

Grameen Bank: Impact, Costs, and Program Sustainability

SHAHIDUR R. KHANDKER*

Abstract

Grameen Bank of Bangladesh is known worldwide for its innovative credit delivery to the rural poor. By incorporating group-based lending, mandatory savings and insurance, repayment rescheduling in case of disasters, and similar other schemes, it has been able to minimize both behavioral and material risks of lending. By 1994, Grameen's coverage had increased to include 50 percent of villages of Bangladesh with more than 2 million members (94 percent of whom are women), with a loan recovery rate steadily above 90 percent. It also has noticeable positive impacts on participants' economic and social well-being, and on the overall income growth and poverty reduction in the village level. To become cost-effective, Grameen Bank should not only expand its outreach, but also diversify its loan portfolio with more growth-oriented activities. This also requires sound macroeconomic policies from the government. Replication of Grameen's financial model is possible with necessary modifications as long as it is social-conscience-driven and its operations are transparent.

* Shahidur R. Khandker is an Economist with the Poverty and Social Policy Department of the World Bank. This paper is based on the findings of a study, "Credit Programs for the Poor: Household and Intrahousehold Impacts and Program Sustainability", sponsored by the World Bank. The author would like to thank Mark Pitt, Abdul Latif, Baqui Khalily, Rushidan Rahman, Osman Chowdhury, and Zahed Khan for their contributions to this major collaborative study; Hussain Samad for research assistance; Carrie Palma for technical support; and Ilyse Zable for editorial assistance. The author is also grateful to M.G. Quibria for suggestions, and three anonymous referees of this journal for valuable comments that helped improve the paper. Views expressed in this paper are entirely his, and should not be attributed to the World Bank, its Board of Directors, or the countries they represent. The author alone is responsible for the remaining errors or opinions expressed herein.

The Grameen Bank of Bangladesh is well-known for its innovative banking for the rural poor, who are otherwise excluded from formal banking because they lack physical collateral such as land or other immovable property. Grameen Bank practices physical collateral-free lending, relying instead on peer monitoring and peer pressure to enforce loan contracts. It also provides members social development inputs (e.g., consciousness raising, health and nutrition training) to make the poor both individually and socially accountable for their actions which include those toward loan repayment and other financial transactions and children's welfare. Providing access to financial services to the poor, as Grameen Bank believes, would help the poor to be self-employed and would generate income, thus freeing themselves from poverty. Further, providing social intermediation inputs would help them to be financially and socially disciplined.

Grameen Bank was established in 1983 as a specialized bank. By 1994 it had mobilized more than 2 million members, disbursed more than US\$1 billion, and mobilized US\$306 million from the poor. About 94 percent of Grameen Bank's members are women. Its loan recovery rate has been consistently above 90 percent, an outstanding success for a rural-based financial institution compared with the dismal recovery rate of 25 percent or so for the country's commercial and agricultural development banks. Its success has attracted worldwide attention and the Grameen model has been replicated both inside and outside Bangladesh. Because of Grameen's innovative program design, outreach to women, and poverty reduction potential, development practitioners are increasingly interested in learning more about its potential, constraints, and replicability.

Grameen Bank has been well-studied in terms of its program design and sources of its success as a rural financial intermediary (Fuglesang and Chandler 1988, Hossain 1988, Jain 1996, Stiglitz 1990, Varian 1990, Wahid 1993); its subsidy dependency (Yaron 1992); its replicability outside Bangladesh (Hume 1990); and its impact on the poor and women (Goetz and Gupta 1996, Hossain 1988, Schuler and Hashemi 1994). Yet, to date no study has been comprehensive enough to examine the benefits and costs of this program, nor been able to identify the causal impacts of Grameen Bank to determine whether the program is generating desirable impacts and if so, at what cost. Analysis shows that Grameen Bank is heavily subsidized by donors and the government, thus, with its performance conditional upon grants and subsidized funds, Grameen Bank possibly cannot survive without subsidy (Bouman and Hospes 1994).¹ The question immediately arises whether a subsidy-free operation of Grameen Bank is at all possible and if not, whether the subsidized operation of Grameen Bank is worth supporting. Assessing whether a subsidy-free Grameen Bank is possible requires an analysis of Grameen Bank's cost effectiveness in delivering financial services over time. However, no study so far has looked at these dynamic issues of self-sustainability. On the other hand, assessing whether a subsidized operation of Grameen Bank is worth supporting requires analysis of its cost effectiveness in generating benefits accrued to the poor and society. But the impact studies have not looked at these issues at all. Moreover, although program impact studies show that the program generates a number of benefits such as income, employment, and other socioeconomic outcomes such as lower fertility and higher contraceptive use, the findings are not conclusive as they suffer from estimation bias, and it is not clear whether program impacts are causal.

In fact, without such a study, the long-run effectiveness of a Grameen Bank-type operation which finances microenterprises can always be questioned (see, for example, Adams and Yon Pischke 1992). That means, if the program benefits are not quantified and substantiated, it may be difficult to justify the subsidy that is involved in the operation of Grameen Bank. Similarly, some studies argue that although women are the major participants of Grameen Bank, they may not be the principal beneficiaries, as majority of them have no control over the loan (Goetz and Gupta 1996, Rahman 1986). Although it may be difficult to assess objectively who controls what in the household, one can objectively assess the resource allocation between men and women within a household in both production and consumption and the program's impact on women's welfare.

¹ Grameen Bank, "an almost lone jewel in a series of mostly dismal failures, is, after two decades of experimenting, still dependent on outside funds to survive" (Bouman and Hospes 1994, 13).

A common problem of the impact analysis is the sample selection bias. Because program participation is self-selective, program impact studies suffer from such bias and hence, have failed to establish the causal effect of program participation on a participant's own and household welfare. Similarly, the exercise that shows Grameen Bank's subsidy dependence does not go on to show whether a subsidy-free Grameen Bank is at all possible and, if so, how. If subsidy is inevitable, then the most relevant question is whether the program is cost-effective both in delivering financial services to the poor and generating benefits accrued to the poor.

The paper's objective is threefold. The first objective is to assess program effects on household outcomes (such as consumption, asset accumulation, and poverty reduction) and individual outcomes (such as employment and education). Identifying these causal effects would help understand whether a credit program such as Grameen Bank produces desirable impacts at the household level that help reduce poverty and increase the human capital of the poor, including women.

The second objective is to identify whether a credit program designed for women raises the welfare of a woman and her family and, if so, how. In other words, the objective is whether the identified household or intrahousehold effects vary by the gender of the program participant. The third objective is to estimate the cost structures of Grameen Bank and examine whether it is self-sustainable. Overall, the objective is to find out whether the benefits accrued to program participants justify the economic subsidy enjoyed by Grameen Bank and whether the subsidy can be eliminated and, if so, how.

The program sustainability analysis is based on Grameen Bank data, collected from its aggregate-level records and from a selected sample of branches. The aggregate program-level data spans the 1985-1994 period, while the branch-level data were collected from 118 randomly drawn branches for 1985-1991 (for details, see Khandker, Khalily, and Khan 1995). Household and intrahousehold impacts of Grameen Bank and two other programs were carried out based on household survey data of 1,798 households randomly drawn from 87 villages of Bangladesh. The survey was carried out in 1991/1992. A quasi-experimental survey design was used to determine both the independent effect of program participation by gender on a number of household and individual outcomes (for details, see Pitt and Khandker 1996). A comparison of household-level and individual-level outcomes between program and nonprogram villages was carried out for a number of outcomes to see if Grameen Bank has been able to benefit beyond the program participating households.

The paper is structured as follows. The second section presents a description of the Grameen Bank, its program design and targeting, and how it addresses the moral hazard problem of lending in a rural setting. The third section discusses the financial and institutional development of Grameen Bank to see if it is financially viable. This section also examines the nature and extent of subsidy required to support Grameen Bank operations. The fourth section estimates whether and how program participants benefit from program participation and also, if there is a spillover effect on the village economy. The fifth section describes the constraints of Grameen Bank for its expansion in Bangladesh. The sixth section discusses the lessons learned for replication outside Bangladesh. The final section concludes the paper.

What is Grameen Bank?

Grameen Concept of Banking

Grameen Bank provides credit to the rural poor, particularly to women, who own less than half an acre of land² or whose assets do not exceed the value of an acre of land. Unlike traditional bank loans, Grameen Bank loans are not secured by physical collateral such as land or other immovable property. Rather, they are secured by group collateral. Grameen Bank believes that the rural poor, owning too little land to support themselves as farmers, can nevertheless make productive use of small loans, borrowed without collateral, and that they will repay these loans on time. In Grameen's view lack of access to credit

² These people are considered functionally landless in Bangladesh.

is the biggest constraint of the rural poor. But with proper and support they can be productively employed in income generating activities, including processing and manufacturing, transportation, storing and marketing agricultural produce, and raising livestock. Further, Grameen Bank maintains that if the poor are provided credit on reasonable terms, they can judge for themselves how best to increase their incomes and need only the inputs that they can afford to purchase. Based on these notions, Grameen Bank creates the social and financial conditions that enable poor men and women to receive credit from Grameen Bank.

Grameen's Credit Delivery Model

Groups of five, with separate groups for men and women, form the banking units of Grameen Bank. Individuals receive loans, but the entire group is liable for repayment: if one member defaults, no group member can receive additional credit. Group pressure ensures social and financial discipline among Grameen Bank members. However, in order to mitigate the entrenchment of vested interests and constellations of power, and to prevent individuals from taking antigroup actions, six to eight groups are organized into a community called the "center". All transactions are openly carried out at the center meetings. Such two-tier peer monitoring and transparency in transactions eliminate possible problems of group collusion among self selected groups.

Grameen Bank usually lends small amounts (less than \$100) to an individual member for a year. The loan is repayable in 50 equal weekly installments which the poor find easy to meet. The loans are provided for activities identified and selected by each member of the five-member group, and members help each other in selecting the activity.³ Both selection activities and amounts of loans are discussed in group and center meetings. Each center is assisted by a Grameen Bank worker, who visits several centers on a weekly basis. Groups elect a chairperson to conduct center activities, while each group elects a chairperson to conduct the group's activities. Each member has a chance to be a chairperson in a group or a center. Chairpersons of both groups and centers hold office for a year. These positions are purely on a voluntary basis.⁴

Savings Mobilization as an Integral Part of Lending

Grameen Bank considers savings mobilization to be an integral part of lending. Each member is required to deposit 1 taka (Tk) each week at the weekly group meeting. Members must also contribute 5 percent of their principal to a "group fund" and 5 taka for each 1,000 taka loan (above an initial 1,000 taka loan) to an "emergency fund". The group fund is self-managed and can be used for mutually agreed upon purposes. Grameen Bank manages the emergency fund for use as insurance against potential default because of death, disability, or other misfortunes. This fund is also used to provide life accident insurance to all group members, repay bad debts, and undertake activities that improve the health, skills, education, and investment opportunities of group members. On top of mandatory savings, each member is required to purchase a Grameen Bank equity share worth Tk 100.

³ Grameen Bank's borrowers are landless and hence, they borrow for rural nonfarm activities. In its early years of operation, therefore, agriculture loans were not a major category of its loan portfolio. However, in 1991 due to pressure from the borrowers as well as concern for reducing its own cost of operation in the wake of rising wages of its staff, Grameen Bank started financing agricultural activities such as crop production. It introduced seasonal and family loans which help landless families have access to land on a rental basis for crop cultivation. In extremely flood-prone areas in Rangpur in the northwestern part of Bangladesh, Grameen Bank introduced goat loans instead of cash loans to help the poor generate income for the family.

⁴ For details on Grameen Bank methods, see Fuglesang and Chandler (1988) and Hossain (1988).

Addressing Production and Lending Risks

Grameen Bank's credit delivery and savings mobilization model is designed to tackle both behavioral and material risks of lending. Behavioral risk results from asymmetric information and imperfect enforcement of loan contracts, which characterize rural credit markets. In contrast, material risk of lending is caused by agroclimate and production risk that characterizes production relations in rural areas. Both types of risks are sources of poverty and failure of rural financial institutions. Behavioral risk of lending emerges when lenders do not have information about the intent of borrowers on loan repayment. In a world of incomplete information, it is costly to collect such information about borrowers. Lack of access to such information makes lending extremely hazardous. Lenders consider borrowers in such an environment riskier and are reluctant to lend. But lack of access to credit means potential borrowers become credit-constrained which seriously affects their production and consumption.

Like behavioral risk, material risk can also create and perpetuate poverty because it involves crop failure, and consequently, income and Consumption shortages. As material risk of production causes income uncertainty, it creates uncertainty in loan repayment and discourages financial institutions to lend. For borrowers, lack of access to credit due to material risk of production means no scope for reduction of income risk through investment and consumption smoothing. For lenders, behavioral and material risks mean high loan transaction and default costs, making lending unprofitable.

It is costly to determine the risk of loan default for each borrower (screening problem), to ensure that borrowers take actions that facilitate repayment (incentive problem), and to enforce contracts (enforcement problem) (Hoff and Stiglitz 1991). The success of a lending institution, therefore, depends on how effectively it manages the behavioral risk of lending. The success of a borrower in securing credit from a bank depends on how effectively he or she can reduce informational costs of lenders by providing information about his or her project. Efficient lending requires minimizing loan transaction costs for borrowers and lenders.

Efficient lending, however, depends on how effectively agroclimatic and environmental risks that threaten the profitability of both borrowers and lenders are reduced. The probability of loan default is high in risky agroclimatic and underdeveloped regions. Infrastructural investments can reduce such agroclimate costs of lending. Without such investments, financial institutions find it difficult to create a viable system in an area that is floodprone, has pronounced seasonality, and poorly developed infrastructure that cannot minimize production risks and transport costs (Binswanger and Rosenzweig 1986).

In order to reduce transaction and loan default costs, commercial and traditional development banks introduced collateral requirements and guarantor arrangements for screening borrowers. Traditional banks select borrowers on the basis of physical collateral (often worth two to three times that of the loan) assuming that credit risk and transaction costs relative to transaction size are inversely related to asset ownership. They also limit their operation in areas endowed with risky agroclimates and poor infrastructure, avoid lending for seasonally pronounced agriculture, and exclude the assetless poor, who are considered to be high-risk.

Grameen Bank does not pursue such orthodox banking policies. Rather, it has carved out a market niche by lending to the poor who live in rural and risky areas and also by lending to support seasonally pronounced agriculture production. But Grameen Bank introduced innovative methods to minimize both behavioral and material risks of lending. Its group-based lending, i.e., tying credit provision to group, not individual, repayment behavior; mandatory savings that improve the financial strength of borrowers; mandatory insurance scheme that protects loans against material production risks; provision of loan rescheduling in cases of natural disaster; and introduction of seasonal loans combined

with nonfarm loans or goat loans, are all geared to minimize risks of lending for both lender and borrower.⁵

Introducing Social Development in a Banking Design

Grameen Bank introduces social intermediation as an integral part of financial intermediation to improve both social and financial discipline among the poor. Grameen Bank realizes that besides income and production risk, lack of financial and social discipline is an important source of poverty. Savings is one means of promoting social and financial discipline among the poor. In addition, Grameen Bank has developed a comprehensive social development program, outlined by its “sixteen decisions”. These decisions are behavioral guidelines that members are expected to follow. For example, they are encouraged to plant trees, grow kitchen gardens, raise small families, and build houses and sanitary latrines. It mobilizes the poor into groups for training and disseminating information about contraceptives, children’s education, health and nutrition, and other socioeconomic indicators of development. For skill development, it introduced different training activities according to the needs of members and borrowers.

As part of its design for social and economic transformation, Grameen Bank actively promotes female membership in a society where women are virtually excluded from productive employment because of social restrictions. Its objective has become to empower women by enabling them to undertake independent income-earning activities. Grameen Bank introduced a housing loan which is specifically designed to empower women in household decisionmaking by securing the land titlement of the homestead in their name.⁶

Financial Sustainability

Concept of Financial Sustainability

Financial sustainability encompasses the ability of a program to sustain its operation on the basis of financial viability. Grameen Bank is financially viable if it can at least equalize the cost per taka lent with the price (i.e., the interest rate) it charges to borrowers. The cost of operation includes administrative cost, loan default cost, and the cost of raising resources.⁷ It follows, therefore, that given the interest rate

⁵ Grameen’s group-based credit delivery scheme has been criticized for the following reasons. First, group pressure presses only for repayment and hence, is not supportive when production fails. Second, Grameen Bank has failed to attract the very poor, who are basically assetless and do not have the ability to assume risk of loan default due to production failure. Third, mandatory savings discourage voluntary savings, while credit is mainly for production, and, hence, does not recognize the need for consumption loans. More importantly, skills development is a neglected aspect of the Grameen Bank model.

⁶ A recent study challenges the notion of women as principal beneficiaries of Grameen Bank (Goetz and Gupta 1996). It finds that only about 60 percent of women borrowers in Grameen Bank have full control over the loans. Of course, this does not follow that women’s food and other entitlements have not increased due to borrowing from Grameen Bank. Although it may be difficult to objectively assess who controls what in a family, the more objective way to assess whether women are the principal beneficiaries of Grameen Bank is to see whether female borrowing increases women’s own consumption, assets ownership, and human capital.

⁷ More formally, financial viability is attained if a program charges an interest rate which equals or exceeds the cost per unit of principal lent, expressed as:

$$r \geq (i + \alpha + \rho)/(1 - \rho)$$

where

r is the interest rate charged per unit of principal,

i is the cost of borrowing per unit of principal,

α is the expected cost of administering and supervising a loan per unit of principal, and

ρ is the expected default cost per unit of principal.

This relationship measures the *operational efficiency* of a financial institution.

of lending, lower costs of loan default, administration, and resource mobilization for on-lending would enhance a program's financial viability. A program is profitable if lending rate exceeds the cost of operation per unit of principal; it loses and is subject to financial subsidy if interest rate falls short of operational cost; and it breaks even if interest rate equals the cost of operation.

Loan disbursement and recovery are critical elements for financial viability. While loan size determines the extent of cost savings per unit of principal lent because of economies of scale, administrative cost and loan recovery rate determine the loan default cost. But the distribution of loans by region and activity influences its loan recovery rate, while the lender's technique used for loan recovery can determine loan administrative costs. Grameen's extensive group-based banking is a high-cost activity. Although it helps reduce loan default cost by increasing loan repayment rates among borrowers through peer pressure, it increases both supervision and administration costs of lending. In order to reduce costs of operation, Grameen Bank relies heavily on subsidized resources (such as grants and concessionary funds) for on-lending and institutional development. Reliance on subsidized resources cannot be a permanent feature of a financially viable institution. External resource dependence brings in external influence. In order to reduce external dependence, a program should not become a conduit for credit delivery. It must resort to internal resource mobilization from local markets. In general, savings mobilization is an indicator of a program's capacity for self-finance and hence, independence.

Financial viability is often misleading for a program such as Grameen Bank. Grameen Bank draws a large portion of its resources from grants and concessionary funds and thus, its cost of raising resources for on-lending and institutional development is underestimated as it does not reflect the true cost of its resources. Hence, financial viability or operational efficiency so measured does not reflect the true subsidy dependence of Grameen Bank. What is required then is to estimate the cost of grants and concessionary resources in terms of their opportunity costs (Yaron 1992). In other words, it is not enough for a program to be financially viable, it also needs to be economically viable if it is to be financially self-sustainable. A program is economically viable if it can meet the economic cost of funds (the opportunity cost) used for credit and other operations with the income it generates from lending. This means the program must be financially viable at the market resources level. This is what the economic efficiency of a program such as Grameen Bank entails.⁸

Loan Portfolio and Its Growth

In 1994 Grameen Bank's loan outstanding was Tk 11,226.3 million (US\$280 million), about seven times higher than the amount in 1989 (Table 1). Among the four major types of loans, the general loan (used for income-earning activities) dominated lending, followed by housing loans, technology loans, and collective loans. The sectoral share of general loans in 1994 was 35 percent for agriculture, 16 percent for processing and manufacturing, 26 percent for livestock and fisheries, and 23 percent for other activities (including trade, commerce, and peddling). The corresponding sectoral distribution in 1989 was 29 percent for processing and manufacturing, only 4 percent for agriculture, 42 percent for livestock and fisheries, and 25 percent for other activities.

⁸ More formally, if τ represents income per unit of loan portfolio of Grameen Bank, it is economically viable (even if it receives subsidized resources for on-lending and institutional development) if τ exceeds the net subsidy (η) per unit of loan portfolio where η is defined as the total subsidy (T) per unit of portfolio net of profit (π) per unit of portfolio which is expressed as:

$$\tau \geq \eta = (T - \pi)$$

where total subsidy per unit of portfolio is expressed as $T = (1/LP) \sum (m-ci)A_i$. Here, LP is the total outstanding of loans,

m is the common opportunity cost of all type of subsidized resources,

ci is the borrowing cost per unit of i th type concessionary or subsidized resource, and

A_i is the i th type of subsidized resources.

Grameen Bank: Impact, Costs, and Program Sustainability
Shahidur R. Khandker

Agricultural lending, therefore, increased dramatically while processing and manufacturing loans decreased proportionally since 1991, when Grameen Bank introduced the seasonal loan to support seasonal farming activities. Despite Grameen's increased lending to agriculture, its loan recovery rate has not been affected. The recovery rate has been consistently above 90 percent throughout 1989-1994, a remarkable success compared with other banks in Bangladesh.

As savings mobilization is an integral part of Grameen Bank's lending, its mandatory savings mobilization schemes helped to increase cumulative savings (including voluntary deposits) from Tk 1,585 million (US\$40 million) in 1989 to Tk 8,728 million (US\$218 million) in 1993 and to Tk 12,232 million (US\$4306 million) in 1994 (Table 1). Because Grameen Bank's financial intermediation is very much limited to the poor, the amount of involuntary savings has been small (about 30 percent).

Institutional and Membership Growth

Grameen Bank's achievements are also measured in terms of its development as an institution and outreach. By 1994 (after more than ten years of operation) Grameen Bank covered almost half of Bangladesh with 1,045 branches and 10,861 employees (Table 2). About 85 percent of the employees work in branch offices. Staff productivity has steadily increased over time. A branch staff that served 83 members in 1990 was able to serve 172 members by 1993 and 186 members in 1994, without a corresponding reduction in loan recovery rates. In 1994 an average branch with nine staff served about 1,928 members, with Tk 10.7 million in loans outstanding, and Tk 11.7 million mobilized as cumulative savings. The corresponding figures for 1989 were 1,033 members, Tk 2.4 million loans outstanding, and Tk 2.5 million as savings. These statistics clearly show tremendous achievements of Grameen Bank as an institution over the years.

The backbone of this success is staff productivity. Grameen Bank follows the same incentive structures as commercial banks in Bangladesh, but its staff selection, training, recruitment, and placement processes are highly self-selective because of the commitment and nature of the work required in Grameen-type banking. High staff morale is required to bank with and for the poor. After intensive training, about 30 percent of the officers and 20 percent of the bank workers drop out rather than accept placement in a remote village. The dropout rate is higher for women than for men (Khandker, Khalily, and Khan 1995). However, the dropout rate among Grameen Bank staff is quite low, and has declined in recent years. In 1989 the dropout rate was 9 percent compared with only 2 percent in 1994 (Table 2). This shows that staff must have had both incentives as well as job satisfaction, otherwise, the staff dropout rate would have been high.

Table 1: Grameen Bank's Achievements as a Bank

Year	Total Loan Outstanding (million taka)	Share of General Loan (%)	Share of Housing Loan (%)	Share of Collective Loan (%)	Share of Technology Loan (%)	Sectoral Distribution of General Loans (percentage)				Savings and Deposits (million taka)	% of Voluntary Savings	Loan Recovery Rate
						Processing and Manufacturing	Agri-culture	Livestock and Fisheries	Others			
1989	1,518.9 (46.0)	64.95	30.17	0.66	4.21	28.8	4.1	42.2	24.9	1,585.2 (64.5)	32.6	96.9
1990	1,987.9 (30.9)	63.36	29.16	0.55	6.93	31.3	4.4	42.4	21.9	2,490.4 (57.1)	32.3	95.4
1991	2,640.5 (32.8)	59.69	28.96	0.34	11.01	28.9	4.1	43.8	23.2	3,559.8 (42.9)	33.3	93.0
1992	4,417.7 (67.3)	71.49	26.12	0.24	2.16	18.8	26.7	31.8	22.7	5,260.8 (47.8)	33.9	96.3
1993	8,735.9 (97.7)	69.80	29.17	0.13	0.81	14.0	35.6	28.2	22.2	8,728.4 (65.9)	28.24	99.0a
1994	11,226.3 (28.5)	70.21	29.69	0.10	0.73	15.5	34.9	26.1	23.5	12,231.8 (40.1)	26.67	99.4a

^aRepresents figure of the reported recovery rates of the Grameen Bank.
Note: Figures in parentheses represent growth rates from preceding year.
Source: Khandker, Khalily, and Khan (1995).

Table 2: Grameen Bank's Achievements in Institutional Development

Year	Total Number of Branches	Number of Villages Covered	Average Members per Branch	Total Employees	Percent of Branch Employees	Average Employees per Branch	Average Members per Employee	Average Branch Loan Outstanding (million taka)	Average Branch Savings and Deposits Mobilized (million taka)	Staff Dropout Rate
1989	641 (27.94)	15,073 (42.84)	1,033.17 (5.56)	8,449 (22.57)	83.59	11.02	93.77	2.37	2.47	9.0
1990	781 (21.84)	19,536 (29.61)	1,113.36 (7.76)	11,964 (41.60)	87.48	13.40	83.03	2.55	3.19	9.0
1991	915 (17.16)	25,248 (29.24)	1,165.49 (4.68)	10,904 (-8.85)	83.69	10.09	115.49	2.89	3.89	8.5
1992	1,015 (10.93)	30,619 (21.27)	1,364.85 (17.11)	10,531 (-3.42)	84.81	8.80	159.49	4.35	5.18	7.9
1993	1,040 (2.46)	33,667 (9.95)	1,745.11 (27.86)	10,499 (-0.30)	84.46	8.53	172.86	8.47	8.39	2.7
1994	1,1045 (0.48)	34,913 (3.70)	1,928.35 (10.50)	10,861 (3.45)	84.92	8.87	185.54	10.74	11.71	1.9

Note: Figures in parentheses represent growth rates from preceding year.
Source: Khandker, Khalily, and Khan (1995).

The phenomenal expansion of Grameen Bank during the last decade was partly due to the able leadership of its founder, Dr. Muhammad Yunus, and partly to its decentralized management structure that professionalizes the management. Over the years, Grameen Bank has effectively institutionalized procedures for ensuring administration and management succession so that the system no longer depends on the leadership of Dr. Yunus. With the expansion of branch, area, and zonal offices, the leadership gradually delegated decisionmaking authority to intermediate administrative units. Unlike other hierarchical bureaucracies, Grameen Bank evolved naturally into a decentralized organization as it grew.

Grameen Bank's success rests on its outreach to the poor, especially women. By 1994 Grameen Bank had mobilized 2 million poor households, of which 92 percent were borrowers (Table 3). Ninety-four percent of both members and borrowers were women in 1994. Almost all Grameen Bank members become borrowers after two to three weeks of training on Grameen Bank procedures. In 1994 women received 93 percent of total loans disbursed and contributed 76 percent of total savings. In the same year an average male member's cumulative savings stood at Tk 17.5 thousand compared with only Tk 3.6 thousand for female members.⁹ The average loans outstanding was Tk 6.9 thousand for men and Tk 6.0 thousand for women.

Financial Growth

As noted earlier, financial strength is measured by profitability and subsidy dependence. Given the cost of funds (most of which were foreign grants prior to 1993, when Grameen Bank borrowed a large portion of its funds from Bangladesh Bank), Grameen Bank made profits in every year except 1992 (Table 4). Its financial margin (about 9 percent of its assets), unlike other commercial banks (3 to 4 percent), is high.¹⁰ However, compared with the 25 to 30 percent of total costs that commercial banks must spend for administration, the administrative cost of Grameen Bank is about 50 percent of its total costs. The interest rate required to break even, given its cost of funds, has always been higher than its

⁹ This is mainly because of high positive growth in female membership and negative growth in male membership. As a result, male members' mandatory savings (5 percent of the loan amount) is higher than the female members'. Also, on average, men borrow more than women.

¹⁰ Financial margin is defined as the interest revenue plus grants minus interest expenses as percentage of average assets.

Grameen Bank: Impact, Costs, and Program Sustainability
Shahidur R. Khandker

average on-lending rate, except in 1993 and 1994. In other words, before 1993, Grameen's interest income did not meet its cost of lending. Since 1993, Grameen Bank has been operationally efficient.

Table 3: Grameen Bank's Achievements in Reaching the Poor and Women

Year	Membership	Proportion of Women		Proportion of Loans of Women Outstanding		Proportion of Savings Mobilized		Average Savings (thousand taka)		Average Loan Outstanding (thousand taka)		Membership Dropout Rate	
		Members	Borrowers	Borrowers	to Women	from Women	Men	Women	Men	Women	Men	Women	Total
1989	662,263 (35.06)	.89	648,467 (37.22)	.89	.82	.68	4.63	1.24	3.82	2.16	2.27	3.45	3.32
1990	869,538 (31.30)	.91	852,522 (31.52)	.91	.82	.67	7.21	1.42	4.66	2.10	2.74	4.52	4.36
1991	1,066,426 (22.64)	.93	1,041,630 (22.17)	.92	.80	.68	9.41	1.65	6.68	2.19	3.33	5.03	4.90
1992	1,424,395 (33.57)	.94	1,385,324 (32.10)	.94	.89	.69	11.94	1.80	5.54	3.03	2.38	4.42	4.29
1993	1,814,91 (27.42)	.94	1,682,914 (21.48)	.94	.93	.74	24.55	2.59	6.43	5.11	1.37	2.30	2.24
1994	2,015,130 (11.03)	.94	1,860,674 (10.56)	.94	.93	.76	17.48	3.62	6.91	5.98	6.39	4.50	4.62

Note: Figures in parentheses represent growth rates from preceding year.

Source: Khandker, Khalily, and Khan (1995).

Table 4: Grameen Bank's Financial and Economic Viability

Year	Profits (million taka)	Financial Margin	Salary Cost as % of Total Cost	Break-even Rate of Interest	Average On-lending Rate of Interest	Subsidy as % of Loans Outstanding	Dependency on Foreign Funds (foreign funds as % of total funds)	Savings and Deposits as % of Loans Outstanding
1989	2.26 (93.46)	9.33	40.83	17.64	12.90	21.12	90.76	29.52
1990	10.22 (352.21)	8.77	42.32	20.34	12.90	21.57	93.57	33.32
1991	11.92 (16.63)	9.20	49.73	22.79	16.50	21.12	94.64	29.50
1992	(-5.65) (-147.40)	9.75	50.02	16.50	16.74	16.80	99.93	31.25
1993	9.56 (269.20)	9.48	44.06	14.85	15.96	11.90	58.12	42.44
1994	21.74 (127.40)	8.43	29.43	16.30	16.51	3.72	3.73	26.13

Note: Figures in parentheses represent growth rates from preceding year. Source: Khandker, Khalily, and Khan (1995).

Despite operational inefficiency before 1993, Grameen Bank nevertheless recorded profits, largely because of income from sources other than lending. Because the funds for on-lending and institutional development were either subsidized loans or grants, they have an opportunity cost. When these funds are priced according to the government rate for fixed-term securities of 36 months, Grameen Bank was found to enjoy an economic subsidy of 4 to 22 percent per unit of loan outstanding during 1989-1993. Interestingly, the subsidy per taka loan outstanding has declined consistently: it dropped from 21 percent in 1989 to 4 percent in 1994. This drop was largely attributable to increased lending and membership as well as to an increase in on-lending interest rate (from 16 percent to 20 percent) in 1991. The 4 percent drop in subsidy dependence was also due to Grameen's increasing reliance on market resources in 1994 when it borrowed US\$150 million from commercial banks at the market rate by issuing bonds, of course with government guarantee.

Is a subsidy-free Grameen Bank possible? Branch-level cost function estimates suggest that economies of scale exist in the operation of Grameen Bank branches (Khandker, Khalily, and Khan 1995). That is, Grameen Bank can increase lending, membership, and savings mobilization without a proportionate increase in cost. Grameen Bank's increased loan volume in 1993 over 1992 (more than 70 percent) shows that Grameen Bank is exploiting these economies of scale. Similarly, Grameen Bank managed to reduce its dependence on foreign funds from 99.9 percent in 1992 to 58 percent in 1993 and 4 percent in 1994 by relying more on market and domestic resources. Grameen Bank's savings and deposits mobilization from its members has helped reduce its dependence on external funds for on-lending. Its incremental savings financed more than 42 percent of its outstanding loans in 1993 and 26 percent in 1994.

Nevertheless, such increases in resources mobilized from both internal and external market sources were not adequate enough for the Grameen Bank to be subsidy-free by 1994. During the 1989-1994 period, the average growth of outstanding loans was about 40 percent. If it can sustain such a high growth rate of lending, the projection is that Grameen Bank would be subsidy-free by 1998, provided that additional lending comes from market sources at market interest rates. Moreover, additional lending primarily is geared toward the existing membership as additional membership would cost more than additional lending. The pertinent questions are whether there exist demand constraints on lending, given local production conditions, and whether there are further economies of scale in the expansion of branch level operations.

Grameen Bank's Socioeconomic Impacts

Impact on Participants: Methodological Issues

Grameen Bank's ultimate achievements must be measured by the nature and extent of the benefits that its members enjoy. After all, Grameen Bank targets the poor with an explicit objective of poverty alleviation (Yunus 1983). Thus, Grameen Bank's achievement as a bank for the poor lies in its success in combating poverty and improving the poor's human resources. Household survey data taken from 24 villages that had a Grameen Bank branch was compared with data from 15 villages that had no branch or similar credit program. The comparison revealed that Grameen Bank placed its programs in poorer areas. The percentage of target households (that is, those owning less than 50 decimals of land) in Grameen Bank villages was 66 percent compared with 52 percent in nonprogram villages. But not all eligible households participate in Grameen Bank even if they have access to bank services. Again household survey data from 24 villages show that only about 45 percent of target households participate in villages where Grameen Bank operates. This figure is, however, the gross participation rate because not all participants stay with Grameen Bank. The data indicates cumulative dropout rate of about 8 percent (i.e., about 8 percent of the members that joined the program at some point dropped out),¹¹ making the net program participation rate (the gross participation rate adjusted by the dropout rate) about 40 percent.

What do these members gain from program participation? Does the gender of participation matter? Simple comparisons of outcomes between those who participate and those who do not from the same village where Grameen works are not methodologically correct. This is due to two potential problems-sample selection bias and program placement bias. As noted earlier, Grameen Bank has placed its program in villages where the extent of landlessness is higher. As poverty in rural Bangladesh is very much dependent on land ownership (Hossain and Sen 1992), the program placement of Grameen Bank becomes endogenous to the village and area characteristics. On the other hand, not all eligible households participate, a decision contingent upon a host of factors including alternative opportunities available to a

¹¹ The highest dropout rate takes place during the first year of membership. The household survey data show that the members' dropout rate is 30 percent during the first year of membership compared to 4 percent after three years of membership. With an average of 3.5 years of program participation, the annual dropout rate is about 2-3 percent.

household for not joining Grameen Bank. The proper way of evaluating program impact, therefore, involves both sample selection correction and correction for program placement endogeneity.¹²

Traditional means of identifying program impact is through the identification of instruments that only affect program participation but not household outcomes such as income and consumption. It is difficult to find such instruments in practice, however. An approach motivated by demand theory is to use the price of credit as an instrument which is the rate of interest charged by Grameen Bank to its borrowers. This is not a valid instrument as Grameen Bank does not charge different interest rates to different borrowers and hence, rate of interest does not vary across the sample households. Similarly, to control for village-level endogeneity of program placement or household-level endogeneity of program participation, instruments are required to identify program impacts. Both village-level fixed-effects and household-level fixed-effects are ways of controlling for both sources of bias. This requires panel data (before and after program intervention and participation) to resolve the endogeneity issues.

Lack of availability of panel data forces researchers to resort to identification methods such as the assumption of normal distribution of error terms and the parametric identification procedure (for details, see Pitt and Khandker 1996). Both these methods are, of course, econometric restrictions imposed for identification and are not behavioral restrictions based on theory of consumer behavior. When the impact of program participation by gender is desirable to estimate, it involves more complications in identification for estimation.

The participant-level impact analysis presented in this paper is based on econometric analysis that assesses Grameen's impact, using the parametric identification method, on a set of household outcomes (Pitt and Khandker 1996). The method essentially is based on both village and sample exclusion restrictions. Even if villages are not randomly placed with programs, households are excluded based on landholding. That means, not all households are eligible to participate in Grameen Bank. Similarly, even if a village has a program, it does not necessarily follow that both men and women can participate. In fact, in the random drawing of 24 villages with Grameen Bank, only 11 villages have the program available to both men and women. These exclusion restrictions (one based on landholding and the other based on gender) are elements imposed exogenously by Grameen Bank and are the basis for identifying program effects econometrically.

Participant-level Program Impacts

As Table 5 shows, the econometric estimates of program effects suggest that program credit has a significant effect on the well-being of poor households. These results are impacts of Grameen Bank borrowing on behavioral outcomes, controlling for sample selection bias due to endogeneity of program

¹² To show the problem of estimating causal program effect, consider the following. Assume that household behavioral outcomes such as income, employment, and consumption (represented as Y) is a function of a set of household characteristics (X), a set of village characteristics (V), the amount of borrowing (C) from Grameen Bank, and an error term (ξ):

$$Y = X\beta + V\gamma + C\phi + \xi \quad (1)$$

where ξ contains both household unobserved characteristics, village unobserved characteristics, and a random error.

Now, borrowing (C) is not exogeneously given but depends on a set of household characteristics (X) which also affects Y , the set of village characteristics (V) which partially attract a program to operate in a particular village, and an error term \sim containing both household and village unobserved characteristics and random errors:

$$C = X\delta + V\lambda + \zeta \quad (2)$$

Because the error terms contain both household and village unobservable characteristics, both borrowing and household outcomes are jointly determined. Even if the error terms are random and do not make (1) and (2) jointly determined, still the problem remains: there is no way of identifying the independent and separate impact of borrowing (C) on household outcomes (Y) as there is no single variable in (2) that can create an impact of C on Y in (1).

Grameen Bank: Impact, Costs, and Program Sustainability
Shahidur R. Khandker

participation and program placement. Interestingly, program impacts are identifiable by the gender of program participants. It is statistically significant that women and men have different preferences and that women could use their own preferences, revealed through participation in Grameen Bank, to influence household behavioral outcomes. More interestingly, the credit effect is greater when women are the program participants. For example, when women are program participants, the credit impact is about 2.5 percent higher in increasing per capita expenditure compared with male borrowing from Grameen Bank. Similarly, the impact of borrowing on girl's schooling is higher for female than for male borrowing. Also a woman's borrowing from Grameen Bank has helped increase her labor supply to cash income earning activities by 10 percent and nonland asset holding by 20 percent. The results clearly suggest that credit provided by Grameen Bank is not perfectly fungible within the household.

Grameen Bank also has important socioeconomic impacts. Again, household data analysis shows that male borrowing from Grameen Bank has reduced fertility by 4 percent by increasing contraception use by about 37 percent (Table 5).¹³

Table 5: Gender Differential Effects of Grameen Bank Borrowing (percentage)

Changes in Indicator	Male Borrowing	Female Borrowing
Per capita expenditure	1.8	4.3
Boys' schooling	28.4	24.2
Girls' schooling	0	18.6
Recent fertility	3.9	0
Women's labor supply	0	10.4
Women's nonland asseholding	0	19.9

Source: Pitt and Khandker (1996).

Because of its antipoverty role, Grameen Bank lending has helped reduce poverty among its participants. Moderate poverty is 10 percent and extreme poverty is 7 percent lower among program participants than among nonparticipants in Grameen villages (Khandker and Chowdhury 1996). Similarly, although indebtedness is higher among program participants, their household net worth is 46 percent higher than that of nonparticipants. The data analysis suggests that it takes 9-10 years for an average Grameen Bank household to free itself from poverty by borrowing from and being a member of Grameen Bank.¹⁴

¹³ This is, however, not the case with female borrowing. The finding clearly indicates that family planning programs which are usually targeted to women are misplaced if they are not targeted toward the male population as well.

¹⁴ Per capita consumption effects of credit show that the marginal return to weekly consumption per capita due to female borrowing from Grameen Bank is about 19 percent. The question is, How long would it take for a household to get rid of poverty? The per capita expenditure of Grameen Bank borrowers with an average 3.7 years of program exposure was Tk 4,000. At the required expenditure of Tk 5,270 for being above the poverty line, it is estimated that an average Grameen Bank borrower household would take an additional 5 years to get out of poverty. Hence, the total years of membership for female borrowers required to rise above the moderate poverty line is about 9 years.

Aggregate Program Impacts

Other than the direct beneficiaries, there are households in the village that might indirectly benefit from program placement. It is also possible that some households might lose as a result of program placement.¹⁵ It is, therefore, important to calculate the net village-level impact of Grameen Bank program placement. The program placement impact is measured by estimating reduced-form regression measuring outcomes against independent variables, one of which is the presence of Grameen Bank in a village (Table 6).¹⁶ The results show that Grameen Bank has helped to increase household income by 29 percent, total value of production (both farm and nonfarm) by 56 percent, labor force participation and monthly hours worked by 7 percent, and rural wage by 5 percent.¹⁷ Also in Grameen Bank villages the level of moderate poverty is 20 percent lower and absolute poverty is 75 percent lower than villages without a Grameen Bank program.

**Table 6: Grameen Bank's Village-level Impact
(percentage)**

Increase in total income per household	29.4
Increase in total production per household	55.9
Increase in labor force participation rate per household	10.1
Increase in monthly hours worked per household	6.8
Increase in rural wage	13.5
Reduction of moderate level poverty ^a	19.8
Reduction of absolute level poverty ^b	75.0

a Moderate level poverty is defined as the proportion of households having income below Tk 5,270 per person.

b Absolute level poverty is defined as the proportion of households having income below Tk 3,330 per person.

Cost Effectiveness of Grameen Bank

How much does it cost to set up a program such as Grameen Bank? The economic cost of the program which Grameen Bank is not yet able to cover from interest and investment income is the cost of program placement. Estimates show that it costs only US\$10 to mobilize and lend to a new member. Ignoring (for the moment) the socioeconomic benefits that Grameen Bank generates for its members, the program's cost effectiveness, in terms of savings it generates from the poor, can be evaluated. If we consider the subsidy that Grameen Bank receives (in the form of grants and low-interest loans) to be a net transfer to the poor, we find that a transfer of 1 taka generates 3.6 taka in savings (Khandker, Khalily, and Khan 1995). As members are able to survive by saving at this rate (otherwise the annual dropout rate would have been much higher than 3 to 5 percent), the social and private benefits must be large enough to support such program intervention. The Grameen Bank's cost effectiveness can also be measured by its

¹⁵ It is possible that a Grameen Bank-type operation may only help redistribute rather than add to the village income. If this happens, the program is not contributing to improving the total welfare of the village.

¹⁶ The ideal way to identify the village-level impact is to compare outcomes before and after program placement. This takes away the problem of program placement endogeneity (Pitt and Khandker 1996). Due to lack of data, such a method could not be used. However, our estimation controls for other village-level observable attributes that may influence Grameen Bank's program placement in a village. One of the potential identifiers used here is the extent of landlessness in a village.

¹⁷ Note that until recently, Grameen's loans are for supporting primarily rural nonfarm activities. So, it is not surprising to see the big impact on nonfarm production. The increase in farm production is not as direct as in the case of nonfarm production. Increases in nonfarm production create an increase in the demand for farm produce, thereby increasing farm production in the process. Increased contraceptive use is a similar result for the spillover impact of Grameen Bank placement.

poverty alleviation impact. Since it takes about ten years for an average borrower to free his/her family from poverty, and since the economic cost of mobilizing and lending to a member is \$10 per year, the cost of poverty alleviation is only \$100. This is a very small price for poverty reduction.

A Grameen Bank-type program is not, however, ideal for all the poor, as making money through self-employment is a difficult job, which calls for entrepreneurship. And not everyone has this ability. For this reason, only about 40 percent of the eligible households participate. This is why other targeted measures such as income transfer, food-for-work, food price subsidy, employment guarantee scheme, broad-based economic growth, and improved access to health, nutrition, and education are required. The importance of an effective role by government in designing and implementing such nontargeted credit measures is thus hardly overemphasized. But Grameen Bank is highly effective in reaching this 40 percent because of the self-selection rule imposed through its program design: only those who are willing to exert the needed effort to initiate an income-producing activity and are willing to abide by Grameen Bank's rules will participate. At the same time, this self-selection rule reduces the cost of financial and social intermediation. As membership cost is the largest component of total cost (Khandker, Khalily, and Khan 1995), Grameen Bank would not survive with a high membership dropout rate, which is currently only 3-5 percent per year.

Grameen Bank's Constraints for Expansion

Grameen Bank must expand its activities (membership, lending, and savings mobilization) over time to become more cost-effective, especially since it will have to depend more on the market, rather than on donors and the government, to finance its lending. But the returns to the activities it finances are likely to decrease, given demand constraints, as more people join and undertake similar productive activities. As such, including more growth-oriented activities in its loan portfolio and achieving cost efficiency will be of major importance as Grameen Bank expands.

A program-level data analysis shows that Grameen Bank could make profits if it disbursed more money for technology loans rather than general and collective loans. Similarly, branches that serve both men and women earn higher profits than branches that serve only women. As the average principal for a technology loan is relatively larger than that for a general loan (Khandker, Khalily, and Khan 1995) and as men borrow more money than women on average (Table 3), increasing the loan amount per borrower is one possible way of attaining both cost efficiency and profitability.¹⁸

Grameen Bank's success must be measured by whether its borrowers "graduate", or at least cease to remain economically dependent on Grameen Bank credit. That is, if they are free from poverty, they must have the ability to earn higher incomes, and require larger loans to support a higher level of economic activity.¹⁹ The ability to borrow more depends on the borrowers' entrepreneurial skills and the market opportunities that they face. Borrowers' ability to borrow more also can only be realized if Grameen Bank is willing and able to meet the increased demand for credit. Given that Grameen Bank is currently offering its services to about half of the villages in Bangladesh and that 60 percent of rural households are eligible to join Grameen Bank, its current membership (about 25 percent of the eligible

¹⁸ Increasing loan amount per borrower is, however, risky by its own sake as it encourages borrowers to assume riskier activities, hence affecting profitability.

¹⁹ To Grameen Bank, "graduation" does not mean dropout. As Grameen Bank members hold shares in Grameen Bank's equity, the program dropout only occurs when a member is pushed out due to antigroup activity or loan default, or voluntary exit when he or she finds a better alternative. Household survey data indicates that among those who dropped out from Grameen Bank, none said that he or she had a better alternative for leaving Grameen Bank. Fifty-six percent of 22 individuals who dropped out said that they did not like the program, followed by 32 percent who said they tried but failed to make any progress.

households) seems suboptimal.²⁰ Whether this low participation rate reflects constraints on the supply or on the demand side is unclear.

Supply Constraints

Given the branches' staffing patterns (on average each branch has nine employees) and the size of centers, Grameen Bank may face supply constraints. In order to attain production efficiency as well as cost efficiency, Grameen Bank should increase the staff strength of each branch as well as the size of centers. It could increase group size from five to eight or 10, and the center size from 12 to 15 (groups) in older branches without jeopardizing the virtue of group-based lending.

Grameen Bank should also consider increasing the landholding requirement from less than half an acre to one acre. Increasing the target base will enable more people to join Grameen Bank and, in the process, reduce its overhead cost. At the same time, introducing differential rates for different members based on their economic graduation would also widen the target base. Those who graduated in terms of increased income level and economic activity may be given much larger loans at a reduced rate so that graduation would continue.²¹ This would reduce Grameen's subsidy dependence while promoting borrowers' income and viability.

Grameen Bank could introduce individual rather than group liability loans for long-time Grameen Bank members who have excellent repayment records. These loans could also be repaid on a monthly rather than on a weekly basis. These together would reduce the transaction costs of borrowing and the administrative costs of lending. However, as long as social intermediation and services are critical inputs of financial transaction for new groups, group-based lending may remain the only option.

Demand Constraints

Grameen Bank may accelerate the poor's credit demand by product and technology promotion. The economic growth of the economy ultimately shapes the nature and extent of borrowers' credit demand. The program mainly supports rural nonfarm and agriculture-based enterprises, and the demand for the products and services of these enterprises in the country is largely determined by agricultural growth. Although Bangladesh has become self-sufficient in foodgrains, it needs to diversify its agricultural production and consolidate its growth in foodgrain production to maintain higher agriculture growth. Grameen Bank may help this process along by diversifying its portfolio and raising the incomes of the poor. The 1993-1994 data show that Grameen Bank is increasingly supporting agriculture and related activities by making seasonal and food storage loans, which further agricultural growth. About 35 percent of total loans were made for agriculture, with a proportionate reduction in growth in lending to processing and manufacturing. Whether this portfolio change (in favor of agriculture and away from rural industries) reflects the constraints on further growth in rural nonfarm activities because of technological and marketing constraints merits further analysis.²²

However, relying primarily on the credit demand of poorly educated entrepreneurs may be too costly for Grameen Bank. It may also be too costly for the borrowers, who may find it difficult to switch to more growth-oriented activities. Unless technology is updated and the portfolio shifts into more

²⁰ The household survey data: shows that the participation rate is about 40 percent. That means Grameen Bank's operation in its command area is not as intensive as it is in the study villages.

²¹ Grameen should charge less, not more, to economically successful entrepreneurs because of its lower transaction costs for large loans. The objective is to move closer to the commercial lending rate (14.5 percent) as economic graduation takes place (in terms of large size of loans).

²² This decline in loan disbursement to rural processing and manufacturing is perhaps also due to the fact that Grameen's loans to handloom are part of the Grameen Uddogee, a separate organization promoting handloom production in rural Bangladesh. Handloom, of course, does not explain the decline entirely because of its small share in the loan portfolio. That means there is a real decline of lending in this subsector.

growth-oriented activities, both the Grameen Bank and its borrowers will have difficulty surviving in the long run. In fact, as the economy grows, commercial banks and other development finance institutions could finance projects that produce similar nonfarm goods on a larger and more profitable scale. The low-cost production of large-scale enterprises may drive down the profit margins of small-scale projects financed by Grameen Bank, eventually forcing them out of this sector; evidence suggests that Grameen Bank branches earn less profit in areas where the density of commercial and agricultural development banks is higher. Therefore, Grameen Bank borrowers must be efficient and capable of diversifying into new enterprises as the economy expands. But this is unlikely to occur unless Grameen Bank promotes borrowers' entrepreneurial development with skills training and technology and market promotion. Grameen Bank may also need to promote marketing by exploring and tapping into potential local and export markets. Grameen Bank's borrowers may be tied into its independent but commercialized sectoral interventions, such as Grameen Uddogoe (working primarily with the handloom sector), Grameen Fisheries Foundation, and Grameen Krishi (agricultural) Foundation, which can help promote profitability of their investment.

Is Grameen Bank Replicable?

Grameen Bank's replicability depends on the flexibility of its program design and on the importance of personality such as Dr. Yunus in its development. If its success has come mainly as a result of Dr. Yunus, or if its design is unique and context-specific, it may not be replicable. The Grameen Bank model is well replicated within Bangladesh. There are several hundred small and localized NGOs which have copied Grameen's group-based model whose loan recovery rate are as good as those of Grameen Bank. There is also a second model being practiced in Bangladesh by programs such as Bangladesh Rural Advancement Committee (BRAC) which offer more than credit. In fact, they provide much more social development inputs including skills training to members. In BRAC, members could not receive loans until after completing six months' rigorous training. In this sense, Grameen's model represents the *minimalist* approach, while BRAC's model represents the *maximalist* approach. Despite this, BRAC, although having experimented with different credit delivery models in the past, is now practicing the small group-based lending model in its credit programs called the Rural Credit Program (RCP). BRAC's experience shows that small group size makes it easier for programs to monitor the group's performance through screening of their own activities (Khandker and Khalily 1996). The government of Bangladesh also introduced the group-based lending method in its two-tier cooperative framework for the Bangladesh Rural Development Board (BRDB) designed exclusively for landless men and women in 139 villages in Bangladesh. Even working within the government bureaucratic structure, analysis shows that this program has managed to keep high loan recovery rates (more than 90 percent) (Khandker, Khan, and Khalily 1995). Grameen Bank's group-based peer monitoring is now a well-accepted model for credit delivery by both NGOs and government programs in Bangladesh (World Bank 1996). As this model is replicable within different management structures, one can conclude that the presence of a charismatic leadership such as that of Dr. Yunus is not a necessary condition for Grameen Bank's replication in Bangladesh.

This may not be the case in other countries where leadership may appear to be a binding constraint for replication. Moreover, the model which is relevant for Bangladesh may not be applicable in another setting. Yet, similar group-based lending programs have already developed in more than 45 countries around the world. In order to address the question of replication, it is important to analyze the development and sustainability of these programs.

The Project Ikhtiar in Malaysia is a successful replication. This program was developed with the support of the Malaysian government and its record of loan recovery has been as high as that of Grameen Bank (Gibbons and Kasim 1990). Many other programs have only recently been implemented therefore it is premature to evaluate their performance. However, a number of studies have shown that Grameen Bank

model is replicable but the concept of “breed your own institution from good foreign stock” (Hume 1990, Thomas 1988) has to be a basis.

An important question is whether group-based lending is replicable. This requirement may be relaxed in an environment where social intermediation is not a constraint for successful financial intermediation. This implies that the target group should be educated and socially and individually accountable, and that community organizations enable contracts to be enforced. The Badan Kredit Kecamatan (BKK) in Indonesia is an example of a successful program that is based on individual lending (Gonzales-Vega and Chaves 1996).

In an environment where social intermediation is not required for lending to the poor, group lending is still more effective if imperfect information and imperfect enforcement make credit transactions risky and difficult to enforce contracts. Group-based lending is also desirable for the poor where the persistence of poverty is rooted in sociopolitical inequities. In such societies individual-based lending can “perpetuate and reinforce the existing socioeconomic inequities and access to scarce financial resources” (Yaron 1992).²³

Potential replication depends on a combination of these factors, which establish a framework for the program design, given certain basic requirements for efficient operation and long-term success. An important precondition is intensive training and incentives for a well-motivated staff that is willing to try innovative methods in response to borrower demand. In turn, this requires an organizational structure that allows for administrative flexibility and decentralized decisionmaking.

However, the crucial component for successful replication is the availability of funds for on-lending. The availability of funds, whether subsidized or borrowed at market rates, and member savings will determine the costs of lending and program profitability. The program has to ensure that, given its various expenditure requirements, it can break even at the earliest stage of its operation.

The key factors to be identified before the program can be replicated are: (a) why such a banking system is needed; (b) what is the credit need of the poor and what should determine their participation; (c) whether the social mechanism serves as a vehicle for credit delivery to the target group; (d) whether people are socially and individually accountable; (e) whether group-based or individual-based lending is feasible and cost-effective; (f) whether the cost of administration can be recovered with the interest rate charged; and (g) whether the poor can bear the full cost of financial and social (if necessary) intermediation. Once replicated, the program’s success depends almost entirely on the creativity and commitment of the leadership and its ability to carve out market niches.

The replication of a Grameen Bank-type operation by commercial banks may minimize the social cost of banking for the poor and save the trouble of establishing anew, specialized bank for the poor. Commercial banks’ basic incentive is profit maximization rather than social development. They aim to promote growth and financial development through larger loans and other financial instruments, which are tied to tangible collateral. Since the poor do not have collateral, a separate lending window which does not involve material collateral may be a possible addition for commercial banks. The supply of such banking facilities may change the relative shares of credit instruments in their loan portfolio. But the effect on the commercial banks’ overall profitability may not be serious. The benefits of doing this may help crosssubsidize the program for the poor and reduce the cost of financial intermediation for the poor through risk pooling across sectors. Commercial banks may also work closely with NGOs supporting their outreach programs. NGOs are found to be better in reaching the poor for on-lending and mobilizing savings in small amounts, which commercial banks find highly costly. Therefore, one possible way to reduce the cost of intermediation for the poor is integration between NGOs and commercial banks, where commercial banks provide on-lending funds to NGOs at market rates and NGOs are expected to charge a rate that covers their lending cost.

²³ Of course, this does not mean that group-based schemes cannot be used as a tool for exploitation of the poor. It depends on how the groups are formed with whom and by whom.

Grameen Bank's experience suggests that group-based lending with a weekly payment schedule and possible repayment rescheduling is applicable to agricultural lending. But Grameen Bank has linked agricultural lending (which is seasonal) with a year-long loan for rural nonfarm activity. In an environment where rural nonfarm activities are not available, group-based lending is still applicable, where seasonal loans for agriculture are mixed with loans for noncrop activities, such as poultry, livestock, and fisheries. In this way, the weekly loan repayment schedule is feasible and enforceable in an agricultural setting.

Grameen Bank's success with group-based lending is relevant for a densely populated area where the cost of group mobilization is less for both the lender and the borrower. The relevance of such an approach, with a weekly repayment schedule and group meeting, seems highly improbable in sparsely populated areas of Africa, for example. But the model is replicable in such a setting if a scheme is developed to confront these obstacles. For example, savings deposits and loan disbursements can be made in local markets where people regularly meet for shopping. Using tribal linkages within the general Grameen Bank model can also be explored. The chief lesson learned from Grameen Bank is that it is necessary to design a system of accountability that works for both bank officials and borrowers. Therefore, any successful replication must ensure that the system is made highly transparent and is "social-conscience-driven" (Yunus 1995).

Conclusions

Grameen Bank, like any other financial intermediary, faces risks in lending because of asymmetric information and imperfect enforcement. The risk of lending is much higher in a rural setting where it is difficult and more costly to gather information about borrowers and enforce a contract. The problem is more acute for the poor who are perceived as more credit-risk than the rich. Still, Grameen Bank works for and with the rural poor, especially women. Because the poor are its exclusive clientele, Grameen Bank has assumed the enormous challenge of providing financial services to people who lack material collateral and are thus considered to be high credit risks by traditional finance institutions. It also faces the difficult task of alleviating poverty with credit provision. More importantly, Grameen Bank operates only in rural areas where production is risky because of environmental factors, seasonality is pronounced, and infrastructure is underdeveloped. Thus, unlike other banks, Grameen Bank is less able to minimize the risk of loan default by diversifying its loan portfolio across sectors.

Grameen Bank introduced group-based lending with mandatory savings to improve the financial and social discipline of its members. Group-based lending improves the loan recovery rate and also provides a cheaper vehicle for social intermediation when social intermediation is an integral part of financial intermediation. At the same time, savings mobilization improves the financial discipline and accountability of the poor, while helping borrowers and lenders absorb the unforeseen shocks caused by agroclimatic factors.

By lending to the poor, and especially to women, Grameen Bank has shown that the poor are creditworthy, as their loan repayment rate has been consistently higher than 95 percent. But as of 1994, revenue from interest payments is barely enough to sustain its activities without further reliance on donor funds which were nevertheless essential for its institutional development. To sustain its operation as an independent financial institution, Grameen Bank must be able to operate based on market resources. It requires more savings mobilization and also more borrowing at the market rate of interest rate while breaking even.

Grameen Bank also needs to be more cost-efficient. It requires increased loan volume per branch by increasing either membership per branch, lending per member, or both. But expansion of lending or membership is demand-constrained. For borrowers, simply returning the money to the bank is not the primary hurdle. When loans are given in small amounts on an annual basis and repayments are scheduled on a weekly basis, loan repayment may not be that difficult. The impact of borrowing and membership is evaluated in terms of changes in income, consumption, employment, health, nutrition, and net wo-h.

Household survey data clearly show that Grameen Bank helps to alleviate poverty and increase resources, both physical and human. It also empowers women economically. Therefore, poverty alleviation and human resource development is possible with targeted credit.

But the poor do not have an unlimited capacity to absorb a larger amount of loans. The poor's demand for credit is influenced by the profitability of investment and economic growth, on one hand, and the entrepreneurial development of the borrowers on the other. Thus, the long-run viability of both Grameen Bank and its borrowers depends on how fast economic graduation is achieved at the borrower level, in terms of both income and occupational mobility.

Higher economic growth is necessary to sustain the economic graduation of both Grameen Bank and its borrowers. Sound macroeconomic policies and good governance of these policies are quite important to promote economic growth. The government thus has an important role to play in promoting and sustaining economic growth to reduce poverty on a sustainable basis. Nevertheless, commercial product-based sectoral interventions such as Grameen Uddogee which promotes marketing, skill-mix, and technical know-how among the small producers can stimulate these microenterprise initiatives. In other words, a good blend of both top-down and bottom-up policies is necessary to promote both income and occupational mobility among microentrepreneurs.

Grameen Bank's financial model, based on social intermediation, is replicable in any context with suitable modifications based on innovation and experimentation. The replication must, however, be social-conscience-driven and transparent so that accountability is established in the institution that is designed and developed based on the notion of self-sustainability. Subsidized funds or grants are necessary at the early stage to develop such an institution. However, the social cost is minimum, given the social benefits that such an institution is able to generate. Perhaps a Grameen Bank-type operation is the most cost-effective way of reaching a highly self-selected entrepreneurial class of people among the poor who do not have access to formal financial institutions because of lack of collateral. Thus, providing financial services to the poor is one of many approaches for poverty alleviation, but the group-based microfinance model of Grameen Bank is cost-effective because of its self-selection procedure.

References

- Adams, D. W., and J. D. Von Pischke, 1992. "Micro-Enterprise Credit Programs: Deja Vu." In *World Development Report 1992*. Washington, D.C.: The World Bank.
- Binswanger, H., and M. R. Rosenzweig, 1986. "Behavioral and Material Determinants of Production Relations in Agriculture." *Journal of Developing Studies* 21:503-39.
- Bouman, F. J. A., and O. Hospes, 1994. *Financial Landscapes Reconstructed*. Boulder, CO: Westview Press.
- Fuglesang, A., and D. Chandler, 1988. "Participation as Process: What We Can Learn from Grameen Bank, Bangladesh." NORAD, Oslo.
- Gibbons, D. S., and S. Kasim, 1990. *Banking on the Rural Poor*. Penang, Malaysia: Amanah Ikhtiar Malaysia.
- Goetz, A. M., and R. S. Gupta, 1996. "Who Takes the Credit? Gender, Power, and Control over Loan Use in Rural Credit Programmes in Bangladesh." Institute of Development Studies, University of Sussex, Brighton, UK.
- Gonzalez-Vega, C., and R. A. Chaves, 1996. "The Design of Successful Rural Financial Intermediaries: Evidence from Indonesia." *World Development* 24:657-8.
- Hoff, K., and J. E. Stiglitz, 1991. "Introduction: Imperfect Information and Rural Credit Markets-Puzzles and Policy Perspectives." *The World Bank Economic Review* 4(3):235-51.
- Hossain, M., 1988. *Credit for Alleviation of Rural Poverty: The Grameen Bank in Bangladesh*. Research Report 65. International Food Policy Research Institute, Washington, D.C.
- Hossain, M., and B. Sen, 1992. "Rural Poverty in Bangladesh: Trends and Determinants." *Asian Development Review* 10:2-34.

Grameen Bank: Impact, Costs, and Program Sustainability

Shahidur R. Khandker

- Hume, D., 1990. "Can the Grameen Bank be Replicated? Recent Experiments in Malaysia, Malawi and Sri Lanka." *Development Policy Review* 8:287-300.
- Jain, P. S., 1996. "Managing Credit for the Rural Poor: Lessons from Grameen Bank." *World Development* 24:79-89.
- Khandker, S. R., and O. H. Chowdhury, 1996. Targeted Credit Programs and Rural Poverty in Bangladesh. World Bank Discussion Papers No. 336. Washington, D.C. Forthcoming.
- Khandker, S. R., and B. Khalily, 1996. The BRAC's Credit Programs: Performance and Sustainability. World Bank Discussion Papers No. 324. Washington, D.C. Forthcoming.
- Khandker, S. R., B. Khalily, and Z. Khan, 1995. Grameen Bank: Performance and Sustainability. World Bank Discussion Papers No. 306. Washington, D.C.
- Khandker, S. R., Z. Khan, and B. Khalily, 1995. Sustainability of a Government Targeted Credit Program: Evidence from Bangladesh. World Bank Discussion Papers No. 316. Washington, D.C.
- Pitt, M., and S. R. Khandker, 1996. Household and Intrahousehold Impacts of the Grameen Bank and Similar Targeted Credit Programs in Bangladesh. World Bank Discussion Papers No. 320. Washington, D.C.
- Rahman, R. I., 1986. *Impact of Grameen Bank on the Situation of Poor Rural Women*. Dhaka: Bangladesh Institute of Development Studies.
- Schuler, S. R., and M. S. Hashemi, 1994. "Credit Programs, Women's Empowerment, and Contraceptive Use in Rural Bangladesh." *Studies in Family Planning (International)* 25:65-76.
- Stiglitz, J. E., 1990. "Peer Monitoring and Credit Markets." *The World Bank Economic Review* 4(3):35-6.
- Thomas, J., 1988. "Credit Programs for the Informal Sector in Peru." London School of Economics. Mimeo.
- Varian, H. R., 1990. "Monitoring Agents with Other Agents." *Journal of Institutional and Theoretical Economics* 146:153-74.
- Wahid, A., ed., 1993. *The Grameen Bank: Poverty Relief in Bangladesh*. Boulder, CO: Westview.
- World Bank, 1996. "Bangladesh: Poverty Alleviation Microfinance Project." Private Sector Development and Finance Division, Country Department 1, South Asia Region. Washington, D.C.
- Yaron, J., 1992. Successful Rural Finance Institution. World Bank Discussion Papers No. 150. Washington, D.C.
- Yunus, M., 1983. "Group-based Savings and Credit for the Rural Poor: The Grameen Bank in Bangladesh." In *Group-Based Savings and Credit for the Rural Poor*. Geneva: International Labor Organization.
- _____, 1995. "Towards Creating a Poverty-Free World." Paper presented at the Annual Meeting of the U.S. Committee for World Food Day, Washington, D.C.