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Many borrow, more save, and all insure: implications for food and micro-finance policy

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Abstract

Among policy makers, researchers and micro-finance practitioners alike, there is much discussion on the role of micro-finance for alleviation of poverty. This paper focuses on the linkages between access to credit, savings and insurance services and household food security. What is the role of micro-finance in the overall mix of policy instruments? What types of financial services are demanded by the poor, and which are offered by micro-finance institutions (MFIs)? Hence, which are the gaps in financial products? We present a conceptual framework that addresses these questions, and provide a synthesis of the empirical results of a multi-country research program in ten African and Asian countries. We conclude that insurance can be considered as the missing third of micro-finance during the 1990s, and that the MFI's outreach to the poor can be improved by offering savings, credit and insurance products that enhance the poor's ability to bear risks. Applied research on the poor's preferences as well as bold experimentation with new financial products appear to be particularly promising in making progress towards that goal. Since insurance services are difficult to be offered except for easily observable idiosyncratic risks, precautionary savings services can be a valuable insurance substitute in particular for the poorest. © 2000 Elsevier Science Ltd. All rights reserved.

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Introduction

At first glance, many might be tempted to say that the poor in developing countries, earning incomes of less than a dollar per day, are neither creditworthy nor are they able to save; nor can they pay for insurance against the risks they face.

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That these common assumptions are wholly unfounded has by now been demonstrated time and again by empirical research on informal financial markets and risk-coping behavior of households. During the past fifteen years or so, these myths should also have been laid to rest by the recognition of an increasing number of successful institutional innovations that provide savings, credit and insurance services to poor people in developing countries which were previously thought of being unbankable and uninsurable.

Yet, much of financial policy right until the end of the 1980s and even today has been based on these faulty premises, leading to well-meant, but inefficient and costly policies for the development of financial institutions with negligible outreach to and impact for the poor. Past policy neglected to provide savings and insurance services, and much, if not all of the emphasis was put on “giving and forgiving” loans. Most, if not all so-called credit projects quickly degenerated into transitory income transfer programs with doubtful coverage of the poor, but with never-ending need for injecting public resources to keep state-driven, top-down banks and cooperatives from collapsing¹. In recognition of these past failures, and in conjunction with the structural adjustment policies implemented during the last twenty years, donor and government support for development banks and parastatal agricultural credit institutions substantially dwindled. Today, many (but not all) developing countries lack a single functioning rural financial institution operating on a widespread, if not national scale that reaches substantial numbers of savers and borrowers. Credit for smallholder and tenant agriculture appears to have been especially hard hit. On the other hand, new member-based institutional innovations have emerged with the support of government and donor organizations, such as solidarity credit groups, village banks, and member-managed savings and credit cooperatives.

Faulty perceptions about the clientele and its demand serve as excuses for inaction or lead to policy recipes promoting ill-adapted services, market structures and institutions. The truth is that the poor are creditworthy, can save, and pay for insurance: They have done it all along, as the myriad of informal savings, credit and insurance arrangements between friends, relatives and other networks daily demonstrate. But it is also the truth that the financial institutions and related knowledge and technology as well as an enabling policy environment were not in place in the past (and still are not in many countries or areas within countries). Because this all did neither exist nor was acceptable to think about at central, commercial and parastatal banks alike, the poor were deemed to be unbankable. To put it positively, one thing that we can learn from “micro-finance revolution”, as Jonathan Murdoch terms it (see Murdoch, 1997) is that institutional — not only technological — innovations and related changes in the legal and regulatory policy framework can extend the feasibility frontier of sustainably reaching the poor with financial services. While increasing numbers of people living around or somewhat below the poverty line are reached by innovations in financial institutions, the outreach to the poorest is low. However,

¹ For a comprehensive critique of past credit policy, see for example Adams (1988), and Adams and Von Pischke (1984).

our recent learning experience tells us that this does not mean the poorest are not bankable. They may not be bankable under many circumstances with the current institutional knowledge in micro-finance that we have, but future innovations will surely be generated, for example motivated and helped by the ever-faster development of new information technologies and our increasing understanding of how institutions form, behave, change, and collapse over time.

The role of micro-finance for food security and poverty alleviation

In most developing countries, achieving food security remains a critical objective of development. This can be done either by increasing agricultural productivity and non-farm income or by improving the ability of households to stabilize their income and food purchasing power.

The contribution of micro-finance within the framework of food policy

Food security, at the household level, is defined in its most basic form as access by all people at all times to the food needed for a healthy life. There are many potential policy instruments for improving household food security. In general, packages combining a range of policy instruments are more effective in improving food security than the reliance on a few sector-specific, single policy instruments (von Braun et al., 1992).

Given the determinants of household food security, the available policy instruments can be systematized into policies that (1) aim to increase household income; (2) stabilize and/or lower food prices; or (3) improve the households' access to financial markets (Zeller et al., 1997).

The first two policy sets are geared towards increasing household's income and purchasing power — either in particular seasons or years or as part of long-term strategies. Key policy instruments for achieving long-term food security are the transfer of technology and investments in agricultural research and infrastructure, combined with the provision of social services, such as health and education. These measures must be part of any development strategy. Policies to directly address problems of income and purchasing power during specific periods are the stabilization of key commodity prices and targeted interventions, such as income transfers, food subsidies, or public works projects for the food insecure. The third policy set aims to improve the household's ability to adjust its consumption and investment between periods via access to savings, credit, and insurance services. In contrast to the other two policy sets, the immediate goal is not to directly influence income in a particular period, but to enable households to make inter-temporal adjustments of disposable income that can be used for consumption, production and investment. Savings services hereby allow one to deposit and safeguard small amounts of capital and to accumulate it over time while in many cases earning a positive rate of return. Credit allows a borrower to obtain a lump sum now, but requires the repayment of the principal plus eventual interest charge at some future point in time. Insurance is

similar to savings in so far as it is the client that has to pay first. The main difference is that any future payout from the insurance contract is contingent on the occurrence of a risk that is covered by the contract. Under the savings or money-depositing contract, the timing of the payout is either fixed in advance, such as is the case for a term deposit, or it can be decided at the discretion of the client. As will be exemplified later in this paper, the poor, just like other people do, seek to use all types of financial services.

Policy instruments that directly aim to diversify and increase incomes are necessary, but not sufficient, for ensuring household food security. Many poor households face the risk of transitory food insecurity, even if, on average, over several years, their incomes are sufficient to provide a sustainable standard of living. Thus, there is a potential demand for savings, credit and insurance services that more efficiently can contribute to consumption stabilization while at the same time enhancing income generation and self-employment.

How can access to financial services make a difference for food security?

Zeller et al. (1997) distinguish three pathways through which access to financial services (or lack thereof) can increase income and food security of households and their individual members. The consideration of these pathways provides a framework for identifying institutional arrangements that address the poor’s diverse demand for savings, credit, and insurance services, for evaluating them, and for comparing their costs and benefits with alternative policy measures aimed at improving food security.

The pathways are (see Fig. 1):

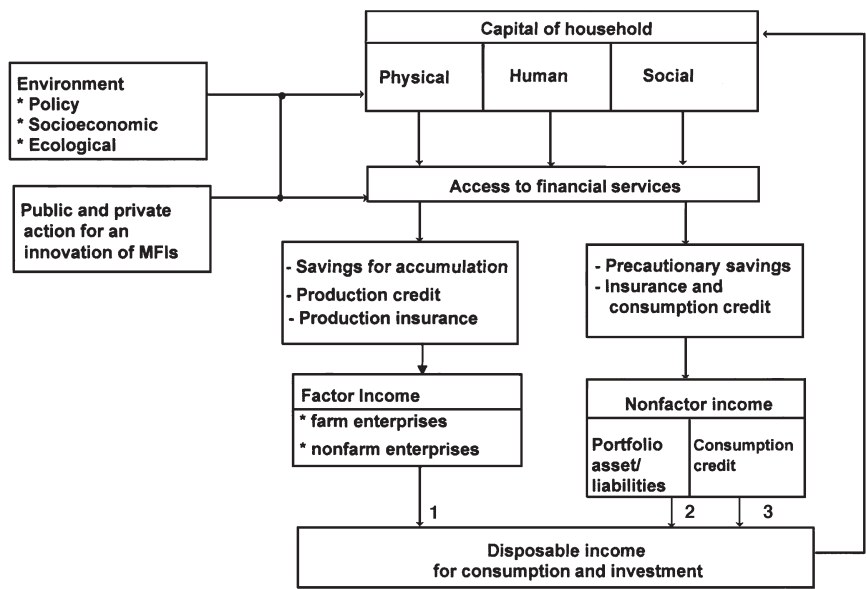


Fig. 1. How does access to finance influence household food security.

- Pathway 1: via income generation,
- Pathway 2: via asset (dis-) investment strategies to smooth disposable income over time at sufficient food consumption levels, and
- Pathway 3: via direct use of credit to finance immediate consumption needs.

In Fig. 1, a household's or individual's access to financial services is influenced by the physical capital (notably land and other suitable collateral), human capital (notably vocational skills for income generation as well as health status) and social capital (notably the household's reputation and its connection to social networks that can provide information and exert pressure for gaining access to a service). These forms of capital provide financial service providers information about the potential client's capacity to save, to borrow and to insure. Access is of course also influenced by the political, socio-economic and ecological environment that governs the structure and performance of the informal as well as formal market segments and by public and private action for and innovation in micro-finance institutions.

Pathway 1: improved income generation

The hypothesized effects of access to credit are twofold. First, additional capital can be temporarily used to enhance the level of the household's or firm's human, physical and social capital so as to generate more income. This is the traditional argument for the provision of credit, especially when considering physical capital. With the provision of credit, the costs of (capital-intensive) technology and assets will be reduced relative to family labor. For example, instead of growing low-yielding local crop varieties with a low level of mineral fertilizer, access to credit may allow an increased use of improved seeds and fertilizer and higher crop output per unit of labor and land (Feder et al., 1985). Of course, savings services that enable the accumulation of assets serve the same purpose of providing capital for future investment and income generation.

Second, apart from this direct effect on factor income and already related to the second pathway described below, access to credit (Eswaran and Kotwal, 1990), but also to savings and insurance services will increase the risk-bearing capacity of the household. Access to services, such as consumption loans and insurance services covering sickness or death of working family members, can help to avoid severe shortfalls in food consumption. This will then indirectly allow the household to adopt more risky, profitable income-generating activities, and will partially substitute for traditional risk-coping measures, such as crop diversification and field fragmentation.

Pathway 2: decreasing costs for self-insurance through more cost-efficient assets and liabilities of households

Improved access to financial services is expected to reduce the holding of assets with lower risk-adjusted returns, such as traditional forms of savings like jewelry or staple food, and perhaps even in some cases livestock that is exposed to various risks (theft, loss, or disease). While the demand for high-interest informal consumption loans is well-known, Rutherford (1998) points out to the unfortunately not so well-known fact that the poor often pay heavily for the chance to save. These costly

informal savings could be substituted if diverse savings services meeting the demand of the poor would be offered by MFIs. This demand response, however, is conditioned by the quality of household's access to labor, food and other commodity markets. For example, if food markets during the hungry season are segmented and food prices are highly volatile, households may continue to save in the form of food, even if formal savings options with high liquidity and low transaction costs are accessible. Such conditions prevail in the rice market of Madagascar, where regional and seasonal price differences reach up to 300% or 100%, respectively (Minten et al., 1998a). The imperfections in the food marketing system explain why the growth and performance of member-managed rice banks in Madagascar, linked with a cash credit program, has been quite successful during the past seven years since its implementation. This example may highlight the importance of financial products that are adapted to the local socio-economic and agro-ecological conditions.

Pathway 3: "consumption" credit

Households attempt to stabilize their consumption by adjusting their disposable income or liquidity. If factor income is insufficient because of shocks, various traditional consumption stabilization techniques are employed to generate non-factor disposable income, such as that derived from the depletion of food stocks, the sale of assets, the call for gifts from relatives and friends, borrowing, and so forth. Factor and non-factor income constitute total disposable income for consumption and investment.

We note that non-factor income for stabilizing consumption can be generated by borrowing, withdrawing savings or by receiving payments from insurance or social safety net schemes. Access to financial services has hereby the potential of substituting for some higher-cost traditional savings, self-insurance, and community-level coinsurance strategies, as well as substituting for some of the higher-cost informal sources of consumption credit. These services may be particularly demanded in environments of considerable inter-annual and seasonal income fluctuations, and therefore particularly be relevant for rural households depending mainly on agriculture for their livelihood.

As noted, the first pathway represents the traditional argument for access to financial services, that is to increase the ability to earn an income. However, as we argue later, this pathway has been so far quite rudimentarily implemented because the micro-finance industry emphasized credit over savings. The second and third pathway can be lumped together as all savings, credit and insurance services that serve to adjust liquidity and disposable income over time so as to smooth consumption. The latter two pathways have been even more severely neglected by the micro-finance industry (with few notable exceptions, as for example discussed by Rutherford 1998 for Bangladesh), although they constitute the *raison d'être* for most of the informal financial contracts that the poor and in particular the poorest engage in practice.

Policy implications derived from the conceptual framework

It appears likely that financial policies will perform better in alleviating poverty and contributing to food security when they address all of the above three pathways for food-insecure households and its members. Because of the vulnerability and low risk-bearing capacity of the poor, and in particular of women, it follows that for the food-insecure the provision of savings, credit and insurance services addressing the second and the third pathway are especially important. A similar conclusion concerning the importance of savings and insurance was drawn by David Hulme and Peter Mosley, based on their literature review and empirical findings from twelve institutions in seven African and Asian countries (Hulme and Mosley, 1996). These services could assist the poor to better avoid serious shortfalls in their consumption, and therefore increase their capacity to bear risks. This, in turn, could favor the adoption of new technology and enterprises.

With respect to developing savings products for the poor, it follows that more emphasis in product differentiation need to be placed on liquidity and low transaction costs for depositing and withdrawal. The poor are not homogenous. Some emphasize return, other prefer liquidity, still others want security, and many demand an array of savings products that emulate all three characteristics as variations on a theme. Providing financial services to enhance food security comprises traditional “production” credit, be it for farm or non-farm enterprises, as well as savings services that emphasize return over liquidity. In addition, however, micro-finance policy — if it aims to become more relevant for the poor and in particular the poorest — should seek to innovate new financial products that are useful for stabilizing the consumption of food and for protecting the health of family members and thereby increasing the ability of the poor to bear risks. These policy recommendations follow from the conceptual framework. They are substantiated in the next section by a review of empirical findings by IFPRI and its collaborating institutions, based on their research in African and Asian countries.

Demand for and access to financial services — a multi-country synthesis²

In general, access to a service, including financial ones, can be defined using various characteristics of its availability for a particular client and the client’s transaction costs for accessing the service. Whether access to a service eventually leads to an articulated demand is an entirely different issue. For example, household surveys usually focus on the number and type of households borrowing, from whom they borrow, for what they borrow, and so forth. These observations only tell us about the demand side (and only about that part of demand that was successful voiced), but give us a truncated picture of credit access of households. This is because many households may have chosen not to borrow, even when they had access to

² Section 3.1 draws from Zeller and Sharma (1998); Section 3.2 from Zeller et al. (1997).

credit, and others wanted to borrow, but had no access. For these reasons, one cannot equate observed demand with access.

Credit services

The focus of the inter-country comparisons presented in this section is not so much on the nature of credit transactions themselves (as conditions among countries vary greatly), but on the differences between the poor and the nonpoor within countries. As a working definition, the “poor” are defined here as the bottom one-fourth of the sample households when ranked by per capita household income levels. In some of the sample countries, such as Malawi, Madagascar, Nepal and Bangladesh, more than half of the sample households would easily fall below a statistical poverty line, i.e. they do not have enough income to secure their basic needs for food and other essential non-food goods and services.

In much of the analysis, a distinction is made between informal and formal institutions. For the purposes of this paper, formal lenders include state and agricultural development banks and other banking institutions as well as member-based MFIs. The latter group includes credit unions and cooperatives, group-based systems, and village banks. All other remaining financial transactions of households are made within the informal sector, i.e. friends and relatives, socially distant informal agents, such as traders, money lenders or deposit-keepers, and indigenous savings and credit associations. In all countries, with the exception of China, Pakistan and Egypt, the household samples were chosen from mostly rural areas where formal financial institutions were operating. Hence, the samples are not representative of the (many) areas that do not have such services. Sample households were randomly drawn in all countries. In most countries, a stratified random sampling method was used so as to over sample clients of MFIs. In these cases, the appropriate statistical corrections for over sampling have been made for the numbers reported in this paper. However, this does not apply for the case of Ghana where no such adjustment could be made.

Poverty has many dimensions, and the poor face many constraints in accessing markets, education and other social services. These constraints have a negative impact on the role that micro-finance can play for poverty alleviation. When comparing the socio-economic characteristics of the poor and non-poor in the IFPRI samples that were predominantly taken from rural areas, 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 (Table 1).

MFIs that seek to be a viable service provider to the poor cannot and should not ignore the role that financial services can and do play for stabilizing food consumption. Households belonging to the lowest income quartile spend as much as 91 percent of their consumption budget on food (Fig. 2). Even so, because their earnings are so low, they sometimes go hungry. 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 and repaying loans during good ones

Table 1
Selected household characteristics, by country^a

Indicator	Bangladesh		Cameroon		China		Egypt		Ghana		Madagascar		Malawi		Nepal		Pakistan	
	P	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)																		
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	93.3	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	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

^a Source: Zeller and Sharma (1998).

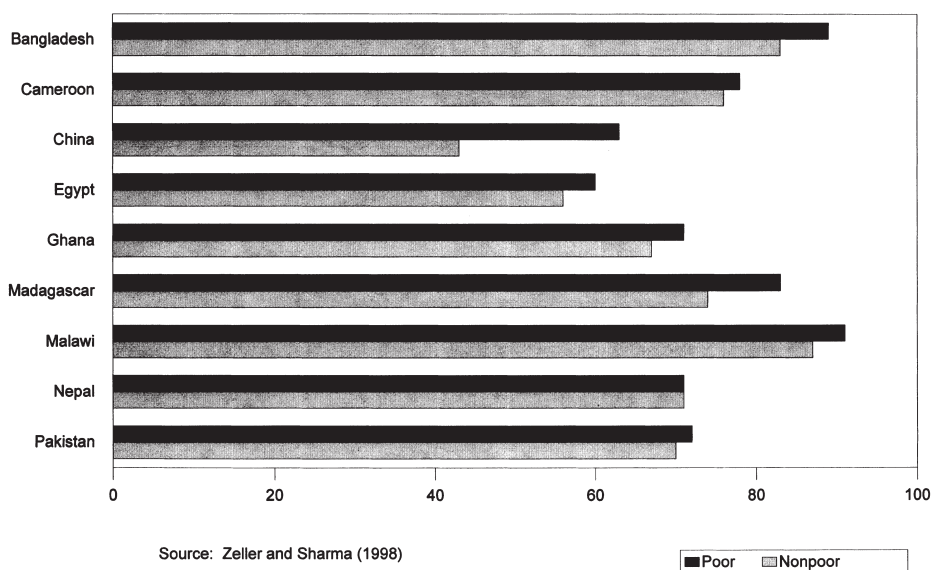


Fig. 2. Percent of consumption budget allocated to acquiring food. Source: Zeller and Sharma (1998).

is an integral part of the livelihood system of the poor. This is evident from the 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 poor households reported that loans were used to cope with household emergencies. In Pakistan, a 1985 rural credit survey conducted by the Government of Pakistan indicated that nearly 40 percent of the poor households engaged in credit transactions. Given the importance of food in total consumption expenditure, and given the poor's apparent demand for financial services to smooth consumption, MFIs attempting to reach clients hovering around the poverty line, or well below it, cannot and should not ignore this demand.

While on average less than half of households carry debt at any given point in time, borrowing from informal, and to a lesser frequency from formal sources, is an integral part of their economic strategy, irrespective of the level of poverty. On average for the ten country case studies of IFPRI, the percentage of households that borrowed at least once during the recall period of one to two years ranges between 50 to 70 percent. Yearly cumulative borrowing from informal and formal sectors combined can reach or even exceed per-capita income levels. 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. In other words, the total amount of yearly loans taken ranges between 50 and 100% of annual per-capita income. In some countries, borrowing exceeds per-capita income. We again need to point out that 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,

the levels reported here for borrowing are certainly higher than the corresponding national averages in these countries.

Fig. 3 shows that — as expected — the nonpoor households (the upper three quartiles of household income) borrow much more than the poor, with the exception of Ghana.³ Moreover, the loan amount shown in Fig. 3 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 farm or non-farm enterprises. The smallest amount borrowed is in Malawi, a very poor country with a relatively inactive informal credit market. On average, less than 5% of formal loans are given for a loan period longer than a year, and most seasonal agricultural loans are given for cash or export crops. In crop lending, many financial institutions seek to exploit marketing bottlenecks in order to secure loan repayment, for example tobacco in Malawi or cotton and brewery barley in Madagascar.

By far the biggest bank in most developing countries are the households themselves. Informal lenders — friends, relatives, neighbors, informal groups, or money-lenders — provide the lion's share of loans in every country except Ghana and

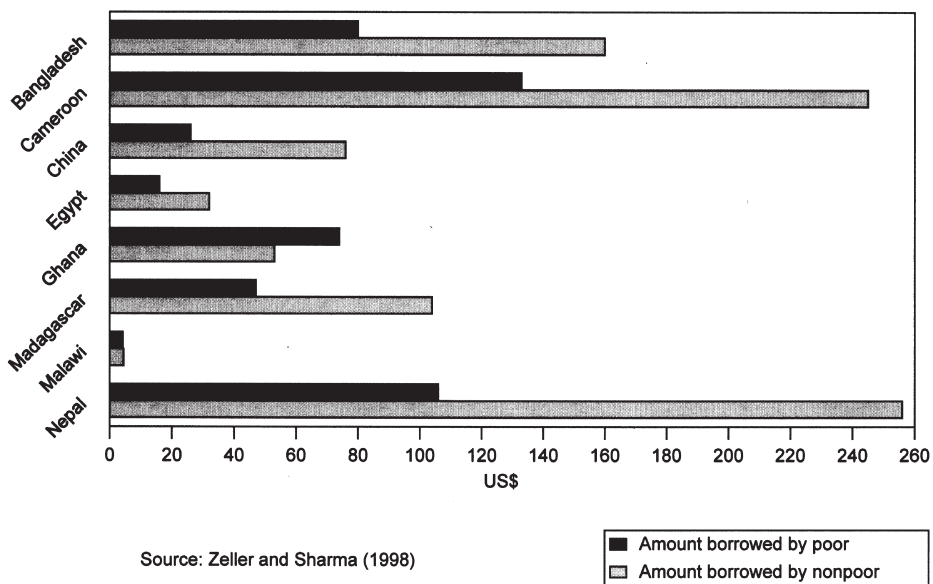


Fig. 3. Average amount borrowed from formal and informal rural financial sectors per household per year. Source: Zeller and Sharma (1998).

³ 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 are the simple, unweighted sample means. As noted above, data from all other case countries are weighted averages, thus correcting for over sampling of program beneficiaries in the survey areas.

Malawi (Fig. 4). In Pakistan and Cameroon, for example, less than 5% of the total amount borrowed during a year by poor households was obtained from formal lenders.

Yet, there is considerable progress in reaching the poor through new innovative member-based financial institutions. The poor obtain a smaller share of their loans from the formal sector than the non-poor in six countries (China, Egypt, Madagascar, Malawi, Nepal, and Pakistan), about the same in one country (Cameroon), and a larger share in two countries (Bangladesh and Ghana) (Fig. 4). In Bangladesh, member-based credit programs run by NGOs now play a significant role in providing credit to the poor. In Ghana, the villages selected for the survey benefitted from the existence of rural banks and NGO-assisted credit programs, the latter targeting female-headed households.

While progress has been made, the outreach to the poor remains very limited. In all case study countries of IFPRI, except Bangladesh, significant improvements in outreach to the poor has been achieved only within geographically quite small areas, covering only a small fraction of all households in a nation. Even in Egypt which has a relatively dense coverage of commercial and state-directed village banks, but with few member-based MFIs doing away with land as collateral, the role of informal lenders remains important.

Formal credit, so far, does not crowd out much of the informal credit. Diagne (1999) shows for Malawi that informal loans and formal loans are far from being perfect substitutes because of differences in product characteristics, such as restrictions on loan use, maturity of the loan, mode of repayment, and so forth. However, the informal sector, in particular the high-cost segment covered by money lenders, is likely to lose market share if the characteristics of the formal savings and credit products would better allow their use for stabilizing consumption.

Another observation from Fig. 4 is that the poor can be reached through financial services, as the figures on market shares for the lowest expenditure quartile in the Bangladesh sample demonstrates. Results not reported here further show that the NGO programs in Bangladesh seem to even reach the lowest income decile (these are people that are likely to be extremely poor by any measure). The poorest decile in the IFPRI sample borrows an average cumulated amount of US\$75 during a year (which is more than their per-capita income). On average, 16.2% of their loans is obtained from member-based MFIs.⁴

The poorer the household, the more it will spend on consumption, either financed from its own sources or from loans. Fig. 5 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 non-poor. In

⁴ The corresponding shares for friends and relatives is 79.2%, for banks 0%, for moneylenders 3.3%, and for informal groups 1.2%.

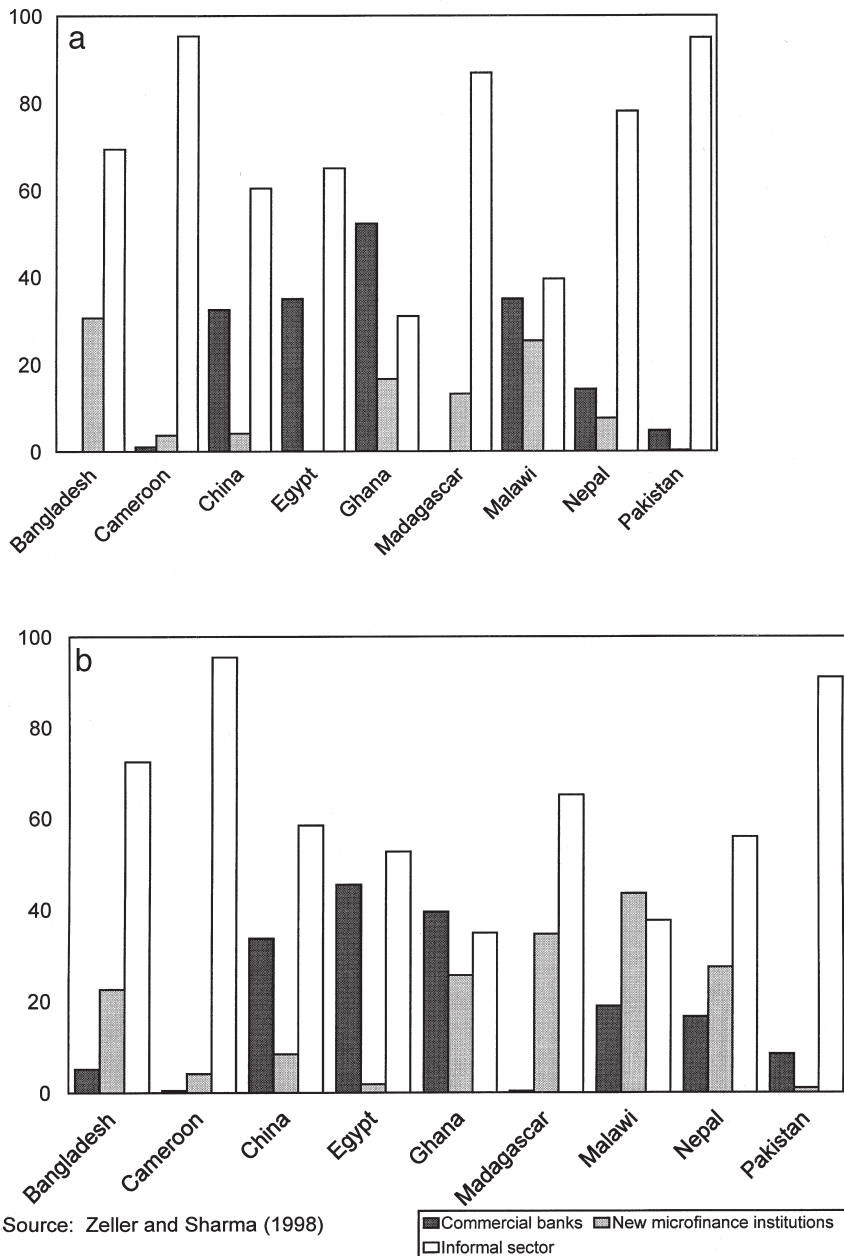


Fig. 4. (a) Share of different sources of loans to poor, by country; (b) Share of different sources of loans to nonpoor, by country. Source: Zeller and Sharma (1998).

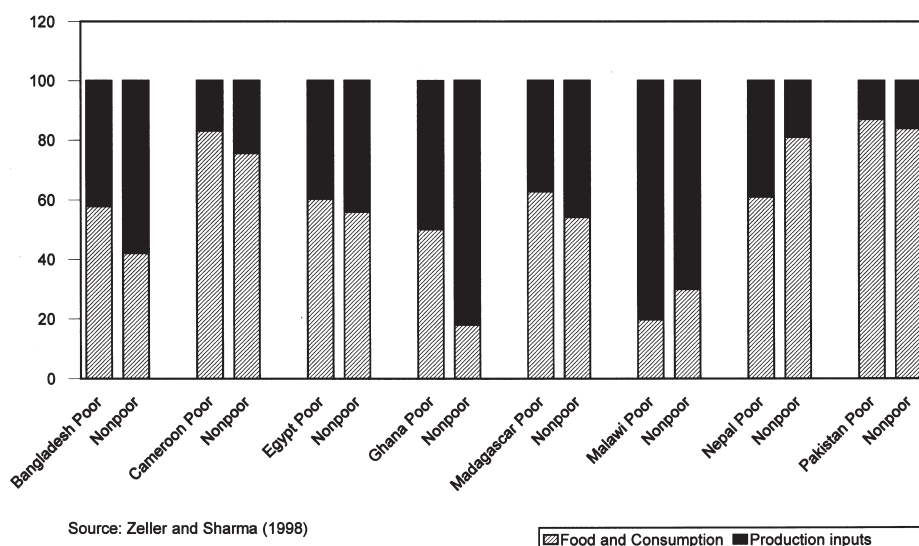


Fig. 5. Stated use of formal and informal loans by the poor and nonpoor, by country. Source: Zeller and Sharma (1998).

every country, the share of loans used for consumption was higher for informal loans than for formal loans. 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 as fertilizer and seeds.

Why is the bulk of loans used for consumption instead of production? 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. The characteristics of informal loans make them more useful for financing short-term activities such as consumption stabilization and providing working capital for farm and off-farm enterprises, in particular those with a rapid rate of capital turn-over, such as vegetable and poultry production, food processing, handicrafts, and petty trade.

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. Because of the unity of the household and its consumption and production activities, the fungibility of loans implies that the use of loans is ultimately driven by the overall budgetary needs of the household. Thus, loans will be mixed with own resources, no matter how hard lenders try to avert this to happen. Loans used for consumption can be seen as working capital loans for maintaining or enhancing the productivity of labor, the poor's main and the poorest's only production factor. Once minimum requirements for a healthy and adequate diet have been met, additional consumption may not generate further

increases in labor productivity while it still can be generating valuable utility to the consumer for which she is willing to pay.

Bankers cannot and should not micro-manage micro-loans. Lending for narrowly defined productive activities seldom prevents rural households from diverting borrowed funds from production to consumption needs because lenders rarely have the resources and time to supervise loan use (Von Pischke and Adams, 1980). 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, as the data from Malawi for example indicates. 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 (Schrieder and Heidhues, 1995; Zeller, 1995). Yet, economists and bankers frequently disagree on the merits of consumption credit. While consumption loans do not constitute a controversial issue among most, if not all economists, bankers frequently argue against consumption loans on the grounds that loans should finance activities that generate income for repaying the loan (although this argument seems to quickly fade away whenever the bank can secure its loan with good collateral). This argument has merit, but the above described linkage between food consumption and labor productivity also does, and is in line with it.

In conclusion, MFIs could do better in reaching the poor by considering policies and financial products that allow not only for production credit, but also for credit that could be used for consumption of foods and other basic necessities. The problems of moral hazard and information asymmetry that are particularly severe for consumption loans (and also for insurance) call for services that are designed by, with and for the clients and that are at least partially financed and controlled by the members of community-based MFIs. For example, the *Caisses Villageoises* (CVECAs) in The Gambia allow their members to raise internal savings funds, and to on-lent these funds for consumption (see Zeller et al., 1994).

What about the access to credit services? In spite of the vibrant informal markets that can be observed in many countries, financial services for the poor remain inadequate.⁵ This is because informal financial services have various strengths, but also serious shortcomings that for brevity cannot be discussed here (see on this for example Adams and Fitchett, 1992). In countries as diverse as Bangladesh, Ghana, Madagascar, Malawi, and Pakistan, access to credit is severely limited for small farmers, tenants, and entrepreneurs, and in particular for women.

A new and perhaps useful way of examining credit access is to enumerate credit limits imposed by lenders (Diagne et al., 1998). Based on questions to female and male adult members of households about their estimates of how much they could borrow at most at a point in time from formal and from informal sources, Diagne et al. (1998) found for Bangladesh a median formal credit limit of US\$50 and an

⁵ 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 CGAP (1996).

informal limit of US\$3. The ability to borrow was significantly more restricted in Malawi, where the median formal credit limit was found to be zero (i.e. half of the households could not borrow anything) and the informal limit was US\$3.

Credit constraints are frequently experienced by small farmers, forcing them to choose less rewarding income, investment and consumption strategies. The 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 (Zeller, 1994). In Ghana, Madagascar, and Pakistan, 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 non-borrowers by country; it is highest in Ghana and lowest in Madagascar (Fig. 6). 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.

Yet, not every poor household is constrained in its access to credit: Other limitations, such as low risk-bearing capacity and inadequate access to know-how, markets, and infrastructure may often be more binding. For the poorest, savings and

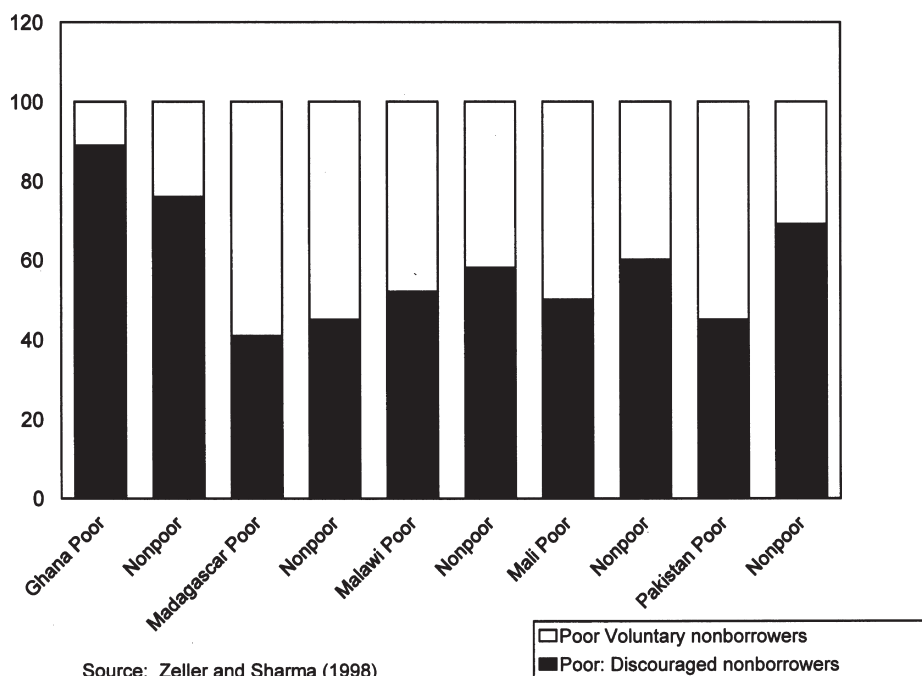


Fig. 6. Self-reported reason for households not borrowing, by country. Source: Zeller and Sharma (1998).

insurance services appear to be relatively more important than production credit, and credit may become into play once an adequate capacity to bear risks is attained.

Moreover, one must not assume — as it is frequently done — that all non-borrowers lack access to credit. In fact, Fig. 6 shows that the share of voluntary non-borrowers ranges from 11 percent in Ghana to 59 percent in Madagascar. Three of the most important reasons given by the respondents for having not borrowed were (1) adequate liquidity within the household, (2) inability or unwillingness to carry the risks of indebtedness, and (3) lack of profitable investment opportunities that could carry the cost of the loan. The second reason indicates the poor's vulnerability that may cause them to choose not to borrow any loans despite the fact that a well-meaning institution may actually target them as so-called "beneficiaries".

The second reason, not being able to profitably invest, may in many cases be caused by a lack of complementary services (such as business management training, agricultural extension, access to services for the prevention of diseases, and so forth) and by an inadequate access to agricultural input and output markets and to rural infrastructure. Access to markets and infrastructure is particularly important to reduce the entrepreneur's transactions costs in buying inputs and selling produce. The higher the transaction costs, the lower the supply response and demand for viable production loans. Thus, the impact of credit access on income generation may be negligible if the necessary complementary infrastructure and markets as well as health and other social services are not in place.

Savings services

Much progress has been made over the past ten years or so in recognizing the poor's demand for savings services. However, much more remains to be done, both from the perspective of institutional sustainability and of achieving customer satisfaction. Savings are particularly demanded by farmers who earn lumpy and risky incomes from crop production and livestock sales. Savings are equally important for the poorest of the poor who rely much on their own savings, on informal credit, and on their luck in the labor market for avoiding food shortages.

While the need for savings mobilization is quite universally accepted, many micro-finance institutions fail to satisfy the demand of their (many potential) clients (see also the convincing arguments by Stuart Rutherford 1998 on this point). The default in micro-finance is still to have no savings service (and instead rely on grants and loans for on-lending), or to demand obligatory savings deposits from loan applicants that are then linked as collateral to the loan. However, this "savings" service should not be called one, but what it is: a down-payment on a loan and a screening device. The clients of such programs may be forced into debt although their primary motivation for joining the program was to have access to a savings service (Rutherford, 1998). Checking accounts, and a variety of term deposits with different maturity and interest rates are still a rarity among MFIs. In the following, we highlight features of the poor's demand for savings services, and discuss gaps between savings services usually offered by MFIs and those demanded by the poor.

The poor can and do save. There is ample empirical evidence that shows that the

poor save, both in monetary and physical assets and certainly in the form of human capital (for example improvement of health and nutritional status, education, number of children, and so forth). Household savings are usually the largest component of domestic savings in developing countries, especially in lower-income, predominantly agricultural countries.

Why do the poor save? Saving provides for the accumulation of capital that, in turn, can generate future disposable income and therefore enable future consumption. In principal, two main motives for savings can be distinguished. The first is the motive for accumulation. This motive is driven by the desire to accumulate assets for some distant future, and usually for a particular purpose, for example for gaining financial security at old age, for financing dowry, or for the acquisition of a house or a piece of land. The second one is the precautionary motive of savings. This motive is driven by the desire to be able to afford a minimum level of consumption during future periods even if income shocks or unexpected increases in expenditures occur, such as for medical needs or social obligations. When such shocks hit, savings must be in a form that they can be withdrawn at short notice and readily be usable. Basically, the main distinction of the two motives of savings is that one is concerned about a planned and well foreseeable expenditure while the other relates to covering an expense of unknown amount at an unknown future point in time.

Because the two principal motives are so entirely different and because their importance changes with the level of poverty of the clients, they call for distinctly different types of savings products and forms of savings. The better-off and well insured tend to simply save for accumulation. They therefore demand term deposits that offer an attractive and reliable return, or if they are really well-off, high-risk bonds and stocks. On the other hand, the poorer and the more vulnerable the client is, the more important becomes the precautionary savings motive.

To overemphasize the point a bit: Poor, food-insecure people want easy and quick access to their money at all times. The less they own, the more liquidity and accessibility they demand. For example, large cash holdings at home — earning zero nominal interest and negative real interest — amounting to up to one season's revenues of rural households, are reported by Schrieder and Heidhues (1995) for Cameroon and by Diagne (1999) for Malawi. These empirical results indicate that the desire for liquidity of the savings — in order to make a quick withdrawal — can outweigh the desire for obtaining a positive return. The two diverging motives of savings also explain why empirical studies — as those reviewed in Deaton (1992) — do not find a significant relationship between the level of interest rates and the volume of savings. The interest paid on savings deposits is just one characteristic of a savings product, and other characteristics, such as liquidity and low transactions costs for withdrawal or for depositing small amounts become more important when clients put more emphasis on the precautionary motive.

How do the poor save? In financial terms, savings are defined as the net change in equity between periods. This definition includes changes in monetary and nonmonetary assets, such as food, jewelry, and other consumption and production durables, and adjustments for changes in debt. When investigating food security and intertemporal behavior, this standard definition of household savings and investment, focus-

ing on monetary and physical capital only, is too narrow. It neglects savings and investments in human capital, such as education, and in social capital, such as investment in self-help networks that provide safety net or a myriad of other services.

Households save therefore in the form of social, human, physical, and monetary capital. Human capital investments for education and improved nutrition not only may increase available human capital and income in current periods, but also could have a beneficial effect on human capital and income available in future periods. In food-insecure, poor households, the distinction between consumption on the one hand, and investment in human capital on the other, is difficult to make. This is well expressed by Dasgupta (1993).

At low levels of nutrition and health care, increases in current consumption improve future labor productivity: if nothing else, morbidity is reduced. At the margin, consumption of basic needs amounts to investment. One may even go further and argue that consumption and investment at the margin are, over time, synergistic up to a point (Dasgupta, 1993, pp. 247).

With respect to physical and monetary savings, households evaluate different forms of savings in terms of security, liquidity, and economic return. The type of assets in which savings are held exhibit different degrees of liquidity, depending on the physical characteristics of the asset (divisibility versus lumpiness) and on the conditions and imperfections of the asset markets. The most liquid asset is money in the pocket. Putting money in a checking or savings account already incurs transaction costs for liquidating the savings. Holding a cash reserve maintains flexibility in future use, but is of course exposed to the risk of inflation and to demands from other household or community members. Apart from money, households hold savings in many other forms, such as food stocks, livestock, and jewelry. For these forms of savings, cultural norms, traditions and the desire for prestige or for demonstrating economic or social status, play an important role, too.

A general systematization of the different forms of household savings according to their degree of liquidity, security, and rate of return is, of course, not feasible. Physical characteristics of assets such as divisibility and lumpiness may be overridden by specific cultural or regional- or country-specific market conditions. One can conclude from this then that formal savings services must be adapted to local environments, too.

For savings products, there are major gaps between what is demanded by the poor and what is offered by MFIs. Most institutions still neglect the provision of different savings products to various groups of poor clientele. Many state or donor-driven agencies do not offer savings at all, other MFIs are not allowed to do so. Some excuse themselves by pointing out the fact that they offer obligatory savings linked with a loan product. However, such a “service” does neither respond to the accumulation nor the precautionary savings motive. Some innovative MFIs already offer a range of savings products, differentiated in terms of their maturity and return (see Hannig and Wisniewski, 1998; Rutherford, 1998). In order to better satisfy the demand by poor clients, checking accounts, savings deposits financing consumption loans,

and savings deposits to build up emergency funds for pooling risks, as well as member-financed and member-controlled insurance products need to be developed.

Insurance services

While savings has been termed the forgotten half of finance during the 1980s, one may consider insurance the forgotten third during the 1990s (Zeller, 1995). A good share of rural households borrow, many more save, but all seek to insure against the vagaries of life. In view of the virtually complete absence of formal insurance markets and social security systems accessible by the poor (Haddad and Zeller, 1997), they use a multitude of measures to reduce the likelihood or impact of risks, either through ex-ante or ex-post measures for smoothing income, consumption or both (Murdoch, 1995). For example, farmers undertake mixed cropping and use multiple seed varieties. In doing so, the farmer pays a premium in form of additional work or lower yields but can reduce the down-side risk of having crop failures. Households enter into co-insurance contracts with their neighbors, relatives and market partners who reciprocate help in difficult times (Platteau, 1991).

Idiosyncratic (or personal) and covariant weather risks are major causes of households sliding into or being trapped in poverty. In a recent household survey by IFPRI in Madagascar it was found that thirty-three percent and twenty percent of households, respectively, mentioned personal and covariant risks as major factors causing the deterioration of living standards during the past five years (see Table 2). Among the poor, the incidence of personal risks was higher, while among the wealthier households, the reverse was true. The poor are more affected by personal risks as they impact on their labor, their main production factor. The wealthier households are relatively more affected by weather risks as these impact mainly on crops and therefore affect the returns to land (Minten et al., 1998b).

Informal systems of insurance may be effective for covering personal risks to some extent, but they are not for protecting against weather and other covariant risks that affect everybody in the community at the same time. Personal risks, such as illness, death, accident, theft of cattle, and old age, usually affect only few persons in a village at the same time. Covariant risks, such as drought, hail, crickets and so forth, affect everybody in the village who depends directly or indirectly on agriculture for their livelihood. Because of these characteristics, personal risks can be insured within smaller groups, while covariant risks cannot. Yet, the existing economies of scale and scope in insurance also make it more economical that larger groups of individuals (at the extreme all citizens of a state) are insured. Because of this, the health and old-age insurance systems for example in many countries of Western Europe make it mandatory for every person to enroll in health and old-age insurance, if the individual is not already covered through private insurance.

The potential for innovation in sustainable insurance products remains by and large untapped by the MFIs with the result that — among the three types of financial services — the largest gap between demand and access exists for insurance. One should note, however, that this gap is not easy to close, as insurance is the most difficult financial service to offer because of the problems of information asymmetry

Table 2

Causes of changes in food insecurity over the past five years, as reported by the head of rural households in Madagascar^a

	Got worse (N=195) (percentage)	Improved (N=142)
Covariant risks: natural catastrophes harming crop, animals, house (drought, crickets, flood)	20	
Negative idiosyncratic risks: accident, human disease etc	33	
Adverse changes in market access or prices	30	
Private transfer received: heritage, gift		3
Public transfer received: (social assistance or farm/business extension		2
Favourable changes in market access or prices		51
Increase in expenses for social events or schooling	3	
Positive idiosyncratic events: mainly more household members in working age		31
Other adverse casual factors	14	
Other positive casual factors		13

^a Source: Minten et al. (1998b). Note: The table lists the different types of responses given by the household head on the question “What was the primary cause for the change in quantity of food consumed in your opinion?” The sample size was 495 households. Of those, 195 households experienced more food insecurity, 142 less food insecurity, and the remainder had no significant change reported.

and moral hazard among market partners that can be particularly severe in insurance contracts. When discussing the potential for innovation in micro-insurance, one needs to distinguish between personal (or idiosyncratic risks) on the one hand, and covariant risks on the other, as the institutional and policy responses will differ by the two categories of risks. Micro-finance institutions can provide insurance services if local, member-based knowledge and monitoring systems are used to determine how much to charge and eventually to pay out, if anything. Studies of informal credit and savings associations, or of solidarity credit groups show that members of the same group attempt to pool their risks, and to support each other to some extent in times of difficulty (see the literature reviewed in Zeller et al., 1997).

Innovative formal institutions have already made an entry in the business of insurance. For example, the Association for Social Advancement in Bangladesh and Bankya Rakyat Indonesia require borrowers to buy life insurance for safeguarding loan repayment in case of the death of the borrower. The Indian self-help organization SEWA allows pregnant borrowers to reschedule their loans, and the members of the Caisses Villageoises, for example in Mali or The Gambia, allow the provision

of consumption loans at lower interest rate if financed through internal savings of the members. For larger micro-finance institutions, it appears that retailing insurance services for personal, idiosyncratic risks on behalf of national or international insurers is a promising point of entry.

Insurance or its substitute, such as precautionary savings products and consumption credit lines, appear to become most cost-effective and therefore eventually sustainable if the services are controlled and at least partially, if not fully financed by their members. At a more advanced, future segment of the institutional learning curve, the grassroots-level institutions may form associations or federations that may pool emergency funds across regions. This is the case for example of Grameen Bank which rescheduled loans in flood-affected areas during 1992, partially financed by emergency reserves.

The state is called upon to support research and pilot programs that experiment with member-financed and member-controlled insurance services, including consumption credit and retailing of products offered by the established insurance sector. Institutional innovation, just like new technology products or new seed varieties, often create public goods that can be used by other countries, firms, households and individuals. Because of the free rider problem, private sector response to innovate institutions remains weak (Zeller and Sharma, 1998).

The appropriate institutional and policy response to covariant risks remains an open, but very important question, in particular for reviving agricultural credit. Weather risks pose major threats to farmers and to rural banks alike. Private insurance companies usually shy away from insuring weather risks in agriculture. The major reason for this is the difficulty and the costs involved in assessing the damage and the amount to be paid. For an insurer it is simply too costly to go out and check the fields of every smallholder to determine for example by how much the yield of maize or cotton was reduced because of drought. One of the major problems of micro-insurance, as it is also the case with micro-credit and micro-savings, is the smallness of the transaction, leading to high unit transaction costs. While several proposals, such as insurance payout linked to regional rainfall data, or use of satellite images of crops, have been recently suggested to reduce the costs of information for the insurer, little progress has been made in practice.

Another possibility that often is suggested is to form associations of member-based financial institutions or networks of banks that raise monies from their clients for the built-up of emergency funds that then are matched in a certain ratio with state funds. The emergency fund is used to finance disaster relief or insurance payout. However, there exist many issues that need to be resolved with this proposition.

While the state is in a position to spread the fixed cost of establishing institutions that insure against covariant risks (Dasgupta, 1993), many governments chose to not do so. They prefer instead to be the implicit insurer of last resort (perhaps also because of political motives), for example by designating disaster areas and by giving hand-outs to affected areas and households, or by coercing state-driven banks in forgiving loans in drought years.

Policy implications

A large share of rural households borrow, many more save, and all seek to insure against the vagaries of life. The poorer the household or individual, the more important become (precautionary) savings products and insurance services, including consumption credit as an insurance substitute. Unfortunately, many of the MFIs, including some of the flagships of the industry such as BRAC, ASA and Grameen Bank have focused on credit, while downplaying the demand for savings. Very few have ventured in the admittedly difficult business of providing insurance. Moreover, because of covariant weather risks, many MFIs shy away from lending to small-scale agricultural production.

To reverse this pattern of gaps between demand and access with respect to financial services for increasing the capacity of the poor to bear risks, future product and related institutional innovation in micro-finance will be required. This is critical for micro-finance so as to increase its relevance for and outreach to the poor, and thus to contribute more effectively to poverty alleviation. Bold pilot programs and experiments with alternative institutional designs and products as well as further empirical research, some of which is jointly undertaken with action-oriented field experimentation, are needed to generate institutional innovation for the poor. Concerted public action by governments, donors, civic organizations, community-based institutions, and private sector is required to provide an enabling framework for this to succeed. A useful premise for innovation in micro-insurance, and thus privately-funded safety nets, is to build upon local knowledge for contract design and enforcement.

Designing, experimenting with, and building financial institutions for the rural poor require economic resources and adequate consideration of longer-term social returns. Policy choices must weigh the social costs of supporting the formation of MFIs for the poor against their social benefits. This paper has not focused on the benefits of micro-finance for the poor see, for example, Sharma and Schrieder, 1998, nor on the private and social costs of provision of financial services. A word of caution, therefore, against over-emphasizing the role and potential of micro-finance for poverty concludes the paper. Poor households face complex, multiple constraints on earning opportunities. The impact of financial services on welfare is likely to vary with accessibility to complementary inputs such as irrigation, education, market and social services. In some environments or for some socioeconomic groups, access to micro-finance in general and to credit in particular may do no good, while in other regions and for other groups, it can make an important difference. It is essential for micro-finance programs to identify the non-financial constraints that their target clientele is facing, and to adjust the financial products accordingly. For the poor and in particular the poorest who may choose not to borrow out of fear of failing to repay the loan, savings and insurance services for increasing their risk-bearing capacity and for integrating them in member-based financial institutions appears a very important and promising point of departure for improving outreach and relevance of micro-finance.

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