

**Microcredit programmes:  
Who participates and to what extent?**

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## **Foreword**

Empirical evidence point to a causal relationship between the socioeconomic status of individuals and communities and their health. Indeed improvement in health is expected to follow socioeconomic development. Yet this hypothesis has rarely been tested: at least it has not undergone the scrutiny of scientific inquiry. Even less understood are the processes and mechanisms by which the changes are brought about.

The Rural Development Programme (RDP) of BRAC is a multisectoral integrated programme for poverty alleviation directed at women and the landless poor. It consists of mobilization of the poor, provision of non-formal education, skill training and income generation opportunities and credit facilities. The programme is the result of 20 years of experience through trial and error. However evaluation of its impact on human well-being including health has not been convincingly undertaken.

The Matlab field station of ICDDR,B is an area with a population of 200,000, half of whom are recipients of an intensive maternal and child health and family planning services. The entire population is part of the Center's demographic surveillance system where health and occasionally socioeconomic indicators have been collected prospectively since 1966.

A unique opportunity arose when BRAC decided to extent its field operations (RDP) to Matlab. ICDDR,B and BRAC joined hands to seize this golden occasion. A joint research project was designed to study the impact of BRAC's socioeconomic interventions on the well-being of the rural poor, especially of women and children, and to study the mechanism through which this impact is mediated.

In order to share the progress of the project and its early results, a working paper series has been initiated. This paper is an important addition in this endeavour. The project staff will appreciate critical comments from the readers.

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## 1.0 Introduction

Land ceilings, occupational criteria and asset valuations are commonly used for targeting purposes by credit agencies aiming to direct resources to the rural poor. However a mixture of demand and supply side factors leads to the inclusion of a small group of ‘non target’ households in these credit programmes. This paper starts by examining the differing characteristics of the ‘properly targeted’ versus these ‘non eligible’<sup>1</sup> members. The next section uses multivariate analysis to identify the characteristics, which lead to participation in a credit programme. The second part of the paper looks at the ‘depth’ of participation of programme members using a set of credit based indicators. Differences between ‘correctly targeted’ and ‘non target’ households are examined in terms of ‘participation depth’ and multivariate analysis is again used to shed light on the possible determinants of active participation. The concluding section looks at the implications of the earlier analysis for microcredit policy. The paper uses data collected by the author as a team member of the BRAC-ICDDR,B joint research project in fourteen villages in Matlab thana<sup>2</sup>, Bangladesh. BRAC ‘s Rural Development Programme (RDP) has been operating in ten of these villages for three years to the data being collected and will be used as the microcredit programme under study.

### 1.1 Objectives

- Examine and highlight differences in socioeconomic status between target group (TG) and non target group (NTG) BRAC members and between TG members and TG non members.
- Identify the factors influencing membership in BRAC’s RDP.
- Construct indicators for ‘participation depth’ and examine differences within BRAC members.
- Identify the factors influencing depth of participation in BRAC’s RDP Discuss the implications of the earlier analysis for programme policy.

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<sup>1</sup> The term ‘target group’ (TG) will be used interchangeably with ‘eligibility’ in this paper

<sup>2</sup> Matlab is a sub-district in Chandpur district 55 kms southeast of the capital Dhaka with a population of about 400,000.

## 1.2 Data and methodology

The data was collected by the BRAC-ICDDR,B joint research project in Matlab thana Bangladesh (see appendix 1 for a description of the data collection method). The methodology consists of differences in means and regression analysis. The details are presented during the course of the paper.

### 2.0 Initial endowment: are BRAC member's 'homogenous'?

A comprehensive village survey in the fourteen villages found a total of 585 BRAC members and 2935 non members. 71% of the BRAC members were classified as 'target group/eligible' (TG) and 29% non-target group (NTG) by the field investigators using BRAC's official targeting criterion.<sup>3</sup> One must note that since the research was conducted three years after BRAC's RDP started operating in Matlab some of the households classified as NTG could have 'graduated' from TG to NTG status in the interim.<sup>4</sup> Table 1, based on data collected in the ten 'BRAC villages', suggests that the BRAC member NTG households are on the whole considerably better off compared to TG households in almost all indicators of well being. However this NTG group are less well off using the same indicators when compared to the non BRAC NTG group (see table 1). In other words the members who fall outside BRAC's official targeting criterion but are 'mistakenly included' come from a category of households that could be considered better off compared to even the 'marginal poor'<sup>5</sup> category but not to the extent that they form part of the village elite. The tests of differences in means and proportions showed that there is little to choose between TG member households and TG non member households in certain dimensions (average education, total savings, dependency ratios, remittances received, proportion of manual labourers, 'hunger', food share) whilst considerable differences exist in others. For instance target group non members seem wealthier in that they have significantly more land and greater value of non land assets compared to target group members and also they have a larger ratio of earners to household members. TG member households on the other hand have significantly fewer heads of household who were ill in the last fifteen days, younger household heads and a greater proportion of male headed households.

A simple demarcation between the poor and the ultra poor (see Lipton 1983) can be made using the land ownership data. Nearly half of BRAC members have less than ten decimals of land (47%) and 30% have less than five decimals. The national rural proportion of households with less than five decimals is 17.6% (BBS 1995) thereby suggesting that BRAC groups have more than a proportionate share of ultra-poor households.

Hence two indicators that are strongly correlated with poverty namely landlessness and female headship, give mixed messages in terms of the accessibility of microcredit programmes for the poorest. The land data suggests the ultra poor do take part while the relative lack of participation of female headed households suggests that there may be barriers to entry for the most vulnerable in society.

Having established that basic differences exist within BRAC members the issue of whether other competitive forces in the village affects the socioeconomic profile of the type of household selected by

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<sup>3</sup> BRAC targets households whose land ownership is less than 0.5 acres (50 decimals) and whose main source of livelihood is manual labour (this criterion constitutes 'BRAC' eligibility')

<sup>4</sup> Moreover the figure for Matlab is higher than a similar calculation from a nationally representative study which found that the non target proportion in BRAC groups is 20% (Mustafa/Ara 1995) possibly due to the rapid scaling up of RDP the year the Matlab branch was opened

<sup>5</sup> See Rahman and Hossain (1995) for the need to include the 'marginal poor' in targeted anti-poverty programmes

BRAC was looked into. The one village out of the ten in the sample which had BRAC, ASA, BRDB and the Grameen Bank<sup>6</sup> was compared with villages which had either only BRAC or BRAC plus one other organization. Tests of differences in means were carried out between the two sets of villages e.g. the land owned by the typical BRAC target group member in the ‘competitive’ village versus the mean land owned by a BRAC target group member in the ‘non competitive’ village. The tentative finding is that the degree of ‘competition’ does not make much difference to the ‘type’ of household participating in BRAC although the small number of villages under study makes generalizations difficult. The differences in ‘endowments’ that do occur between households in the two sets of villages are more likely to be due to village level differences as when differences do occur they are consistent amongst the different socioeconomic classes. The village where programme concentration is the highest appears more prosperous (measured by a number of indicators) than the norm.

**Table 1: Summary statistics for different socioeconomic groups in the sampled villages**

Indicators	Groups			
	BRAC Member TG n=403	BRAC Member NTG n=162	Non BRAC Member TG n=505	Non BRAC Member NTG n=782
Quantity of land owned (decimals)	13.70	87.91	17.13	134.22
Value of non land assets (taka)	15943	44159	15828	83849
Food share in total consumption	0.71	0.67	0.73	0.64
Proportion of HH's which went without rice/chapati for one day in last four months	0.06	0.0	0.08	0.01
Daily consumption per capita (all items) in taka	14.4	20.87	14.07	31.43
Total credit taken in last four months (taka)	2665	3234	2053	4057
Total savings (in taka)	2455	8292	2226	9933
Proportion of HH heads who are manual labourers	0.33	0.07	0.31	0.04
Proportion of HH heads ill in last two weeks	0.14	0.12	0.16	0.10
Proportion of HH's seriously damaged in last four months	0.07	0.05	0.06	0.03
Average years of education in household	1.31	2.69	1.40	3.69
Age of household head	42.70	46.52	44.44	51.23
Dependency ratio*	0.33	0.29	0.34	0.31
Ration of earners to total members	0.22	0.20	0.28	0.23
Remittance received last year in taka	162	358	82	804
Proportion of male headed households	0.87	0.85	0.82	0.80

\* (number under nine + number over 60)/(number between 10-60)

See page 3 for a discussion of the differences in the means and proportions

Source: The data was collected by the BRAC-ICDDR,B Matlab project between April-August 1995

<sup>6</sup> ASA (Association for Social Advancement), BRDB (Bangladesh Rural Development Board) and the Grameen Bank are other agencies involved in lending to the rural poor.

### 3.0 The determinants of BRAC membership: a multivariate analysis

‘Participation’ in a targeted credit programme is the outcome of both demand led and supply side factors. The former depends on the judgments of eligible households about the costs and benefits of taking part; the supply aspect revolves around the decision by the organization to locate in a particular village and secondly to select households for the programme.

This section uses multivariate analysis to assess the factors influencing a woman’s decision to join, or be selected by, BRAC (see appendix 2 for a table showing the differences in the means and proportions of the explanatory variables). In order to do so one must identify certain explanatory variables that can be considered exogenous and hence exclude others such as savings, non land assets, housing quality or consumption that could have been affected through BRAC membership.

In the long run it can be argued that most variables are endogenous and determined by some underlying structural model. However for the purposes of this analysis we can assume that BRAC membership will not affect the explanatory variables used in the model during the four years that the organization has been in Matlab.

#### 3.1 The ‘membership model’

$BRVO = f(ADFEM, ADMAL, AGEHHH, AGESQ, ASA, AVEDUC, BRDB, EARNR, ELECT, GRAME, HHHLBR, LANDQN, MRKTIM, SXHHH)$

where

ADFEM	number of adult females aged 15-60
ADMAL	number of adult males aged 15-60
AGEHHH	age of the household head
AGESQ	age of household head squared
ASA	one if ASA is present in village; zero if not
AVEDUC	average years of education of members in household
BRDB	one if BRDB is present in village; zero if not
BRVO	dichotomous variable; one if the household is BRAC member and zero if not
EARNR	ratio of number of earners in household to number of household members
ELECT	one if village has electricity, zero if not
GRAME	one if Grameen Bank is present in village; zero if not
HHHLBR	one if household head is a day labourer; zero if not
LANDQN	total amount of land owned (including homestead land) in decimals
MRKTIM	distance from market place (0 = far 1=near)
SXHHI-I	sex of household head; one if male. zero if female

Land can be used as a proxy for wealth and due to its centrality in BRAC’s targeting rule is an obvious determinant of membership. Land transactions are relatively infrequent and hence the assumption of exogeneity should be safe (see Pitt *et al.* 1995 for a similar argument). The average number of years of schooling in the household was also included as better educated households are more likely to be wealthier and hence ineligible to join. Fertility decisions affecting household composition and hence also the earners ratio can also be considered exogenous. The ‘earner ratio’ variable will be the outcome of two countervailing forces. Households with few earners are more likely to turn to BRAC as their source of credit; on the other hand the lack of earning members could act as a disincentive to join if there is a shortage of family labour to manage the loan investment. Moreover the more adult



females in the household the likelier it is for households to be BRAC members; this could be due to the fact that it is adult women who are targeted by BRAC (supply side factors) and the availability of other adult females allows substitutability of a BRAC female member's traditional household tasks while she is involved in BRAC related activities (demand driven force). The number of adult males is important due to their role in managing enterprises located outside the homestead and in marketing the output.

The presence of other similar rural credit agencies in the shape of ASA, BRDB and the Grameen Bank ought to lower the probability of a household joining BRAC; on the other hand a member may try and join more than one organization if the loan size he receives from one is insufficient to meet his/her investment needs. However in practice multiple membership is rare. The distance from the market variable and electrification were included as the 'village infrastructure' variables after preliminary tests had excluded others such as irrigation and distance from roadside due to high degrees of collinearity with other variables in the model.

The dependent variable is a dichotomous 'membership' variable where a BRAC member household is given the value 'one' and all other households are 'zero'. Logistic regression is estimated in view of the nature of the dependent variable (see Maddala 1983).

This paper estimates this equation for two different 'sample groups'.

Sample 1: This sample investigates the determinants of membership using all BRAC members (both TG and NTG) and TG non members in the ten RDP villages. There are 1069 households which fall in this category.

Sample 2: This sample is even more homogenous than the first as it includes only target group BRAC members and TG non members in the ten RDP villages (see table 2 and the discussion on the similarities and differences between the two groups). There are 908 households in this category.

### 3.2 Results from the ‘membership’ model

**Table 2: Results of logit estimation on BRAC’s membership**

	Sample 1: BRAC members and TG non members (n=1069)		Sample 2: BRAC TG members and TG non members (n=908)	
	Coefficient estimates	Odds ratios	Coefficient estimates	Odds ratios
<b>Variables</b>				
Constant	0.363	-	-0.144	
ADFEM	0.212**	1.24	0.135	1.15
ADMAL	-0.154	0.86	-0.107	0.90
AGEHHH	0.037	1.04	0.065*	1.07
AGESQ	-0.0004	0.9996	-0.008*	0.9993
ASA	-0.302**	0.74	-0.349*	0.71
AVEDUC	0.031	1.03	-0.086	0.92
BRDB	-1.414***	0.24	-1.285***	0.28
EARNR	-2.611***	0.07	-2.687***	0.07
ELECT	1.119***	3.06	1.210	3.35
GRAME	0.058	1.06	-0.239	0.79
HHHLBR	-0.167	0.85	0.002	1.02
LANDQN	0.012***	1.01	-0.005	0.99
MRKTIM	0.253	1.29	0.461**	1.59
SXHHH	-0.066	0.94	-0.152	0.86
Correct prediction %	65.3		63.6	
Mcfadden’s R squared	0.113		0.075	
Maximum likelihood value	1311.6		1152.7	
Likelihood value when all	1478.5		1246.1	
Coefficients equal zero				

\*\*\*variable significant at 1%, \*\*variable significant at 5%, \*variable significant at 10%

In the first sample those with larger landholdings and fewer number of earners to household size are more likely to be BRAC members. A one decimal rise in land leads to a one percent increase in the odds of being a member<sup>7</sup> and a unit rise in the earners ratio leads to a 93% fall in the same odds. These significant coefficient estimates can be explained by the fact that NTG members in BRAC’s credit group have significantly larger land holdings compared to the target group<sup>8</sup> and by the fact that amongst the poor those households with fewer people earning have greater incentives to join BRAC. A greater number of adult females in the household leads to a 24% rise in the odds of being a member; the availability of substitutes for the female member’s traditional homestead tasks is a plausible reason. Moreover the presence of other NGO’s appears to lower the probability a household will join BRAC. However average education, age, sex and occupational status of household head cannot be used to predict membership.

<sup>7</sup> A simple transformation  $p(1-p)$  suggests that a one decimal increase in land leads to a 0.3 percent point increase in the probability (not odds) of membership, where ‘p’ is the average probability of membership for this sample of households evaluated at the means of the data.

<sup>8</sup> see table 1 and appendix 2

In the more homogenous second sample the main result that emerges is a confirmation of the earners ratio hypothesis, namely that in a sample of eligible households in BRAC RDP villages, households with a lower ratio of earners to members are more likely ( $p=0.0002$ ) to join BRAC. The age and age squared coefficients suggest that the probability of membership rises with age of household head but then declines beyond a certain age. The sex of household head and land owned two variables whose mean values differed significantly amongst the two groups considered in this sample emerge as insignificant at the 10% level in explaining membership in this analysis. The presence of other NGO's is similar to the first sample. In both samples the probability of a household joining BRAC rises if the 'BRAC village' has electricity.

Further implications of these results will be discussed later in the paper.

#### 4.0 The depth of participation

The previous section discussed the characteristics of households who join BRAC microcredit programmes vis-à-vis those who are eligible but do not. Our attention will now turn to the characteristics of the households who are BRAC members and are actively involved in its credit programme. The data will be drawn from the ten BRAC villages surveyed in Matlab and the indicators of 'active' participation will restrict itself to credit activities as opposed to participation in terms of a members role in other aspects of the programme.<sup>9</sup>

The indicators that will be used to measure 'participation depth' are whether the household ever borrowed or not, the total credit obtained from BRAC for those who did borrow, the average loan size, the average number of loans taken, a measure of 'loan concentration' (i.e. total borrowed as a proportion of length of membership) and participation in BRAC's 'sector programmes'<sup>10</sup>. Table 3 shows the extent, if any, of differentiation between eligible and non eligible BRAC members in terms of different indicators of 'membership depth'.

**Table 3: Differences in 'membership depth' according to eligibility in the ten BRAC villages surveyed in Matlab**

	BRAC TG member	BRAC NTG member	'p' value of differences in means
% borrowed at least once	89.2 (n=378)	91.1 (n=180)	0.475
Cumulative amount borrowed from BRAC (taka)	7642 (n=335)	7788 (n=163)	0.732
Average loan size (taka)	2942 (n=335)	3180 (n=163)	0.002
Average number of loans taken	2.54 (n=335)	2.39 (n=163)	0.125
'Loan intensity' (cumulative loan/ membership length)	403 (n=335)	414 (n=163)	0.736
% took 'sector loan' at least once	12.4 (n=378)	8.0 (n=180)	0.120

<sup>9</sup> This is of course a limitation of the analysis. Participation takes many forms e.g. in VO management committees, as small group leaders etc. However since the main thrust of BRAC's RDP is its lending operation, 'credit participation' was considered a reasonable proxy for overall participation

<sup>10</sup> BRAC's sector programme loans (poultry, livestock, fisheries, sericulture, social forestry and vegetable cultivation) are complemented with input supply, training and marketing support. Due to the need to go on training courses and the greater interaction with BRAC staff a member taking a sector loan could be considered a more active participant

The comparison of means suggests that NTG members borrow significantly larger amounts compared to TG members in terms of average loans; the cumulative borrowed figure is however not significantly different. The average number of times a household has borrowed from BRAC is only just not significant at the 10% level and interestingly we find that TG members appear to borrow more frequently. In terms of 'loan intensity', BRAC NTG members' score higher but again not significantly so compared to TG members. The sector programme loan is interesting as it suggests that at the 12% level TG members are more likely to take a sector programme loan.

A preliminary message that emerges from these figures is that apart from average loan size, there does not appear to be a clear-cut difference in the depth of participation between the two groups. However one needs to consider that the full extent of the potential target/non target group spread is probably not revealed in the above table due to the limit on loan sizes set by BRAC and the limited average length of membership. Disbursement ceilings are set by the number of times she has borrowed though the activity she wishes to invest in and her previous borrowing record are also considered. Moreover, the average length of membership is just under two years and hence the full extent of the differences in 'participation depth' cannot be explained at this stage. However, multivariate analysis may shed some more light on the factors influencing the depth of participation and this is what the next section addresses.

#### 5.0 The determinants of 'membership depth'

Reduced form equations<sup>11</sup> were estimated for the different dimensions of 'participation depth' (see table 4) Steps similar to the 'membership model' were taken prior to settling for a particular model, based on the 'intuitive appeal' of the explanatory variables, goodness of fit and other specification tests<sup>12</sup>. The 'participation depth' model introduces two new variables length of membership<sup>13</sup> and BRAC eligibility status.<sup>14</sup>

**Depth = f (ADFEM, ADMAL, AGEHHH, AGESQ, ASA, AVEDUC, BRDB, BREL, EARNR, ELECT, GRAME, HHLBR, LANDQN, MEMLENG, MRKTIM, SXHHH)**

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<sup>11</sup> One limitation of the analysis for the 'membership depth' model is the fact that the sample of BRAC members may be drawn from a truncated distribution; this possibility has not been taken into account in the estimation of the reduced form (see Maddala 1983)

<sup>12</sup> The scatter plot of standardized residuals against standardized predicted values was inspected to check for 'linearity'. Normality was tested using a normal plot (cumulative probability of standardized residuals in the case of normality against the cumulative probability of occurrence in the actual residuals). The test for heteroscedasticity was done by plotting the standardised residuals on a histogram and inspecting whether the plot approximates normality.

<sup>13</sup> Length of membership in months is coded MEMLENG

<sup>14</sup> BRAC eligibility (BREL) can be seen as an interaction term between land owned and the manual labourer dummy since eligibility is a combination of these two factors. BREL was used and then excluded from the final 'membership model' as the collinearity between the terms made land, occupation and eligibility variables all insignificant.

**Table 4: Coefficient estimates on selected indicators of participation depth**

Variables	Borrowed at least once		Sector programme participant		Log of total borrowed	Log of average borrowed	Log of loan 'intensity'
	Logit coefficient	Odds ratio	Logit coefficient	Odds ratio	OLS estimates		
CONSTANT	-0.476		-6.071***		8.369***	8.091***	5.321***
ADFEM	0.356	1.43	0.015	1.01	0.074	-0.011	0.051
ADMALE	0.406	1.50	-0.279	0.76	0.189	0.012	0.012
AGEHHH	0.049	1.05	0.088	1.09	-0.017	-0.004	-0.012
AGESQ	-0.000	0.99	-0.001	0.99	0.0001	0.0006	0.0001
ASA	-0.199	0.82	0.108	1.11	0.026	0.055*	-0.113
AVEDUC	-0.057	0.95	0.148	1.15	0.002	-0.003	0.036
BRDB	-0.310	0.73	0.617	1.85	0.122	0.001	0.234**
BREL	-0.153	0.86	1.108***	3.03	0.057	-0.017	0.079
EARNER	-0.282	0.75	-3.062	0.05	-0.211	-0.001	0.067
ELECT	0.634	1.88	-1.007*	0.37	-0.165*	-0.068	-0.227*
GRAMEEN	-1.086*	0.34	-0.418	0.66	0.072	0.083*	-0.030
HHHLBR	0.308	1.36	-0.763*	0.47	-0.113	-0.056*	-0.138*
LANDQN	0.002	1.00	0.003**	1.00	0.0004	0.0004**	0.0008
MEMLENG	0.015	1.02	0.075***	1.08	0.019***	-0.002	-
MRKTIM	0.062	1.06	-0.208	0.81	0.022	-0.047	0.058
SXHHH	-0.034	0.97	0.015	1.01	0.308***	0.032	0.448***
Adjusted R squared	89.6		89.0		0.10	0.03	0.06
% correct predictions	368.0		378.4				
Initial log likelihood	334.1		344.9				
Maximised log likelihood	0.09		0.09				
McFadden's R squared							

\*\*\* variable significant at 1% \*\* significant at 5% \*significant at 10%

Note: 'Loan intensity' is defined as total borrowed from BRAC divided by membership length; hence the MEMLENG variable was omitted from the model

The variables, which appear significant from this exercise, are sex and occupation of household head, presence of other credit delivering agencies, electrification and length of membership. Female headedness appears to be a constraint to the amount a household borrows; households headed by males are predicted to borrow 31% more and have 45% greater 'loan intensities' compared to their female headed counterparts. Households headed by manual labourers are also likely to borrow smaller amounts both as a proportion of the number of loans (average loan) and membership length ('intensity'). Moreover manual labourer households are also less likely to take part in sector programme activities; however this finding is contradicted by the highly significant BREL coefficient which suggests that eligible households are more likely to have taken at least one sector programme loan. This puts into doubt the impression that the initial acceptance of new technology and non-traditional enterprises is more likely to come from the 'moderate poor' households. The reason for this may be due to BRAC's intensive presence in terms of input supply, training, credit delivery and marketing of the sector programme micro enterprises thus allowing the poorer households who do not have the ability to independently access the extension services or to market these products a chance to invest in these activities. Demographic variables such as the number of adult males and females in the household, the ratio of earners, age and age squared of the household does not seem to influence the various indicators of depth in the regression models. However a comparison in the differences in means shows that those households who borrow have significantly higher numbers of adult males and

females as well as older heads of households compared to non borrowers (see appendix 2). The educational variable used, average years of schooling<sup>15</sup> in the household, also do not have much influence on the depth of participation. The village infrastructure variables and the presence of other NGO's variables present mixed results; it seems that in villages where both BRAC and Grameen operate, BRAC members have a lower probability of borrowing but those who do take larger loans, whereas ASA's presence seems to stimulate average loan sizes borrowed from BRAC and BRDB's presence does the same for 'loan intensity'.

## 6.0 Concluding discussion

This section looks at the implications for microcredit programme design of the first two parts of the paper namely the 'heterogeneity' of credit group members and the factors affecting membership and active participation in BRAC's RDP.

There are two approaches that credit agencies targeting the rural poor can take with regard to the issue of 'non target group members'. One approach is to gradually exclude existing NTG members from the group and replace them with eligible households taking the view that the large unmet demand for credit amongst the poor ought to take priority. In line with this view steps to make targeting more rigorous can be taken so as to minimize NTG inclusion in new areas. However the second approach is that these NTG members ought to be retained within the group for a number of reasons.

The first is the focus on financial sustainability of the organization delivering credit. Even though average membership length is 'only twenty-three months and there are strict ceilings on loan disbursement, differences in average credit borrowed are apparent between NTG and TG members. It is likely that over time this gap will grow and hence larger loans can be delivered and greater interest revenue per loan generated from these NTG households once loan ceilings are lifted. However the 'loan absorptive' capacity of these NTG households is still a matter to be looked into which will determine the full extent of the revenue earning potential for a microcredit organization. Furthermore, incentives to tap the considerable savings potential (see table 1) of the NTG group could be devised (e.g. a two tier interest rate system of current account savings schemes with free access complemented by 'deposit accounts')<sup>16</sup> in order to make the lending agency more sustainable.

Secondly these larger loans can be used to create employment opportunities for the poorest who are less likely to participate actively in credit programmes. However this objective may have to be an integral part of the loan sanctioning process before large loans for medium/large enterprises are agreed upon if job creation for the poorest is actually to take place. This type of 'safety net' provision would be in line with overall 'growth with equity' objectives pursued at the macro level. BRAC is in the process of initiating a new project lending to 'graduated' or NTG members (the average loan size disbursed under this new project will be at least ten times more than the current RDP average) with proven entrepreneurial ability in order to create medium/large scale enterprises prioritizing labour intensive enterprises.<sup>17</sup>

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<sup>15</sup> Regressions were run with other educational variables namely education of the household head and average education of adult females in the household. They were both insignificant in the analysis. Average education of the household as whole was chosen due to the fact that the management and marketing of loan financed investments are known to be a joint affair involving several members of the household.

<sup>16</sup> see Zaman *et al* (1994) for a discussion on flexible savings schemes piloted by BRAC's RDP.

<sup>17</sup> In line with this alternative repayment incentives need to be devised in view of the greater risk associated with lending large sums. A mixture of both 'formal' and 'social' collateral based loans can be considered for non target group households. In other words small peer groups of similarly endowed households can be formed to monitor each others loans as well as using assets to secure the loan. Moreover staff supervision and monitoring of these larger loans probably need to be even stricter than at present.

A further reason for retaining the NTG group is to do with a possible reason for this group being included in the first place. Pressures exerted by target group members themselves to include some influential NTG households may compel programme administrators to turn a blind eye to the official targeting criterion.<sup>18</sup> Hence in order to enable a village organization to be socially acceptable a few NTG members may have to be included and retained. Whilst the general ‘community approach’ has been tried and discarded by BRAC due to the elite benefiting most, the ‘target group’ approach may have to be flexible enough to incorporate a number of socially influential ‘middle income’ households, in order to maintain a link with the other socioeconomic classes in the village.

Another finding which is significant for programme design is the relative importance of the earners ratio variable in determining membership. Since the number of earners is not currently part of BRAC’s targeting criterion the fact that households with fewer earners are more likely to join BRAC appears to be a ‘demand side’ phenomenon. Hence if this variable is added to the current land and occupation based eligibility criteria a greater number from this particularly vulnerable group (i.e. households with few earners to members) will be included in RDP activities. Female headed households are another vulnerable group for whom there exists evidence that barriers to RDP membership exist (Hossain and Huda 1995, Evans *et al.* 1995). Table 1 indicated that when target group BRAC members are compared to a control group of target non members there appears to be a significant underrepresentation of female headed households in BRAC’s RDP. Moreover the evidence presented in this paper suggests that female headship also curtails active participation amongst those who do join. Policies have to be designed to meet the needs of this particularly vulnerable group bearing in mind the socio-cultural constraints in involving such households in credit programmes (Hossain and Huda 1995). The additional ‘purdah’ barriers imposed on females without a living husband which restrict both mobility and the type of loan investment have to be catered to as well as the breakdown of the traditional family based social security mechanism. Hossain and Huda in their work on female headed households in Matlab feel that ‘...the social rules about what work women can do have not changed at the same rate as the deterioration of the social safety net system and the outcome is the extreme vulnerability experienced by women-headed households’ (pg. 30). The significance of the occupational and wealth variables suggest that whilst the ultra poor measured in terms of landholding and occupation may be able to join BRAC these members do not participate as actively as other members.<sup>19</sup>

If credit programmes are to serve the interests of the most vulnerable in society certain institutional features may have to be changed to accommodate this group. Initial loan repayment has to be staggered in line with the time frame of loan investment returns. Installment payments could be made monthly though the effect on overall ‘credit discipline’ has to be monitored.<sup>20</sup> Compulsory savings requirements have to be eliminated or reduced to a minimum if the poorest are not to be deterred from taking part. Easy access to savings and consumption credit<sup>21</sup> in order to meet emergency needs could be initiated. Moreover the ‘credit-plus’ approach of supporting loans with a training, technical

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<sup>18</sup> This is a view expressed during conversations with BRAC programme administrators and field staff.

<sup>19</sup> Whilst the BREL variable may itself not be significant the two components of BRAC eligibility ie manual labour and land size are

<sup>20</sup> BRAC’s RDP has launched an experimental monthly repayment system in selected branches to monitor the effect on loan repayments

<sup>21</sup> Table 1 showed how target group households face a higher incidence of food shortages compared to non target members

assistance and marketing package could be more relevant to the needs of the poorest.<sup>22</sup> However aside from changing the design of credit programmes the issue of providing employment opportunities as an alternative to credit, discussed earlier, has to be strongly emphasized.

Whilst the provision of 'flexible and diverse financial services' is in vogue in current micro finance thinking<sup>23</sup> the extra administration costs of any new policies directed at a subsection of members has to be weighed up against their benefits. For instance the 'credit-plus' approach, which may be more suited to the needs of the poorest, involves more costs for the implementing organization than the 'minimalist approach'. On the other hand initiating separate policies for the marginal poor in terms of larger loans and savings incentives may generate sufficient revenue for the microfinance organization to cover the additional costs over time. Hence further research is needed on this crucial issue in order to assess the 'optimal' degree of flexibility given the possible trade off between improved services for a heterogeneous client group and the financial sustainability of the microfinance institution.

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<sup>22</sup> BRAC's IGVGD programme caters to the needs of the most destitute rural women for whom traditional credit programmes are not the answer. This programme works with women who are given monthly wheat relief rations, provides training in homestead poultry rearing and progressively offers concessional loans with a monthly repayment requirement. These members are gradually absorbed into the mainstream RDP program and offered larger loans. This mechanism is designed to facilitate the entry of the poorest into regular credit programmes and acts as a transition from a relief to a longer term development programme.

<sup>23</sup> see Wright (1996) for a discussion on flexible financial services in the context of Bangladeshi rural finance organizations



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## Appendix 1

The data used in this paper was collected by a team of thirty-two field investigators who resided in four 'research bases' spread around the research area. Each base had a resident supervisor and the Matlab project also had an overall resident field supervisor. The head office staff were involved in the questionnaire design, field testing, training the interviewers and overall coordination of the data collection. The coding, editing and data entry were done at head office in Dhaka.

## Appendix 2

Independent variables	Membership model			Depth model			
	All BRAC members (n=565)	Only TG members (n=403)	TG non members (n=505)	Borrower (n=498)	Non borrower (n=49)	Took sector loan (n=60)	Did not take sector loan (n=487)
ADFEM	1.49	1.38	1.27	1.51	1.16	1.53	1.47
ADMAL	1.33	1.28	1.22	1.36	1.06	1.32	1.34
AGEHHH	43.8	42.7	44.4	45.00	37.08	45.2	44.2
ASA	0.43	0.42	0.46	0.41	0.53	0.5	0.41
AVEDUC	1.70	1.31	1.41	1.75	1.50	1.79	1.72
BRDB	0.68	0.68	0.81	0.66	0.74	0.6	0.68
EARNR	0.22	0.22	0.28	0.21	0.24	0.20	0.22
ELECT	0.40	0.37	0.28	0.41	0.47	0.28	0.43
GRAME	0.23	0.21	0.16	0.21	0.37	0.15	0.23
HHHLBR	0.26	0.33	0.31	0.26	0.20	0.17	0.26
LANDQN	35.0	13.7	17.1	39.5	22.1	46.0	37.0
MRKTIM	0.59	0.63	0.72	0.55	0.63	0.60	0.55
SXHHH	0.86	0.87	0.83	0.88	0.84	0.85	0.87

### t-tests of differences in means and proportions:

All BRAC members vs TG non members: ADFEM, AVEDUC, EARNR, ELECT, GRAME, LANDQN, MRKTIM (all at the 1% level); ADMAL, HHHLBR (at the 5% level)

TG members vs TG non members: ADFEM, AGEHHH, BRDB, EARNR, ELECT (at the 1% level); LANDQN, MRKTIM (at the 5% level)

Borrower vs non borrower: ADFEM, ADMAL, AGEHHH (all at the 1% level); GRAME (at the 5% level); EARNR (at the 10% level)

Sector loanee vs non sector: ELECT (at the 1% level)