

RURAL FINANCE AND POVERTY ALLEVIATION

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FOOD POLICY REPORT
INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE



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PREFACE

This report presents information on the credit constraints that poor rural households face, derived from detailed rural household surveys conducted by IFPRI and its collaborators in nine countries of Asia and Africa (Bangladesh, Cameroon, China, Egypt, Ghana, Madagascar, Malawi, Nepal, and Pakistan). It uses this information to make the case for appropriate public intervention in strengthening rural financial markets and draws conclusions about areas where public resources may best be spent. It describes how informal, often indigenous institutional arrangements—from savings clubs and lending networks to small retail shops and input dealers—have succeeded in tailoring savings, credit, and insurance services to the poor. What enables informal institutions to provide sustainable financial services that banks and cooperatives in the formal sector institutions, with few exceptions, fail to provide? What are their strengths and weaknesses? What lessons can formal sector institutions draw from them? The report argues that the basic problem lies in institutional arrangements, summarily transplanted from urban-based formal banking systems, that have high transaction costs for lenders and borrowers alike. For the lender, these costs are incurred in screening large numbers of borrowers, monitoring and enforcing unsecured loan contracts, and managing tiny savings deposits. For the borrower, these costs take the form of time and other resources spent securing loans or making deposits, or inappropriate deposit or loan terms. Finally, the report looks at examples of recent institutional innovations that overcome some of these obstacles. It concludes that just as there is a role for the public sector to develop or support science-based technologies,

concerted public action is also needed to create an enabling environment in which institutional innovation is encouraged and given more room to spread. Governments, donors, banking practitioners, nongovernmental organizations, and research institutions must work together closely to pinpoint the costs, benefits, and future potential of emerging rural financial institutions.

The report presents empirical results and conclusions from a multicountry research program at IFPRI, that began formally in 1994. Many IFPRI staff and collaborators from other research and government institutions have directly or indirectly contributed to the country case study research and synthesis work. Rosanna Agble, Joachim von Braun, Sumiter Broca, Franz Heidhues, Eileen Kennedy, Zhu Ling, Sohail Malik, Charles Mataya, Mohammed Mushtaq, Ellen Payongayong, Alexander Phiri, Zillur Rahman, Gertrud Schrieder, Simtowe, Rosetta Tetebo, Tshikala Tshibaka, and Jiang Zhong Yi all contributed. We also thank Lawrence Haddad and Bonnie McClafferty for comments, and Phyllis Skillman for editing this manuscript.

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INTRODUCTION

The myth that poor households in developing countries, who often earn less than a dollar a day, are not creditworthy or able to save has been firmly put to rest in recent years. Poor households, it has been found, place special value on reliable and continued access to different types of financial services, available at reasonable cost and catering to their specific needs. Credit and savings facilities can help poor rural households manage and often augment their otherwise meager resources and acquire adequate food and other basic necessities for their families. Credit facilities enable them to tap financial resources beyond their own and take advantage of potentially profitable investment opportunities. Well-managed savings facilities provide incentives for households to build up funds for investment or future consumption. Credit and savings facilities enable farmers to invest in land improvements or agricultural technology such as high-yielding seeds and mineral fertilizers that increase incomes (while sustaining the natural resource base). For rural households who do not own land, credit and savings facilities can help establish or expand family enterprises, potentially making the difference between grinding poverty and an economically secure life. Short-term borrowing or savings are often used to maintain consumption of basic necessities when household incomes decline temporarily—after a bad harvest or between agricultural seasons, for example.

The task of providing financial services at a reasonable cost to those who have limited assets has not been easy, however. Until the 1980s in many developing countries, state-run agricultural development banks took the lead in establishing formal credit markets in rural areas. However, the shortcomings of the banking principles that they were based on—collateralized lending, an organizational setup without any incentives to do business

with the poor, excessive dependence on government funding, and pervasive political patronage—severely handicapped their performance. The provision of savings services was also largely neglected because the importance of providing deposit services to the poor was not appreciated and because donor finance was available on attractive terms. Distributing loans at subsidized interest rates was emphasized. And it was all too easy for the socially powerful and the wealthy to preempt most of the benefits of the subsidized distribution of credit. Moreover, in some countries, political leaders found it to their advantage to resist any moves to collect long-outstanding debts from subsidy recipients, and in many cases leaders periodically announced loan amnesty or interest remission programs in order to attain political objectives. These types of actions greatly eroded borrower discipline and loan arrears ballooned. Not only did the banks fail to serve the poor who were unable to pledge collateral, they also became chronically dependent on larger and larger infusions of subsidy money, quickly sliding beyond any prospect of long-term financial sustainability. Many of them, in effect, degenerated to costly and inequitable income transfer programs.

In the past 15 years, support for state-sponsored agricultural banks has greatly declined, and the need for financial market reforms to rectify distortions caused by past government policies is now almost universally acknowledged. However, governments, donors, and nongovernmental organizations (NGOs) continue to look for alternative models for extending financial services to the rural poor in an effective and economically sustainable way. Typical questions asked are what types of financial services are demanded by the poor? How does access to credit affect the welfare of the poor? How can rural financial institutions more effectively

reduce poverty? What kinds of innovations in institutional design are called for and how can they be generated? What is the role of government in this process? The solutions proposed in answer to these questions are often confusing and conflicting, frequently the

result of taking extreme positions on some issues or generalizing from a narrow context. This report attempts to provide a balanced discussion of the underlying issues, giving due attention to competing claims and points of view.

CLIENT PROFILE

Successful provision of financial services to the poor requires a clear picture of who the “poor” are. But generalizations are hard to make. Conditions of the poor in Latin America or Central Asia are quite different from those in South Asia or Africa. Hence, the nature of the constraints and the best approach for tackling them depend on the characteristics of the target population. Approaches that work in one region may not be readily transplanted to another, and services that successfully address the demand of one type of clientele—poor agricultural traders, for example—may fail to address those of another type—semisubsistence farmers in the same region. Inadequate understanding of the conditions of the client population or the context within which policy decisions are made often leads to tension among policymakers, donors, and managers about what is the best way to support financial services for the poor. With this in mind, some major characteristics of the poor and their participation in formal and informal financial markets in rural areas of Africa and Asia are identified here. The data for the analysis are derived from nine household surveys conducted by IFPRI, that collected detailed data on credit market participation.¹ Here the focus of the intercountry comparisons is not so much the nature of credit transactions themselves (as conditions among countries vary greatly), but the differences between the poor and the

nonpoor within countries. The “poor” are defined here as the bottom one-fourth of the sample households when ranked by per capita household income levels.

The extremely limited resource base of the poor in Asia and Africa is evident in Table 1. The majority of the poor lack basic education, are primarily dependent on agriculture for their livelihood, own extremely small amounts of land for cultivation, and support large families at low average per capita income levels. Further, since rural areas are not as well serviced as urban centers by physical and social infrastructure such as roads, schools, telephones, radio, shops, and health clinics, their capacity to take advantage of market opportunities is severely curtailed. Households belonging to the lowest income quartile spend as much as 91 percent of their consumption budget on food (Figure 1). Even so, because their earnings are so low, they sometimes go hungry.² As a result, the consequences of a drop in their earnings or the need to finance unexpected expenditures such as medical expenses could be quite serious. The cycle of borrowing during adverse times or during planting seasons and saving or repaying loans after harvest or when earnings are good is an integral part of the livelihood system of the poor. This is evident in IFPRI studies in Pakistan, Madagascar, and Nepal. In Nepal, an overwhelming majority of the poor, about 72 percent, engaged in some form of financial transactions. In Madagascar, nearly half of the

Table 1—Selected household characteristics, by country

Indicator	Bangladesh		Cameroon		China		Egypt		Ghana		Madagascar		Malawi		Nepal		Pakistan	
	Poor (P)	Nonpoor (NP)	P	NP	P	NP	P	NP	P	NP	P	NP	P	NP	P	NP	P	NP
Mean household size, number of people	5.4	5.0	8.5	6.0	4.8	4.4	7.7	6.2	8.4	6.8	6.8	5.3	5.3	4.0	6.3	7.5	11.2	8.4
Years of education of household head (percent) ^a																		
None	73.3	49.3	36.9	33.9	17.1	9.3	56.2	39.2	29.3	20.9	13.0	21.6	30.0	27.0	93.1	93.3	64.2	59.6
Under five years	21.3	20.4	52.8	58.8	42.4	42.0	15.0	13.6	10.6	4.6	67.4	53.6	51.0	39.0	2.3	3.7	0.0	0.0
Five to eight years	3.3	14.2	8.3	8.2	32.5	38.1	12.9	16.1	14.6	7.9	17.4	13.5	18.0	29.0	4.5	2.6	29.0	24.2
Nine or above	2.0	16.0	0.0	4.2	7.7	10.3	16.0	30.9	45.4	66.9	2.2	11.2	1.0	5.0	0.0	0.6	6.8	16.3
Percent of household heads reporting self-employed farming as principal occupation ^b	16.0	44.6	69.4	62.0	91.1	81.2	23.4	27.3	76.0	63.0	76.6	81.0	80.0	59.0	n.a.	n.a.	42.0	58.1
Mean land ownership (hectares)	0.2	0.6	2.5	4.3	2.0	2.0	0.4	0.8	2.6	3.4	2.1	3.3	1.5	1.7	0.5	1.5	1.5	4.9
Mean annual income per household member, US\$	108.6	232.2	179.1	357.2	74.1	204.62	236.3	641.5	82.8	217.2	86.6	223.9	32.7	61.0	90.0	118.5	216.6	407.2

Source: IFPRI research on rural finance (see note 1).

Notes: P = poor. The poor belong to the lowest quartile of income (or consumption expenditure) in their respective countries.

NP = nonpoor. The nonpoor are the three other quartiles.

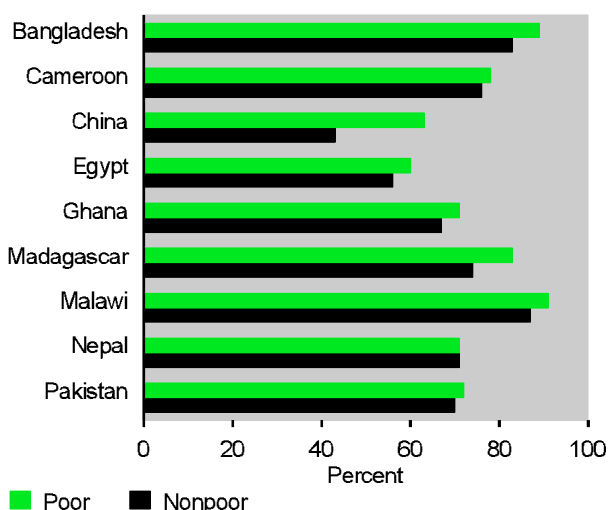
The time periods of the surveys are: Bangladesh, 1994; Cameroon, 1992; China, 1994; Ghana, 1992–93; Madagascar, 1992; Malawi, 1995; Nepal, 1991–92; Pakistan, 1986–91; Egypt, 1997.

n.a. is “not available.”

^a“Household head” refers to the major family laborer. For years of education of household head, the category “none” refers to the percentage that are illiterate; “under five years” to those who had at most some primary education; “five to eight years” to those who completed some junior level school; and “nine or above” to those who completed some senior level school.

^bHousehold heads working principally as daily laborers in agriculture account for an additional 37.6 percent for the poor and 10.1 percent for the nonpoor.

Figure 1—Percent of consumption budget allocated to acquiring food



Source: IFPRI research on rural finance (see note 1).

poor households reported that loans were used to cope with household emergencies when they occurred. In Pakistan, a 1985 rural credit survey conducted by the government of Pakistan indicated that nearly 40 percent of poor households engaged in credit transactions.³

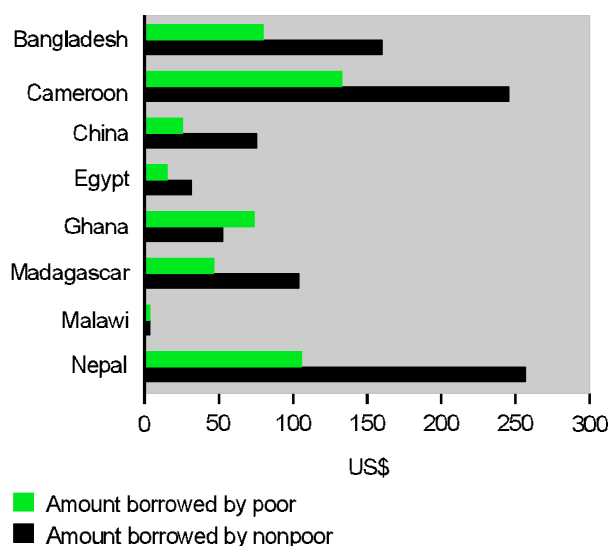
The average cumulative yearly amount borrowed by poor households from the formal and informal sectors ranges from about US\$4 in Malawi to US\$80 in Bangladesh to US\$133 in Cameroon. The samples drawn are not nationally representative; with the exception of China, Egypt, and Pakistan, they are concentrated in areas and in villages where formal financial institutions are placed. For this reason, reported levels of borrowing are likely to be higher than national averages. Nevertheless, Figure 2 shows that the nonpoor households (the upper three quartiles of household income) borrow much more than the poor, with the exception of Ghana.⁴ Moreover, the loan amount shown in Figure 2 is not available to the borrower throughout the year, but only for several weeks or months. This is because most informal loans are given for only a few days or weeks. Even many formal loans obtained by the sample households are

seasonal loans for agriculture or rural micro-enterprises. The smallest amount borrowed is in Malawi, a very poor country with a relatively inactive informal credit market.

Informal lenders—friends, relatives, neighbors, informal groups, or moneylenders—provide the bulk of the loans in every country except Ghana and Malawi (Figure 3). In Pakistan and Cameroon, for example, less than 5 percent of the amount borrowed by poor rural households was obtained from formal lenders. In this report, formal lenders consist of state and agricultural development banks and new microfinance institutions. The latter group includes credit unions and cooperatives, group-based programs run by government agencies or nongovernmental organizations, and village banks. The new member-based microfinance institutions successfully reach the poorest income quartile in Bangladesh and Malawi.

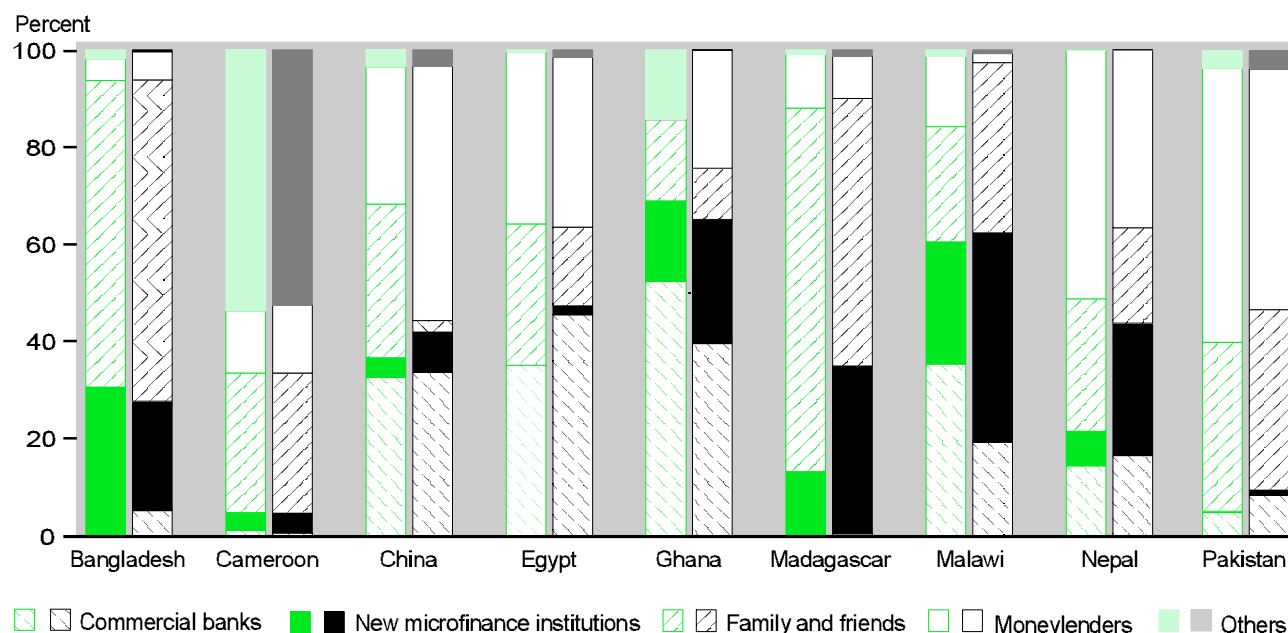
The poor obtain a smaller share of their loans from the formal sector than the nonpoor in six countries (China, Egypt,

Figure 2—Average amount borrowed from formal and informal rural financial sectors per household per year



Source: IFPRI research on rural finance (see note 1).

Figure 3—Share of different sources of loans to poor and nonpoor, by country



Source: IFPRI research on rural finance (see note 1).

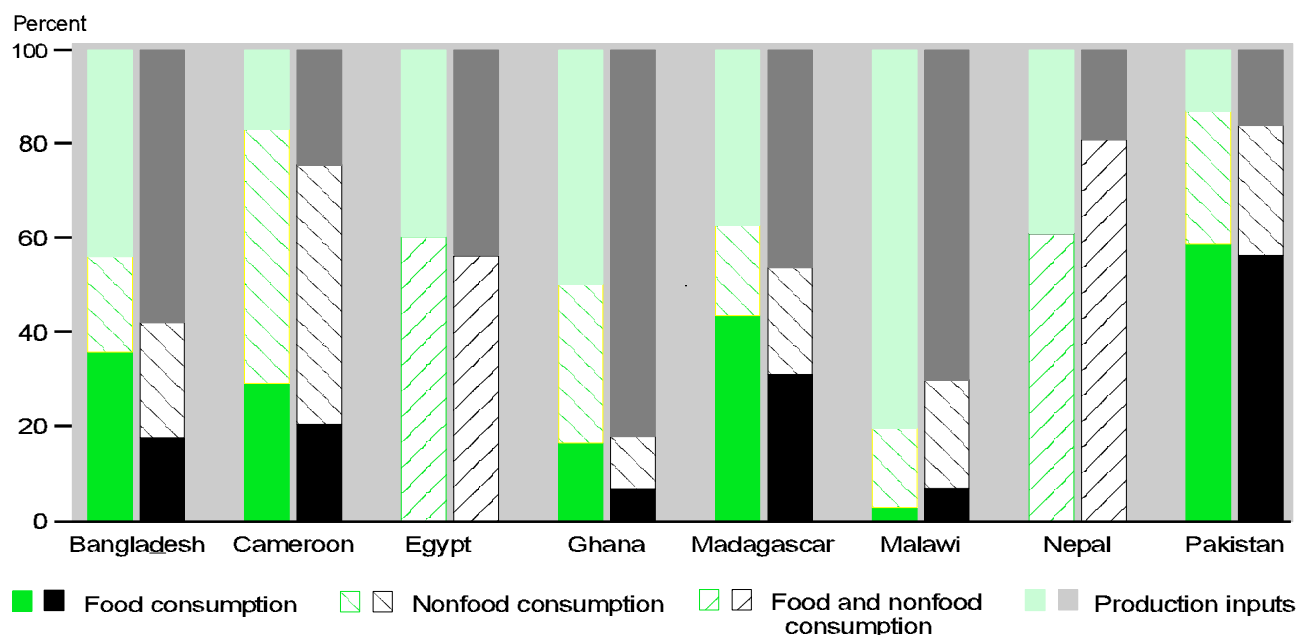
Note: Green = poor; Black = nonpoor

Madagascar, Malawi, Nepal, and Pakistan), about the same in one country (Cameroon), and a larger share in two countries (Bangladesh and Ghana) (Figure 3). Even in a country like Egypt that has a relatively dense coverage of formal financial institutions, the role of informal lenders remains important. In Bangladesh, member-based credit programs run by NGOs now play a significant role in providing credit to the rural poor. In Ghana, the villages selected for the survey benefited from rural banks and NGO-assisted credit programs, the latter targeting poor female-headed households.

Figure 4 indicates how households spent their loan money. About one-half to almost nine-tenths of the loans obtained from the formal and informal sectors combined went to consumption-related purchases. In Pakistan, more than 80 percent was spent on consumption, food and nonfood combined. Moreover, in six out of eight countries, with Malawi and Nepal the exceptions, loans for consumption are more important for the

poorest quartile than for the nonpoor. In every country, the share of loans used for consumption was higher for informal loans than for formal loans.⁵ In Malawi, only a small share of loans was used for consumption because the Malawi Rural Finance Company, the major rural lender, provides all loans in kind in fertilizer and seeds.

Why do more loans finance consumption activities than production or investment activities? First, the main suppliers of credit, informal lenders, are generally ill-equipped to finance substantial, long-term investments since they rely on their personal funds. The average duration of informal loan periods was, for example, 86 days in Bangladesh and 65 in Madagascar.⁶ The characteristics of informal loans make them more useful for financing short-term activities such as consumption stabilization and providing working capital for off-farm enterprises. Formal loans, which are larger in amount and longer in duration, are more useful for financing seasonal inputs and investments.

Figure 4—Stated use of formal and informal loans by the poor and nonpoor, by country

Source: IFPRI research on rural finance (see note 1).

Note: Green = poor; Black = nonpoor

Second, in poor households the spheres of consumption, production, and investment are not separable in the sense that consumption and nutrition are important to a household's ability to earn income. If a laborer does not have enough to eat, he may be too weak to work productively. In general, family labor is by far the most important production factor, and the maintenance and enhancement of labor productivity is central for securing and increasing income.

Once minimum requirements for a healthy and adequate diet have been met, additional consumption does not generate further increases in labor productivity. Many view such excess consumption as a luxury and see no social benefit in financing it through publicly supported programs. Yet, it is fair to say that luxurious or excessive consumption is extremely rare among the rural poor. Thus, in considering policies for providing banking for the poor, consumption loans spent mostly on foods needed to obtain a balanced diet or to improve the health of family labor should be seen as

productive loans because the loan enhances the family's ability to earn.

Bankers in particular frequently argue against consumption loans on the grounds that loans should finance activities that generate income for repaying the loan. In actuality, however, the current practice of lending only for narrowly defined productive activities seldom prevents rural households from diverting borrowed funds from production to consumption needs, since lenders rarely have the resources and time to supervise loan use.⁷ Only when loans are given in kind—in seeds or fertilizer, for example, instead of cash—do farmers have difficulty in diverting the loan to consumption uses. The data show that the share of loans used for consumption borrowed from the formal sector is lower than the consumption share of informal loans, but it still ranges from 9 percent in Ghana to 54 percent in Nepal for all households. The Nepal study indicates that borrowers often take advantage of the fungibility of financial instruments to divert investment-tied

loans to finance consumption expenditures that, in the household's own calculation, offer greater returns. But just because a loan is used for consumption purposes does not imply that repayment will falter. Consumption loans in Cameroon and Madagascar were found to have the same or even higher repayment rates than production loans.⁸

What about the adequacy of rural financial services? In spite of the vibrant informal markets that can be observed in many countries, financial services for the poor remain inadequate.⁹ In countries as diverse as Bangladesh, Ghana, Madagascar, Malawi, and Pakistan, access to credit and savings facilities is severely limited for small farmers, tenants, and entrepreneurs, particularly women. A useful way of examining household access to financial markets is to examine credit limits imposed on them by lenders.¹⁰ In Bangladesh the median formal credit limit is \$50 and the informal limit is \$13. The ability to borrow is significantly more restricted in Malawi, where the median formal credit limit is zero and the informal limit is US\$3.

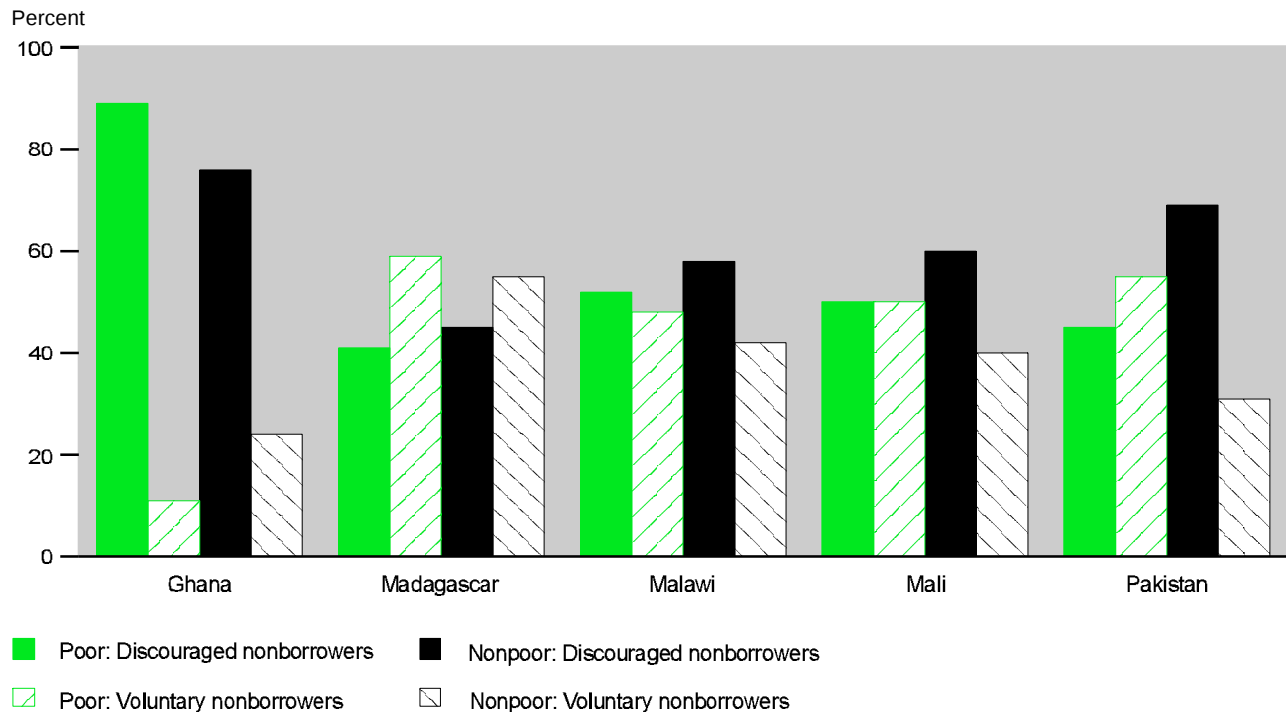
Such low credit limits mean that while some households frequently are unable to borrow enough to meet their needs, other households simply do not apply for a loan at all because of the expectation that they will be denied. In Madagascar, for example, about 50 percent of loan applicants received less than they asked for or nothing from formal and informal lenders alike.¹¹ In Ghana, Madagascar, and Pakistan, IFPRI studies show that a significant proportion of the poor who do not apply for loans are discouraged from applying by the strict collateral requirements and high transaction costs frequently involved in doing business with formal institutions. There is some variation in the percentage of discouraged nonborrowers by country; it is highest in Ghana and lowest in Madagascar (Figure 5). Given such widespread credit-rationing, it is entirely possible that even households with average annual incomes above the poverty line may not be able to avoid transitory food insecurity when

faced with an adverse shock such as a bad harvest or serious illness of a family member.

While these figures describe the extent of inadequate access to credit, one must not assume that all households who do not borrow lack access to credit. In fact, Figure 5 shows that the share of voluntary nonborrowers ranges from 11 percent in Ghana to nearly 59 percent in Madagascar. Among the most important reasons cited for not borrowing were adequate liquidity within the household, lack of profitable investment opportunities that could carry the cost of the loan, and inability or unwillingness to carry the risks of indebtedness.

Three important implications may be drawn from the information presented here about clients:

- A significant number of poor households in developing countries experience real constraints in the financial market in the sense that they are unable to borrow as much as they would like at the prevailing transaction terms. Given that most of the poor attempt to borrow in order to finance consumption of food and other basic goods that enhance health and labor productivity, such constraints may force poor households to eat less food or cheaper foods with lower nutritional value. Also, when consumption levels are already precariously low, they may be forced to cancel or postpone profitable investments or sell off assets—sometimes at a substantial loss—to meet irreducible consumption needs. This may lead to greater impoverishment in the long run.
- Because the cost of failure can be very high at extremely low incomes, poor households are likely to be particularly risk averse and sensitive about the kinds of projects that they choose for financing. Access to credit and savings options may enhance their capacity to bear risks and therefore indirectly foster technology adoption and asset accumulation.

Figure 5—Self-reported reason for households not borrowing, by country

Source: IFPRI research on rural finance (see note 1).

- Poor households in Africa and Asia face complex, multiple constraints on earning opportunities. They often lack education, markets, and other essential services. Hence, the impact of financial services on welfare is likely to vary with accessibility to

complementary inputs such as irrigation, education, and market services. In some environments or for some socioeconomic groups, access to microfinance may do no good, while in other regions or for other groups, it can make an important difference.

COMMITTING PUBLIC RESOURCES TO RURAL FINANCE

Policymakers, advisers, and managers have not reached consensus about how governments should intervene in and regulate the rural financial sector. Some argue that a microfinance institution should be a purely financial institution, functioning under the principle of full cost recovery. Performance should be measured not just by the extent to which current costs are fully recovered, but also by the cost recovery that would have taken place had all types of subsidies been eliminated. Only then, they say, is there any prospect for sustaining these services over the long run, when subsidized funds from donors and governments have dried up. If the poor are unable to make profitable use of financial services priced at full cost, then these services ought not be used as instruments for poverty alleviation. This line of argument implies that public resources could be better used in other poverty alleviation activities, since well-run financial institutions should be able to service the poor and maintain adequate financial returns. Banco Sol in Bolivia and the village banks (Unit Desa) of the Bankya Rakyat Indonesia (BRI) are often cited as good examples.

But this kind of advice clashes with real world experience where most microfinance institutions that serve the poor, including well-known ones such as the Bangladesh Rural Advancement Committee (BRAC) and the Grameen Bank in Bangladesh, depend on subsidies from national governments and international donors.¹² The arguments for committing public resources to rural financial institutions are made on two grounds: market failure and poverty alleviation.

Market Failure and Institutional Innovations

In the past, the development and spread of financial institutions were suppressed by excessive state interference, such as rigid exchange rate regulations and caps on interest rates. Today, it is widely recognized that the basic roles of government are to establish macroeconomic stability; to ensure that financial markets are free to respond to economic incentives, while following prudential banking practices; and to maintain and enforce a legal framework that ensures contract compliance. However, while a liberalized financial market is a necessary condition for improving the supply of financial services to the poor, it is not sufficient in itself. Market liberalization alone has not been able to trigger innovation in new financial instruments that reduce transaction costs for the poor.¹³ This is because rural financial markets of developing countries have inherent problems that make investments risky and costly.¹⁴

- Clients are too scattered geographically, making service delivery expensive.
- Since most of the clients derive their incomes from agriculture, they all tend to want to borrow at the same time, say in the preharvest season, and to save immediately after the harvest. This makes it difficult for the financial institutions to diversify their portfolios.
- Information about potential borrowers is difficult to obtain, especially when they are scattered, making loan applications costly to evaluate.

- The poor own few assets, making it infeasible for the financial institution to secure its lending with collateral.

Typically the lender must spend time and resources on assessing the creditworthiness of the loan applicant and seek alternative forms of collateral. Given traditional techniques of lending, these costs often prove excessive. As a result, commercial banks shy away from rural clients altogether, limiting their services to the urban or periurban economy, where information on prospective borrowers is less costly to obtain and transaction volumes are larger. There is little evidence, as yet, that financial institutions in the private sector are willing to invest resources to devise profitable savings and loan services for the rural poor.¹⁵

Improvements in literacy, household incomes, communication infrastructure, advances in banking technology and telecommunications, and financial sector reform are likely to decrease transaction costs in the future. While it may be best for private banks to wait until conditions for investment are favorable, waiting may not be the optimal government policy. Institutional innovations that reduce the cost of service delivery and improve its usefulness for the poor are essential for enhancing the efficiency and long-run sustainability of rural financial programs. This provides a strong reason for directing public resources toward policies that generate institutional innovations in the rural financial sector. There will be even more payoffs if these innovations, which are in the nature of public goods, are eventually adopted by private sector financial institutions to profitably provide services to the poor.

Rural Financial Institutions and Poverty Alleviation

The second argument for committing public resources to rural financial institutions is that provision of financial services is a potent tool for poverty alleviation, and public resources

are called for to deliver these services to the poor.¹⁶ Institutions such as the Grameen Bank or the Malawi Mudzi Fund receive a significant amount of public resources. Their clients are much poorer than the clients of Banco Sol or the BRI, and it is likely that the poorest of them would be left out if they had to pay for services at full market prices.

Managers of microfinance institutions in Asia and Africa often find that providing financial services to the poor is not enough to attract the poorest clients because of the many constraints they face. Credit may offer low returns to investment for households that own tiny plots of unirrigated land of low productivity, especially when they are illiterate, in ill health, or lacking experience in high-yielding agrotechnology or nonfarm microenterprises. For these reasons, institutions such as Freedom from Hunger in Ghana and BRAC and the Grameen Bank in Bangladesh offer financial services in combination with other complementary services, such as basic literacy programs, training in enterprise management, and education in nutrition, health, and family planning that are likely to increase the productivity of the loans provided.

What then is the case for allocating public resources to rural financial institutions for poverty alleviation? Is there a case for combining credit services with other kinds of services? Are these hybrid programs more effective in reducing poverty than minimalist credit programs? The answers depend on the potential impact of financial services on poverty and how they compare with other means of reducing poverty. Clearly, if an additional dollar spent on a credit-based program reduces poverty by a greater amount than a dollar spent on another poverty reduction program, then there is a case for redirecting resources to credit-based programs. Measuring the effects of these programs on poverty alleviation is therefore an important step toward better informed decisions. But making impact assessments is by no means straightforward, since a host of other factors that affect poverty have to be carefully controlled for. This is

especially difficult in the case of hybrid programs where disentangling program credit effects from noncredit effects can itself be daunting. Nonetheless, recent years have witnessed a number of research undertakings that have made progress toward measuring impact (Box 1).

The results from IFPRI's own research program also point to generally (but not uniform) positive effects of credit on income, technology adoption, and food consumption (Table 2).¹⁷ Households with improved access to credit are better able to adopt technology, increase their incomes, and improve food expenditures and calorie intake than those who do not have access to credit. However, the effects on nutritional status, an important indicator of poverty, are not clear.

Access to credit or participation in a formal credit program positively affected household income in four of the five countries where such an assessment was made. The study in Malawi, however, did not indicate such an impact, possibly because the Malawi survey coincided with an exceptionally bad harvest year due to inadequate rainfall. Studies in Madagascar and Pakistan, which specifically examined the effects on input use, concluded that improved access to credit increases the use of agricultural inputs, especially fertilizer and improved seed. In three out of four countries, credit access had a positive effect on total food expenditures (Bangladesh, China, and Pakistan). Credit was also found to reduce consumption variability in Bangladesh and Nepal. The effect

Box 1

EVIDENCE ON IMPACT

Recent evidence indicates that loans from well-managed and innovative rural financial institutions, far from being one-shot income transfers, have helped poor families make permanent positive changes in the quality of their lives.

- In Bangladesh, BRAC has had significant positive effects on school enrollment, asset holdings of households, and food consumption.¹⁸
- Also in Bangladesh, household participation in credit markets has smoothed fluctuations in the weights of preschool children. Growth patterns of children in landless households were influenced by credit market imperfections.¹⁹
- A study of the effects of borrowing constraints on the timing of human capital investments in Peru shows that if parents are credit-constrained and a child could work for wages, parents are likely to withdraw the child from school in order to smooth consumption.²⁰
- In Kenya, credit access contributes to increased expenditure on education.²¹
- Credit access provided by both the Grameen Bank and BRAC in Bangladesh had a positive impact on women's empowerment and contraceptive use.²²
- In Ghana, the combination of credit with education services in women's groups resulted in higher off-farm income from microenterprises, improved household food security, and improved nutritional status of children.²³

Table 2—A summary of positive or negative effects of credit access on welfare, by country

Indicator of welfare outcomes	Observed Impact of credit programs						
	Bangladesh	Cameroon	China	Madagascar	Malawi	Nepal	Pakistan
Household income level	+	+	+	+	?	n.a.	n.a.
Technology adoption	n.a.	n.a.	n.a.	+	?	n.a.	+
Total food expenditure	+	n.a.	+	n.a.	?	n.a.	+
Total calorie intake ^a	+	?	+	+	?	n.a.	n.a.
Nutritional status of children ^b	?	?	n.a.	?	?	n.a.	n.a.
Consumption variability	—	n.a.	n.a.	n.a.	n.a.	—	n.a.

Source: Econometric results are presented in individual country reports and other publications listed in note 1.

Note: A plus or minus sign indicates positive or negative impact statistically significant at the 10 percent level. A question mark means that the effect was not statistically significant. n.a. indicates that an estimate was not available.

^aNo significant effect on caloric intake was found, but 75 percent of the households already met at least 80 percent of total caloric requirements.

^bRegressions were run separately for each major type of credit program. One credit program showed positive effects on preschooler height-for-age. The results for two other programs were not significant.

on calorie intake, on the other hand, was not significant in two of the five. No relationship between the nutritional status of children and access to a credit program was found in any of the country studies, probably because good nutrition is the product of a complex interaction between food intake and other factors such as access to safe water and

sanitation, access to health services, and nutritional knowledge of caregivers.

Current evidence therefore indicates that, overall, the effects of credit programs on welfare can be significant under many but not all circumstances. What needs more evaluation in the future are the program costs incurred and the resulting ratios of benefits to costs.²⁴

INFORMAL MARKETS: WHAT LESSONS CAN WE LEARN FROM THEM?

In most developing countries, it is the private, informal markets that the rural poor turn to for their financial needs. Why have these institutions succeeded in providing services to the poor when formal institutions have not? What are their basic limitations? The answers may indicate important directions that public policy should take in encouraging institutional innovations.²⁵

Typically, informal institutions can be categorized as follows:

- **Lending and borrowing among relatives, friends, and neighbors.** Borrowing from socially close lenders is often the first recourse of poor households in financing expenses, especially essential consumption expenditures. Transactions are collateral-free and, as the

IFPRI country studies show, interest is usually not charged.²⁶ These are essentially informal social insurance schemes that have the principle of reciprocity at the core of the transactions.²⁷ Hence, both the lender and the borrower gain from the transaction, and the process is self-sustaining. The borrower is able to finance urgently needed expenditures quickly and with few transaction costs; there is no lengthy appraisal process, little or no paper work or travel time, and the terms of transactions are easy to understand. The lender gains a right to reciprocity that he can lay claim to in the future. Further, risk of a loan not being recovered is minimal because the lender only lends to persons who are part of his or her social network, within which contracts can be enforced. For each partner, therefore, the long-term gains associated with maintaining borrowing privileges is greater than the short-term gain from reneging on the payback.

- **Rotating savings and credit associations** (ROSCAs), found in many countries, are also network-based but address different needs of their members. The rules of conduct are more formalized. These associations, which may even operate under a designated manager, pool savings from members each period, and rotate the resulting pot among them, according to various rules including random drawing. The process is repeated each period until the last member receives the pot. Unlike demand deposits, once the saving is committed, it usually cannot be withdrawn before the member's scheduled turn, although some groups do allow for an early draw of the pot in an emergency situation.
- **Informal moneylenders.** Typically, informal moneylenders are approached when the amount of credit required is larger or is needed quicker than can be

obtained from friends and neighbors. Moneylenders lend for profit and often charge high interest rates. Rates in the range of 5 to 7 percent per month are not uncommon.²⁸ Typically, moneylenders lend only to households about whom they possess adequate information. However, they may make an exception if punitive actions against defaulters are feasible—if there is physical collateral that can be seized or social collateral in the form of community pressure that can be exerted when contracts are breached. The informal nature of these transactions must be emphasized: more often than not, these sanctions are not enforced by any legal authority but by the commonly understood rules of the communities themselves.

- **Tied credit.** Credit transactions are frequently tied to transactions in land and labor markets to circumvent problems of inadequate information and lack of assets suitable for collateral. Traders, for example, disburse credit to farmers in exchange for the right to market the growing crop; shopkeepers increase sales by providing credit for food, farm inputs, and household necessities; large landholders secure access to labor in the peak season in return for earlier loan advances to laborers. In these types of transactions, the lender also deals with the borrower in a nonlending capacity and is able to use this relationship to screen applicants and enforce contracts. The grain buyer or the local sugar mill that advances credit to the farmer, for example, is reasonably assured of repayment because the loan can simply be deducted from future sales of the farmer's harvest.
- **Household savings,** until recently, were perhaps the most overlooked component of rural finance. Savings provide for the accumulation of capital, which, in turn, can generate future

income and enable future consumption. However, there is now ample evidence that poor rural farmers save to build a precautionary buffer to be used during lean seasons or to finance unexpected expenditures.²⁹ For example, in Cameroon, 59 percent of households reported saving for health care or to meet family obligations, roughly 30 percent for education and house construction, and less than 10 percent for agricultural production.³⁰

In general, the ingenuity of informal lenders and self-help organizations in tailoring savings, loan, and insurance products to the requirements of their clients or members makes them indispensable in both the urban and rural financial landscape of developing countries.

Informal Systems Face Disadvantages as Well

Innovative and useful as the informal sector may be, it also frequently runs up against severe constraints.³¹ Informal credit markets, by their very nature, are segmented. A “market” typically consists of a single village community or a socioeconomic group within a village. And informal lenders seldom manage savings deposits. Hence, financial intermediation in the sense of providing a common clearinghouse for borrowers and lenders does not take place to the fullest extent possible. As a result, the supply of credit is limited, resulting in either severe credit rationing or extremely high interest rates for some borrowers.

It is not surprising, therefore, that in all the studies conducted by IFPRI, informal sector transactions were small, short-term loans taken in order to purchase urgently needed goods for household consumption—especially food—or, to a lesser extent, inputs such as seeds and fertilizer. The IFPRI study in Bangladesh, for example, found that in 1994 the average size of a loan in the informal sector

was about US\$15 taken for about three months. Invariably, when larger projects need to be financed, such as a new enterprise, an irrigation pump, or the lease or purchase of agricultural land, people often turn to formal lenders. Also, especially in agricultural regions, droughts or floods affect both informal lenders and borrowers simultaneously, so a credit supply crunch is likely to take place just when the demand for credit peaks. Formal institutions such as banks usually have a network of branches across different regions of a country and are therefore in a better position to diversify risks. And when they are allowed to collect savings deposits, they serve the needs of savers as well as borrowers. Formal institutions can also leverage funds in other financial markets such as the bond market.

Lessons from Informal Systems

A number of lessons can be derived from the workings of the informal system:

- **Credible long-term partnership.** That the accumulated benefits associated with continued long-term transactions are larger than the short-term gains associated with delinquent behavior is what makes informal loan contracts enforceable. Formal institutions, similarly, must successfully demonstrate to clients that they expect to be in business for a long time. This demonstration of stability is essential for maintaining high repayment rates. Clients are usually astute in making inferences about the permanence of new projects. Short-term and sporadically implemented credit projects generally encounter higher rates of loan delinquency precisely because the short-run gains from defaulting outweigh uncertain future gains.
- **Tailoring financial services to specific demand patterns.** As with the marketing of any product, financial services must be sculpted to fit the specific

demands of the borrowers or savers. For the poor, the privilege of borrowing from various informal institutions is worth preserving precisely because their services are responsive to the households' needs. Emergency loans, for example, can be obtained immediately on demand; the repayment structure is closely linked to local production cycles associated with the borrower's occupation; and loans can be renegotiated, taking into account both the lender's and the borrower's specific circumstances. These attributes greatly increase the value of loans to borrowers and provide further incentive for them to retain borrowing privileges.

On the other hand, when terms of loans are incompatible with local production patterns or when loans are tied to activities that, given the structure of local resources, yield poor returns, little is gained by retaining borrowing privileges. Benefits from defaulting may outweigh the retention of borrowing privileges. For example, agricultural credit programs frequently provide credit for specific farm enterprises, usually export crops or main food staples. The loan, most often for seeds and fertilizer, is frequently provided in-kind, and the amount loaned is closely tied to the area devoted to the crop. Thus, improving the credit line or using the loan to finance other remunerative activities is not possible. This reduces the flexibility of the farm household in making the best use of the loan. Under these conditions, the farmer may be better off defaulting and investing the loan amount elsewhere.

- **Knowledge of the local economy is important; therefore, decisionmaking should also be made at the local level.** The ways in which informal agents successfully interlink financial transactions with transactions in the markets for land, produce, and labor

provides yet another example of how financial products can be tailored to clients' requirements. To do this requires intimate knowledge of the structure of the local economy as well as knowledge of existing institutional arrangements that can potentially be used to strengthen contract enforcement. Generally this is not possible within a top-down organizational framework. Front-line managers must be actively involved in adapting financial products to local institutional arrangements.

- **Most financial contracts are not self-enforcing, and adequate steps must be taken to enforce contract compliance.** Whereas the majority of informal financial contracts between friends and relatives are self-enforcing, socially distant lenders depend on explicit (though not necessarily legally codified) mechanisms to enforce repayment. Just as moneylenders must obtain a mandate from small communities to take punitive actions against defaulters, it is also important for formal institutions to have clear, implementable, and well understood plans for contract enforcement and loan recovery before lending begins. Lack of a credible plan only invites default.
- **Group-based transactions hold promise.** The existence of ROSCAs and networks of friends and relatives indicate the possibility of using groups in formal lending and saving activities. If groups can be made responsible for some of the screening, monitoring, and enforcement functions, the risks would be reduced for formal "outsider" institutions. Furthermore, group loans would be larger in size and less costly to administer. Although the group-based concept has been widely applied in formal rural financial systems in Asia, Africa, and Latin America, little is known about the efficiency and outreach of groups, compared with other member-based

institutions such as credit unions or village banks. Future research in this area is urgently needed.

- **Provision of savings services.** The poor place a high value on savings services, especially when the options provided combine security of deposit, value retention, and flexibility in making savings deposits and withdrawals. For the banks, rural savings mobilization can provide relatively inexpensive funds for on-lending. The particular form in which household savings are kept is influenced by return, liquidity, and risk. When investigating the savings behavior of the food-insecure and poor, the standard definition of household savings and investment, which focuses on money and physical assets, is too narrow.³² It neglects the potential for savings to increase human capital through investment in education and improved nutritional and health status of family

members. Such expenditures may not only increase the ability of people to earn a living now, but they are likely to have a beneficial effect well into the future.

- **A question of incentives.** Borrowers and lenders in the informal market directly interact with each other. This is not necessarily so in formal systems, where loan managers may not have the same incentive to make good loans as owners or trustees of the bank might have. For example, in most government-run institutions, loan managers are not rewarded for making good loans. Therefore, they are less likely to take sufficient care in screening clients or in taking steps to recover loans swiftly. Formal lending systems should therefore establish incentives that build on the loan manager's knowledge of clients in order to minimize fraud and other problems of contract compliance.

PUBLIC POLICY: SUPPORTING INSTITUTIONAL INNOVATION

To reach the majority of the poor, institutional innovations are needed that enable services to be expanded, while substantially reducing the transaction costs for both the financial institutions and the clients. Long-term support of institutional innovations in the rural financial sector may be the most promising direction for public policy to take. Both governments and donors must encourage institutional innovation and development, not micromanage banks and other organizations, or initiate short-term projects that have no bearing on institution building.

The Institutional Framework

In general, transaction costs can be brought down by improving infrastructure such as roads, schools, and communications; by titling property so that it can serve as collateral; or by improving institutions.³³ While infrastructure development and land titling may prove politically or economically feasible only in the long run, institutional innovations can be fostered through public action, through the concerted efforts of donors, governments, nongovernmental organizations, communities, and households.

Successful outreach requires institutional innovations that reduce the risks and costs associated with lending and depositing small amounts of money. Many of the transaction costs arise from the need to acquire information about the market partner. Obtaining such information for small loans can be prohibitively costly if the bank agent is asked to do this. Traditional banking techniques, such as judging the loan application based on written information, are either not feasible because of illiteracy or too costly to administer. Yet, information about the creditworthiness of a loan applicant is readily available within the local community through neighbors and other peers.³⁴ Such information can be obtained at less cost if networks or institutions are based at the community level.

While there are several different forms that institutional innovations in rural finance can take, all of the innovations build on locally available information and exploit the cost advantage of informal monitoring and enforcement systems. Within such systems, the functions of information acquisition and monitoring and enforcement of financial contracts are largely transferred from the bank to a group of borrowers and savers. The group members share a common interest in gaining access to credit and savings services, and they also possess enough low-cost information to adequately screen each other and apply sanctions to those who do not comply with the rules. The major difference between traditional and innovative banking for the poor is that in traditional banking, the agent of a rural bank branch directly negotiates savings or loan contracts between the retail banking institution and the individual. In innovative approaches, on the other hand, a local institution mediates between the bank and the individual and assumes many of the screening, monitoring, and enforcement functions that are too difficult or too costly to be executed by a bank agent.

Yet, differences in culture and socioeconomic systems do not allow for institutional blueprints. While the principle of harnessing

locally available information and sanctioning and enforcement mechanisms is central to institutional innovations in rural finance, the practical challenge lies in finding how best to build and adapt these local community- and member-based institutions and to link them with other institutions in the formal banking system. So far, most institutional innovations in microfinance have been generated by NGOs that do not have commercial profit as their principal objective. By taking fresh approaches, these new microfinance institutions have penetrated rural financial markets and serviced an underclass of borrowers in a way that was unimaginable some 20 years ago.

In 1988, IFPRI published one of the most detailed studies then available of the innovations in group-based banking introduced by the Grameen Bank of Bangladesh, which has provided credit to 2.1 million women in 36,000 villages. Since then, IFPRI has examined the experiences of other institutions, including member-owned village banks in Madagascar; other large-scale, group-based credit programs in Bangladesh and Malawi; and savings and credit cooperatives in Cameroon. Table 3 outlines some of the more important features of these institutions. Some key common characteristics have been instrumental to the success of most of these programs, and lessons for new program designs can be derived from them:³⁵

- **Savings arrangements** are a prominent part of sustainable financial programs for the poor. All of the innovative rural finance institutions in Table 3 have some type of savings scheme. Savings schemes must take into account that clients, especially the poorer ones, are motivated to save, among other reasons, as a precaution against future risks. Therefore, it is important that products be differentiated with respect to maturity, liquidity, and return to reflect this concern.
- **Group approaches** have shown clear potential for reaching poorer participants of financial markets, who either

Table 3—Structure of innovative rural financial institutions for the poor: Some examples from Africa and Asia

Institution	Percent of female members	Minimum balance/ membership fee	Type of collateral requirement	Subsidization	Covering administrative costs	Percent of loan recovery	Length of operation (years)	Growth (number of members)
Nonbank rural financial institutions								
Bangladesh Rural Advancement Committee (BRAC)	80	Membership in a group. Regular savings requirement	Group liability, fraction of loan must be deposited as savings	Yes, but moderate. Many donors	Yes	95 to 100, over the years	26	121,000 707,000 (1992) Over 1 million (1998)
Association for Social Advancement (ASA), Bangladesh	96 (1997)	Same as BRAC	Same as BRAC	Yes, in new donor-supported branches	Yes	99.9 (1997)	20	800,000 (1997)
Cooperative Credit Union League (CamCCUL), Cameroon	25	One membership share mandatory	Savings deposit with leverage 1:5, peer pressure	Yes, technical assistance	Yes	74 (1991)	20	50,000 (1983) 72,000 (1989)
Mutual Assistance Credit Groups (MCAGs), China	Household is member	Admission fee (\$2 to \$20) or equivalent in grain	Savings with leverage 1:4, social capital as collateral substitute	Yes, state and relief funds	Covered mostly by members	n.a.	Since 1992	About 170,000 MCAGs nationwide (1995)
Rural Credit Cooperatives (RCC), China	n.a.	Must buy shares	Savings, social capital as collateral substitute	Yes, state funds	Covered mostly by members	85 (1994)	Since late 1950s. Separated from Agricultural Development Bank in 1994	RCC located in 96 percent of counties
Mutual credit and savings groups (CECAM), Madagascar	About 10	Yes, 1-5 times the daily wage (decided by members themselves)	Savings deposits with leverage 1:10/social capital	Yes, by international donors	Covered mostly by members	Above 90	8	Started 1990. 7,200 members in 90 villages (1997)

Member-Managed Village Banks (AECA) in Madagascar (also in Cameroon, Mali, The Gambia)	About 30	Yes, decided by members	Member/village solidarity. Various loan sizes in relation to savings deposit applied (varies with village bank)	Yes, technical assistance (by French NGO)	Covered by members	Close to 100	7	Started 1991. 1,830 members in 38 village banks (1997)
Village Development Funds, Segou, Mali	n.a.	No	Village savings fund for lending, leverage 1:10	Establishment assistance by BNDA	n.a., but financial success	100 (1988)	Start 1984	85 villages (1988)
Malawi Mudzi Fund (MMF)/Rural Finance Company (MRFC), Malawi	n.a.	No, but opportunity costs of time for group training/formation	Savings with leverage ratio 1:10. Social capital as collateral substitute	Yes	No	More than 90; during 1990s, below 90%	12	About 5,000
Promotion of Micro-entreprises for Rural Women (PMERW), Credit Program, Malawi	100	No, but must save and be trained before any credit is given	Savings, loan sizes fixed. Social capital as collateral substitute	Yes, technical assistance and credit guarantee for commercial bank	No (subsidized)	More than 90 (1995)	4	600 (1996)
Banking institutions (serving poor clientele)								
Grameen Bank, Bangladesh	90	Membership in a group. Regular savings payment	Savings/loans extended to groups under joint liability, fixed loan sizes	Yes, moderate, through grants and low-interest loans from donors	Yes, in old branches, but not in new ones	98 (1995)	First branch office in 1978	58,000 (1985) 250,000 (1986) 660,000 (1990) 2.07 million in 1,055 branches (1995)
Bankya Rakyat Indonesia unit network (BRI-UD)	About 25	No	Physical guarantee (land, vehicle, savings), therefore do not reach the poorest	No (Subsidy Dependency Index—40%, i.e. BRI makes profit)	Yes	More than 95	Founded in 1970 (to expand Green Revolution) between 1970-84 highly subsidized	Reorganized since 1984, 16.2 million depositors and 2.5 million borrowers in 3,512 units

Note: n.a. means not available

do not possess suitable collateral or who cannot provide such collateral at reasonable transaction costs for the lender. Most schemes make members jointly liable for the repayment of loans and give subsequent credit only if the group has fully repaid. The threat of losing access to future credit exerts pressure on members to perform various tasks, including screening of loan applicants, monitoring the individual borrowers, and enforcing repayment of their peers' loans.

- **Demand-oriented financial services** are essential for wide outreach. The scope of lending services offered to

rural households must address not only production- and income-generating activities but also consumption needs such as health, education, and social obligations. Rural financial institutions should also be able to put in place innovative refinancing and repayment procedures that are flexible enough to accommodate unanticipated events affecting a household. This may require unbureaucratic access to emergency loans or the buildup of emergency funds by member-based financial institutions, which could possibly be pooled through a regional or national second-tier institution.

CONCLUSIONS

New innovative microfinance institutions have shown the potential to reach people who live below the poverty line. But many of the poorest of the poor remain excluded. To include this group, institutions must market financial products suitable to the poorest group and reduce other entry barriers faced by the poor.

IFPRI's impact assessment studies have mostly focused on the short-run effects of credit access on income, food consumption, and nutrition, which are positive for income, agricultural technology adoption, and level of food expenditure and calorie intake. However, because the poor face so many constraints, in some situations, investment in education, extension services, health care, and improvements in infrastructure may be more cost-effective ways of reducing poverty than provision of financial services. But, in other situations, financial services may have to be combined with other services and community action to make them effective.

Few impact assessment studies to date have attempted to compare the social benefits at the village, household, and individual levels with the social costs of supporting expansion of microfinance institutions.³⁶ Research that compares the overall long-term effects of improved credit access with program costs is urgently needed.

Despite their success, it would be unwise to conclude that the new format of the microfinance institutions such as the Grameen Bank can simply be replicated elsewhere. One lesson is becoming increasingly clear: there is no single blueprint for success. Recent experience indicates that programs should be designed to harness a community's particular strengths—its local resources, agroecological characteristics, historical and cultural experiences, and occupational patterns—in order to reduce costs of screening participants, monitoring financial activity, and enforcing contractual obligations. Institutional design may vary even for similar target

groups within the same country. In Bangladesh, for example, the Association for Social Advancement and BRAC provide loans to clients themselves, while Rangpur-Dinajpur Rural Services forms and trains groups, which then obtain agricultural loans from banks.

Designing, experimenting with, and building financial institutions for the poor require economic resources and adequate consideration of longer term social returns. Whether an institutional arrangement that is suited to local conditions will also be accepted by the banking sector cannot be known until it is tried. Since the market, by itself, has not been able to stimulate much research and experimentation, public support in the institutional experimentation and development phase is critical. Once viable prototypes are identified, they will eventually be adopted by the private sector.

In the last two decades, NGOs have taken the lead in developing innovative financial institutions partly because the subsidies they receive from donors and government organizations make it feasible for them to allocate resources to innovations. In their infant stage, cooperatives, village banks, or groups are dependent on technical as well as financial assistance. For example, technical assistance is needed to train members to read and maintain savings and loan records; training is also needed to establish management and control functions of newly formed groups. Financial assistance, on the other hand, supplements initial savings deposits from clients to provide start-up capital for lending. Only when these new institutions prove their creditworthiness over a series of loan cycles are they likely to be accepted by commercial banks as viable partners. In fact, banking laws may be required to accommodate, regulate, and supervise new member-based financial institutions. Indonesia, for example, has undergone a number of proactive regulatory changes in the financial sector that have allowed member-based financial institutions to provide savings and credit services to smallholders and microentrepreneurs.³⁷

In a broader sense, just as public policy should play a role in promoting technological innovations that generate social benefits, it should also help promote institutional innovations that assist the disadvantaged or address intrinsic market failures. As policymakers seek to make rational policy choices, they must weigh the social costs of designing and building financial institutions for the poor against their social benefits. Well-directed support, including subsidies, to promising microfinance institutions is likely to have payoffs in both services to the poor and reduced cost of services in the long run. This is a point of view that those who argue for a complete removal of subsidies should not ignore. Of course, some experiments in institutional innovations will succeed, while many others will fail. Public policy will need to support and evaluate this experimentation process and nurture those designs or institutions that hold promise of future success. Governments, donors, practitioners, and research institutions must work together closely to pinpoint the costs, benefits, and future potential of emerging financial institutions.

In the long run, the payoff to public investment in institutional innovations will lie in the transformation of now nascent microfinance institutions into efficient and full-fledged financial intermediaries that offer savings and credit services to smallholders, tenant farmers, and rural entrepreneurs, thus alleviating poverty. Evidence of this transformation is already emerging in countries such as Bangladesh, Indonesia, and Thailand. The payoff will also come from the development of viable lending methodologies that private commercial banks can readily adopt to profitably provide savings and loan services to the poor. Like the development of new high-yielding crop varieties in agriculture, institutional innovation generates public goods that can be readily used by those who did not contribute to the cost of development. The rapid growth in credit groups within and outside of Bangladesh that replicate Grameen Bank principles is one example. Still another example is

found in Latin America where private commercial banks have started to adopt group-based lending methods developed and tested by nonprofit organizations that initially depended on public support. Another example is in Kenya where the microfinance institution K-REP is now seeking permission to operate as a bank.

In the final analysis, judging whether such institutional innovations—generated by public action and through domestic or foreign resources—pay off requires a critical look at

the benefits that improved access to financial services bring to the poor. It is therefore both welcome and necessary that recent research has increasingly examined the impact of credit programs on income and employment generation, food security and nutrition, and poverty alleviation. With the right combination of public policy, private initiative, and objective research, public investments in financial institutions designed to serve the poor in rural areas of Africa, Asia, and Latin America are likely to bear fruit as well.

NOTES

1. In all countries, with the exception of China, Pakistan, and Egypt, the household samples were chosen from areas where formal financial institutions were operating. Hence, they are not representative of areas that do not benefit from such services. However, they do provide a useful picture of the characteristics of the poorest compared with the nonpoor in the selected areas. A summary of study countries and related data sets is provided in M. Zeller, et al., "Research Proposal for IFPRI's Multicountry Project (MP5) on Rural Finance Policies for Food Security for the Poor" (International Food Policy Research Institute (IFPRI), Washington, D.C., 1994). An earlier cross-country synthesis for up to seven case study countries is contained in M. Zeller, et al., "Financial Services for the Rural Poor: A Multicountry Synthesis and Implications for Policy and Future Research," a final report to the German Ministry for Economic Cooperation and Development (BMZ) (IFPRI, Washington, D.C., December 1996, photocopy). Detailed information on sampling and results is available in the final reports for the following case studies. For Bangladesh, see M. Zeller, M. Sharma, and A. U. Ahmed, "Credit for the Rural Poor: Country Case Bangladesh," a final report submitted to the German Agency for Technical Cooperation (GTZ) (IFPRI, Washington, D.C., 1996, photocopy). For Cameroon, see G. Schrieder and F. Heidhues, "Credit Policies for Food Security in Sub-Saharan Africa: The Case of Cameroon," a final report submitted to GTZ (IFPRI, Washington, D.C., 1993); G. Schrieder, *The Role of Rural Finance for Food Security of the Poor in Cameroon* (Frankfurt, Germany: Lang Verlag, 1995). For China, see L. Zhu, Y. Jiang Zhong, and J. von Braun, "Credit for the Rural Poor in China," a final report to GTZ (IFPRI, Washington, D.C., 1996, photocopy); and L. Zhu, Y. Jiang Zhong, and J. von Braun, *Credit Systems for the Rural Poor in China* (New York: Nova Science Publisher, 1997). For Egypt, see M. Sharma and M. Zeller, "An Analysis of Household Level Credit Transaction in Egypt," a report prepared for the U.S. Agency for International Development (USAID) (IFPRI, Washington, D.C., March 1998). For Ghana, see E. Kennedy, E. Payongayong, L. Haddad, T. Tshibaka, R. Agble, and R. Tetebo, "Impact of Credit Programs on Food Security and Nutrition in Ghana," a report to USAID (IFPRI, Washington, D.C., 1994, photocopy). For Madagascar, see M. Zeller, "Credit Policies for Food Security in Sub-Saharan Africa: The Case of Madagascar," a final report to GTZ (IFPRI, Washington, D.C., 1993). For Malawi, see A. Diagne, M. Zeller, and C. Mataya, "Rural Financial Markets and Household Food Security: Impacts of Access to Credit on the Socioeconomic Situation of Rural Households in Malawi," a final report submitted to the Ministry for Women, Children Affairs, Community Development, and Social Welfare, Malawi (IFPRI and the University of Malawi, Washington, D.C., 1996). For Nepal, see M. Sharma, "Rural Credit Institutions and Subsistence Consumption: An Empirical Study Based on Household Data from Nepal" (Ph.D. diss., Cornell University, Ithaca, N.Y., 1998). For Pakistan, see S. J. Malik, "Credit Use, Poverty, and the Role of Institutional Rural Credit: The Case of Pakistan" (IFPRI, Washington, D.C., 1994, photocopy).
2. International Food Policy Research Institute, *A 2020 Vision for Food, Agriculture, and the Environment: The Vision, Challenge, and Recommended Action* (Washington, D.C.: IFPRI, 1995).
3. Sharma, "Rural Credit Institutions and Subsistence Consumption: Nepal"; Zeller, "Credit Policies for Food Security in Sub-Saharan Africa: The Case of Madagascar"; Malik, "Credit Use, Poverty, and the Role of Institutional Rural Credit: The Case of Pakistan."

4. The household sample in Ghana was drawn from villages with credit programs that targeted relatively large loans to poor women. The survey sampled many of these program beneficiaries, and the results reported in the figure are the simple, nonweighted sample means. All data from other case countries are weighted averages, thus correcting for oversampling of program beneficiaries in the survey villages.
5. Zeller et al., "Financial Services for the Rural Poor."
6. Ibid.
7. J. D. von Pischke and D. W. Adams, "Fungibility and the Design and Evaluation of Agricultural Credit Programs," *American Journal of Agricultural Economics* 62, no. 4 (1980): 719–726.
8. See G. Schrieder and F. Heidhues, "Reaching the Poor Through Financial Innovations," *Quarterly Journal of International Agriculture* 34, no. 2 (1995): 132–148; and M. Zeller, "The Demand for Financial Services for Rural Households: Conceptual Framework and Empirical Findings," *Quarterly Journal of International Agriculture* 34, no. 2 (1995): 149–170.
9. D. Adams and D. Fitchett, eds., *Informal Finance in Low-Income Countries* (Boulder, Colo., USA: Westview Press, 1992). The Consultative Group to Assist the Poorest (CGAP) estimates that fewer than 10 million of the few hundred million small businesses in urban and rural areas have access to financial services. See Consultative Group to Assist the Poorest, *CGAP: A Micro-Finance Program*, Focus Note No. 1 (World Bank: Washington, D.C., 1996). The picture for rural and particularly agricultural entrepreneurs is likely to be worse than for those operating in urban areas, however, because banking services are mostly offered in urban and semiurban locations.
10. See A. Diagne, M. Zeller, and M. Sharma, "Determinants of Household Access to and Participation in Formal and Informal Credit Markets in Malawi and Bangladesh," a paper presented at the Annual Meeting of the American Economics Association, Chicago, Illinois, January 3–5, 1998.
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13. M. Zeller, G. Schrieder, J. von Braun, and F. Heidhues, *Rural Finance for Food Security for the Poor: Implications for Research and Policy*, Food Policy Review 4 (Washington, D.C.: International Food Policy Research Institute, 1997).
14. Joseph Stiglitz identifies 10 market failures in financial markets, most of them related to imperfect and costly information, and develops a set of principles for government intervention to respond to these market failures. J. E. Stiglitz, *The Role of the State in Financial Markets*, Working Paper No. 56 (Washington, D.C.: Institute for Policy Reform, 1992).
15. BancoSol in Bolivia and the village banks of Bankya Rakyat Indonesia (BRI) are examples of successful banking institutions that provide savings and credit services on a sustainable, even profitable, basis to low-income clientele. On the profitability of BRI, see J. Yaron and B. McDonald, "Recent Developments in Rural Finance," a paper presented at the 23rd Conference of the International Association of Agricultural Economists, Sacramento, California, U.S.A. August 1997.

16. Morduch, "The Microfinance Revolution"; and D. Hulme and P. Mosley, eds., *Finance Against Poverty* (London: Routledge, 1996).
17. The methodologies used in the impact evaluation in IFPRI's country studies are described in Zeller et al., "Financial Services for the Rural Poor." To account for potential selection bias, all IFPRI country studies use a two-stage econometric estimation procedure. The first stage measures the influence of factors that affect either access to or participation in the formal and informal credit market. The second stage then estimates the effects of predicted credit access or program participation on various outcome variables.
18. M. M. Pitt and S. R. Khandker, *Household and Intrahousehold Impacts of the Grameen Bank and Similar Targeted Credit Programs in Bangladesh*, World Bank Discussion Paper No. 320 (Washington, D.C.: World Bank, 1996).
19. A. Foster, "Prices, Credit Markets, and Child Growth in Low-Income Areas," *Economic Journal* 105, no. 430 (1995): 551–570.
20. H. Jacoby, "Borrowing Constraints and Progress through School: Evidence from Peru," *Review of Economics and Statistics* 76, no. 1 (1994): 151–160.
21. G. Buckley, "Financing the Jua Kali Sector in Kenya: the K-REP Juhudi Scheme and Kenya Industrial Estates Informal Sector Program," in Hulme and Mosley, *Finance against Poverty, Vol. II: Country Case Studies*, 271–322. For a recent review of credit impact studies, see J. Sebstad and G. Chen, *Overview of Studies on the Impact of Microenterprise Credit* (Washington, D.C.: U.S. Agency for International Development, 1996).
22. S. R. Schuler and S. M. Hashemi, "Credit Programs, Women's Empowerment, and Contraceptive Use in Rural Bangladesh," *Studies in Family Planning* 25, no. 2 (1994): 65–76; B. McNelly, "Freedom from Hunger's Credit with Education Strategy for Improving Nutrition Security: Impact Evaluation Results from Ghana," paper presented at the mini-symposium on "Sustainable Nutrition Security for Sub-Saharan Women Subsistence Farmers," held at the 23rd Conference of the International Association of Agricultural Economists, Sacramento, California, U.S.A., August 1997.
23. McNelly, "Freedom from Hunger's Credit with Education Strategy."
24. On this argument, see, for example, Zeller et al., "Research Proposal for IFPRI's Multi-Country Research Project on Rural Financial Services"; D. Van de Walle, "Comments on 'Rural Finance in Africa: Institutional Developments and Access for the Poor' by Ernest Aryeetey," in *Annual World Bank Conference on Development Economics*, ed. M. Bruno and B. Pleskovic (Washington, D.C.: World Bank, 1996).
25. Adams and Fitchett, eds., *Informal Finance in Low-income Countries*.
26. See M. Zeller, S. Broca, and M. Sharma, "Financial Services for the Rural Poor: A Multicountry Synthesis and Implications for Policy and Future Research," final report to the German Agency for Technical Cooperation (GTZ) (International Food Policy Research Institute, Washington, D.C., December, 1996, photocopy)
27. See C. Udry, "Credit Markets in Northern Nigeria: Credit as Insurance in a Rural Economy," *World Bank Economic Review* 4, no. 3 (1990): 251–269; S. Coate and M. Ravallion, "Reciprocity without Commitment: Characterization and Performance of Informal Insurance Arrangements," *Journal of Development Economics* 40 (1990): 1–24; R. Townsend, "Risk and Insurance in Village India," *Econometrica* 62, no. 3 (1994): 539–591.

28. See Adams and Fitchett, *Informal Finance in Low-income Countries*, for various examples.
29. See Zeller et al. *Rural Finance for Food Security for the Poor*.
30. K. H. Jung, "Savings Conduct of Farmers in Cameroon," *Entwicklung und ländlicher Raum* 27, no.3 (1987): 85–97, cited in Zeller et al., *Rural Finance for Food Security for the Poor*.
31. This section draws from M. Zeller and M. Sharma, "Rural Financial Services for Poverty Alleviation: The Role of Public Policy," *1996 Report* (Washington, D.C.: International Food Policy Research Institute, 1997).
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33. M. Huppi and G. Feder, "The Role of Groups and Credit Cooperatives in Rural Lending," *World Bank Research Observer* 4, no. 2 (1990): 187–204.
34. For discussions on actions by group members in cases of individual loan defaults, for Costa Rica, see M. D. Wenner, "Group Credit: A Means to Improve Information Transfer and Loan Repayment Performance," *Journal of Development Studies* 32, no. 2 (1995): 263–81; and for Madagascar, M. Zeller, "Determinants of Repayment Performance in Credit Groups: The Role of Program Design, Intragroup Risk Pooling, and Social Cohesion," *Economic Development and Cultural Change* (1998): 599–620.
35. Zeller et al., *Rural Finance for Food Security for the Poor*.
36. One in-depth study is supported by the World Bank and the Bangladesh Institute for Development Studies; see, for example, S. R. Khandker, "Grameen Bank: Impact, Costs, and Program Sustainability," *Asian Development Review* 14, no. 1 (1996): 97–130.
37. See C. Lapenu, *Indonesie: Le Système Financier Rural Indonésien: Rôle De L'état et Des Institutions Privées*, Sustainable Banking with the Poor, Asia Series (Washington, D.C.: World Bank, 1998).