8(0.48)	266.2(0.28)	168.5(0.18)	184.6(0.19)	278.0(0.29)
Village vibrancy	160.1 (1.96)	151.8(1.86)	212.2(2.25)	212.8(2.27)	193.9(2.04)	206.2(2.20)
Per capita non land asset holding	0.5(4.01)	0.5(3.64)	0.5(3.61)	0.6(3.92)	0.6(3.87)	0.6(3.86)
BRAC membership =1, else =0	921.5(0.95)	122.5(0.12)				
Total institutional loan for the last three years		0.2(2.33)				
Informal loan amount		-0.02(-0.06)				
Cumulative amount of BRAC loan			0.1(1.38)			
Involvement in any IGA=1, else =0			1216.2(1.37)			
BRAC training received=1, else=0			81.1(0.08)			
Length of BRAC membership				-2.0(-0.17)		
BRAC membership length 12-47 months =1, else=0					680.8(3.87)	
BRAC membership length 48-83 months =1, else=0					746.9(0.59)	
BRAC membership length >83 months =1, else=0					-857.9(-0.65)	
BRAC members received loan only =1, else=0						65.2(0.6)
BRAC members received loan and training =1, else=0						976.0(0.74)
CONSTANT	4028.8(2.44)	3278.5(1.95)	1748.5(0.87)	3389.3(1.76)	3462.2(1.77)	3072.3(1.45)
R-square	0.18	0.20	0.20	0.18	0.19	0.19
F value	8.11	7.00	5.89	6.9	5.58	6.17

Table A.4. Determinants of per capita total assets of the poorest

Explanatory variables	All poor		Only BRAC			
	Eq 1	Eq II	Eq I	Eq II	Eq III	Eq IV
Household economic dependency	-10.9(-1.97)	-10.9 (-1.98)	-11.4(-1.75)	-11.7(-1.91)	-11.2(-1.84)	-11.5(-1.87)
Aggregate household education level	49.6(4.65)	49.7(4.65)	59.6(4.92)	56.3(4.65)	56.5(4.69)	60.0(4.98)
Occupation of the household head Wage=1, else=0	-5177.5(-2.29)	-5159.0(-2.27)	-4221.1(-1.72)	-4486.7(-1.86)	-4435.0(-1.84)	-4171.4(-1.73)
Sex of the household head Female=1, else=0	1496.2(0.65)	1458.5(0.64)	1179.6(0.47)	850.7(0.34)	883.9(0.37)	970.0(0.40)
Village vibrancy	15.8(0.09)	14.7(0.09)	-11.2(-0.06)	-13.5(0.07)		
Total household savings	1.6(2.33)	1.7(2.23)	2.1(2.47)	2.2(2.78)	2.4(2.89)	2.2(2.71)
BRAC membership =1, else =0	1399.1(0.68)	1178.3(0.55)				
Total institutional loan for the last three years		-0.06(-0.41)				
Cumulative amount of BRAC loan			-0.05(-0.33)			
BRAC training received=1, else=0			-1144.2(-0.58)			
Involvement in any IGA=1, else =0			17.4(0.01)			
Length of BRAC membership				-31.9(-1.25)		
Dummy on BRAC membership length 12-47 months =1, else=0					-3005.5(-1.36)	
Dummy on BRAC membership length 48-83 months =1, else=0					-3273.0(-1.19)	
Dummy on BRAC membership length >83 months =1, else=0					-3380.0(-1.23)	
BRAC members received loan only=1, else=0						-1860.5(-0.74)
BRAC members received loan and training =1, else=0						-2940.0(-1.01)
CONSTANT	8422.3(2.02)	8475.1(2.03)	6436.3(1.36)	7718.4(1.65)	8068.9(2.28)	7344.3(1.99)
R-square	0.18	0.18	0.19	0.19	0.19	0.19
F value	8.15	7.12	5.45	7.24	6.43	7.15

Acknowledgments

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