



**Paving the Way Forward for Rural Finance
An International Conference on Best Practices**

Lead Theme Paper

Theme: Innovations in Rural Finance

Innovative Products and Adaptations for Rural Finance

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I. Executive Summary

The paper is about innovations in rural finance. It presents financial products and innovations which improve the management of these products. It gives some details on products designed to finance farmers, such as agricultural investment loans or loans against warehouse receipts, and on products geared to serve rural households in general that include adapted microenterprise-loans, savings and remittances. It explores innovations in processes based on new technologies like credit scoring or the use of handheld computers in loan analysis and design.

It reviews the characteristics of households and agricultural enterprises as well as the conditions for sustainable development of the financial institutions that serve them. Innovations are evaluated based on their contribution to expanding the frontier of rural finance, either by reducing the transaction or risk costs of the market participants or by increasing the investment capacity of the clients who use them. Based on experiences gained with innovations in different rural settings, suggestions are given to donors, governments and to the providers of financial services on how to decide which innovations to pursue, and on how best to support the process of innovation.

Innovations are exemplified mainly with cases from Latin America and Bangladesh, and to a lesser extent, examples from other countries. Some financial institutions (including microfinance entities) in Latin America and in Bangladesh have been forced to innovate in order to cope with increasing competition. They have been able to innovate successfully and also to undertake failed experiments in part due to the existing support of donors. The conditions for innovation in financial services may differ from those found in rural areas of other continents. Of course, conditions in rural Latin America differ strongly from those in Bangladesh. Most rural areas in Latin America are relatively sparsely populated and depend heavily from agriculture, while rural areas in Bangladesh are more densely populated and thus economically diversified.

In the following chapters, some observations about the usefulness of financial services and about the rural economy are given as an introduction to some innovations which are relevant for rural areas. Examples of innovations are separated into four groups: a) innovations in lending, b) innovations in savings, c) innovations in remittances and d) new technologies which affect several products (such as handheld PCs and Automatic Teller Machines). Some relevant issues on how to design and introduce innovations are then discussed. The paper concludes with a list of suggestions for institutional stakeholders interested in launching or promoting innovations, that is, financial institutions, donors and governments.

To facilitate the reading, references on useful literature and other notes can be found at the end of the document.

II. Innovations in Financial Services

Financial services are useful. They can generate value for the clients who use them. In general terms, their main value is that they make money available for investments or for current expenses at the time and place they are required. Credit, savings and remittances allow the families and enterprises to improve their liquidity management, to finance investments which help them

diversify and or enlarge their income sources, to respond to lifecycle events such as marriage and birth, and also to emergencies which arise from illness, death, natural or economic catastrophes¹. In rural areas they additionally have an important welfare role as they allow smoothing the funds required for daily consumption in the face of seasonal income.

Financial services are useful to all rural groups regardless of their income. Financial services related to business have an implicit ratio of expense and revenue. Financial services related to consumption are of a more subjective nature, while financial services for emergencies reduce losses and can be a crucial element in survival or avoidance of sustained impoverishment. Families and enterprises making use of financial services benefit if they can generate additional income or reduce their costs by using them. In these cases, the use of financial services generates a gain that arises from the net income generated after the deduction of their total costs of using them.

Innovations create additional value² if they reduce households' and enterprises' transaction costs of access to financial services. They also create value if they facilitate larger investments by lengthening term structures or if they create products, primarily loans, improving client's economy by refining the valuation processes. Reducing the cost of access to financial services benefits clients directly; the possibility of making larger investments improves the income and economic capacity of clients; better valuation processes³ facilitate larger loans to existing clients and engage clients who would not be served otherwise.

The supply of financial services can be sustainable in the long run only if providing them is profitable for the entities which provide them⁴. Profitability allows institutions to invest and grow, supporting their outreach. Profitability is achieved when the total income generated from clients using financial services exceeds the total costs, i.e. financial costs, operational costs and risk costs, by those who provide them.

Innovations in financial products are valuable for the institutions adopting them if they increase their profitability by reducing their costs or increasing revenues. Revenues can be increased by an innovation that improves the institution's competitiveness by serving new segments or by generating additional income in their business with existing clients.

Financial institutions are most likely to develop and provide innovations if they have to compete. In competitive markets institutions have to continuously improve the quality and pricing of their services in order to protect or increase their market share. Competitive institutions are thus always innovative.

However, innovations can be a source of significant costs and risks for their sponsors. Innovations that fail may have significant negative consequences for an institution's reputation and performance if they are large investments that are unproductive or even counterproductive⁵. Innovative institutions will thus not always be competitive.

There are two types of innovations in financial services: 1) completely new products which match the characteristics of the intended users, and 2) improvements or refinements in the procedures used to deliver the services or to design contracts and achieve their enforcement. Innovations can include adoption or adaptation of products already in use in other countries or

regions. Innovations can also be changes to existing products such as supplier loans which are used widely in some countries.

III. The Rural Economy

Rural areas in all countries are immersed in a process of structural change. Agriculture is increasingly losing importance, but is still important for employment and income. This development is caused by the emergence of alternative income sources, both within countries and outside them and by the long-term evolution of international prices. Prices for agricultural products tend to decrease while the costs of inputs tend to increase⁶. Although a large share of the economically active population in developing and transitional countries is still active in agriculture, its importance as an income source shows a steady decrease worldwide, with significant differences between continents, countries and specific areas within countries.

Table 1 Relative importance of the economically active population engaged in agriculture as percentage of the total

	Year			
	1961	1980	1990	2001
Africa	79%	69%	63%	57%
Asia	76%	67%	62%	56%
Eastern Europe	50%	28%	22%	15%
Latin America & Caribbean	48%	34%	25%	19%

Source: FAO; FAOSTAT Database in: <http://apps.fao.org/page/collections>

These trends show the depth of rural structural change. Together with large migration from rural areas, they translate into significant changes in the economies of rural families, which increasingly make their living from non-agricultural income. As indicated by table 2, which presents data from Nicaragua as an example, families with smaller plots of land depend more on income from wages while those with larger plots make their income mainly from agriculture including livestock.

Table 2 Income sources of Nicaraguan farmers by the size of their plots

	Micro <1.5 ha.	Mini 1.5-3.5 ha.	Small 3.5-15 ha.	Medium 15-35 ha.	Large >35 ha.
Agriculture	32%	57%	68%	57%	39%
Livestock	0%	0%	10%	25%	46%
Wages	50%	22%	13%	6%	4%
Remittances	4%	9%	5%	2%	1%
Commerce, etc.	14%	12%	5%	11%	10%

Source: FAO 1996

The rural demand for financial services can roughly be divided into two segments, based on different orientation and perspectives:

- The “agricultural segment” is composed of farmers who make most of their living from agricultural activities and who expect to continue to do so in the long run. These farmers have to be able to embrace technological innovations which allow them to stay profitable in an environment in which technological and commercial change improves productivity and influences prices. These farmers, many of whom have larger farms, specialize in a few agricultural enterprises and use financial products suited to the characteristics of their activities in increasingly competitive markets. Within this segment, important differences in access to financial services can be observed: Larger farms usually use services provided by formal financial institutions or by capital markets. In contrast, medium size enterprises usually cannot tap capital markets and in many countries face significant constraints in gaining access to the formal financial sector.
- The “transitional segment” has its main income source outside agriculture or is significantly reducing the importance of agriculture in its overall economy. Most households in this segment, a significant part of the rural population in developing countries, have several income sources, agricultural and non-agricultural, thus diversifying their risks and managing seasonality. “Generic” financial products help this group in their transition out of agriculture. Lower and medium income families included in this segment are usually not served by formal financial institutions, or if served, only to limited extent. Instead, they use the financial services of informal providers like traders, processors of agricultural produce or moneylenders.

IV. Innovative Products

Innovative products can create additional value and expand the frontier of finance if they:

- create access to the formal financial system by groups previously without access;
- reduce transaction and risk costs of the financial services provider or of the clients or both;
- increase the term of loans and of savings, and/or
- provide larger loans to clients by refining valuation processes.

Measures of the contribution of these types of innovations can be considered the main performance indicators in financial progress. These include volume as reflected in number of clients and size of portfolios; reduction of providers’ costs or of the transaction costs borne by their clients; and the size and time horizon of loans issued show the extent of their contribution to the expansion of formal finance.

Today, many institutions worldwide are improving their financial services to better serve rural areas. This results in a variety of different approaches which cannot be covered in the frame of this document. In the following some financial innovations will be discussed which are considered to be relevant given that they are promising or that they are being considered by many institutions. After some innovations in lending, innovations in savings and remittances as well as in the area of automation will be described.

V. Innovations in Lending

The usefulness of innovative loan products can be measured by their profitability for providers and for clients.

Clients making use of loans bear direct costs, transactions costs and risk costs. The direct costs are the amounts paid directly to the financial institutions in the form of fees and interest. Transaction costs include transportation costs, the opportunity cost of work foregone on farms and in enterprises, and the costs which arise when gathering the required paperwork or when obtaining somebody's signature as guarantor. Risk costs arise for borrowers if they fail to fulfill their obligations in time as a consequence of unfavorable conditions and when they fail to repay on time and have to deal with the consequences of the lender's collection efforts which harm their reputation. Lending is profitable for them if these costs are perceived to be reasonably less than the expected additional income or the losses incurred, relative to alternative possibilities. Innovations which reduce the total cost of lending for clients increase the demand for loans and expand the frontier of finance.

Providers likewise incur financial costs, transaction or operational costs and risk costs⁷. In competitive markets they are constantly forced to improve the quality of their services in order to protect or increase their market share. Innovations which reduce their overall costs can directly improve their profitability or increase their competitiveness if savings are passed on to clients in form of lower rates and fees. Innovations which increase the debt capacity of clients and provide loans on more favorable terms (e.g., amount, maturity and interest rate) enhance the quality of service while reducing risk costs.

A. Multi-purpose Rural Credit Products

Multi-purpose rural credit products are geared to serving the large portion of the rural population undergoing structural change and diversifying their income sources. This sort of credit is similar to the urban micro-lending products that focus on the household as the core borrowing unit, with a specific subset, which are loans which are granted or rescheduled in emergency situations.

1. Working Capital Loans for Rural Family-Enterprises

The following describes the rural credit products of two regulated microfinance institutions, Caja Los Andes in Bolivia and of Financiera Calpiá in El Salvador.

Both institutions have introduced credit products for rural households, which allow tailoring payment plans to the expected cash flows of individual households⁸. When assessing each client's payment capacity, the future cash income and expenditures of their basket of different economic activities are projected, as are the family's expenditures, to determine payment capacity and to define a payment schedule. In contrast to urban microlending, rural lending

procedures in both institutions take into account that clients may have substantial income from agriculture and that they usually have a larger number of income sources than urban clients⁹.

Urban loans are usually repaid in multiple installments, and some rural loans are also of this type. However, rural loans generally have a variety of repayment schedules which include bullet payments (i.e. a single payment of interest and principal at maturity), loans with monthly payments of interest and repayment of principal at maturity, or even loans in which the timing and size of payments are not constant but irregular, based on the borrower's projected seasonal income pattern. These products make it possible for Los Andes and Calpiá to lend to clients with seasonal incomes and to give them larger loans than would have been feasible using the traditional microenterprise lending technology which considers only recurring monthly income when determining payment capacity.

Rural lending requires greater effort to assess and design loans than in urban lending due to the greater complexity of rural households' economies which arises from seasonality and diversified incomes. This and geographic dispersion increases administrative costs. Both entities recover part of these costs through higher disbursement fees on rural loans¹⁰.

Clients value their loans from these institutions. Several surveys confirm their satisfaction with products that are adapted to their cash flows. The value of loan design can be measured by the two main measurements for credit risks which these institutions use and which show that rural risk costs are not significantly higher than in urban lending. The average arrears rates¹¹ of the urban and rural portfolios of Financiera Calpiá¹² over a period of 5 years are 3.3% for the urban portfolio and of 3.6% for the rural portfolio. Total write-offs during the same period did not show any difference at all, averaging 1% for both rural and urban portfolios¹³.

SafeSave has recently pilot-tested in Bangladesh a new rural lending product, which allows flexible repayment of loans: When clients apply for a loan they specify the desired maturity (which may not exceed 12 months) and pay the interest up front. Once disbursed, clients are free to pay whatever amounts they wish to SafeSave's collectors, who visit clients at regular intervals (daily, weekly or monthly). As repayment capacity is apparently not being assessed by SafeSave, loan amounts are very small, but can be increased in subsequent cycles if clients repay as agreed. While risk may be minimized through this approach, it should be noted, that SafeSave may face default when loan sizes grow beyond clients' repayment capacity¹⁴. So far, one year after the initial introduction of this product, experience seems to be encouraging for future expansion.

These lending products differ strongly from those used by MFI's in other countries. They certainly stand in strong contrast to ASA's standardized loan product which has allowed that institution to reach out to over 1.5 million customers end of year 2002 at a relatively low cost¹⁵.

These institutions do not finance start up businesses, but some clients have used their loans to finance their working capital and that invest their own funds in new enterprises like small shops or to acquire transport vehicles which they use to further diversify their income.

2. Emergency loans

Emergency loans are very highly valued by rural clients. Access to credit in emergencies is an important means of dealing with hardship and stabilizing the household economy of low-income families. Emergency loans are traditionally provided by family members, friends, not to mention

moneylenders. Emergency loans can be used for individual emergencies such as accidents, illnesses or other individual events and disasters caused by natural catastrophes like earthquakes or flooding.

Clients use existing products to cope with emergencies if they have access to short-term all-purpose loans in which the use of funds is not restricted in the lending contract. They may also use their savings. To support their clients in emergencies, some institutions located in areas with frequent natural catastrophes help their clients obtain insurance, and some have also developed specific emergency loans¹⁶.

In Bangladesh, a country frequently affected by floods, microfinance institutions have developed several strategies to cope with such recurring disasters as described in detail by Brown and Nagarajan in 2000. The strategies deal with emergency situations in three different phases: before, during and after the event occurs. Financial arrangements for emergencies are specifically designed for use during these phases: preparedness products and arrangements to be used before the emergency occurs, relief products and arrangements for the phase during the emergency to cope with the immediate effects, and reconstruction products and arrangements to re-establish economic activity and to rebuild housing. The products and arrangements used in Bangladesh in each of the three phases are summarized in the following:

- Preparedness arrangements and products: Floods can be predicted quite accurately, enabling institutions to design their loans so that payments during the flooding season are reduced or avoided. In addition, some entities actively promote investments which may help clients to better deal with floods, such as construction of flood resistant houses and shelters. These investments are financed in Bangladesh by loans from MFIs, some of which draw on subsidies from the state.
- Relief arrangements and products: Most institutions provide grace-periods for loans of clients affected by disasters. In addition, some institutions give small and standardized loans during this critical phase, which help clients cover basic needs. Loans issued during this phase have to be disbursed very fast and may also require a grace period before repayments start. Some lenders have offered this type of loan at reduced interest rates, while others apply commercial rates. So far in Bangladesh, both approaches have created portfolios of a quality similar to the lenders' overall portfolios.
- Loan products for reconstruction: After a disaster occurs, some clients may face the challenge of reconstructing their homes and businesses. Some institutions, especially those which allow clients to have more than one loan outstanding per household or those that offer their client lines of credit, simply offer their regular products. Other institutions with less flexible lending procedures that face a demand for reconstruction loans may have to introduce specific products to finance such investments.

Institutions which have dealt successfully with catastrophic events have done so by determining the impact of the event on each client's situation and by establishing policies to deal with different types of clients. In all cases, successful institutions have considered their clients' repayment capacity in the design of their preparedness, relief or reconstruction products and also in determining whether rescheduling of existing loans is appropriate. They have done this either by generally restricting the amount of loans to small loans within the reach of their target groups

or, as in the following case of Financiera Calpiá, by evaluating each client's individual payment capacity.

Financiera Calpiá in El Salvador dealt with two catastrophes in a short period of time: torrential rainstorms associated with Hurricane Mitch in 1999 and earthquakes in 2001. While arrears rose significantly after these events, Calpiá was able to keep arrears and write-offs in the months and years after these events at a relatively low level¹⁷. In order to maintain positive credit relationships, clients were divided into four groups:

- The first group were clients who could not repay because their asset base was destroyed. Loans of this group, which was the smallest of the four, were simply written off and clients were referred to external grant programs sponsored by USAID.
- The second group was considered to be able to get back on their feet if support was provided. Their loans were rescheduled and they gained access to additional recovery loans at reduced interest rates. If applicable, families belonging to this group were also referred to grant programs.
- The clients in the third group were not directly hit by the catastrophes but faced a reduced demand for their services. Their loans were rescheduled at a reduced rate of interest and given a grace period to re-establish their business.
- The fourth group was considered not to be affected at all by the catastrophes and was given no special treatment.

At the institutional level, natural disasters have forced many institutions to set up programs to cope with the consequences of such events. Emergency loans for agriculture are common in rich countries. In the USA such loans are made in counties after an emergency declaration by the competent authorities. They are disbursed to finance repair or replacement of damaged or destroyed farm property (real and chattel) and supplies lost or damaged as a direct result of a natural disaster.

While some institutions have developed strategies to deal with natural disasters affecting large groups of clients, only few institutions have set up specific arrangements or loan products to deal with individual emergencies. Most institutions have in fact been reluctant to offer emergency loans for individual emergencies because hardships may reduce the client's payment capacity and thus increase credit risk.

Given the importance of financial mechanisms in dealing with emergencies, it would be desirable if providers of rural financial services could more systematically promote specific arrangements and products that would respond to emergencies. The framework used by Brown and Nagarajan for the phases of preparation, relief and reconstruction can provide valuable guidance in designing such products and arrangements.

B. Products to Finance Agriculture

While generic loans geared to lower income rural households are based on the existence of different income sources, agricultural loans finance production, processing and marketing of enterprises specialized in agriculture. Agricultural loans may be useful to medium-income clients and also for lower-income clients associated in cooperative or other economic organizations.

Lenders financing agriculture have to consider in detail the nature of production and market risks, especially when repayment is closely linked to changes in production and prices of single commodities. Loans for tractors and other farm machinery usually carry lower risk than those financing specific crops on highly specialized farms.

To lock in prices or hedge price risks of tradable commodities, futures contracts or options may be used. Such contracts usually involve minimum quantities of produce that are larger than those produced on a small farm. Hence, they are more suited to large farms. Small farmers may be able to participate through support from private or state entities that bundle their production and contract with brokers at commodity exchanges in London, Chicago or New York, to name the most important. An example of such systems, which are still very incipient, was recently developed in Mexico that allows smaller farmers to access futures markets. It will be interesting to follow this experience and others which may develop¹⁸.

Even if futures contracts are not being used by clients, futures markets may be useful for lenders as they provide information about the probable evolution of prices in the short term (one to two years, which is usually the scope of futures contracts).

To deal with production risks, lenders financing agriculture may encourage their clients to use index based insurance, which is currently being developed in some countries.¹⁹ Index contracts contain features that make it more feasible than classic all-risk crop insurance, which always requires subsidies that are usually uneconomic. Index insurance gives relief based on climatic factors that affect agricultural production, primarily rainfall. Because index insurance is not linked to the individual production of each farmer, institutions providing index insurance can avoid moral hazard while the costs of verification are significantly reduced, thus reducing premiums.

Futures contracts or index based insurance will in most cases be generated by institutions other than those that provide credit²⁰. Promoting their use or selling them to agricultural clients may help to improve the management of specific agricultural risks for both clients and lenders. Some large farm lenders use commodity options and futures as a form of portfolio insurance: if upsets occur, borrowers' repayment capacities are reduced and loan losses may to some extent be offset by gains on options and futures. Lenders are likely to benefit more directly if their agricultural clients use these mechanisms and designate the lender as the beneficiary who will receive the indemnity or gain on futures or options contracts. Lenders may in some cases help their clients to bundle their produce to achieve minimum contract volume or by facilitating insurance contracting.

The required depth of market risk analysis increases with the term of the loans. While short term loans may be designed by projecting seasonal price trends, long term loans have to take into consideration the possible impact of long-term developments.

1. Long Term Loans for Investments

Some important types of investment that improve agricultural production and productivity take several years to recover their costs. Land leveling and irrigation facilities, for example, are quite costly relative to the annual profit they produce. Tree crops may not yield for three and six years after planting. Farm machinery constitutes major expenditures on many farms. Likewise, investments in processing and in marketing infrastructure are important in adding value to raw

materials and in creating rural employment. These sorts of investments are commonly funded by term loans in developed countries, but may be difficult to obtain in poor countries and transition economies. The complexity and the risks of with long-term investments vary accordingly.

In principle, term loans to finance investments face higher risks than short term loans because the probability of an adverse event is more likely as maturity increases. Without suitable collateral and an adequate legal framework, this type of loan poses probably the greatest complexity in agricultural finance. The main risks affecting long-term investments loans are related to the environment in which the investment occurs (i.e. the markets and the conditions for production), as well as to the management capacity of the clients themselves.

The risks associated with long-term loans are also influenced by the purpose of the investment. An investment to increase the volume of existing operations (e.g. by expanding a herd) can be considered as a lower risk than an investment in a new enterprise or for adoption of a new technology. An example for the latter would be an investment in processing facilities to increase the degree of vertical integration of a farm by processing produce, which was hitherto sold unprocessed (e.g. a cheese factory). The experience of the client in managing the investment makes a crucial difference between the two options. The setup and management of a cheese factory by somebody who has never done this before is clearly a higher risk than the management of a larger herd by an experienced owner.

While working capital loans to smaller enterprises are usually based on the borrower's current income, term loans are often based at least in part on the additional income to be generated by the investment itself. This is necessary because the investment can have a profound effect on the structure of costs and output of the farm.

Institutions making long-term investment loans have to deal with the considerations outlined above. Loan appraisal has to assess all aspects of the borrower's business – and often businesses because the household may have several distinct activities underway. What will be the performance and risks of a long-term investment loan? In the following some relevant issues (prices, the conditions for agricultural production, the clients' management capacity and the value of collateral) are discussed.

Future development of prices:

Long-term investments face a high risk related to future trends in markets and prices. Lenders appraising long-term investments should consider the possible impact of deregulation of markets not yet been liberalized. Technological trends should also be considered as these can affect prices significantly. An example is the introduction of coffee-harvesting machinery in Brazil, which has reduced production costs in that country significantly.

Issues related to agricultural production conditions:

Agricultural production is affected by problems with climate and the incidence of pests and diseases. Farmers have always searched for ways to manage the adverse effects of these factors, and an important part of investment in agriculture is devoted to managing these risks. Use of improved inputs and investments for instance in irrigation, in

greenhouses or in stables and barns improve the conditions for agricultural and livestock production and stabilize productivity.

While the incidence of pests and diseases can in most cases be managed at some cost, many climatic factors affecting production cannot be controlled. In these situations, long-term investments have to take into consideration the potential effects of climatic variations using historic data. Index insurance may offer a valuable risk management technique that can reduce the risk of default.

The clients' management capacity:

Farm management capacity and skills are decisive determinants of the risk incurred by a lender providing long-term investment loans. Management capacity involves several elements which have to be considered in loan appraisal:

- The first important element is the technical capacity of the client to manage increased production or an investment in vertical integration. The client and the client's employees' technical performance is crucial, especially in the case of loans for enterprises in which he or she has no or only limited experience. If a client does not have the technical capability to manage an investment, the lender may have to impose conditions requiring training or hiring competent personnel.
- A second element is the capacity to deal with new market partners. Lenders should assess where the production will be sold and where the required inputs will be purchased. A long-term investment may result in a significant change in those with whom the investor will have to do business. He or she might have to deal with larger firms or even firms abroad to acquire inputs or to sell produce. Depending on market structure, there may be many or only a few buyers for the produce and/or suppliers for the main inputs. The smaller the number of potential market partners for a certain product or input, the greater the importance that the client undertaking the investment establishes contact with suitable market partners and that he or she even signs contracts which will secure the operation of the investment. This is especially relevant in the case of products which are exported or imported.
- A third element is administrative capacity. Clients making important investments may have to improve their administration and the internal organization of their business. This is especially the case when clients acquire raw materials from other farmers, as in the case of a milk processing facility that cannot be run profitably if it relies only on the client's production. In such cases, records have to be kept on the quantities and quality of milk delivered by other suppliers in order to process payments. The more complex a business becomes, the greater the importance of its internal structure for planning, execution and control, including accounting systems that control costs and revenues and facilitate sound management.
- A fourth element is the corporate governance of the client's business. Governance of large firms and cooperative is an important source of risk. When farmers group together to undertake a large investment, issues arise about the distribution of power and the power to borrow. In addition, the performance, stability and soundness of the enterprise have to

be analyzed and the reputations of its representatives have to be verified. Also, the incentives of the different constituencies -- owners, employees and clients – have to be examined.

Value of collateral

The value of collateral for long-term investment loans is an important issue. While enforceable mortgages on land for which there is secure title and a high commercial demand (as for urban plots or easily accessible high quality irrigated land) may be unproblematic, these conditions do not often characterize the situation in rural areas in many countries. Collateral can be problematic. Problematic collateral will have a negative impact on the costs of lending for the borrower, as lenders will have to face higher risk costs and also higher costs in order to properly assess the clients' willingness to pay. The value of collateral in term-lending is mainly affected by two issues: the quality of the legal framework with respect to secured lending and of the institutions participating in the enforcement of applicable laws²¹ as well as the value of the good itself.

Constraints in the legal framework may limit enforceability

In developed countries, term loans are usually secured by real estate. For longer terms loans (10 -30 years), the collateral could be the land, a long term lease, or some other land right. However, major problems in the legal framework governing mortgages in developing countries mean that rural land and small plots of land often cannot serve as collateral for loans. In addition, restrictive legal systems that confine collateral to titled land mean that many rural operators cannot use their non-titled land rights as collateral. In developed country rural areas, medium term loans of 4-7 years are often secured by heavy mobile equipment and for fixtures installed on real estate (e.g. grain driers, roasters, silos, refrigeration equipment). However, major problems in the legal framework governing the use of movable property as collateral in most developing countries often makes such property useless as collateral.

Many farmers cannot mortgage their land because land markets are underdeveloped, because lack of title or agrarian reform legislation prevents them from doing so, or because they are renting the land they till. In these cases, only their movable property can serve as collateral. If the legal framework for lending secured by movable property is weak, leasing may be an attractive way of financing farm equipment. The client makes a down payment but the asset remains the property of the lender, who receives a leasing fee. When the contract expires, the equipment usually becomes the property of the client. During the life of the lease, repossession in case of default can be achieved with little or no legal constraints, reducing the lender's costs and risk. As in the case of machinery used as collateral, the usefulness of these arrangements depends strongly on the maintenance of the equipment and on the ability of the lessor to repossess and sell the equipment in the event of default on the lease payments. Tax regulations may increase the cost of leasing significantly, making them more expensive than regular investment loans.

The market value of collateral may diminish in time

Tree crops have limited lives and vineyards, tea stands, machinery, buildings and other fixed assets may deteriorate if not properly maintained. Their market value may also deteriorate as a consequence of adverse developments in product markets, as demonstrated dramatically by

coffee plantations in the wake of the current slump in coffee prices. This effect is less important if an asset can be used for different purposes, as is the case for tractors. This risk may also be reduced by leasing and by service contracts with providers of equipment²². Banco del Pichincha in Ecuador has gone even further, establishing a lending scheme for agricultural equipment, in which the bank's loans to clients are co-financed by the equipment suppliers. These types of measures provide strong incentives to reduce the risk of poor maintenance. The riskier is the taking of collateral, the less impact will collateral have on the terms of credit.

The depth of assessment of each of these issues will vary depending on the size of the intended investment and on the expected maturity of the loan. Once loans are granted, lenders have to follow up the performance of such investments, especially of the larger ones or those that are the most complex.

As with other types of loans to farmers, long-term investment loans will bear a lower risk if they are undertaken by enterprises having diversified income sources: The more specialized an enterprise, the higher the effect of adverse events.

Experiences with long-term investment lending²³ show, that the more entrepreneurial clients highly value the opportunity to make investments. In some cases they require additional assistance from external advisory services that can prepare investment plans and help carry them out successfully. Usually, investment loans have to be supported by additional short-term loans for working capital. Interest rates also influence the expected performance of the long-term investment loans. Differences of just a few percentage points can affect the feasibility of loans with maturities above 3 to 5 years. The higher the rate and the longer the term of the loan, the greater is this impact.

2. Warehouse Receipt Loans

Storing grain is one of the oldest forms of savings in rural economies. Families set aside part of their production for later consumption or for later sale in order to achieve a higher price. Storing grains is risky because produce can be harmed by pests and diseases and because prices may fall significantly below the expected levels. Storing produce successfully requires detailed knowledge, which is one reason why specialized, professionally managed grain storage warehouses have been established in many countries. Farmers who deliver their produce to these facilities obtain a warehouse receipt documenting their claim on the goods in storage, and pay a monthly storage fee. Farmers can decide when to sell their produce, and in some countries they can obtain loans backed by the stored grain as collateral.

Lenders making storage loans focus on the technical performance of the warehouse and on projecting realistic future prices²⁴. To work properly, this system requires trustworthy warehouses supervised by an independent state or private board which enforces compliance with a set of standards for determining the quality of produce delivered for storage and for assessing the storage management.

Loans backed by warehouse receipts in a well-supervised system require little assessment by lenders and can be issued to all sorts of clients, without further investigation of their repayment capacity. They provide clients easy access to loans which they can use to finance new production cycles before the last harvest has been sold. The relative ease with which loans backed with

warehouse receipts are granted contributes significantly to the deepening of the market in areas in which lending to farmers is considered a high risk proposition.

In spite of these positive considerations, the potential impact of loans backed by warehouse receipt is constrained by:

- Lack of clearly defined standards for storable products.
- Lack of trustworthy warehouses in rural areas.
- The minimum quantity of produce required for the issuance of a warehouse receipt often exceeds the production of small farmers. Small farmers have to form groups to bundle their production, increasing their costs of storing produce.
- Loans against warehouse receipts are short term and may be small relative to the debt capacity of farms or farm households.
- Legal conflict with the more important pledge against the future crop is common and must be avoided in well-designed legal reforms.

Valuable experiences with the use of warehouse receipts include those of ACDI/VOCA in Bulgaria; of CECAM in Madagascar, and of the Natural Resources Institute in Zambia²⁵.

3. Linking agricultural production loans with traders' services²⁶

Rural traders who supply agricultural inputs, grocery stores and firms processing agricultural inputs are the most important providers of credit in rural areas, with the possible exception of moneylenders in some countries. Their financing services are usually related to their trading business, and loans are given mostly to well known clients. Loans by these providers are often provided in kind, in the form of agricultural inputs, and they are repaid with the debtor's produce.

Lenders who also process or market agricultural produce offer these types of arrangements with two objectives: one is to secure the supply of local produce for their trading or processing business. The other is to earn income from lending. Income from lending is often not only from the interest rate charged on the amount lent, but also in the form of higher prices for the inputs purchased or of lower prices for the produce sold. Given that the actual costs of lending are in most cases not transparently disclosed, borrowers using these loans may be paying very high prices for such services. Studies in different countries²⁷ show that the effective lending rates in such contracts decrease significantly in more developed areas where traders compete for clients. It can be assumed that the effective interest rates will decrease, or that such arrangements may even phase out, if farmers can tap other sources of credit which may allow them to sell their produce freely. Unfortunately, the willingness to supply credit often goes up with monopolistic or monopsonistic positions of traders because they have confidence the farmer will repay because the dealer can cut off supplies or sales if the farmer defaults.²⁸

In order to lend to large numbers of farmers and to secure produce, processors and agro-industries use local traders as middlemen. Local traders usually serve a small number of clients with loans, namely those whom they know and about whom they can gain precise references. Given their limited capacity to estimate risks outside of their area, they remain restricted to the

areas and clients they know closely and who represent a lower risk. This results in small portfolios and with few economies of scale.

Debtors in these types of arrangement gain access to loans but often lose their ability to choose where to market their produce or that portion committed when the loan was obtained. This loss can be significant in monetary terms if the prices paid by the lender are significantly lower than those of other buyers. The loans they get are often small and mostly limited to the purchase of agricultural inputs and possibly family expenses.

Given the advantages arising from traders' knowledge of rural clients, some financial institutions have attempted to link their services with those of these traders. In principle, this linkage can occur at two important points of the lending process: 1) at the moment of disbursement, when loans are disbursed in kind or in cash through local traders, and 2) at the moment of collection if loans are collected by deducting the amount due from the payment for the client's produce sold through traders and processors. In the first case, clients benefit as they can obtain loan funds through outlets that are convenient, while the institution gains the benefit of a bigger net of outlets. In the second case, institutions benefit from reduced collection costs, and also reduced default costs because payments are deducted at source. Clients benefit through the time saved from not having to go to the lender's office to repay their loans. Traders or processing industries participating in such tripartite arrangements may benefit, as they do not have to provide production loans to their clients, freeing funds for alternative profitable uses. As before, these systems work better the less competition there is in the dealer market.

Disbursing loans via suppliers of inputs may be feasible if these businesses keep trustworthy records. Financial institutions linking up with traders have to set up suitable controls in order to source out this sensitive part of operations. So far, best practices seem to indicate that these models may work well if electronic point of sale (POS) devices can be set up at the traders shops, like for instance the ones used by Financiera Trisan in Costa Rica which use smartcard technology to store and process information.

Another example worth of further analysis is the Kisan Credit Card Scheme implemented by the National Bank for Agriculture and Rural Development (NABARD) in India. This institution has already issued since its inception in 1998 several million Kisan cards and clients can use them to pay for agricultural inputs and also to access cash by using withdrawal slips. The credit limit is based on operational land holding, cropping pattern and scale of finance. Collateral ranges from the sole credit agreement in the case of small loans to the Hypothecation of crops and mortgage of land (or) third party guarantee in the case of large loans. Drawals have to be repaid within a maximum period of 12 months²⁹.

Disbursing loans to farmers supplying processing plants and recovering these loans via these enterprises poses a different challenge for financial institutions. In such cases, clients' payments for loans are withheld by traders from the amount they would pay to producers for raw materials delivered by the institution's clients. Such arrangements may work well, if only one suitable specialized marketing channel for agricultural produce exists, like is the case with sugar factories, which require large investments to be set up. They may also be feasible, if borrowers commit themselves for whatever reason to one of several marketing channel (like in the case of marketing channels for organic produce) and if his commitment may be considered to be stable. If borrowers face different options to sell their produce, loan repayment in the described form

may not be feasible at all, as the freedom to choose among different marketing options at the time of harvest may be an important issue for farmers' incomes.

In any case, financial institutions teaming up with processors in collecting loans granted to their suppliers have to assess the soundness of the processors' enterprise. If this is not given, lenders should back from this kind of arrangements, as liquidity problems affecting the processor might lead to a delayed repayment of loans or even to the default of large numbers of borrowers.

In more advanced systems, banks circumvent many of these problems by taking the portfolios of the dealers as collateral for the loan. Dealers, in turn, may sell unsecured or may take the pledge on the future crop of the farmer, the pledge of a warehouse receipt, the equipment of the farmer, and even, in well designed systems, land rights even where the farmer does not have title. In such a system, banks do not depend on the monopoly position of the dealer but, rather, the overall performance of his portfolio. Such a system requires a major overhaul of the legal system³⁰.

C. Innovations in Lending Procedures: Credit bureaus and Credit Scoring

Innovations in lending procedures can comprise any of the different steps of the lending process. They can affect the way, in which potential clients are detected and in which they are informed about the characteristics of the credit products, which an institution has to offer. They can also improve the process, by which loan applications are evaluated and the loans are designed and they can improve the way, by which loans are disbursed and recovered. Innovations can affect several procedures at a time and allow institutions to reduce their costs while improving the quality of service to clients.

Institutions detect potential clients and promote their services using a wide array of means, ranging from mouth to mouth dissemination to the use of telemarketing and publicity campaigns in the mass media. One main objective of these campaigns is to access those potential clients, who may have interest in using the available lending products and to give them core information about how the advertised lending product may be used profitably.

The significant decrease in lending costs achieved in developed countries with the use of credit bureaus and credit scores has induced donors, practitioners and consultants to assess and promote the use of such instruments to enhance credit processes in developing and transition countries. Some networks of MFIs have engaged in extensive research about credit scoring, while credit bureaus are being established and promoted with donor support in several countries.

As credit scoring is being undertaken in developed countries in many cases by the credit bureaus or with information provided by these, the presentation of both mechanisms includes some references to the synergies which are achieved when using both instruments together.

1. Credit bureaus

Credit bureaus are public or private firms³¹ using large databases containing the history of financial transactions of individuals and firms of all economic activities. These histories are used by lenders and insurances in order to assess applications of potential clients in different ways,

depending on the lender's or the insurance's criteria which are usually reflected in scores. Credit bureaus differ with respect to the scope of information they gather and also to the sources they refer to³².

As for the scope, the main differences are if a bureau only gathers basic information about each client (name, gender, age, address) and about their credit transactions or if it also collects information about employment, income, the use of checking, savings or other deposit accounts. Differences also arise in the extent of information gathered about credit transactions: as some bureaus do report only loans in default while others also include information about loans repaid in time.

As for the sources, some bureaus concentrate only on transactions with the formal financial system, while others include information provided by traders, especially those which sell consumer goods on credit and even by cell phone companies. Public bureaus usually collect information from regulated financial institutions while private bureaus contain information from all type of providers. Entities reporting to credit bureaus are usually also users of the information provided by that specific bureau. To participate, each entity reporting to a credit bureau has to commit to a set of rules, which allow guaranteeing the accuracy and thus the trustworthiness of the credit bureau's database.

Credit bureaus fulfill for lenders two important functions: They allow appreciating the risk which is incurred when lending to a specific individual or firm and they help enforce the repayment of the loans. The more complete the information in a credit bureau with respect to its scope and the number of information sources, the more comprehensive the analysis which can be performed by a lender. Repayment of loans is enforced by credit bureaus by making an even temporary breach of a lending contract become public. When such information becomes public about a client, other lenders may restrict lending to him or her or they may increase the interest rate charged for loans to this individual, who is now perceived as a higher risk. The higher costs of lending or the exclusion from further lending sets for clients a strong incentive to repay loans in time.

2. Credit scoring

Scoring is widely used in developed countries to assess repayment risk. It is based on the assumption, that the past performance of the different client segments is a valuable tool to predict the future repayment patterns and even loyalty to a given institution. As such, credit scoring analyses the past performance of different client segments and tries to predict future repayment based on this information³³. In the United States, credit scoring, based on the extensive databases with individual credit histories available through the three major credit rating agencies³⁴ is used as the sole tool to select potential clients and to determine whom to lend and whom to reject. Scoring and additional information on the applicant's income is also used to determine loan size and to determine the interest rate charged to each client.

Credit scoring in a management tool which consists in two basic steps: 1) the statistical assessment of the variables affecting the performance of portfolios with respect to different indicators, and 2) the construction and use of a decision-oriented model to predict the future performance of these indicators for single clients or client segments.

a) Statistical Analysis

The statistical analysis of credit databases is a useful tool to determine the relationship between repayment conduct or customer loyalty on one side and different indicators. Statistical analysis can be performed for a single institution or for a group of institutions.

Statistical analyses performed on data from several institutions allow establishing the relationship between the specific characteristics of clients, like gender, age, marital status, income source or level of income and their repayment conduct or loyalty. This type of data is the one most used to set up the credit scores described further down. While a clear relation between gender, marital status, age, or size of the family on one side and default on the other has been reported in many countries³⁵, the relationship between income source and default seems to be less clear. Conditions in developing countries and especially in rural areas can be such diverse and instable for different economic sectors, that a general pattern of repayment conduct with respect to income sources cannot be established. Unstable conditions arise from changes in legislations and in state interventions in markets which can affect the profitability of economic sectors as a whole this distorting the results of statistical analyses.

Analyses performed on data from a single institution may also give insight about the performance of portfolios depending on the management of different (regional product related) units within an institution. An example for this, second, use of statistical analyses is the analysis of default by branch or by loan officer, which sheds light into their performance in lending and which allows to set up specific policies and to follow up on their results. Analyses performed on data from a single institution may also help to establish the usefulness of some of the criteria used to assess and design loans. In this sense, it may for instance be useful to break portfolios down by level of indebtedness and to assess, if there is a relation between this indicator and the level of default and to determine policies accordingly.

The statistical analysis of a given portfolio can be distorted strongly by the performance of the units administering it. If, for example, the quality of housing portfolios in a given country were compared with that of agricultural portfolios, it can be expected, that the housing portfolio would show a better quality than the agricultural portfolio. While the risk may indeed be lower in housing, the figures may be strongly distorted as the housing portfolios may have been set up and administered in a proper manner by efficient institutions while the agricultural portfolio may have been administered by politicized public agricultural lenders with deficient procedures for the disbursement and collection of the loans. A similar situation may apply within an institution, as some units may be better structured and have better procedures than others³⁶.

If used as an assessment tool, the data generated in the statistical analysis of the portfolios can be used to fine-tune credit management; it can help to make situations like the mentioned above evident.

b) Scoring

Setting up a scoring scheme to predict future repayment conduct or loyalty can only be undertaken if accurate information exists for large numbers of clients over several years. Setting up a scoring scheme requires specialized expertise as the existing information has to be assessed

using statistical models and mathematical forecast models have to be set up. Given the shocks and deep changes, which affect the economies in developing countries and especially their rural economies, scoring in such countries can only be used to determine the general trends in repayment behavior. It may not be used, as in developed countries, to give a forecast of the probability of default.

But if credit scoring is used together with credit bureaus having extensive and accurate information, promising results may be achieved in reducing transaction and risk costs, as lending decisions can be automated and as repayment is reinforced. If the databases are not extensive and repayment is not being reinforced by efficient credit bureaus, the potential of scoring is more limited.

To predict repayment performance, the largest possible set of relevant information about each specific client should be used. This imposes an important restriction on the construction of scoring models based on the information of single entities, which usually will not have complete information about single clients.

Given the fact, that credit scores in developing countries and especially in rural have only a limited capacity to predict the future repayment behavior, this tool should not be *yet* used as the sole decision instrument to evaluate loan applications of rural clients³⁷. Relying in credit scoring as the sole instrument to assess microcredit borrowers in developing countries can indeed be a significant risk, as demonstrated by the recent bankruptcy of Chilean consumer finance companies in Bolivia which relied mainly on this technique. In spite of this, the use of in depth statistical analyses and credit scoring as a tool to better understand clients and to reduce the costs of lending seems to bear some promise and the results achieved by institutions³⁸ currently experimenting with this technique should be followed closely.

VI. Innovations in Savings

Saving helps rural clients manage emergencies, prepare investments and smooth consumption. Savings for rural and urban clients is risky: savings in the form of cattle is subject to diseases and accidents, savings in gold invite theft, ROSCAs may be subject to unsound management, and banks may become bankrupt. Therefore, savers give the highest priority to security when deciding where and how to save.

Savers preferences with respect to liquidity and return³⁹ depend on their current situation and expectations. If they want to accumulate funds to fulfill a long term goal, they will give return priority. If they require funds for emergencies, they will give priority to liquidity. In all cases, clients value convenience of access.

By collecting savings, financial institutions diversify their source of funds and gain access to a potentially large supply while giving clients a valued service. Savers usually outnumber clients taking loans, expanding an institution's client base. Experience gathered about a client's savings pattern provides valuable information which may help to serve him or her other services. Although collecting savings from the public may be expensive, recent analyses suggest these may not be unreasonable expenses⁴⁰.

Institutions collecting savings have a high responsibility to ensure the security of their clients' savings. Given the risk to depositors, most countries restrict the business of collecting savings from the public to supervised financial institutions. Supervision and deposit insurance are intended to reduce the risk savers face. NGOs usually are not allowed to collect savings due to the weakness of their corporate structure: in contrast to private financial institutions, NGOs do not have owners whose equity would be at stake if the institution fails or who would be in a position to inject more capital into a faltering institution.

Saving requires clients to make a special effort. Money has to be diverted from consumption, sometimes from basic consumption. Savings is not easy and many savers value institutional ways that help them enforce their decision to set money apart.

Innovations in savings can produce a wide variety of products (for some of them see Branch et Klaehn, 2002) which provide specific incentives for clients. In the following, two important innovations in savings relevant for rural areas are discussed: the outsourcing of savings collection to groups and external entities and SafeSave's flexible savings product.

A. Outsourcing the collection of savings

Different institutions in Africa, Nepal and other countries have initiated experiment in collecting savings in sometimes remote rural areas with support of indigenous local organizations⁴¹. In these schemes, local groups are set up, which perform locally the administrative task of collecting the savings for the financial services provider, which can be a cooperative or financial institution allowed to mobilize savings. The clear advantage of such schemes, which in many cases are run on a voluntary basis, is that they reduce transaction costs and add convenience for the members of the local group, who are thus enabled to take advantage of this important financial service.

While small local organizations collecting savings may have a simple structure and can be run by relatively low-skilled personnel, requirement to the administrative capacity increase with the size of the groups and, especially, when groups are allowed to lend on funds, i.e. when funds are not simply collected and delivered to the financial institution. While the operations of smaller groups collecting savings may be supervised and controlled with relative ease, larger and more complex units may pose a significant challenge to the internal control mechanisms of the financial institutions with which they operate. The requirement for additional control of personnel not directly employed by a financial institution may pose a significant risk factor, which may endanger schemes as the one presented. This risk may harm the financial institution's reputation even in such cases, in which it is not directly involved in the supervision of the local scheme, as clients will tend to identify the group with the institution.

B. SafeSave's flexible savings product

A very interesting scheme that combines savings enforcement with flexibility is SafeSave in Bangladesh. This scheme was established in urban areas and is being tested in a rural setting. It was designed to serve people at the lowest income level. Its operation relies on local collectors

who visit their individual clients every day to collect savings and/or repayment of loans and to make withdrawals.

Matin describes the operation of the product as follows:

“At each daily visit, SafeSave clients may save as much as they like (including nothing) or withdraw as much as they like (up to the limit of their savings balance). Balances which build up over the long term are rewarded with interest at 10% a year, payable after five years. Clients may also take a loan and use it for whatever purpose they choose. The maximum permitted value of the loan is determined by their savings balance and their previous history with *SafeSave*, in that clients may borrow an amount equal to their current savings balance plus a further amount that grows with each loan. Loans do not have to be repaid according to a fixed schedule and there is no fixed maturity term. If they wish, clients may repay any amount during the daily visits, or choose to repay in a lump sum. If they choose to repay in a lump sum they may, if they wish, do so by deducting the sum from their savings balance, provided they repay the loan in full. The only ‘compulsory’ requirement is that monthly interest charges on loans (at 3% per month calculated on the declining month-end balance) must be paid monthly.”

As with lending, savings services provided by financial institutions can be enhanced by new technologies: ATMs add convenience for clients if they can be used to withdraw and deposit funds to savings accounts. Handheld PC’s used by collectors in the field may improve the administration of savings collection from groups.

Linking savings and credit can be desirable for lenders and clients by reducing the screening costs of lenders and lowering the financial costs for clients. The trade off is that investments have to be deferred until the savings target is met. At that point credit becomes available. These products have been used successfully in housing.

VII. Remittances

The phenomenon of remittances is closely related to the structural change affecting developing countries, especially rural areas. One or more members of a family migrate abroad and support those staying home by sending small amounts of money every month or in response to emergencies or special opportunities

Remittances involve two types of clients: senders and the recipients. Experience in Latin America⁴² shows that senders are more prone to send remittances home in the early years following migration. Once migrants settle in the new environment the links to their home country are weakened, especially if they succeed in bringing their family with them. But, migrants are reported to send larger amount home as their economic situation improves.

On average, Latin American migrants send between US\$100 and US\$500 per remittance, around 7 to 8 times a year. The number of workers migrating worldwide is estimated by Orozco, 2003 at 200 million per year, and an estimated US\$100 billion is remitted per year. A market for remittances has developed in which money transfer organizations compete with formal financial institutions and with informal channels.

The innovations that are emerging bring down the costs of sending remittances and link them to other financial products, for both the senders and their relatives who are the receivers. Studies undertaken by Multilateral Investment Fund show that the cost of remittances decreases as markets mature. These markets become more competitive the longer the traffic from one country to another. In the early stages of a migration stream from one country to another, remittances are usually sent through informal couriers or non-financial money transfer organizations (MTOs) at relatively high cost. With time, as formal financial institutions (in some cases from the senders' home countries) enter this market, competition increases and costs decrease.

This trend is boosted as migrants learn more about their options, and as illegal migrants obtain legal status. Illegal migrants tend to be loyal to informal remitters and to MTOs, which do not require that a remitter identifies himself when sending money, protecting their anonymity.

The relatives receiving remittances are mainly the parents or children of the remitter and are dependent on remittances or on some other relative. They use these funds for consumption, and to lesser extent, to invest in housing or in family owned businesses that may be operated by a migrant who later returns to his or her native land.

Some financial institutions are experimenting in targeting loans and savings products for senders and receivers of remittances. While savings products may be unproblematic from the financial institutions' vantage point, lending products repaid through remittances require special arrangements. Income and the stability of a remitter living abroad can be difficult to assess, especially, if he or she is illegally in the host country and/or if a stable employment contract is not available. Institutions lending on the basis of remittances often require a mortgage lien on suitable property in the country in which they operate.

Banco Solidario in Ecuador⁴³ has designed a program named "My Family, My Country, My Return" which serves Ecuadorian migrants in Spain. It provides loans to clients migrating legally to Spain who already have employment there. This product pays for the trip and settling in expenses, and also provides savings and loan products for housing and business purposes. One salient feature of the scheme is that it allows clients in Spain to manage their money from there by designating how the amounts remitted should be used, for savings or to repay loans, for example. Relatives receiving remittances are able to collect the funds sent to them using a Smartcard issued by the bank in Ecuador. Similar programs have been set up by private banks in El Salvador and elsewhere.

Experience in different institutions suggest that receivers of remittances through cooperatives in El Salvador save up to 10% of the amounts received, and that about 37% of the families receiving remittances deposit some portion⁴⁴. This figure contrasts sharply with central bank's estimate that only about 1% of remittances are being saved.

Clients receiving money from relatives abroad seem more willing to leave part of their funds in an account with the institution through which funds are received, but only if they have convenient access to the money. This effect occurred in MEB Bank in Kosovo after the introduction of an ATM system and it has also been reported by cooperatives in Latin America.

VIII. Technological Innovations

A. Use of Handheld PCs

While computers are now widely used to manage credit portfolios, some institutions⁴⁵ have started to use handheld PCs and Palm Pilots to make their loan officers more productive by improving data gathering and approval of small business loans in urban and rural areas. Information about pending applications as well as about loans in default is downloaded from the main computer of the institution into the device, thus providing the loan officer with an overview of work to be done and allowing her to better organize his day. To improve processing of the loan applications, these devices are programmed to collect information in a structured way considering, as in the case of the Mexican MFI FINCOMUN, the characteristics of different types of businesses. The loan officer using these devices can compare a client's indicators with those of similar clients, permitting a more rapid preliminary assessment of the probability of approval of the loan application. Furthermore, loan officers can track the client's history by downloading this information, permitting consideration of past problems and their implications for potential problems.

Handheld PCs can reduce the costs of lending if they improve productivity as described above, reducing paperwork, performing calculations automatically and eliminating manual copying the client's data into the lenders' computer. They can furthermore improve the quality of the information gathered by inducing loan officers to obtain complete information on the clients' businesses in a structured form.

Introduction of these tools requires careful programming, especially in gathering information on clients. Pre-programmed electronic assessment forms define a structure for the analysis which may prove incomplete or even misleading if programming does not consider the relevant issues that have to be addressed in this step⁴⁶. In contrast to the paper forms used to assess clients' businesses and farms, which can be rather flexibly used and modified to keep record of special situations, the credit assessment programs of PCs are rather inflexible. Using handheld PC's to assess the clients' repayment capacity introduces a new step into the lending process, namely programming, whose performance can affect the quality of portfolios significantly.

SafeSave began a pilot project in 2002 that used Palm Pilots at one branch to manage the collection of savings⁴⁷. Collectors of this institution perform monetary transactions with clients (be it deposits, withdrawals or payments to loans) at their place of residence and register these into the device and into the client's passbook at the moment they occur. At the end of the day, the information is fed into the institution's central information system in order to update all accounts. By doing this, SafeSave has reduced the use of paper and has eliminated about half the amount of time needed to register this information manually. In spite of the fact, that the innovation results in significantly higher costs than the previous system⁴⁸, SafeSave has a positive view of it. The main advantages perceived are the possibility of significantly improved internal control (the fieldworker is required to enter the savings account balance from the passbook), the possibility to introduce a greater flexibility in product management in the field.

Institutions introducing this technology seem to have had positive experiences with this tool. While loan officers accustomed to paper forms had some difficulties adjusting to the new tool, newer loan officers who never used paper forms have adjusted easily to it.

B. Automatic Teller Machines

Automatic Teller Machines (ATMs) are used worldwide for financial transactions. ATMs permit clients to withdraw funds with credit or debit cards; they enable them to make deposits to their accounts and in some cases even to transfer funds between accounts. ATMs are very convenient for clients, reducing their transaction costs. They can avoid lines, and can use ATMs at any time. If the provider has a large number of conveniently located ATMs, clients have greater convenience and lower transaction costs. Given the convenience of these devices, some institutions have introduced target group adequate ATMs to better serve their clients and to gain a competitive market advantage.

Introduction of ATM services implies major investments and a major change for institutions engaging in it. They have to use a processing center to process transactions in real time around the clock. A processing center is a system that authorizes and stores card-based transactions initiated at ATM's or at point of sale (POS) terminals. The processing center may be established by the institution itself or may be set up by an external provider that serves several financial institutions.

The complexity of the introduction of ATM services is exemplified by the following excerpt from an internal document of MEB Bank in Kosovo⁴⁹:

In order to manage the ATM system, the institution has to supply updated information on clients, accounts and cards to the processing center and update their accounts with information provided from the processing center. In addition to this, the introduction of a card-based transaction system requires an interface between the bank's core banking system and the processing center. This interface should at a minimum support the definition of cards and client-account-card relationships, as well as the importing of transactions authorized by the processing center. To enable card-based transactions, a bank needs to issue cards and PINs (personal identification numbers required to access ATM services). Finally, the set up of a card-based transaction system requires a network of devices (ATMs and POS terminals) that accept cards and a Wide Area Network (WAN), which links all financial institutions (in MEB's case decentralized branches) and devices to the centralized processing center.

PRODEM, a regulated microfinance institution operating in urban and rural Bolivia, has introduced Intelligent Teller Machines or ITMs which use smart cards. Unlike traditional automated teller machines, PRODEM's ITMs can recognize the client's fingerprint. Clients can furthermore choose among the three languages in Bolivia (Aymara, Quechua or Spanish) so that instructions are spoken in the one in which they feel most comfortable. Clients who are not skilled in reading or writing do not have to worry about filling out forms or signing their names. In addition to providing a convenient service, PRODEM stresses that this innovation has improved internal control by making fraud more difficult.

Financiera Trisan, a finance company in Costa Rica has introduced a smart card to disburse loans to their clients at POS terminals⁵⁰. As Trisan has traditionally targeted farmers as their main clientele, these are located in the premises of retail suppliers of agricultural inputs and at other merchants' stores. While new clients have to make monthly loan payments on their card, those with an established track record may pay off their balance in a single (balloon) payment at the time they sell their produce. Clients welcome this innovation and convenient access to their funds, as their fast acceptance of this service shows. Rural clients benefit especially because they are sometimes unable to visit their financial institution during its opening hours, increasing their transportation and opportunity costs.

The two institutions do not report significant difficulties once their system was introduced. MEB Bank has an ATM processing center of its own. It made a very smooth introduction of POS terminals at merchants' locations and also added other card products once the core system was in place. In addition, MEB Bank clients have significantly reduced the amounts withdrawn per transaction because access is so convenient, leaving larger amounts in their accounts.

IX. Design and introduction of Innovations in financial products

Innovating in rural finance is, as any form of innovating, a process which is challenging and which may be very rewarding, if success is achieved. Innovating generates always costs and it may, sometimes, also generate revenues. The chance of innovations generating revenues depends on good ideas, a careful design and on a close monitoring of costs.

Design and introduction of innovative financial products is a learning process requiring a series of steps. It is a gradual, process of learning-by-doing in which information and experience is systematically gathered and incorporated into the design of the innovation. It requires successive adjustments and fine-tuning as initial assumptions are reviewed in light of the acceptance by the targeted clientele and the incurred costs. These steps are briefly outlined and conditions for success are listed below.

Design and introduction of a financial innovation usually starts with identification of potential market niches which are not yet served or of improvements which could reduce costs or increase an institution's competitiveness. These observations may be suggested by clients or by employees, who know about the operations of other suppliers (formal and informal) or from knowledge of technological innovations. They may also arise from managers or owners searching for ways to improve outreach and profitability.

Innovations can be larger and quite complex (e.g. when a new product is launched or when institutions open up their services to new segments of the market). They can also consist of smaller improvements (like changes in the procedures used to determine the creditworthiness of clients applying for loans), which are not noticeable to clients or to the institution's administrative staff but which may have a profound impact on an institution's performance. Successful institutions consistently undertake both types of innovations.

The likelihood of success of an innovative process crucially depends on the energy which an institution focuses on it: The better an intended innovation serves the strategic objectives of an institution and the stronger the governing bodies of that institution commit themselves to a

specific innovation, the better the output of the innovative process. Such commitment to a specific innovation produces adequate funding and staffing, and equally important, close monitoring of results against the intended objectives.

In all cases, innovations thrive best in innovative institutions, i.e. in where innovation is highly valued and where successful innovators are rewarded. Innovative institutions give innovators freedom to make mistakes and they also take care that such mistakes do not have fatal consequences. Innovative institutions provide funds for innovating and promote intense communication between those innovating and other stakeholders including clients.

Innovations are more likely to take place in a competitive environment, as competing institutions will search for ways to increase market share. The more institutions have to compete for a specific market, the more they have to innovate. The better an institution's portfolio of financial services matches an existing demand, the greater its competitiveness.

Innovation requires two key elements: inspiration and hard work⁵¹. Both have to be present throughout the process, which can be subdivided into two major phases: the discovery phase, and the design and development phase.

A. The phases of the innovation process

1. Discovery phase

Innovation usually starts with someone's desire to improve the performance of her or his institution or to better serve clients. This wish and a certain receptiveness or open mindedness regarding new ideas, a kind of acuity, characterizes the discovery phase.

During this phase, inspiration occurs. Although incentives can promote the surge of innovative ideas, it is not feasible to plan or force their emergence. It is easier to find and discuss suitable ideas if the different stakeholders who could benefit or be affected are invited to bring them forward and if they are seriously evaluated. The more people involved in this disorderly process, the likelier it is that coincidences and serendipity may lead to useful paths to explore which may lead to success⁵².

2. Design and implementation phase

While the discovery phase is of an inspirational nature, the development and introduction phase should be undertaken in a logically planned form. The main steps which should be undertaken to develop and introduce innovative ideas are as follows⁵³:

To begin, current practice should be reviewed, as rural finance innovations are often adaptations to existing products and procedures. Sources of relevant experience are: a) the form in which local, informal providers provide similar products; b) the operations of institutions serving similar or other markets and c) similar innovations serving customers who are different from the

ones to be targeted by the innovating institution. Products and procedures used by local providers and those used to serve other, wealthier or more urban, segments of the population can serve as guidance in assessing the feasibility of an innovation and in preparing its design. Products and procedures already in use in the markets targeted by innovator also provide some guidance on how to design an innovation. Convenient features of existing arrangements should be copied, if possible, while shortcomings and inconvenient features are avoided. In some cases, it may be feasible to team up with existing providers by linking their services to those of the innovating entity.

Another important area of initial exploration is market research, based on questions like: What do clients demand with respect to the intended innovation? Who serves this demand? How are relevant financial services provided? What are the strengths and weaknesses of these schemes? Is it feasible to team up with existing institutions serving the target group to supply the intended services? How can demand be estimated? If an innovation is geared to serve populations hitherto not targeted by the institution, information should be gathered about the information channels (radio, tv, etc.) most likely to reach potential clients and how to contact them. Interviews with knowledgeable persons, including existing providers, and surveys among representative members of the target group can help find answers to these questions and give ideas about factors which should be included in the design of the innovation.

The results of market surveys should be evaluated carefully: potential clients may offer positive responses in order to please the interviewer. The real demand for a product will only be assessed conclusively when the product is available. An exception to this may occur if similar products are already in the market and innovations result in significant improvements from the target group's perspective.

Once this information is systematized and evaluated, a preliminary design should be undertaken. This design has to include how the new services will be offered to and used by the target group, as well as a first estimate of pricing possibilities that may apply to the new service⁵⁴. Pricing should be based first on projections incorporating explicit assumptions about the different factors and productivity indicators which affect costs. If similar products are not yet on the market, institutions should set the initial prices for their services conservatively so that their costs are covered as soon as possible. In the case of long-term loans, these considerations have to be balanced by considering the possible maximum term at a given interest rate: the higher the interest rate, the shorter the time horizon, after which loan sizes increase only marginally with increasing maturity. When setting prices, decisions have to be met about the pricing structure (in the case of loans, about the use of interest charges and additional fees, which may be charged up front or with every payment). In general, pricing for loans will have to consider in the effective interest rates the impact of administrative expenses (to cover the costs of loan appraisal and servicing), of financial expenses and of risk expenses. Risk expenses will in tendency be higher, if loans are not secured. Pricing for savings products on the other side will consider the tradeoff between convenient access to the saved funds and interest rates⁵⁵.

At this stage, preliminary survey forms have to be designed to obtain the relevant information to be gathered, along with a preliminary design for the computerized management of this information.

With the initial design in place, a first reality check in the form of a small pilot test may be launched in a specific area or through selection of small groups of clients. As a general orientation, participating clients should be easily accessible for the institution and communication with them should be easy in order to gain information about receptiveness to the innovation. If the innovation relates to lending, it is advisable that the clients invited to participate during the pilot can reasonably be considered as low risk⁵⁶. Those included in this pilot should be advised that they are participating in a test, that their feedback is important and that further changes to the innovation may be necessary. Sometimes, it may be advisable to develop the pilot as an activity carried out with complete independence from the existing institution in order to prevent reluctance or hostility against change. This is advisable especially in those cases in which innovations can negatively affect the status or income of some employees.

Based on performance during the pilot phase, the projections used to determine pricing should carefully be reviewed and adjusted to reflect revised information about the factors and indicators affecting costs in order to determine the prices at which an innovation will be launched.

Experience from the pilot phase should be closely monitored and frequently evaluated to determine the convenience of the innovation for both clients and institution, to adjust relevant aspects of the innovation and to prepare the final design.

After the pilot test is deemed to be successful in that it responds to target group demand and that the expected revenues will cover its expenses, a marketing strategy should be designed. The form in which innovations are communicated to prospective clients is a key element that may determine success or failure. Clients have to have information about the potential benefits and costs of using the innovation. Benefits have to be presented in a way that matches expectations and that addresses constraints clients face.

Experience gathered in the pilot phase nurtures the final design, including the conditions, rules and procedures for providing the new service. These norms have to be designed in such a way that internal costs are reduced as far as possible within the requirements for appropriate internal control. After defining these conditions and establishing the information required to use the innovation, the IT system of the institution has to be adapted to automate procedures far as possible and to produce management reports that track relevant aspects of the innovation from the very start. The lessons from this process should also help to define the organizational setting, in which the innovation will be implemented (is a separate department required for this?) and the profile of the personnel who will be responsible for the innovation and to design training for introduction and administration of the innovation.

In addition to this, experiences gathered during the pilot phase and the initial phase of introductions should allow designing, if appropriate, how to consider the effects of the innovation in existing incentive systems for staff and management of an institution.

Launching an innovation may be undertaken with more or less publicity and with different speed, depending on its nature and the expectations of the institution. The introduction of innovative lending products geared to segments hitherto not served by the institution requires for instance a gradual approach, in which experience is gained first with clients that do not cause

high risk or transaction costs. Progressive introduction may also mean that loan amounts and maturities are initially smaller and shorter than at a later stage when a product is fully in place.

While this listing of steps might imply that they should be performed sequentially, the design and introduction of an innovation is a dynamic process. It is not feasible to set up precise roadmaps for it. Some of these steps may not be carried out in the sequence suggested here, depending on the nature of the innovation and institutional strategy.

B. Organizational Issues

Designing innovations in financial institutions is a process which involves different parts of the organization: A product has to be designed with the general support of management. It has to be tested and fine-tuned with participation of operations staff. Additions and adjustments have to be made to software by the information systems department. Introduction of an innovation later requires participation of these and other internal units in order to a) present the product in the market and to explain it to clients, b) to hire and/or train personnel in charge of its promotion and day to day operation and management, c) to assess its performance. To achieve these results in an orderly fashion, it is advisable to assign the task of design and introduction to a dedicated task force in which at least some high ranking employees involved in the innovation participate. This task force should also monitor closely the reactions of clients to the innovation during the different stages of the process.

C. Reasons for Failure

To finalize this chapter, it is important to remember that innovations may fail. Many reasons can contribute to failure, being the main: a) a lack of commitment of the institution or of those in charge of the innovation, b) lack of control over the process and its outcome, c) faulty communication of the innovation both, within the innovating institution and with clients, d) a wrong assessment of demand, e) internal misunderstanding or resistance to new products⁵⁷, f) unrealistic projections of costs and/or revenues, and e) lack of internal control in general⁵⁸.

Although there have been many failures, only few have been documented so far. An interesting case is the one of Provident Financial's expansion of its business from the United Kingdom to South Africa⁵⁹. Provident Financial started offering back in 1998 in South Africa's rural areas a product called "Home Credit", which consisted in small, short-term and unsecured loans which were delivered and collected at the client's home. Although this product faced a high demand in spite of the high interest rates charged⁶⁰, it failed in consequence of risk (arrears rates went up substantially due to a poor personnel management) and operational costs, which were higher than the interest charged.

Another failed innovation, which has not been as documented, was the introduction of mobile banking offices, which should bring financial services conveniently to remote areas. While the idea was in principle very attractive, the acquisition and operational costs of appropriate vehicles (which had to be equipped and sometimes armored) resulted to be very high. Some of the Cajás

Municipals in Peru, which had been granted such vehicles without cost, stopped their operation after realizing that their pure operational costs generated high losses.

Readers interested in further reading on this subject may find valuable insights in Matin's assessment of three innovations in Bangladesh⁶¹ as well as in the different materials, including some toolkits published on the website of MicroSave-Africa⁶² and in the Practical Guide to Mobilizing Savings recently published by WOCCU⁶³.

X. Recommendations

Concluding remarks and suggestions for innovation by institutions, governments and donors are as follows:

- Innovations take time, are costly and may fail. To manage these risks, innovations requiring large investments should be undertaken only by solid institutions that can bear the financial and public relations costs of failure. Following the inspiration, the design and introduction of innovations is hard work.
- Innovation requires careful research, intimate knowledge about current conditions, competitive alternatives and clients' preferences.
- Innovations in lending should begin with low or limited risk through commitments of small amounts initially to larger amounts as experience develops. When innovations lengthen term structures, the same incremental strategy should be followed in extending the maturities that are offered.
- There is no general recipe for selecting among different options. However, innovations are often most useful when supply is not able to meet demand and when costs can be reduced significantly.
- A precondition for successful introduction of an innovation is institutional commitment based on clearly defined expectations about the expected gains and costs, and outreach. The capacity to price innovations flexibly is critical.

Recommendations to innovating institutions:

- Consider all the issues discussed above and assign responsibility to a coordinating unit that can interact effectively with the relevant internal and external players and stakeholders.

Recommendations for donors:

- When supporting institutions wishing to introduce innovations, make a careful assessment of their sustainability. Innovations may fail, if undertaken by entities which are not sustainable or unable to guarantee the permanence of innovations. Consider that innovations can lead, in extreme cases, to the failure of the complete institution.

- If grants are given to undertake innovations, always request the institutions to bear a significant part of the risk of innovating. By doing this, the clear commitment by the innovating institution can be easily assessed, resulting in a more careful selection, design and implementation of innovations.
- Promote innovation through discussion and provide funding for reasonable concepts presented by credible sponsors.
- Bring financial institutions together with firms, which can provide specialized knowledge suitable for innovations. Provide information which allows assessing the performance of both, the innovating financial institutions and the firms providing technical assistance in order to increase transparency and competition by these.
- Bring diverse actors together.
- Promote the dissemination of best practice but be realistic about the willingness of innovators to share their experience with competitors.

Recommendations for governments:

- Set up a liberal framework for the introduction of innovations in competitive markets which allows experimentation and permits innovators to reap windfall profits from successful attempts at innovation.
- Remove regulations that hinder innovations. In some countries these include rigid collateral or documentation requirements for loans.
- Set incentives for institutions innovating rural financial services in order to increase outreach, sustainability and / or impact. Viable institutions can be rewarded with prizes for especially useful innovations, they can be granted partial subsidies of the costs of specific innovations and they can be offered funds to lend for users of newer technologies, if required. In any case, it is advisable that government incentives are accessible to all kinds of institutions and that they are awarded using some form of transparent competitive bidding.
- Support the emergence and consolidation of credit bureaus. Credit bureaus can allow reducing the costs of lending especially, if they are accurate and complete. They are a valuable tool to enforce lending contracts (by making the clients' behavior public) and they can provide, once larger databases become available, valuable information to assess the repayment behavior of different client segments.
- Undertake the legal reforms required to facilitate secured lending.

Endnotes

¹ See Rutherford, 1999; Zeller and Sharma 2000 and Zeller 2001.

² von Pischke, J.D, 1991

³ Valuation processes allow to determine loan sizes by relating them to the value of the collateral (in asset-based lending) or to the expected net income of a client (in cash-flow based lending)

⁴ The present paper is written from the standpoint that financial services should be provided in a sustainable way. If subsidies are provided in relation to financial services, they should be given only to strengthen the supply and in such a form, that they do not distort the prices of the financial services. Subsidies should thus be only of temporary nature.

⁵ Examples on some failures are provided in chapter 5.

⁶ Prices of major agricultural commodities tend to decrease as technological innovations reduce the costs of producing them. Prices of inputs tend to increase as many are non-renewable resources or farmers become more sophisticated users of fertilizers and high yielding seeds. The recent evolution of some internationally relevant prices is presented at: <http://www.worldbank.org/prospects/pinksheets/index.htm>

⁷ These cost components of lending are often interrelated: If transaction costs are reduced, e.g. by diminishing the time and effort required to assess loan applications or follow up debtors, risk costs may increase. If an institution faces high risk costs as a consequence of arrears, financial costs may also rise as the institution may be perceived as a higher risk by private or public depositors.

⁸ Calpiá's rural lending technology has been described by Navajas, 2000. Churchill, 2001, gives an excellent description of the individual credit products offered by institution in Indonesia (BRI), the Dominican Republic (ADEMI), El Salvador (Calpiá), Egypt (ABA) and Peru (the Municipal Loan and Savings). Birbuet, 2001, pp 48 – 75 describes specific cases in which different rural lending technologies (individual lending, group lending, and village banking lending) have been used in Bolivia and their evolution in time.

⁹ Detailed descriptions of the economic structure of the lower-income rural populations can be found in Meyer et Alicusan 1984 on Thailand, Gonzalez Vega et al. 2002 on El Salvador, in Buchenau, 1997 and in Buchenau et Hidalgo 2002 on El Salvador, Ecuador and Bolivia.

¹⁰ A recent internal assessment of the direct administrative costs of lending undertaken by Caja Los Andes using the Activity Based Costing (ABC) methodology reports that loans to small farmers generate administrative monthly costs equal to 1.44% of the average portfolio size, while urban micro loans' cost hover around 1.00% per month. The one time disbursement fee for rural loans increases at Caja Los Andes, depending from the distance of the client's farm from the branch, from 1% up to 3%.

¹¹ Portfolio at risk with a default over 30 days.

¹² About 50% of Calpiá's rural portfolio is placed among households who obtain most of their income from agriculture.

¹³ Given the excellent performance of Calpiá's portfolio, a well designed reform of the system of secured transactions could permit this institution to expand in some future day its operations by refinancing their loans in financial markets using their portfolios of loans as collateral.

¹⁴ Information about this product was provided by SafeSave to the author and may become available at its website in future: www.safesave.org.

¹⁵ According to Fernando and Meyer, ASA incurred in administrative costs over average portfolio of only about 0.75% per month, a figure that is significantly lower than the one of Los Andes. The loan product used by ASA has been described in ASA's website at <http://www.asabd.org/>

¹⁶ Most rural clients in developing countries do not make use of insurance services. In emergencies, savings and credit products which allow coping with the effects of an adverse event are thus especially useful.

¹⁷ See data on Calpiá above in the chapter on the generic credit products.

¹⁸ This program is administered by ASERCA, Apoyos y Servicios a la Comercialización Agropecuaria and a description of its operations can be seen at the web-site of the Mexican Ministry of Agriculture at www.sagarpa.gob.mx

¹⁹ Mexico is also in the process of developing and introducing such an insurance scheme through its state-owned second tier insurance firm, AGROASEMEX at: www.agroasemex.gob.mx

²⁰ For further information on index based insurance and on the use of futures markets see the document presented by Jerry Skees at this conference (Skees 2003).

²¹ These are discussed in detail by Fleisig, 2003 in a document presented at this conference.

²² An example of leasing in Uganda will be presented by Mr. Juma Kisaame from the Ugandan DCFU Leasing Co in this conference

²³ So far, there are not many successful experiences with long term lending to small and medium farms, reflecting the rather complex nature of this endeavor. The following is based on experiences of Financiera Calpiá, an institution which launched a program to increase its long-term investment loan portfolio with support of the Multilateral Investment Fund. Other examples will be available in an extensive publication which is currently being prepared by FAO and which outlines basic principles and experiences with lending for long-term investments. See hereto the paper presented by Frank Hollinger at this conference

²⁴ Lenders will face a lower price risk, if clients hedge it using futures markets.

²⁵ See the papers presented at this conference by Jean-Herve Frasin about CECAM's experience in Madagascar and of Gideon Onumah from the Natural Resources Institute about the Zambian experience

²⁶ For further information on this subject see the paper presented by Doug Pearce at this conference.

²⁷ See Robinson, 2001.

²⁸ See examples in the paper by Zeller and Fleisig.

²⁹ Some detail about this scheme can be found in Faruqi, undated.

³⁰ See paper presented by Fleisig at this conference.

³¹ In some countries public bureaus coexist aside of private bureaus.

³² Campion and Valenzuela provide a good assessment of the usefulness of credit bureaus by analyzing examples from 5 countries (Bolivia, Chile, El Salvador, Peru and Uruguay) in a document published in 2001.

³³ Mark Schreiner, who has worked extensively on credit scoring, provides in his article on credit scoring (Schreiner, 2002), a detailed description on how this technique works, how it can be set up and about its limitations when applied to microfinance.

³⁴ The web-pages of these bureaus are quite illustrative about their operation and services. They are: www.equifax.com; www.experian.com and www.transunion.com

³⁵ Women with children are usually said to show a better repayment conduct than unmarried men.

³⁶ In the 1990's it was for instance reported, that the Unit Desa System within the BRI showed a significantly better performance as a whole than those, traditional, areas of the bank dedicated to finance corporate enterprises and that the different performance was mainly due to the quality of the procedures used (Reference?).

³⁷ This statement is in concordance with one of the conclusion made by Schreiner, 2002, who states "Scoring, however, is not for most microlenders; it works best for those with a solid individual lending technology and with a large data base of historical loans. Even when scoring works, it is only a marked improvement, not a breakthrough. In particular, scoring will not replace loan officers in microcredit because much of the risk of the self-employed poor is unrelated to the information available for use in scoring."

³⁸ Several institutions belonging to the ACCION and to the Women's World Banking networks are currently experimenting with the use of credit scoring.

³⁹ See Branch et al, 2003.

⁴⁰ See Richardson, 2002.

⁴¹ See Hirschland, forthcoming, and Johnson et al, 2002.

⁴² These issues have been analyzed in depth by the Multilateral Investment Fund, <http://www.iadb.org/mif/website/default.asp?C=1&L=1>

⁴³ References on their products for migrants can be seen at: <http://www.solidario.com.ec/migrantes.html>

⁴⁴ See Grace, 2002.

⁴⁵ The *Microenterprise Americas* autumn 2002 issue reported that these technologies were being adopted by several institutions belonging to the ACCION and to the Women's World Banking networks. See also: Ketley and Duminy, undated.

⁴⁶ An example of such a failure would be, if programming would not consider information about some account, e.g. accounts receivable, and would thus lead to an incomplete or distorted appreciation of the client's economy.

⁴⁷ The author wants to thank SafeSave for sharing information about its innovations. Further information about this innovation may become available at SafeSave's website in the future.

⁴⁸ An initial calculation by SafeSave results in a cost of US \$ 0.037 per client per month for the previous system, versus a cost of US \$ 0.087 per client per month using the Palm Pilot. This cost structure is highly influenced by the very low costs of labor in Bangladesh and can thus not be transferred to other countries.

⁴⁹ Sajet, 2002

⁵⁰ When a farmer, who is client of Trisan, purchases agricultural inputs at one of the affiliated stores, the corresponding balance can be charged to the credit account using the POS device. The POS device registers the corresponding transaction on the smartcard chip and in its own memory. The information stored in the POS device is

transferred once a day by the affiliated store via telephone to Trisan and accounts are updated. While clients benefit from easier access to their loans, the affiliated store benefit in that they do not have to keep records on accounts receivable (at least for those clients using Trisan's services) and that they can, as a matter of fact, completely outsource the management of their accounts receivables. A more detailed description can be found in Wenner, 2000

⁵¹ See Drucker, 1985.

⁵² Some very interesting cases of how to promote inspiration can be found in: Peebles, 2003.

⁵³ Wright et al. have listed some questions, which should be contemplated when undertaking a product development process (undated document). MicroSave Africa has developed toolkits which may be useful to prepare and to carry out these phases of the product development cycle. Brand, 1999; Robinson, 2001 (pp 265 – 261); and Campion and Halpern, 2001 give valuable insights into some concrete experiences into the process and results of financial innovation.

⁵⁴ Christen, 1997, pp 95 – 126 gives an introduction into how to determine cost-covering interest rates. Churchill, 1999 presents the main issues considered in the pricing strategies of 5 institutions in different continents. Richardson and Oliva, 2002, provide some examples on how costs of savings mobilization can be determined and Branch, 2002 gives a general orientation about how to determine prices for savings products.

⁵⁵ See Branch, 2002.

⁵⁶ If an urban institution expands its services into lending to farmers, it is advisable that during the pilot phase such farmers are addressed, who derive only part of their income from agriculture or who produce and market their output under favorable conditions.

⁵⁷ See the case of the introduction of voluntary savings by ASA in Bangladesh described by Matin, 2002.

⁵⁸ Valenzuela provided in 1998 a useful listing of 14 worldwide cases of fraud in microfinance as an introduction to a panel on internal control in which detailed cases from Indonesia (BRI), Kenya (K-Rep) and Bolivia (PRODEM) were presented. Campion, 2000, provides a guide to improve internal control in MFIs.

⁵⁹ See Cadogan, 2002.

⁶⁰ Interest rates fluctuated, depending on the loan amount, between 7.5% and 14.5% per month while inflation in South Africa hovered, according to the Worldbank, around 7% per annum.

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