FARM CREDIT AND MICRO-FINANCE - IS THERE A CRITICAL MISMATCH?

MALCOLM HARPER

June 2005

INTRODUCTION

"New paradigm" micro-finance has largely replaced old style rural finance, which was mainly subsidised low-cost farm credit. The "old paradigm" rural development finance institutions have in some cases disappeared, and in others they have been converted into what are effectively specialist micro-finance institutions (MFI). Does new paradigm micro-finance effectively address the needs of farmers?

For the purposes of this paper farming is defined as the cultivation of crops, and animal husbandry of any kind is excluded. This is not because animal husbandry, such as raising goats, milk cattle, pigs, poultry or any other animal, is unimportant, but because such activities already are one of the most popular uses of microfinance, and there seems little doubt that "new paradigm" micro-finance suits them well.

Crop cultivation is different. Most micro-finance portfolios include rather few loans which have been taken to finance crop cultivation. The smaller community owned village banks and co-operatives are constrained by their lack of funds (Klein B et al., 1999, p. 8), and few NGO MFIs are engaged in crop lending (Coffey E, 1998). MFIs which have ventured into crop financing such as Basix in India have had relatively poor experiences with this kind of loan (DiLeo P, 2003). In the Bangladesh Grameen Bank's 2003 list of the 25 most popular loan activities, power tillers, for which 217 loans were taken, and shallow tube wells, with 562 loans, are the only farming activities by our definition. By contrast, 18,037 loans were given in the same period for grocery shops, and 12,881 loans for stationery shops (Grameen Bank, 2003).

Since farming is and will presumably continue to be the main economic activity of many rural people, it is worth asking why micro-finance is not often used to finance farming, whether it matters, and what can be done about it if it does matter.

There are some fundamental differences between farming and other income generating activities, which may affect the match between micro-finance and the farmer's needs.

These differences include the following special characteristics of farming:

- Most farming products are themselves a means of survival. They can be eaten as well as sold.
- Farming tends to be an ancestral activity. Most small-farmers are following their parents' footsteps, and farming itself is not new to them.
- Many (but not all) farmers already own land, the basic asset required for farming. They do not have to finance its acquisition.
- Land is traditionally the most acceptable form of collateral, as well as being basic to farming.

- Farming land, unlike most other assets, almost always increases in value in
 the long term, but in the short term it declines in value if it is not used. Its value
 can also be reduced through over- or misuse, but if it is not used at all the
 owner must usually invest heavily in bringing it back in to production. This
 does not apply to land used in shifting cultivation, but this type of land use is
 not the dominant method in most regions.
- Most farming families live on the land which they cultivate; it provides space for shelter as well as ground for cultivation.

THE FEATURES OF ON-FARM vs. OFF-FARM CREDIT USE

To compare farm credit with micro-finance loans, it is necessary first to examine the typical uses which a rural household might make of micro-credit. These can then be compared to see where they are the same and where they are different, and how 'classic' new paradigm micro-finance fits or does not fit them.

Five typical examples are proposed:

- 1. So-called consumption credit, for medical care in case of sickness.
- 2. Petty trade, dealing in consumer goods, often from home or on a mobile basis.
- 3. Livestock, the purchase of a milking cow.
- 4. Seasonal crop finance, for farm inputs.
- 5. On-farm investment, for minor irrigation.

The following table attempts to compare these, along the following parameters:

- I. Amount of investment/loan needed. How much does it cost?
- II. Lumpiness of investment. Is it in one payment, or can it be spread?
- III. Financial Return on investment. What is the % return on the investment?
- IV. Lumpiness of return. Is the return in one lump or continuous over a period?
- V. Delay. Is there a delay between the investment and the first return?
- VI. Predictability of investment. Can the client predict when the payment will be needed?
- VII. Risk of loss. How secure is the return, and the asset which earns it?
- VIII. Seasonality of investment and of return. Do the investment and the return depend on the time of year?
 - IX. Centrality to household livelihood. How important is the income from the investment to the household's total income?
 - X. Male or female managed. Is the asset generally under the control of men or women?
 - XI. Skill needed. Does the return depend on skills which the client may not have?
- XII. Access needed. Does the return depend on access to supplies or markets which the client may not have?

The right hand column suggests the ideal requirements for each of these parameters which match the features of a typical micro-finance programme.

Feature	Sickness	Petty Trade	Milking Cow	Crop Ioan	Minor Irrigation	Requirements of typical Micro-finance programme
Amount	Small	Small	Medium	Medium	Large	Small
Lumpiness of investment	High	Medium	High	High	High	High
% Return on investment	Nil, but enables wages	High	Medium	Medium	Low	High
Lumpiness of return	Low	Low	Medium	High	High	Low
Delay before return	Low	Low	Medium	High	High	Little or None
Predictability	Low	Medium	Medium	High	High	High
Risk	High	Low	Medium	High	Medium	Medium
Seasonality	Medium	Low	Low	High	High	Low
Centrality to household income	High	Low	Medium	High	High	Low
Gender	Woman	Woman	Woman	Man	Man	Woman
Skills needed	None	None	Medium	Medium	High	None
Need for market linkages	None	None	Some	Some	High	None

Rural people's livelihoods have diversified, in part thanks to micro-finance, but farming is still the most important single source of income for most rural people, in kind and in cash. At least at first sight, the match between the features of the investments and the requirements of micro-finance in the last column appears to get worse as one moves from sickness and petty trade to farm inputs and irrigation. Does this in part explain the following features of MFIs?

- They serve mainly women, and landless people.
- Their loans are used mainly for consumption or off-farm investment.
- Few of their rural clients 'graduate' to mainstream banking as one would expect they might if MFIs addressed their main livelihood needs.
- There is little evidence that micro-finance has radically transformed the livelihoods of rural people.
- The main farm-related use of micro-finance loans is for small-scale trade, processing and livestock.
- Few MFIs have ventured into farm credit, and their results have generally not been good.

There are obviously many reasons why rather few on-farm investments are financed with micro-loans. The topic was discussed at the 2004 Asia/Pacific micro-credit summit in Dhaka. Dr. M A Hakim of PKSF suggested that it could be explained by the perceived high risks and seasonality of farming, the history of politically induced low recoveries and the misplaced notion that farm financing required specialist technical skills. Neither he nor any of the other discussants, however, mentioned the issue of interest rates and rates of return (Transcript of remarks at Asia/Pacific micro-credit summit, Dhaka, 2004).

This is one of the features listed in the above table. The interest rates charged by MFI are higher than the usual commercial bank rates, and it is presumably believed that the rates of return which clients will earn by investing the borrowed funds will be higher still, so that their net incomes will be increased. The remainder of this paper will focus on that particular feature of micro-finance, and its possible mismatch with on-farm returns.

INTEREST RATES

One particularly important difference between activities is of course the rate of return which can be earned from them. Micro-credit is generally more expensive than traditional formal institutional credit, because of the high transaction costs which have to be incurred to provide the accessibility and other service characteristics which have been shown to be more important to poor people than the rate of interest they have to pay. These interest rates are usually lower than money-lenders' rates which are most micro-finance customers' only alternative, but it is also important to be sure that the returns on their investments are sufficient to cover the interest costs.

The Micro-Banking Bulletin (issue number 8, CGAP, 2005) gives a range of yields on portfolio for the various groups into which MFIs are divided for the purpose of data presentation and analysis. The average nominal rate for larger MFIs is 37%, for medium MFIs it is 42.5% and for small MFIs it is 42.8%. The differences are more pronounced when the figures are disaggregated by types of institution. The average rate for NGOs is 43.6%, for non-bank finance companies it is 38.3%, and for banks it is 33.7%. These figures include loan processing fees and other supplements which many MFIs add for a variety of reasons, and are therefore more indicative of what clients really pay than plain interest rates, particularly when these may be quoted (or mis-quoted) as 'flat' rates. The Bulletin also includes 'real' yields, which are corrected for inflation, but the orders of magnitude are similar.

It can of course be argued that it is inappropriate to associate any particular loan or source of loans with any particular investment. Money is fungible, and micro-loans, like any other finance which comes into a household, go into the common pot from which money is withdrawn when it is needed. If one objective is to improve customers' incomes, however, MFIs should surely want to be sure that the returns on the largest and most common type of investment their clients were likely to make were well in excess of the cost of their loans, which may make up a large proportion of a household's liabilities.

Like any service provider, therefore, MFIs should set their prices not only by calculating what their costs are, but by assessing what their customers can afford to pay. The competition is still usually the money-lender, whose rates have often come down in recent years, in part because of competition from MFIs, but money-lender interest rates are still well above most MFI rates. Business investors compare the cost of money with the projected yield on their investments, and they do not usually invest in projects whose return is lower than their cost of funds. Bankers are well aware of this, and they compete with one another accordingly. Many MFIs are still quasi-monopolists, in that their only competition is money-lenders, but MFI management should nevertheless examine the returns earned by their clients on the ventures in which they invest their loans. If the interest rates are higher than their clients' returns, the long term impact will be to impoverish and not to enrich them.

RATES OF RETURN ON AND OFF THE FARM

Rates of return generally decrease as the scale of investment increases. A rickshaw puller can earn a higher percentage return on his investment in the rickshaw than a taxi driver can earn on the cost of his car, and a tailor can earn a larger proportionate return on the cost of her treadle-powered sewing machine than an investor can make on her investment in a garment factory. Most micro-finance institutions, however, are not in the business of financing taxis or garment factories. Their high interest rates, as well as their often quite onerous demands for group membership, regular savings, weekly meetings and so on, effectively discourage larger borrowers from using their services, and thus protect them from 'client drift'. People who can access mainstream bank loans are generally not interested in micro-finance.

The concern here, however, is if possible to compare the returns on farm and non-farm investments of similar scale. If investments in farming yield a generally lower return than investments of similar amounts in what has come to be known as 'the non-farm sector', then this may be one explanation for the fact that most micro-credit is used for consumption or for non-farm activities.

An attempt was therefore made to compare the percentage rates of return on a range of farm and non-farm investments of similar scale. A fair quantity of data on the returns to non-farm micro-investments was already available. This data has been reported elsewhere (Esipisu et al, 1998, p.77; Harper, 1998, p.15). The information was acquired by students, micro-finance practitioners and government and donor staff who participated in a number of training programmes in Asia and Africa, and who collected the data as part of field exercises.

One purpose of these exercises was to show that MFI clients could afford to pay high rates of interest, and thus to overcome policy makers' and bankers' fixation on the need for subsidised interest rates. Although the field visits were undertaken mainly in rural areas, and the participants were free to select any enterprise they chose, very little data was obtained for on-farm investments. This was partly because teashops and vegetable vendors can be found in any village, whereas farms and their owners are usually scattered in the country-side and are not easy to find during a half-day field training exercise.

Data was collected from 215 micro-enterprises. The businesses were of all types, apart from farming, and they were selected at random by the students along roadsides and in village market places. About one third were owned by women.

The sample is not of course representative of all non-farm micro-enterprises, but the figures are at least indicative of what can be expected. The figures for investment were not whatever sum the owner had invested at the start of the business, but were an estimate of the total value of the investment at the time of the visit, at current prices. All the figures were adjusted for seasonality, and the opportunity cost of labour was generously estimated. There were only 37 cases where this cost was nil, because there were clearly no possible opportunities for the owners to earn any money from employment. In every other case, there was some way in which the owner could have earned something during at least some of the time she or he spent on the business. This was usually casual labour.

Failed businesses were not of course included, because they were not there to be studied, and the figures make no allowance for the risk of failure and loss of the investment and the earning capacity it had generated. Many of the businesses had in fact been in existence for five years or more, and although many owners spoke of earlier failures, these did not usually seem to have involved total loss of the investment. Equipment had been sold, and the working capital had been extracted for consumption or for re-investment in another venture.

The average annual incremental return on these 215 investments, after subtracting the opportunity cost of their owners' labour, was 847%. The returns ranged from minus 480% to plus 19200% and only in 40 cases, mainly the larger businesses with investments of over \$500, were the annual returns less than 100%. The return was over 1000% in 44 cases. There were only ten businesses where the owner would have made more money by being employed. These extraordinarily high returns do not of course mean that the owners of these micro-enterprises were wealthy. The amounts invested are very small, and the opportunity costs of the owners' labour are often very low. An 847% annual return on an investment of \$100 is only \$847, which is about\$2.30 a day and may be the sole income for a household of five or more people.

For the purposes of this paper an attempt was made to obtain similar data for farmers. It may be significant that little data of this sort appeared to be available from most international financing or micro-finance support institutions, such as the World Bank or DFID. The CGAP direct donor information centre slide presentation on interest rates states that rates of return on micro-finance investments vary between 117% and 847%, although no source is given for this data.

Basix Finance were, however, able to provide some Indian examples, and the participants in the December 2004 Dhan Foundation international training programme on 'The Art of Up-scaling Micro-finance" in Madurai in Southern India were asked to interview farmers and acquire some comparable data.

The following table summarises some of the findings for individual farmers which were obtained from Basix, and by the students on the Madurai programme:

Place	Madurai	Madurai	Anantapur, Andhra Pradesh	Mehboobnagar, Andhra Pradesh	Madurai, Tamil Nadu
Activity	Replace cow dung with fertiliser for paddy	Plant paddy on 0.4 acres newly irrigated land	Year round irrigated double crop, groundnut and red gram.	Rainfed cotton	5 acres irrigated paddy
Cash invested	\$100 for fertiliser	\$60 for fertiliser	Seeds and fertiliser, \$300	Seeds, fertiliser and pesticides \$450	Fertiliser and pesticides, \$54, hired labour \$15
Opportunity cost of family labour	No extra labour needed	30 days labour @\$2 = \$60	\$100	\$100	\$87
Gross return	20 additional bushels of paddy @ \$9	Value of crop \$130	Value of crop \$600	Value of crop \$900	30 bags @ \$6 = \$180
Period	6 months	3 months	One year	One year	Three months
Return net of investment	\$80 per six months	\$10 per quarter	\$200	\$350	\$24
Annualised rate of return	160%	31%	50%	64%	61%

In no cases do the investments include the cost of land, nor the capital cost of any irrigation works, which were substantial in two of the cases. The farmers were paying no fees for the irrigation, which had been provided by government. No allowance is made for risk, which is of course particularly high in rain-fed crops. It is also assumed that the initial capital was all invested at the start of the season or other period, which is not always the case, but it is rare for any cash return to be realised until all the inputs and labour have been expended.

Some data from West Africa is also available. Four small irrigation investments in Nigeria, using two and three inch portable pumps, achieved rates of return of 45%, 78%, 107% and 119%, and the cultivation of maize and millet was said to earn 25%, and yams and cassava, 53%. (Yaro M, 2004) In Benin, the return on maize and soya cultivation was assumed in a FAO/IFAD proposal to be 40% (Republique du Benin, 2005)

This is only a small and non-random sample, and the methods of data collection and analysis were not necessarily consistent. Indian cases predominate, but this may not be unreasonable in the light of the fact that some 700 million Indians live and work in rural areas, of whom most are very poor by any standards. All the data was obtained from farmers' own recollection, rather than from diaries or any other more systematic means. People do not usually like to talk of failures, although some farmers may have been tempted to understate their returns because of a mistaken impression that the researchers were dispensing subsidies. Alternatively, of course, they may have exaggerated their success out of pride, or to demonstrate their eligibility for loans. There are many reasons why the data may be inaccurate, but the errors are equally

likely to have been positive or negative, and there is no reason why the returns from farming data would be any less accurate, or more understated, than the returns from non-farm enterprises. The orders of magnitude are probably reasonably correct however, and readers should be able to confirm (or contradict) the figures with examples from their own experience.

The highest of the above annual rate of return percentages was 160%, only three were over 100%, five were between 50% and 100% and four were under 50%. These returns are reasonable or even quite high returns by normal commercial standards, but when MFIs are charging annual interest rates of 36% or higher, as many do, there is only a small margin to cover risk, profit, and any imputed return on the often very high value of the land. Two of the return figures were actually lower than the average micro-finance interest rates which were quoted earlier in this paper, so that farmers would be worse off if they invested micro-finance loans in these crops. However approximate the data may be, the returns from farming are dramatically lower than the returns from the earlier sample of 215 non-farm businesses.

DOES THE MIS-MATCH MATTER?

The low or negative margin between the cost of micro-loans and the returns from onfarm investments may not be a serious problem. The following arguments, among others, might support this view:

- Micro-finance is aimed at women, from the poorest households. They tend to own no land, and many of them use their micro-loans to start or expand non-farm micro-enterprises from which they will supplement or even replace the minimal wages they earn as labourers on their better-off neighbours' farms. Micro-finance is irrelevant to most farmers.
- o Farmers may already have sources of funds to finance their crop production. The traditional 'old paradigm' credit providers still survive, in some places at any rate, and there is a whole array of alternative fund sources such as credit from input suppliers and advances from crop traders, not all of which are exploitative. Microfinance aims to complement and not to replace these sources, and enables clients, particularly women, to diversify their livelihoods.
- Population pressure and the resulting smaller family holdings, the growing capitalintensity of farming, water shortages and WTO-induced global competition in commodities such as edible oils and food grains, mean that small-scale farming is becoming uneconomic. Rural families must move into non-farm activities, and micro-finance enables them to do this.

The strength of these arguments will vary from one context to another, but there are strong counter-arguments to support the view that micro-finance should be an appropriate source of funds for on-farm investments as well as for non-farm micro-enterprises and 'consumption' expenditure:

 The neo-liberal market-led view is in the ascendant, and appears likely to remain so. Some MFI interest rates are higher than they would be if the institution was totally efficient, but the differences between the returns from farm and non-farm ventures are such as to make it quite impossible for the surplus to be earned on the farm can come anywhere near that which is available from non-farm enterprises.

- o In many countries traditional commercial bank branch numbers are being cut drastically, and in some places they are being replaced by MFIs, such as the about to be privatised National Micro-finance Bank in Tanzania, which runs the rural branches of the erstwhile public sector National Bank of Commerce, or the Centenary Rural Development Bank of Uganda, an MFI which has effectively replaced the Uganda Commercial Bank as the country's rural commercial bank, albeit with fewer branches. The 'old paradigm' rural credit system has not always survived.
- Farmers' Co-operatives, which used to be many cultivators' main source of seasonal finance, are in disarray in many countries. In India in the year 2000, 142 of the countries' 367 District Central Co-operative Banks were technically insolvent, and 332 of them were capital-inadequate. (Berkhoff A, 2003). The financial position of their 93,000 affiliated primary societies was even worse, and their co-operative status was also deeply compromised by political interference and government control.
- Farmers need more finance than before, to be able to buy more expensive inputs and equipment, so that even if their traditional sources are still available, they are not sufficient to allow farmers to invest the sums they need to be able to compete.

Irrespective of these arguments, however, the basic point remains: if the cost of finance exceeds the return which is earned on investment, the investor will lose money. It has even been suggested that micro-finance is Eastern Europe has effectively discouraged local manufacturing by providing small high cost loans which are suitable only for short-term trading in imported goods (Bateman M, 2003). This is a rather extreme point of view, but it might perhaps also be argued that micro-finance can have a similar effect on agriculture in rural economies.

WHAT IS TO BE DONE?

This paper has only dealt with interest rates and rates of return; issues such as cash flows, risk or gender have not been covered. Many recent developments in microfinance can be interpreted as attempts to correct the mis-match on some of these issues. Some MFIs, such as Grameen Bank under its Grameen Two programme, have modified their rigorous fixed weekly or monthly repayment schedules to allow for the timings of cash inputs from farming, and some now offer or even require life and health insurance. Basix Finance in collaboration with ICICI Lombard is also pioneering new forms of protection against crop failure, in order to reduce the risk of non-repayment.

There have also been a number of innovations in farming systems and technologies, such as the irrigation treadle pump and small-scale micro-drip irrigation kits, pioneered in Bangladesh and India, and lower risk crops, integrated pest management using less inputs, and new technologies which are under the control of women. Some of these increase rates of return while others reduce the amounts needed for investment.

Nevertheless, these changes are far from being universally applied, and, even if they were available everywhere micro-finance would not be wholly suitable for farmers. What more needs to be done to bring micro-finance and farming closer?

Answers to this question will of course vary from one place to another, but there are certain trends which are already evident, and other steps which can be taken, which may in part address the issue:

- o MFIs need to be more efficient, and to reduce their costs. The pressure to date has been for MFIs to achieve 'sustainability'. For a financial services business, this presumably means profitability, including some return on equity. MFIs have only reached ten per cent or less of the potential micro-finance market in most countries, and moneylenders and other informal credit suppliers are still their main competition. The easiest way to cover costs, therefore, is to charge high interest rates; partly as a result of their quasi-monopoly position, many MFIs are already highly profitable. The 52 'financially self-sufficient' MFIs in the Micro-Banking Bulletin's list made an average after tax profit of 5.5% on their total assets and 14.1% on their equity; these are respectable figures for any financial institution. Competition is increasing, however, and this will of course be the main driver of efficiency, and of the lower interest costs, greater flexibility or other service improvements which their customers will demand. The mis-match between interest rates and returns which we have identified will presumably be reduced over time.
- The increasing presence of commercial banks in micro-finance (Harper M and Arora S, 2005) may also bring interest rates down. The figures quoted earlier in this paper showed that banks' micro-finance interest rates are almost 10% points lower than NGOs, and existing banks are sometimes reluctant to charge their poorest clients higher rates than those paid by the better-off. Their activities are more visible, they may be state-owned or at least substantially beholden to the state, and they have more opportunities to cross-subsidise what is usually only a small part of their business, particularly since it has high public relations value and some micro-finance clients may 'graduate' to main-stream status.
- Loans to women dominate most micro-finance portfolios. There are very good business and social reasons for this, and it may be heretical to question it, but onfarm activities are still mainly male-dominated. Competition may force MFIs to look for neglected niche markets, and male farmers may be one of these. Some institutions have started down this road. The Pandyan rural bank for instance, in Tamil Nadu state of India, is heavily involved in micro-finance for women, and has financed over 13,000 women's self-help groups, with around 15-20 members each. The Bank has more recently also started lending direct to small-scale farmers, usually men, using Joint Liability Groups of about five members each, who guarantee each others' loans. The transaction costs are low, for both the Bank and the farmers, with no requirements for regular meetings, and the repayment experience has been as good as that from the women's self-help groups. (The Hindu, 2005).

In spite of these emerging trends, however, the fact remains that most MFI credit products are unsuitable for financing on-farm investments; they are too expensive and too inflexible. Micro-finance staff, however, seem to be unaware that they may not be serving the farming market. The most immediate need is for MFIs, and for those who advise, finance, train and study them, to examine the issue more rigorously than has been possible in this short note, to find out if there is indeed a problem in their area, and then to address it.

REFERENCES

Asia Pacific Regional Microcredit Summit (2004) *Microcredit and agriculture; how to make it work*, transcript of workshop, Dhaka, Bangladesh

Bateman M, (2003) New Wave MFIs in south-east Europe: towards a more realistic assessment of impact, Small Enterprise Development, volume 14 number 3

Berkhoff A, (2003) Microfinance in Rural India: Linking Self-Help Groups to Cooperative Banks and Primary Agricultural Credit Societies, unpublished diploma thesis, IWW Universität Karlsruhe,

Coffey E, (1998) Agricultural Finance: Getting the Policies Right, Rome, FAO/GTZ

DiLeo P, (2003) Building a reliable MFI funding base: donor flexibility shows results, CGAP, Washington

Esipisu, Harper, Mohanty and Rao, (1998) *The New Middlewomen*, ITDG Publications, Rugby and Oxford and IBH, New Delhi

Grameen Bank, (2003) Annual Report, Dhaka

Harper, (1998) *Profit for the Poor, Cases in Micro-Finance*, ITDG Publications, London and Oxford and IBH, New Delhi

Harper M and Arora S, (2005) *Small Customers, Big Market – Commercial Banks in Micro-finance*, ITDG Publications London and TERI Publications New Delhi

Klein B et al., (1999) Better Practices in Agricultural Lending, Rome, FAO/GTZ

Micro-Banking Bulletin (2005) issue number 8, CGAP

Republique du Benin, (2005) *Programme d'Appui au developpement rurale*, Rome, FAO/IFAD,

The Hindu, (2005) Business Line, 9th May

Yaro M, (2004) *Loan Management*, National Special Programme for Food Security, FMARD & FAO, Rome

ACKNOWLEDGEMENTS

A number of people have made useful comments on this paper. I should like to thank them all, and in particular Nana Opare of Cranfield School of Management, DSK Rao of the Micro-Credit Summit Organisation, Susan Johnson of Bath University and Maria Pagura, Michael Marx, Jennifer Heney and Ake Olofsson of the FAO.