NGOs and Village Impacts: A Case Study in Badhair Union

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1. Introduction

The NGO sector in Bangladesh today is one of the densest in the world. With an estimated 1200 NGOs operating in the country of approximately 130 million people, almost one NGO exists per hundred thousand people.[1] The need for such a large NGO sector has surely arisen in response various factors, some of which are the extreme nature of poverty in Bangladesh, the government's seeming inability to meaningfully address poverty, and the disaster-prone character of the country. Income per capita in Bangladesh is estimated to between $220 to $360 depending on sources, and has not grown more than 4% in the last twenty years.[2] One of the relevant question arising in the wake of this booming growth in the NGO sector, a question which has implications for development practices elsewhere, is how effective NGOs have been in promoting sustainable poverty alleviation and development.

An abundance of research has reviewed the targeting, effectiveness and sustainability of these NGO programs in the last decade. The bulk of this research has naturally focused on how particular programs are successful in achieving tangible improvements in the lives of NGO members -the evidence indicating that NGOs have a palpable impact on vulnerability to crisis, although evidence is more ambiguous with respect to poverty reduction.[3] An oft-overlooked aspect of NGO impact analysis however, is how villages *as a whole* are affected by the presence of NGO programs. The most obvious difference between "village impact" (where little research exists) and "member impact" (where a plethora of data and research exists) is that nonmembers are included in the former and not in the latter.

Most research and evaluation of NGO work has focused specifically on impacts on NGO members by controlling against nonmembers. NGO programs however, may also be

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[1] The estimate of 1200 NGOs is taken from Chowdury (2000). A 1998 World Bank study, based on its projections from the 1991 census from the Bureau of Bangladesh statistics, estimates that the 1998 population was approximately 125 million and growing at a rate of < 2%.
[2] GDP growth rates were 4% in the 1980's and 5% in the 1990s. However, populations growth rates of about 2% and low inflation have minimized its impact on GDP per capita. World Bank (1997), BBS Statistical Pocketbook (1995) and UNDP (1999).

affecting nonparticipating households in NGO villages through externalities of either a positive or negative nature. Income levels, asset accumulation, attitudes, behavioral outcomes, and social norms are just some of the constructs which could be influenced at a village There may therefore be a difference between impacts on members and impacts on villages, the operative influence being these externalities, or spill-over effects.

Village level effects of NGO presence have been little-explored partly because collecting and analyzing data is difficult. First, while panel data is ideal, there are very few non-NGO villages left in Bangladesh as the NGO presence is pervasive. Secondly, there is a clear endogenity problem in village selection. Specifically, villages are selected by NGOs for particular reasons. NGOs may set up operations in better off villages and target the poorer within those villages, or they may be selecting households according to their accessibility to the *upazilla* centers[4].

Despite these problems, understanding how NGOs impact village outcomes remains a very important component of how the NGO presence affects the development landscape in Bangladesh. The pilot study we have undertaken therefore attempts to overcome some of these difficulties and examine the full NGO effect on village-level outcomes.

2. Methodology

To examine the full effect of NGOs on villages, we sought to compare aggregate village level outcomes for both NGO and non-NGO villages. Five villages - three BRAC villages and two non-NGO villages - in the Badhair union of Tanore upazilla in Rajshahi district were chosen. BRAC villages were chosen to act as a proxy for NGO activities, although several other NGOs were operating in Badhair. The basis for selection were 1)existence of several non-NGO villages so that village level outcomes could be compared and 2)the existence of villages where BRAC had been operating for a period of three or more years so that village level effects of an NGO presence would begin to be apparent.

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[3] Khandker's (1998) work indicates that poverty is reduced by NGO provision of credit for example while others [Morduch (1998)]do not agree. However, a wider consensus Morduch (1998) and Mustafa et al (1995) indicates that vulnerability is reduced.

As a pilot study, the sample was deliberately small. The sample size was intended to be 175 household surveys of 35 households per village; all nonmembers in non-NGO villages and 25 members and 10 nonmembers from NGO villages. In sum, 75 members and 100 nonmembers were to participate. Actual sample size was limited to 164 households of 100 nonmembers and 64 members because only 64 member households had belonged to BRAC for a period of 3 years or more.[5]

Data on household composition, landholding, non-land assets, consumption, agricultural production, non-agricultural income sources, change in assets, safe water use, sanitary toilet use, morbidity (loss of income due to illness) and family planning per eligible couple was collected.[6]

To simply use the collected data however, would have given rise to non-random sampling biases because while in non-NGO villages, data was randomly selected from specific groups of villagers, i.e. member and nonmember households. In an attempt to circumvent the bias, we calculated the average proportion of BRAC members to village population and randomly drew out this population representation from the sample data. Regressions were then run on a population of 110, of which 41 respondents were from NGO villages and 69 respondents were from non-NGO villages. Among the 41 respondents from NGO villages, 9 were NGO members, approximately indicative of the village membership distribution.

From this data, the following variables were used in a multivariate OLS regression: years of education of the household head, log of economic dependency,[7] log of total asset value, log of household income per capita, log of total land owned, log of distance to

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[4] The government levels in Bangladesh are set up as follows: central government, divisions, districts, upazillas, unions, and villages. Most NGOs have field offices at the upazilla level.
[5] Three year of membership was the cut-off line, therefore the numerous households who had belonged to BRAC for two years or so could not be included.
[6] For specifics on how data was collected, see Appendix A.
[7] Economic dependency was measured as ratio of the number of household members under the age of 10 and over the age of 65, plus students and unemployed to the number of the household members between the ages of 10 and 65, minus those who are students or unemployed.

market, log of distance to upazilla center, log of distance to paved road and log of morbidity in last six months. A dummy variable was included for each of the following: incidence of family planning per eligible couple, assets bought in the last six months, assets sold in the last six months, sanitary toilet use, and NGO presence in village.

Using these variables as independent influences, several regression were run on three different dependent variables - log of income per capita income, log of total asset value and log of consumption per capita. The statistical package automatically excluded distance to upazilla center as a relevant variable. The results are indicated in Tables A.1-A.3.

The earlier mentioned issues of finding non-NGO villages and of controlling for the selection bias of villages were dealt with in the following manner: finding NGO villages in relative proximity to non-NGO villages required some research but were found in remote areas in northwest Bangladesh. Questioning of local BRAC staff (several of whom had been working since RDP established its offices in Tanore) revealed that they perceived villages to be selected on the basis of their proximity to RDP offices for one, and their accessibility to an all-weather road for another. By including variables for distance to upazilla center and distance to paved roads, the selection bias was controlled as much as possible.

3. Regional Background

As a pilot study, the results given here may naturally be specific to the region being studied. For this reason, it may be appropriate to be aware of the specific background of the Badhair union. The Badhair union was almost exclusively focused on large-scale agricultural rice production. Smaller scale economic activity included production in the form of fisheries, potato, wheat and vegetable production, poultry and livestock care, as well as services such as rickshaw and van driving. The regional BRAC manager reported that the regional economy is depressed and that its people are quite poor, even when compared to the rest of the country. Despite the failures of some BRAC programs

however, he nonetheless believes that the economy is more productive today however than when BRAC began half a decade ago.[8]

Regional literacy has been steadily rising, but is still astonishingly low at 28%.[9] BRAC has been operating in the area for the last six years and has introduced several BRAC Non-Formal Primary Education (NFPE) schools, which the area manager believes has had the most discernible impact on development. BRAC has also been responsible for introducing fishery programs and vegetable production, which have been successful on a small scale. Other BRAC programs, such as livestock and poultry, have not been very successful in the area local BRAC staff reports, and the area manager reports that BRAC is considering abandoning these programs.

Other NGOs (ASA, CARITAS, etc.) and Grameen Bank[10] have also been operating in Rajshahi for generally the same time period, approximately five years. Despite the long-standing BRAC presence however, the BRAC staff maintains that little progress in human and economic development has been long fought for and precariously maintained, primarily as a result of the poor infrastructure in terms of electrification and roads. The red earth which comprises most of the area's soil turns into a sticky clay for the months of monsoon (May through October) and on days of heavy rain, as a result of which a vast majority of the region's villages are inaccessible for six months of the year. Neither of the studied villages had access to electricity, which is indicative of the entire region's generally poor infrastructure. Projects are reported to be underway to bring electrification to some villages in the next year.

4. Data Analysis

4.1 Per capita income OLS regression (Table A.1)

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[8] The information is based on two interviews, one with a village organizer and one with the RDP manager, as well as personal observation.
[9] National literacy rates are just under 40% (World Bank, 1997). Bangladesh Statistical Year Book (1993) indicates that literacy levels are 28%.
[10] The Grameen Bank is often confused outside of Bangladesh with the NGO community. Although its influence is widespread, it is in fact chartered as a bank and not an NGO.

With 24% of the variation explained (R^2), the log of total land owned (LG_LND) was the only statistically significant determinant of per capita income in the household. A high beta coefficient (.23) indicates for every unit increase in total land value, income per capita will increase by .23 units. This finding is significant at the 1% confidence level.

The dummy variable included to examine whether the village presence of an NGO was a determinant of per capita income was positively correlated with higher income by a high beta value of .25. However, this was not significant. The lack of significance could be due to the sample size, which in a larger, more representative study may be more definitively associated with per capita income.

Despite a lack of significance, other interesting results were indicated. The log of the dependency ratio for example, was negatively correlated with per capita income, a logical outcome as a greater dependency ratio would indicate that household members were dependent on a smaller proportion of incomes. Morbidity was also negatively associated with per capita income, for similarly obvious reasons. Predictably, years of education of the household head, incidence of family planning, sanitary toilet use were all positively associated with per capita income.

As also expected, assets bought were positively associated with income, as the ability to invest in assets during the past six months is an indicator of the economic stability of the household. To be able to make purchases in assets seems indicative of a sense of household economic security. By the same reasoning, assets sold are likely to indicate a degree of economic insecurity, although this is clearly not always the case. Accordingly, assets sold in the regression were positively, but not significantly, associated with per capita income.

The statistically insignificant finding that per capita income was negatively associated with distance to the closest market, indicating that the further the distance from the market, the lower the per capita income, would seem natural. The marketplace, as a commercial center to sell and buy products is more likely to support income-generating

activities such as selling goods, van driving, etc. than a village might be. A greater distance from a commercial center then could very well negatively influence income per capita in villages. However, distance to paved roads was positively associated with per capita income, a finding that is difficult to reconcile with expected results - as one would have expected that a greater distance from a paved road would have been negatively associated with household per capita income. What would explain this result is not clear and could be attributed to any number of influences - small sample size, simply an anomaly. Alternatively, these results could belie significance, but it is not likely.

4.2 Log of total asset value per household OLS regression (Table A.2)

With an even higher explained variation (R^2)of .49, total land per household was again a powerful indicator of asset value per household. For every 100% of unit increase in land holdings, the total value of assets increases by 32%, a finding that was significant at the 1% confidence level. The high elasticity of asset value with respect to land ownership highlights the extremely important nature of land ownership in household well-being. This may have been especially true in Tanore, a region highly focused on agricultural activities, but has been shown elsewhere to be the most important indicator of household well-being in rural Bangladesh.[11]

Other significant variables in explaining total asset value per household were: assets bought in last 6 months, education of household head, distance to market and distance to paved road. For obvious reasons, assets bought during the last six months would help explain the total asset value of the household.[12] Education of the household head, as expected, exerted a strong influence on the value of assets. For every year increase in the education of the household head, the value of assets in that household would increase by .14 units.[13] As education has elsewhere been significantly correlated with several measures of household well-being,[14] this result seems natural here.

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[11] See Husain (ed. 1998)
[12] This finding was significant at a 5% level.
[13] This finding was significant at the 1% level.
[14] See Husain (ed. 1998).

The same puzzling positive association between income and distance to a paved road earlier arose again in the case of asset value. Distance to market center appears negatively correlated (as with income per capita) with the log of asset value, which is significant at the 10% level. As mentioned earlier, the result indicate that villages closer to a marketplace experience a higher level of economic vibrancy. However, the inexplicably positive association between distance to paved road and asset accumulation was also present in this regression - and in this case, significant at the 5% level. Any anomaly which appeared in the data would tend to be present in both regressions, so while it may not be surprising that the same curious result is given twice, but it is nonetheless not easily explained. One could conjecture that a greater distance from a paved road would necessitate greater asset accumulation because the households and villages could not depend on accessing assets elsewhere (especially as the condition of roads renders them inaccessible by another other wheeled means) and would instead need to have such assets available in the village.

NGO presence in the village appeared to have a negative correlation with asset value per household, although this only slightly negative and not significant. This would seem to indicate that village level NGO presence does not seem to influence asset accumulation in the period it has been operating - four years.

Economic dependency and morbidity were both positively but not significantly associated with asset accumulation. As earlier indicated, this result is compatible with the logical assumption that a greater proportion of employed persons per household and fewer days of income lost respectively translates into greater household well-being.

4.3 Consumption per capita OLS regression (Table A.3)
Although an OLS regression was run on consumption with the same variables, the regression produced very incongruous results. As Table A.3 indicates, consumption was negatively associated with education of the household head and log of income, which violate some of the most basic assumptions about the relationship of income and

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education to household well-being (as measured by household consumption in this case). Therefore, the results from this regression will not be interpreted.

4.4 Average Indicators of Village

In addition, we examined different characteristics of households in both NGO and non-NGO villages which could help explain some of the above-described results (Table A.4). In accordance with the regression results, the averages indicate that per capita consumption is lower and per capita income is higher in NGO villages. However, the breakdown of income along agricultural and non-agricultural income sources reveals that the difference between per capita income in the two types of villages is made up largely by higher levels of non-agricultural income in NGO villages. Agricultural income was 3% whereas non-agricultural income was 18% higher in NGO villages.

As may have been expected from the results of the regression, average asset values were significantly higher in non-NGO villages. The average amount of cultivated land per household was also higher for non-NGO villages, although this finding is reversed once we include the entire sample. This would seem to further substantiate the above-mentioned finding that NGO villages are more focused on non-agricultural income sources than non-NGO villages.

We also found family planning and sanitation use to be more prevalent in NGO villages. The incidence of family planning was 55% in non-NGO villages and 63% in NGO villages. Sanitary toilets were used in 9% of cases in non-NGO villages and 39% of cases in NGO villages. Such indications could be influenced by any number of variables and may not imply causation, but would indeed seem to indicate that NGO presence in similar villages is correlated with better social indicators.

5. Discussions

Because the focus of the study was to identify whether village-level outcomes were impacted by an NGO presence, the discussion will confine itself to this question and potential answers. While the data examined did not produce any statistically significant

results with respect to this question, some indications of NGO impacts may nevertheless be inferred.

Our results suggest that NGO presence in villages exerts a positive significance on income per capita, but no influence on asset value per household. What would explain this scenario? First it is important to note that asset accumulation is generally a longer-term variable than income, since the former is a 'flow' variable and the latter is a 'stock' variable. If income grew by enough, the continued flow of higher income would likely result in greater asset accumulation, but this would be in the long run.

The rate of asset accumulation however, would likely be extremely sensitive to the initial level of income. For poorer households such as those in the Badhair union, the marginal propensity to accumulate assets would be lower because a greater proportion of additional income would be spent on basic needs. Higher income households by contrast, would be more able to devote a greater proportion of additional income to asset accumulation.

Therefore, the positive association between BRAC impact on household-level income but not on asset accumulation for the villages in which BRAC operates could be explained by the fact that BRAC may have been operating long enough in Badhair (four years) to have had an impact on income levels, but not yet long enough to impact asset accumulation. Given the lower levels of income of the region,[15] higher levels of income may not necessarily translate into greater asset accumulation except over a longer period of time.

Secondly, the fact that NGO villages appear more focused on non-agricultural income sources largely accounts for the higher level of income. Although correlation does not imply causation, one could speculate that an NGO presence may be helping to focus the local village economy on non-agricultural activities.

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[15] The average income for our constructed sample group was approximately 6010 taka. This contrasts with a current market price per capita GDP of 10,050 for Rajshahi division. Although this latter figure makes no distinction between rural and urban areas, even discounting for the urban-rural differential would still render our sample below average per capita GDP for the region and for Bangladesh. See BBS (1998).

In essence, assuming a longer-term relationship between income and asset accumulation and assuming that present asset endowment was pre-existing, BRAC appears to be helping villages with poorer initial endowment levels "catch up" by boosting income per capita in the non-agricultural sector. In the longer term, this may also have a positive influence on asset accumulation.

6. Conclusion

Our results confirm the importance of land ownership in affecting household well-being. Although our proxy variable for NGO impacts was not significant, we suggest that the impact of NGOs is positive in the shorter term. In the longer term, it is not clear whether NGOs have an impact, but the longer term is here defined by participation of three to four years. It may be possible that with even longer NGO participation, asset accumulation would also show up,

As a pilot study, our objective was to determine whether data analysis identified a NGO impact on village-level variables.[16] There is a correlation in the case of per capita income, although the statistical insignificance and small sample of that finding would beg caution in interpretation. Given the fact that land ownership exerts such a powerful influence on well-being and the fact that NGOs (in this case) have targeted villages with lower land endowments and fewer assets,[17] it may not be surprising that non-NGO villages are 'better-off' as defined by assets.[18] But our results imply that the NGO presence is associated with such villages 'catching up' to villages with higher assets through boosting non-agricultural village-level income.

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[16] To apply this methodology to a more representative survey however, would entail several modifications to our approach. Such changes are discussed in Appendix B.

[17] Non-NGO villages are better off in terms of assets in either case, and better of in terms of cultivated land once the entire sample (and not just the constructed one).

[18] In this case, although the constructed sample used in the multiple regression indicates that the total amount of cultivated land is *higher* in BRAC villages, the opposite is true if one includes the entire sample.

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Table A.2: Determinants of total asset (regression result)

Dependent variable: Log of total asset value

Independent variables	β-coefficient	Standard error
Log of economic dependency	0.092	0.061
Log of total amount of land owned	0.323***	0.061
Log of value of asset loss due illness	0.067	0.044
Log of distance from the market	-2.455*	1.421
Log of distance from metal road	1.152**	0.509
Log of education of the household head	0.142***	0.043
Whether eligible couples use family planning	0.363	0.250
Whether the household has sanitary latrine	-0.164	0.353
Village type (1=NGO village, 0=Non-NGO village	-0.073	0.306
Log of per capita income	0.090	0.086
Whether the household bought asset in last six months	0.627**	0.301
Whether the household sold asset in last six months	0.173	0.274
Constant	9.199***	2.084
R^2	0.488	
Adjusted R^2	0.424	
F statistics	7.70	

***Significant at 1% level, ** Significant at 5% level, *Significant at 10% level.

Appendix A

Table A.1: Determinants of income (regression result)

Dependent variable: Log of per capita income

Independent variables	β-coefficient	Standard error
Log of economic dependency	-0.077	0.073
Log of total amount of land owned	0.233***	0.078
Log of value of asset loss due illness	-0.057	0.052
Log of distance from the market	-0.096	1.70
Log of distance from metal road	0.071	0.615
Log of education of the household head	0.050	0.054
Whether eligible couples use family planning	0.003	0.298
Whether the household has sanitary latrine	0.196	0.415
Village type (1=NGO village, 0=Non-NGO village	0.249	0.360
Whether the household bought asset in last six months	0.311	0.361
Whether the household sold asset in last six months	-0.195	0.323
Log of total asset value	0.124	0.119
Constant	6.50**	2.606
R^2	0.235	
Adjusted R^2	0.141	
F statistics	2.488	

***Significant at 1% level, ** Significant at 5% level, *Significant at 10% level.

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Table A.3: Determinants of household consumption (regression result)

Dependent variable: Log of per capita weekly consumption

Independent variables	β-coefficient	Standard error
Log of economic dependency	-0.061**	0.025
Log of total amount of land owned	0.118***	0.028
Log of value of asset loss due illness	-0.029	0.018
Log of distance from the market	0.593	0.584
Log of distance from metal road	-0.285	0.212
Log of education of the household head	-0.056***	0.019
Whether eligible couples use family planning	-0.0823	0.102
Whether the household has sanitary latrine	0.263*	0.142
Village type (1=NGO village, 0=Non-NGO village	-0.033	0.124
Log of per capita income	-0.018	0.035
Whether the household bought asset in last six months	-0.201	0.125
Whether the household sold asset in last six months	-0.123	0.111
Log total asset value	0.044	0.041
Constant	3.625***	0.925
R^2	0.373	
Adjusted R^2	0.289	
F statistics	4.401	

***Significant at 1% level, ** Significant at 5% level, *Significant at 10% level.

Table A.4: Comparison of NGO and non-NGO villages in terms of some selected indicators.

Variables	NGO village	Non-NGO village
Per capita weekly consumption (Tk.)	96.3	99.6
Per capita annual agricultural income (Tk.)	3,890	3,765
Per capita annual non-agricultural income (Tk.)	2,431	2,060
Total value of asset (Tk.)	15,580	23,410
Amount of cultivated land owned (decimal)	128.4	109.5
Amount of cultivated land owned (decimal)- with selection bias		
Households having sanitary toilet (%)	39.0	8.7
Households with eligible couples using family planning method (%)	63.4	55.1

Appendix B: Data Collection

Each of the five villages, a six page survey was administered by four data collectors and one researcher. The survey consisted of eight components in each of the following areas: family composition, assets, health, family planning, consumption, production, non-agricultural income sources, and asset changes. The data collection format and the calculations in each of these areas was undertaken in the following manner:

A: Household Composition

Data on names, relationship to household head, ages, sex, marital status, employment, and NGO membership status and length was collected. Information was collected for all members of the household, regardless of whether they were family, so long as they lived and ate on a permanent basis in the household.

B: Assets

Data was collected for both land and non-land assets. For land assets, data on acreage and value was collected for owned, leased, mortgaged, and sharecropped land. Land was also classified as productive or non-productive For non-land assets, interviewers asked for amount and value on the basis of a checklist of the twenty-one most common assets, in addition to any other mentioned assets.

C. Health

Interviewers collected information on sanitary toilet use, water use, and morbidity. In the former case, positive/negative responses were elicited by checklists of ring-slabs, sanitary toilets or others. In the latter case, respondents were asked to identify what kind of water was used for drinking, cooking, washing dishes, washing clothes, and bathing. The indicator for sanitary water use depended on whether tubewell water (as opposed to pond, canal or river water) was used for cooking and drinking.

Respondents were asked to recall the number of wage days they had lost to illness in the last two week, the last month, the last six months and the last year. As most respondents

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could reliably recall only the last six months, this was the indicator used to indicate morbidity over the last year.

D. Family Planning

Based on household composition information, interviewers were asked to respond ask women separately (at the conclusion of the interview) whether family planning methods were employed by the eligible household couples. Only positive/negative answers were elicited.

E. Consumption

A detailed checklist of the fourteen most common food consumption areas was used to elicit responses. These responses were classified in categories of in-kind consumption, gifts, and bought. The total amount of consumption was multiplied by a unit price to arrive at a total value of consumption for the household. This figure was divided by family size to arrive at consumption per household head.

F. Production Income

Production was classified into major and minor crops and information was collected for each of the three harvests. Total amount produced from all harvests was multiplied by the unit price of crop to arrive at agricultural income.

G. Non-Agricultural Income

Income from non-agricultural sources was classified into several broad categories and collected in the following categories: taka per day, days per month and months per year of work. Multiplied together, these variables created non-agricultural income per year data.

H. Change in Assets

Data was collected by prompting respondents on any assets that were bought or sold during the last six months. Information on quantity, value, and character of transaction (bought/sold) was collected. Total value of assets bought and sold were used as regression variables.

Appendix C: Towards a Methodology for Village-Level Impacts

One purpose of conducting this pilot survey was to investigate the feasibility of village-level impact assessment work. We thus sought to suggest some ways in which a village-level impact study such as this one could be meaningfully incorporated in larger studies such as BRAC's Impact Assessment Study (IAS) of its Rural Development Programme.

However, studies such as ours which compare non-NGO villages to NGO villages are not likely to be feasible in a larger scale. This is primarily because finding villages where no NGOs function is rather difficult, given the high level of NGO penetration Bangladesh possesses. However, there are a number of lessons which may provide guidance for future research.

The first lesson is the importance of panel data in providing a comprehensive picture of NGO impacts. This study used cross-sectional data, looking at impacts by comparing NGO and non-NGO villages at a specific point in time. However, the ideal manner of tracking village level changes is to compare NGO and non-NGO villages over a period of time to better understand how they are both developing individually. Only then can one accurately compare how the NGO presence is influencing development. Without such an understanding, data risks being skewed to anomalous circumstances. And more seriously, one cannot attribute development to an environment where no pre-existing data exists, since one cannot define 'change' with any degree of certainty. There is thus no more effective means of quantitatively understanding how NGOs impact villages than to analyze information over time, despite the selection problems that may plague such a comparison.

The second lesson is that instead of the NGO/non-NGO division, future assessments of NGO impacts at the village level will need to look at NGO penetration in degrees. Given the ubiquitous nature of NGOs in rural Bangladesh, comparing NGO villages to non-NGO villages will be close to impossible since the latter now exists only in small pockets. Furthermore, villages may very well have access to a variety of NGOs instead

of just one. A more relevant comparison of NGO impact would thus examine NGO "depth" by looking at a number of variables which judge the length and extent of NGO penetration in the village, much in the same way that female empowerment indicators are judged along a continuum.

More specifically, one would want to examine the following characteristics to create a composite variable for 'NGO depth'. The composite 'NGO depth' variable would want to include crude data on the number of NGOs operating within a village, the percentage of population involved, the length of NGO membership and the level of NGO input as measured in services offered and loans disbursed, as each of these in some manner indicates the extent of NGO presence in a village.

Naturally, some of these variables will be linked and there is no perfect method of creating the desired composite. The number of NGOs operating in the village will be very closely linked to the percentage of the population involved. This duplication is necessary however, if one is to catch the finer degrees of variation for example, between five NGOs enrolling ten members each and one NGO enrolling half a village. Using a variable which accounts for these degrees would allow one to better compare relatively high penetration villages with relatively low penetration villages and their outcome variables.

The third lesson is that researching NGO village level impacts necessitates collecting data on household characteristics and output, and then aggregating these characteristics into village-level outcomes. Any village-level data is inherently based characteristics such as production and consumption *at the household level.* The only variables not be determined at a household level are ones of price. Not only are these typically prey to such a variety of non-local influences that render a comparison difficult, but prices are often not even determined in villages, but in marketplaces.

Current IAS methodology of comparing BRAC households in BRAC villages to non-NGO households in other villages with similar characteristics does not allow for a good

examination of village level impacts because it ignores several issues - random selection of both villages and of households and multiple NGO access.

IAS methodology currently selects a large number of villages in which to conduct their surveys on the basis of a BRAC presence, in effect creating a bias in selection because BRAC does not operate in all rural villages of Bangladesh. Ideally, village selection would take place on an entirely random basis and an examination of NGO impacts on villages would begin from there. In all likelihood, BRAC villages would comprise a large proportion of randomly selected villages anyhow. In absence of altering the current research format, randomly selected BRAC villages, while still suffering some bias, are still somewhat random, given BRAC's extensive outreach.

Once a number of BRAC villages were randomly selected for village-impact studies however, data should not be selected from just BRAC households, but from a significant proportion of randomly selected villagers (both member and nonmember). Collecting household data such on the types of variables mentioned in this study as well as village data on NGO penetration would allow for a more useful comparison of NGO impact on outcome variables. Some of the outcome variables could be income per capita, consumption per capita, asset value per capita, and employment.