Proceedings of the 4th Biennial Conference
of the
African Farm Management Association

Farm and Farmer Organisation for Sustainable Agriculture in Africa

Edited by
Johann Laubscher

26 - 30 January 1998
University of Stellenbosch, South Africa

SUSTAINABILITY OF MICRO-FINANCE ORGANISATIONS IN THE 1990s: A BRIEF COMMENTARY ON ISSUES OF PERFORMANCE AND DESIGN

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1. Introduction

The sustainable growth strategy first emerged in the middle 1980s as an important offshoot of the environmental movement. Today it has become a defining parameter of development policy in multilateral and bilateral development institutions. The development objective is principally concerned with the promotion of economic growth subject to the side condition of minimising environmental degradation. At the same time, poverty alleviation emerged as a growing development focus in mid to the late 1980s and more clearly in the early 1990s. This effort was increasingly associated with the growth of the NGO movement as a private non-profit substitute for ineffective government policy to provide basic needs for the poor. While marshalling more energy and commitment than that associated with government programmes, the NGO initiatives grew increasingly dependent on international donor resources at the very time these resources came under severe budgetary constraints. This quickly led to the second sustainability movement, namely, the felt need to guide the NGO grassroots movement into micro-enterprise development and create financial NG0s from within the movement to supply financial services to these enterprises on a self sustaining basis. In so doing, this would presumably guarantee future micro-enterprise growth in the face of declining donor resources (Otero and Rhyne, 1994; Krahnen and Schmidt, 1994).

2. The sustainability debate in the micro-finance world

The contemporary debate in the field of micro-finance centres on the trade-off between outreach and sustainability in attempts to reach the poor and the near poor with financial services. The more one chooses to maximise short run outreach, the more one sacrifices sustainability and vice versa.

Another older debate concerns the type of subsidy that is acceptable and the type that is unacceptable to expand outreach. There is generally a broad consensus today that subsidising interest rates is an inappropriate subsidy mechanism since it distorts the structure of interest rates in the economy, thereby creating a misallocation of resources into lower rate of return activities. At the same time it reduces the solvency of financial intermediaries and discourages savings mobilisation. A direct subsidy to the institution itself to learn new lending technologies is considered a far more acceptable form of support, as long as there is a finite horizon for the subsidy and progress is evident. Indeed, this is currently the most commonly practised form of subsidy in the financial NGO world. The remaining issue here is how much and for how long?

Christin *et al.*, Yaron, and Schreiner have all contributed to the sustainability debate in recent years. Christin *et al.* underscored the issues surrounding financial viability for financial NGOs (Christin *et al.*, 1995). They identify three hurdles to be overcome on the way to full self-sufficiency. In the first level, where the vast majority of financial NG0s find themselves, financial NGOs cannot cover all non-financial expenses out of programme fees and interest charges. Non-financial expenses include salaries, administrative costs, and depreciation of fixed capital and loan losses due to default. This is the minimum spread required, yet most

financial NGOs and development banks lending to the poor are unable to meet this challenge and therefore need continued infusions of new funds to continue functioning. To move to operational self-sufficiency (i.e., level II) programmes must attain more efficiency, increasing client to staff and loan output to cost ratios, with a good control of arrears and default. Many of the "best practice" financial NGOs and micro-finance banks are at this level, such as the Grameen Bank (Bangladesh), K-Rep (Kenya), ACEP (Senegal), and FINCA (Costa Rica). Yet these institutions face a second hurdle before achieving full self-sufficiency (level III), namely, covering both financial and non-financial costs on a commercial basis. At this level subsidies are not needed and, more importantly, investors can expect a return on equity equal to what can be earned elsewhere in the private sector. Very few financial NG0s or development banks have reached this stage. The few who have are BancoSol (Bolivia), Caja de los Andes (Bolivia), Calpia (El Salvador), and BRI (Indonesia).

The key operating concept here is leverage, a programme's ability to use its resources secured from donors as a lever to generate yet further additional funds from outside commercial sources, whether from depositors or investors or through borrowing from banks. As Christin *et al.* illustrate, level one programmes generally have a leverage factor of less than one. Each donor contribution of $1 generates substantially less than $1 of additional funds from outside commercial sources, given their poor performance and being unable to cover their operational costs. Level II programmes can improve this performance to a leverage of one to one. Each donor dollar generates roughly one dollar of outside commercial resources, usually borrowing from banks or donors, now that they can cover their operational costs. Level III programmes (which through evolution have now become licensed institutions) are able to generate outside commercial funds in the order of 10 or 12 to one, attracting a larger number of depositors and investors through the issue of debt or equity instruments (Christin *et al.*, 1995, p. 11 - 12).

The composition of the portfolio naturally changes as a programme matures from level one to level three over a number of years to attain full self-sufficiency. At level one its clientele consists exclusively of the target group (i.e., the poor and the near poor) with small loan sizes ($100 to $300). By the time the programme has reached level three, average loan size has grown to $1,000 to $2,000 as the original clientele has grown, with repeat loans and new, and less poor clientele drawn into the programme. However, roughly one third of the portfolio is typically still committed to poverty lending. Therefore, $1 of donor resources invested in equity in level III institutions can leverage $4 more dollars for poverty lending (with a leverage ratio of 12 to one). Thus, as the authors argue, the key to self-sustainability lies in overcoming the hurdles that limit leverage (Christin *et al.*, p. 12).

The most strategic development in financial NG0s along the path to financial, and eventually private, profitability is the emerging role of repeat loans. This development creates loan quality for the client as a long run client-lender relationship creates value in the permanent line of credit available to the borrower. Over time the size of the loan increases, the term maturity lengthens and the interest charges decline as the lender saves on screening and monitoring costs. Finally, voluntary contract enforcement is enhanced, as the client-borrower will not want to jeopardise his/her reputational capital diligently earned through a large number of repeat loans with a specific lender. This reputational capital, generating improved loan terms and conditions, cannot be transferred easily to a new lender with whom the borrower has no credit history (Gonzalez-Vega *et al.*, 1997).

Therefore an important ingredient in the mix of elements that generate leverage is the growth of repeat loans and the "quality" or "value" of these loans in the institution's portfolio. For it

is this dimension of lending that reduces screening and monitoring costs and improves contract enforcement.

This dimension highlights the fact that sustainability should be considered a dynamic process and therefore defined in the long term. By the same token, poverty alleviation can only be maximised through organisations that achieve full self-sufficiency, i.e. organisations that remain viable to serve the poor in the future as well as the present. Put differently, programmes or organisations that engage in rapidly expanding one or two short loan strategies to maximise outreach to the poor in the short term but never achieve self sustainability, are far less preferable than programmes that may serve a smaller number of the poor and the near poor in the present, but expand carefully in the self sustaining strategy through a significant share of quality repeat loans into the future. The latter will be around in the future to service the poor. The former will eventually stagnate and disappear.

3. Performance issues

Yaron introduced the first comprehensive measure of sustainability with his subsidy dependence index, essentially measuring for a development finance institution (DFI) or a financial NGO the opportunity cost of its use of resources by market rates of interest (Yaron, 1992). This includes subsidies granted through contributions to equity as well as loanable funds priced below market rates and technical assistance and material supplied free or below cost. This measure has been applied extensively to a wide range of DFIs but much less so for MFOs.[1]

Schreiner has added the perspective of five stakeholders in financial NGOs or, as he labels them, micro-finance organisations (MFOs): society, customers, donors, MFO workers, and investors. Each stakeholder has its own goals and thus its own measure of performance (Schreiner, 1997). For society, good performance is having an MFO using its earmarked funds through donors to help the poor better than the next best development project could have done. For customers the goal (and performance) is measured through repeated use of loans. For donors the goal of good performance is leveraging public funds with market funds from depositors, commercial lenders and investors. For the workers of MFOs, good performance means keeping the good jobs of serving the poor. This means maintaining the real value of subsidised funds while paying market prices for other funds to continue receiving their salaries in order to serve the current base of customers with the current stock of resources. For investors good performance is measured through a competitive market rate of return on their investment in the MFO.

The issue brought out by considering the stakeholders in a MFO is that their goals (and measures of good performance) may diverge or be in conflict. Sterner illustrates this with a number of examples. Customers can gain benefits from a MFO (i.e. repeat loans) even with a performance which is bad for the other stakeholders. As a result donors stick with a MFO,

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[1] Stated simply, Yaron's SDI measures all subsidies (as described above) in the numerator and all revenue from lending (interest earnings on the loan portfolio) in the denominator as follows:

$$SDI = \frac{\text{Subsidy}}{\text{Revenue from lending}}$$

An SDI of zero (or negative) means that the DFI or MFO has achieved self-sustainability. An SDI of 100 percent indicates that a doubling of the average lending rate would be required to eliminate subsidies (Yaron *et al.*, p.141).

will not stop funding it because they can see the customers who lose but they can't see the number of poor who are cut out of the benefits which might be gained from a better use of the same scarce resources. Secondly, market leverage may fulfil the goals of only donors and customers but not the other stakeholders. It is only a means to an end for the other stakeholders. Thirdly, financial self-sustainability does not imply private profitability (which attracts investors). Workers will stop pushing for increased efficiency and growth long before an MFO attracts investors. Fourth, no single stakeholder measure is sufficient for self-sustainability. This is why some analysts argue that a MFO would fulfil the goal of society if it reached self-sustainability, private profitability, financial self-sufficiency or market leverage. Yet none of these is necessary for a MFO to be worthwhile for society as long as it is better than the next best development alternative.

In the end, the discussion of the sustainability of MFQs leads to the necessity of measuring the cost effectiveness of the use of resources in a MFO versus the next best development alternative to help the poor. Considering that it is too difficult to measure benefits directly, a cost effectiveness analysis is suggested whereby the ratio of social costs over output is discounted through a net present cost framework for the resources used over time (Schreiner, 1997, chapter 8).

4. The core determinants of sustainability

Regardless of the issues of measuring performance, the core determinants of self-sustainability in DFIs and MFOs are financial technology and organisational design (Gonzalez, 1994). The challenge is to lower screening, sorting and monitoring costs and to enhance the voluntary compliance with contractual obligations. This means that the contract between the lender and borrower must be incentive compatible, i.e. induce voluntary loan repayment (or eliminate wilful default).

One way of achieving this is through group lending with joint liability within the group. A group loan programme economises on screening and monitoring costs by delegating these tasks to the group. To some extent, these savings are reduced by the costs of training and group formation initially undertaken by the programme. However, once the groups are functioning, the groups do monitoring, collection of payments, etc. themselves. At the same time, a structure of positive and negative incentives is designed into these programmes. Positive incentives are the graduation into larger sized loans and new loan products for long standing group members as repeat borrowers with a good credit history. Negative sanctions are threats of instant termination of loan services to the group with the default by any single member.

There are many different ways these programmes delegate screening and monitoring and implement positive and negative sanctions. What is important here is to highlight the fact that innovative lending technology is a key instrument for programme or institutional viability.

Some DFIs and many MFOs have achieved best practice standards through individual rather than group lending technologies. In this case, cash flow analysis of the micro-entrepreneur stands out as a key field level innovative practice. Frequently the cash flows in the entrepreneur's household are documented, as well as those of his business. Cash flow analysis allows the loan officer to build up the balance sheet and income statements for the small business and makes it possible to tailor instalments to the business cash flow. Smaller working capital loans are emphasised, gradually increasing in size and term maturity through

repeat loans. Non-traditional chattel property is used for collateral, a fixed, frequent, repayment schedule is established to introduce disciplined repayments and facilitate monitoring, and the use of loan committees helps to ensure internal controls (< biblio >).

Two essential ingredients of all the best performing individual loan technology programmes are MIS software, to allow for instant loan tracking, and performance based remuneration schemes for loan officers. Given the high degree of discretionary judgement used by the loan officer in his household and business visits and the documentation of cash flow, bonuses that can double the officer's monthly salary are deemed essential as an incentive compatible contract design to ensure diligent work. Ninety five percent loan recovery is generally necessary to qualify for bonuses, after which the number and volume of loans disbursed each month are included as additional performance based criteria.

In addition to innovative financial technologies, organisation design is strategic to long run sustainability. Organisational design refers to the ownership and governance structure of DFIs and MFOs (Gonzalez-Vega, 1994). Whenever ownership is diluted or ambiguous, the governance oversight role is compromised and the monitoring of opportunistic behaviour by management is weak to non-existent. This, of course, can quickly lead to ineffective internal control mechanisms, fraud or unchecked incompetence leading to insolvency. Unfortunately, most DFIs and MFOs do not have clear, unambiguous owners. Donors and governments are not usually effective owners for financial institutions. Private ownership is in principle the least ambiguous, the most obvious example of real owners with something at stake (i.e., their own money), thereby guaranteeing a strong governance role over management. Nevertheless, private banks do fail in the real world. This is usually due to either moral hazard behaviour introduced by deposit guarantee insurance schemes, as the owner and the management of banks conspire, at the expense of the taxpayer, to gamble their way out of a financial crisis (Kaufman, 1995) or the vulnerability of weak institutions to macroeconomic shocks (Caprio and Klingebiel, 1996).

This is usually not the state of affairs in the DFI and MFO worlds. Here ownership is ambiguous, i.e. poorly defined. In credit-only MFOs a donor is nominally the owner, but is too distant to exercise day to day monitoring, thereby leaving the field level MFO manager with no effective overseer. In credit co-operatives, the clients are the owners. Unfortunately, this can lead to a conflict of interest between net savers and net borrowers in the same institution, a struggle usually won by borrowers, leading to borrower dominated institutions at the expense of net savers.

It is of interest to note the association of strong leadership in many of the "best practice" MFOs. It would not be inappropriate to refer to these figures as charismatic personalities. They were responsible for launching their programmes and felt a strong unwavering commitment to build them around a strong sense of mission that was communicated throughout the organisation. In effect, these people acted forcefully as surrogate owners who played a strong vigilant role over management to ensure growth and, eventually, sustainability.

However, charisma cannot last forever. Organisational design is required to incorporate rigorous governance structures into these programmes particularly after they have achieved a respectable scale of activity. Many mature best practice organisations are at present, after 7 to 9 years under their earlier poorly defined ownership and governance structures, in this phase.

5. Organisational transformation: products, processes, and mechanism design issues

From the early 1990s onwards a number of best practice MFOs based on group loans began to experience problems in managing their growth in order to maintain self-sustainability. On the one hand, they did achieve scale economies through expansion to 20 to 30,000 borrower-clients. This diluted their operational costs per dollar lent. Nevertheless, a drop-out phenomenon appeared in many of these programmes associated with the domino effect, i.e., one or two members falling into arrears, which in turn induces the remaining members of the group of five or six to also drop out. In short, the joint liability fails. Peer pressure and group solidarity are not sufficient to overcome the initial arrears problem.

Recent studies are now beginning to investigate group dynamics, hitherto a black box in group lending programmes. Paxton, in a recent study of group behaviour in a lending programme in Burkina Faso, has determined that the nature of the problem behind the initial arrears determines whether a domino effect will be triggered. She approaches this problem through a multiple stage estimation model built on the structure of a two-stage decision tree. A member with a repayment problem must first decide whether to resolve the problem independently or to tell the group. If and when the group finds out about the problem, peer pressure or group solidarity will then affect whether the loan is repaid (Paxton, 1996). If the reason for the first member's arrears is perceived to be legitimate (illness, suffered a setback in her business beyond her control, etc.) the remaining members will generally respond with group solidarity and temporarily make up for the shortfall in payment. However, if the reason for the lack of payment is judged unacceptable (taking a trip without making arrangements to repay; engaging in conspicuous consumption for a family occasion or other irresponsible behaviour) the remaining members will frequently refuse to pay her share, or their own, thereby causing the group to dissolve.

Another issue of group dynamics explored by Paxton was the matching problem; the mismatch that can occur in a maturing group lending programme when one or two members, after a number of subsequent loan cycles, encounter a matching problem with the terms and conditions of the group loan. In short, their growing business activity requires a larger or a longer term than that characteristic of the rest of the group. This heterogeneous demand within a homogeneously designed group loan product can cause dropouts as the member(s) with the unsatisfied demand moves out to search elsewhere. This issue has led many best practice group loan programmes to offer new products, i.e. individual loans to those more successful entrepreneurs able to graduate from the more uniform group product. (Gonzalez-Vega *et al.*, 1996).

The introduction of individual products allows group loan products to rapidly expand their volume of lending for those graduating to the upper tier of groups. However, this also introduces a need for a new kind of loan officer, one who can evaluate collateral and carry out cash flow analysis on individual clients, tasks that were not necessary for group loans with joint liability. Here the individual creditworthiness of group members was unimportant and therefore not incorporated into the lending technology. Therefore, using group loan officers for individual loans frequently created problematical results. This strikingly different loan philosophy and technical skill required recruitment of equally different loan officers with a banking background and sharply different views on financial services. Two cadres of loan officers were created in the same institutions that sometimes found it uncomfortable to work alongside each other. This generated organisational issues, such as the need for internal

control mechanisms and a more hierarchical administrative structure. In short, moving from a group to both group and individual loan technologies represents a marked change in both the technical as well as the organisational core of the institution (Gonzalez-Vega, *et al.*, 1996). This also carries implications for the governance role in the rapidly evolving institution. Debate centres around the degree of balance between the two constituencies that should be represented on the board. BancoSol in Bolivia, for example, has a rough balance on its board but its new chief operating officer is a former banker, a requirement of banking authorities before BancoSol could secure a banking license.

MFOs implementing individual loan technologies from their inception, of course, do not face this organisational challenge of introducing this product later in their evolution. The programme challenge facing these institutions is mission drift, allowing average loan sizes to rise so high that they progressively abandon their original target group of micro, low-income clienteles. At the same time, the expansion into small, as distinct from micro enterprises increases risk as loan sizes increase.

Also, these larger (i.e., small) enterprises draw on more sophisticated collateral, so loan officers will have to acquire more sophisticated collateral valuation technologies along with more extensive and longer term cash flow analyses than those used for micro clientele. The incentive structure for loan officer bonuses also becomes more complicated as larger loan customers, some with multiple loans, are drawn into the portfolio.

At the same time, these institutions still face a similar governance challenge to group loan programmes when they reach a stage of formalising their organisation with banking authorities. They also have to organise a governance board that effectively carries out the monitoring and disciplinary role over management that is associated with owners in conventional financial intermediaries.

Donor representatives frequently serve on these boards, as well as representatives from the international NGO responsible for launching the MFO. These representatives ensure that the more formalised organisation does not lose sight of its original target group. Unfortunately, it is not clear if donor or NGO board representatives can effectively monitor the day to day or week to week operations of management. The recent financial crisis of temporary insolvency in FINANSOL in Columbia, a recently formalised bank of "best practice" group loan origins, is evidence of these risks.[2]

Finally, the path to self-sustainability of MFOs eventually engages banking authorities in developing countries in a regulatory challenge. These institutions are not like conventional banks. The lack of private owners suggests that capital requirements should be higher than those typically associated with private commercial banks (i.e., 20 percent rather than 8 - 10 percent of risk adjusted assets). The greater volatility in the arrears and default profile of recently formalised MFOs also argues the need for a larger capital cushion. In addition, in not having private owners it is difficult for a MFO to quickly raise capital to meet a financial crisis.

Field level examination by regulatory authorities is complicated by the fact that MFO exposure to risk has very little to do with concentrated portfolios, the usual indicator used in

[2] The story of FINANSOL's financial problems has been discussed at length on The Ohio State University Development Finance Intemet mailing list during 1996.

banks. The quality of management is the principal Achilles heel in MFOs. Yet conventional examinations generally focus on portfolio indicators rather than directly addressing management competence. This is one reason, among others, why bank regulators should consider recruiting professionals with a good track record in the MFO world for their examining staff (Rock and Otero, 1997).

6. Sustainability: the forgotten issue at the micro credit summit

In February 1997 the micro-finance community and the international donor community held a worldwide conference in Washington, D.C., discussing the future for micro-enterprise financial organisations. Most analysts agree that of the roughly 7000 MFOs in the world, probably no more than two to three dozen would qualify as best practice organisations achieving or approaching self-sustainability. Thus, although the MFO sustainability strategy has been emphasised for the past decade, it has proven to be a difficult and frustrating path for most organisations in this field. Despite this evidence that greater effort is required for sustainability, the conference emphasised outreach and poverty alleviation, obviously important and legitimate objectives, but with little, if any, attention to sustainability issues. A proclamation at the end of the conference stated that 20 billion dollars needed to be spent on micro-enterprise finance in the next 10 years to eliminate poverty.

This comes to 2 billion per year; far in excess from the levels currently legislated for this effort by major industrial countries. The emphasis was largely on poverty alleviation through the finance of self-employment activities rather than employment or income generation in small enterprises. The World Bank has joined this effort through the Consultative Group for Assisting the Poor (CGAP) and has generated a powerful lobby for the one dollar a day measure to define poverty as a quick short run solution for this task. Yet it is not clear how one dollar a day (or 365 dollars a year) correlates with comprehensive field level studies of poverty. Furthermore, measurements of poverty should be country specific. One dollar a day in Bangladesh is not the same as one dollar a day in Costa Rica. Therefore, establishing a standardised universal poverty parameter is not very helpful. Poverty indicators should be established by country, as the elements that define poverty differ by country in their relative importance.

At the same time, it is not possible for most MFOs to undertake comprehensive surveys of poverty. This is a costly, time consuming exercise. Some have attempted to short-circuit this process by estimating their own idiosyncratic measures for the clientele they work with. Three shorthand measures are typically used: an income approach; a basic needs approach; and a net wealth approach. However, once these shorthand proxies are used, it is still not possible to determine the degree to which these proxy measures correlate with more comprehensive measures on a national scale. Currently the debate centres on the degree to which selected, cheap, proxy measures can be found that do, in fact, correlate well with the more comprehensive measures of poverty (Carvalho and White, 1997). To date there is still no consensus in this debate and, in the end, these measures will ideally be country specific. Finally, an important question remains. To what extent are MFOs the most cost-effective instrument to reach the poorest of the poor? To what extent could the highly subsidised volume of resources currently planned for this massive expansion of MFO outreach be better allocated to generate a bigger positive impact on the poorest members of society through health, education and other non-MFO projects? This question was not addressed at the conference since any serious discussions of this issue, and the cost effectiveness analysis required for this comparison, would necessarily dilute the micro-credit initiative.

7. Conclusions

The sustainability of micro-finance organisations emerged in the early 1990s as a movement within the micro-finance community to address the challenge of shrinking donor resources. This, in turn, has led to studies on the various levels of sustainability and the way in which MF0s change the growing consensus that emphasised the need to measure the efficacy of MFOs (and DFIs) in their use of donor resources. Hence, a subsidy dependence index emerged to measure the degree of subsidisation in these organisations. A consensus is also growing that the core elements behind MFO sustainability lie in innovative financial technologies and effective governance structures. Best practice MFOs have gone a long way in discovering effective financial technologies. Hôwever effective governance structures still have to be tested in these institutions as they pass through the threshold of semi-formal to formal financial institutions falling under regulatory authority.

Finally, it is pertinent to note that the recent micro-credit summit in Washington revealed a divergence between what donor institutions and practitioners believe. Some believe in the virtues of sustainability and that long-run outreach to the poor can best be served through institutions that achieve self-sustainability. Other donors and constituencies in the MFO world believe that a high level of near permanent subsidisation is needed to achieve poverty alleviation quickly, hence sustainability should be secondary to this task. Time will tell how this drama will play itself out in the MFO world.

POSTSCRIPT: WHERE IS THE AGRICULTURAL PRODUCER IN THE MICRO-FINANCE WORLD?

1. Background

As a postscript to this discussion of micro-finance, it is appropriate to ask where the farmer is in this world. I have previously addressed the issue of creating a sustainable supply of financial services for agricultural producers through agricultural development banks and the serious problems of organisational design, agency costs, and governance structures inherent in this challenge (Graham 1995). Therefore, I will not repeat that analysis here. Today I want to remain in the classic micro-finance world discussed in this paper to explore the issue of agriculture and micro-finance. As illustrated in the body of this paper, the innovations in best practice lending technologies (whether for individual or group loans) for rural and peri-urban non-agricultural borrowers largely address the problem of market failure in credit markets set forth in the information theoretic literature (Stiglitz and Weiss, 1981). It should be pointed out that these new financial technologies by best practice organisations were a far more positive approach to addressing market failures in financial markets than the simplistic interventions of the past through subsidised interest rates that distorted financial markets, weakened financial institutions' viability, and encouraged rent seeking behaviour by both borrowers and lenders (Yaron *et al.*, 1997).

2. New lending technologies revisited

The new lending technologies provided means for overcoming uncertainty about the ability and willingness to repay; reduced information asymmetries and the threat of adverse selection by lenders; ameliorated incentive problems and the threat of moral hazard (opportunistic) behaviour by borrowers; lowered borrower and lender transaction costs; and dealt with the problem of incomplete contracts (Gonzalez-Vega, 1997). This meant including signalling (between borrowers and lenders), screening, contract design that is incentive-compatible (with collateral and reputation capital), monitoring, contract enforcement mechanisms minimising losses, portfolio diversification, lower transaction costs, and performance based remuneration schemes for loan officers.

The best practice methods achieving impressive outreach as well as sustainability emphasise correct pricing (i.e. changing interest rates that cover their costs), designing products that match the demand from clientele in their niche markets, adopting procedures (i.e. technology) that lower borrower transaction costs (quick assessment and disbursement), monitoring (frequent repayment schedule) and a structure of incentives that reduces the probability of default through a commitment to a long term relationship (between borrower and lender) through repeat loans with improved terms and conditions.

3. Obstacles to micro-lending to an agricultural clientele

The question at hand is whether this technology, which is well adapted for peri-urban and rural non-farm borrowers, can be transferred to agricultural lending. The obstacles are formidable. Gonzalez-Vega summarises the most obvious as the following (Gonzalez-Vega, 1997):

(1) *Greater Heterogeneity* among agricultural borrowers in human capital, entrepreneurship, soils and climate, location, access to water, etc. compared to non-

agricultural rural and peri-urban micro clientele. Therefore screening becomes more expensive.

(2) *Greater impact of erogenous variables on output* (repayment capacity). It becomes more difficult to determine if arrears are due to self-interested opportunistic behaviour by the borrower (moral hazard), or due to erogenous events beyond the borrower's control. Hence monitoring becomes more expensive.

(3) *Greater spatial dispersion:* This typical feature of agricultural borrowers leads to higher lender screening and monitoring costs and higher borrower transaction costs which, in turn reduces the value of the loan. Lesser density of clientele makes it more difficult to dilute the fixed costs of lending over a larger number of clients and it creates higher costs of peer monitoring for group loan programmes. In short, it reduces the incentives to form groups.

(4) *Seasonality of harvest cycles:* This leads to a reduced scope to adjust the terms to loan maturities with an ageing borrower-lender relationship (a popular feature for non-farm clientele) and, it creates lumpy cash flows that do not permit frequent instalment repayments which help to monitor borrowers (another favourite feature for lenders serving urban and peri-urban borrowers). Therefore, the monitoring of agricultural borrowers requires visits that are more expensive.

(5) *Higher variability of outcomes:* This is due to weather and other farm related factors. This creates a greater risk of default, even for honest borrowers willing to repay, therefore generating larger losses for lenders.

(6) *Covariance of incomes:* Droughts, widespread pests or crop diseases across farming areas, etc. can introduce higher covariant risk of all borrowers failing at the same time. Systemic risk is more likely in agricultural than in non-agricultural lending where idiosyncratic (i.e. individual) risk is more common.

Covariant income risk means lenders incur higher risk diversification costs in agricultural areas. The lender must operate in wider geographical space incurring dispersion costs as well as agency costs through a more decentralised network.

4. Elements for successful lending to micro clienteles in agriculture

Prior to outlining the features for successful micro clientele lending in agriculture, it is instructive to first list the unsuccessful techniques used in the past to lend to agriculture. The old small farmer lending programmes only lent for agriculture, ignoring the non-farm and off-farm income generating activities of the farm household. Secondly, farm budget models were used generating inflexible formulas for lending. Thirdly, there was little individual tailoring of loan supply to meet individual demand. Fourthly, there was no recognition of the probabilities of systemic risk in projections of future income streams growing out of project lending. The probability of droughts and damaging rains, etc. was not incorporated into the cash flow projections for the future. Fifthly, there was no recognition of the fundability of finance, i.e. the fact that credit granted for agriculture could be easily diverted to other uses. Finally, there were no performance based bonus remuneration schemes for loan officers in these programmes. Lending was carried out through inflexible farm budget formulas in which the individual insights, knowledge and initiative of the loan officer were minimised. In short,

there was no incentive structure to reward initiative and accountability. A civil servant mentality prevailed in these programmes.

In the light of the above counter-productive features of the old small farmer program lending practices, the elements of more successful lending become more apparent.

(1) Micro-finance lenders should address the demand for financial services from *the overall household-farm unit.* Micro lending should recognise the property of fundability by evaluating the totality of cash flows into and out of the farm-household enterprise.

(2) Micro-finance lenders should *not lend just to agriculture alone.* Lenders should recognise and rely upon the strength of the income diversification strategies of the household including migration, off farm employment, and non-agricultural activities. In effect, the lender is delegating portfolio diversification decisions to the household and building on these for his lending strategies. This also addresses the seasonality issues and concentration risks in lending for agriculture alone.

(3) There should be substantial flexibility for *individualised screening* and contract design in lending to micro household-farm enterprises. In projecting for future income flows to repay loans, the probability of systematic risk should be properly weighted for the portion of agricultural lending in total household lending.

(4) Selected livestock enterprises such as *poultry raising and dairy activity* are preferable agricultural projects for lenders since they constitute enterprises with *uninterrupted cash* flows, facilitating the monitoring of borrowers through frequent repayment schedules (the classic micro-finance monitoring device). Long gestation crop activity is the least attractive activity for micro lenders.

(5) *Higher interest charges* are more feasible for non-agricultural activities than for agricultural activities. Nevertheless, the total weighted interest charge for all activities must be sufficient to cover all costs.

(6) Micro-finance loan programmes entering an agricultural clientele must draw in loan officers with an *agricultural background and training,* in addition to their broader experience of micro lending practices. Performance based remuneration schemes should be emphasised and incorporated into the reward structure of these loan officers.

In closing, it is pertinent to note the virtual absence of micro-finance activities in agriculture. The successful best practice micro-finance programmes and organisations throughout the world have built up their ample portfolios through lending to the urban and peri-urban poor, not to an agricultural clientele. This is not surprising when one notes that the classic lending technologies for these programmes described in this paper and postscript do not lend themselves easily to agricultural activities. Nevertheless, some programmes are tentatively moving into this hitherto neglected market. However, even the most successful initiative in this area (Calpia in El Salvador) allows agricultural lending to reach only 25 percent of its total lending to the poor and the near poor. Any programmes moving into this new untested market for micro lending should recognise the potential for higher losses than those associated with their non-agricultural lending. Although this complicates the drive for self-sustainability in these programmes and organisations, the guidelines laid out in this postscript should help facilitate these initiatives.

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