

**SOCIO-ECONOMIC METHODOLOGIES
FOR NATURAL RESOURCES RESEARCH
BEST PRACTICE GUIDELINES**

**RURAL FINANCE AND
NATURAL RESOURCES**

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Natural Resources Institute

The University of Greenwich

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GORDON, Ann (2000) Rural finance and natural resources. *Socio-economic Methodologies for Natural Resources Research. Best Practice Guidelines*. Chatham, UK: Natural Resources Institute.

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Production of this publication was funded under project R6800, by the Policy Research Programme of the United Kingdom's Department for International Development.

The Department for International Development can accept no responsibility for any information provided or views expressed.

Copies of this publication can be obtained by writing to NRI Catalogue Services, CAB International, WALLINGFORD, Oxon OX10 8DE, UK. When ordering, please quote BPG6.

Natural Resources Institute
ISBN 0 85954 496 – 6

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THE RENEWABLE NATURAL RESOURCES KNOWLEDGE STRATEGY CONTEXT

The Department for International Development (DFID), through its Renewable Natural Resources Knowledge Strategy (RNRKS), emphasizes demand-led research and a clear identification of uptake pathways in research design and implementation. These guidelines aim to provide RNRKS programme managers and project managers with sufficient information on rural finance to judge the extent to which project design may have to take it into account. This includes in particular the possibility that the characteristics of rural finance may pose a constraint to the uptake of research results.

The main interface between RNRKS projects and rural finance relates to the uptake of research results – and the implicit assumption sometimes made that rural households have access to credit (or adequate savings) to invest in new technology. These guidelines provide an overview of different types of rural finance, explain terms, and suggest useful contacts, so that research leaders may know how to assess the importance of rural finance in relation to their areas of investigation or intervention.

RURAL FINANCE

What is rural finance?

Rural finance comprises credit, savings and insurance (or insurance substitutes) in rural areas, whether provided through formal or informal mechanisms. The word ‘credit’ tends to be associated with enterprise development, whereas rural finance also includes savings and insurance mechanisms used by the poor to protect and stabilize their families and livelihoods (not just their businesses). An understanding of rural finance helps explain the livelihood strategies and priorities of the rural poor.

Rural finance is important to the poor. The poorest groups spend the highest proportion of their income on food – typically more than 60% and sometimes as much as 90%. Under these circumstances, any drop in earnings, or any additional expenditure (health or funeral costs, for instance) has immediate consequences for family welfare – unless savings or loans can be accessed. Financial transactions are therefore an integral part of the livelihood system of the poor.

Rural finance consists of informal and formal sectors. Examples of formal sources of credit include: banks; projects; and contract farmer schemes. Reference is often made to micro-credit. *Micro* underlines the small loan size normally associated with the borrowing requirements of poor rural populations, and micro-credit schemes use specially developed pro-poor lending methodologies. Rural populations, however, are much more dependent on informal sources of finance (including loans from family and friends, the local moneylender, and rotating or accumulating savings and credit associations).

A glossary of terms explaining those often used in the literature on rural finance is provided at the end of this Guide.

Lending to the rural poor: the issues

At the 1997 Micro-Credit Summit, James Wolfensohn, President of the World Bank, said that “micro-credit is not the single answer to poverty, but an important one”. This widely held belief underpins much of the interest in rural credit, although it has some important shortcomings:

Some researchers argue that the *better-off* of the poor are usually those served by micro-credit, since the ultra-poor seldom join micro-enterprise loan programmes. The poorest benefit more from small savings schemes, consumption loans, or emergency funds. (ibid.)

Rural credit would not be the focus of so much development effort were it not for widespread market failure (i.e. failure to provide the services people want) in rural financial services in developing countries. Reasons for market failure include:

- the lender does not know the default risk of each potential borrower and to collect this information is costly;
- it is costly to ensure that the potential borrowers take those actions which make loan repayment more likely;
- it is difficult and costly to enforce repayment; and

- the cost of providing services to the rural poor is high because the rural poor are located in remote areas, want to borrow small amounts, are often illiterate, lack experience of banks, and lack collateral, all of which necessitate the development of tailored approaches.

What are the implications of this for agricultural activities? All these types of market failure apply to lending to the agricultural and other natural resource-based sectors in developing countries. Lack of information on the risk of default is particularly germane to agricultural enterprise. Farmers do not keep records, so it is difficult for them to produce the information that might convince a bank of their creditworthiness. Rural market transactions are largely informal, so it is difficult for the bank to collect independent information on prices. Farming is clearly a risky business because of weather, pests and market fluctuations – and it is difficult for a bank to assess the degree of risk associated with particular activities. The rural poor do not have track records, or referees who will vouch for their competence and reliability. Making sure that farmers stick to their business plan, using loans as intended, and carrying out tasks to schedule, is also costly, although this might make loan repayment more likely. Enforcing repayment is also difficult – this requires monitors who know when crops are sold, or agreements with merchants to pay the farmer net of what s/he owes the bank, or effective penalties such as seizure of assets or prosecution. Farmers rarely have collateral acceptable to banks. They may not have clear title to the land they farm, or even if they do, rural land markets may not function well enough for land to be considered a ‘bankable’ asset. Poor farmers, moreover, rarely have other bankable assets. They might own a bicycle, and have a store half full of grain, but were a bank to seize such assets the cost of doing so would probably exceed their sale value.

The poorer the farmer, the less are his/her chances of borrowing from the formal sector. Women, particularly poor women, face even more problems in obtaining credit. Land title, where it exists, is usually held by men. Women often have little control over other factors of production, particularly for the ‘bankable’ cash-cropping activities. In some countries women may only borrow in the names of their husbands, if at all, and literacy rates for poor women are almost always lower than those for men. The irony is that numerous studies show that women tend to repay loans more reliably than men.

Numerous projects, government schemes and NGOs engage in loan programmes targeted at the poor. Some of these work well, but the majority are unsustainable because of high and subsidized costs, and high rates of default. Moreover, many miss their target, with the benefits captured by the less poor. The poor depend overwhelmingly on the informal sector.

Informal financial mechanisms used by the rural poor

The poor borrow from family and friends. This is an extremely important source of finance, but is inadequate in situations where everyone’s need arises at the same time (purchasing seasonal inputs, or replanting late because the rains have failed). Moreover, locally obtained funds are very vulnerable to covariate risk, i.e. risk that affects everyone, such as crop failure.

The poor borrow from moneylenders, shopkeepers, pawnbrokers and merchants. Interest rates are usually high and loans are taken out for short periods. Such lenders

are usually based within the community – they know their clients; they know their clients' businesses; and they can apply pressure from within the community to ensure that loans are repaid. Sometimes the loan will be guaranteed (loans from pawnbrokers for instance), or linked to crop sales. The latter may be on extremely poor terms for the farmer. 'Green' loans are made in Zimbabwe, for instance, against a standing crop. The farmer takes such a loan because s/he is desperate for cash before the harvest (when there is a general shortage of cash in the farming community), but in return relinquishes all his/her right to the crop on a specified plot. In India, fish merchants 'lock' fishermen into lifelong indebtedness, by making loans that are repaid through fish sales at pre-arranged (below market) prices. For many rural people, borrowing from these sources is a last resort, but even though the cost of borrowing may be high, such lenders provide an important source of cash in rural communities where there are few, if any, alternatives. Where credit is not available, households may have to deplete their asset base (spend savings, or sell jewels or livestock) or go without essential items, including food.

The discussion of credit tends to direct attention towards productive finance, i.e. finance for the purpose of generating income. However, poor people often need mechanisms to protect their livelihoods: they need credit to overcome a consumption shortfall, or to smooth consumption patterns; and they need insurance or insurance substitutes to protect fragile and high-risk livelihoods. Multi-peril crop insurance schemes targeted at the poor have generally been expensive failures. This is largely because of high administrative costs and political difficulty in charging fair premiums and enforcing impartial loss adjustments. Rural populations use insurance substitutes, such as:

- savings (money or assets, including livestock, which can be accessed at times of need);
- risk-reducing behaviour (for example, low-yielding but drought-tolerant crop choices); and
- investment in social capital (for example, developing ties with peers or relatives to increase access to potential assistance in times of need).

The demands that can be made on extended family simultaneously help poor people protect their livelihoods and make them less reliable in repaying formal loans, because family demands on cash resources may be unpredictable, but socially unacceptable to resist.

Savings mechanisms are very important to the poor. By foregoing current consumption, future options are preserved – for consumption or investment. Saving is a type of insurance and the poor may prefer to save rather than to invest. Precautionary savings increase household resilience and the capacity to absorb risks. So strong is the need for safe-keeping of income (from their own personal consumption, consumption by others, or from theft), that in some countries people will actually pay money-guards to look after their savings (which do not accumulate interest). Rotating and accumulating savings and credit associations are another mechanism used by poor people to establish a savings habit (regular contributions are made by all members to a common fund, and the pooled resources are then disbursed to each member in turn). Yet once again, the ultra-poor are excluded from such associations because they cannot commit to regular payments.

These mechanisms are important and provide insight into why farmers pursue certain strategies. Reducing risk may be more important than increasing yields; accumulating savings may be more important than investment; and farmers may keep cattle as savings, rather than as an income-generating venture in their own right.

Rural finance: what is covered and what is not

A useful rule of thumb is to assume that poor rural people do not have access to credit for agricultural and other natural resource-based livelihood investments. There are exceptions to this, of course, but this is the prevailing situation. Box 1 summarizes what and who tends to be excluded (or less excluded) from sources of rural credit. Whilst informal sources of credit are more accessible to the poor, they are usually directed towards very specific needs (loans of short duration and small size, often needed in response to an unforeseen demand). This forces the poorest to depend on their savings.

Box 1: Who and what is excluded or less excluded from rural credit

Tending to be excluded ←	→ Tending to be less excluded
<i>Formal sources of credit</i>	
Women	Men
The poor	Less poor
Illiterate	Literate
Agricultural activities	Non-farm enterprise
Landless	Those with land
Those with no bankable assets	Those with other collateral
Food crops	Cash crops – especially export crops
Unforeseen urgent needs	Planned investments
<i>Informal sources of credit</i>	
Long-term	Short-term
Large loan size	Small loan size
Seasonal inputs and investment	Crisis loans

The features of formal and informal credit are covered in more detail in the section below, before turning to the implications for the research process and research practice.

The characteristics of alternative sources of finance for the rural poor

A key factor determining the level of access of poor people to financial services is the characteristics of the various alternative channels that may be available to them.

Formal financial channels

'Conventional' banks

The most obvious source of finance is actually the least accessible to the rural poor. Many banks in developing countries, particularly the large banks with a major urban presence, have poor rural networks. They rarely lend to the rural poor because:

- they do not see them, because of a weak rural presence, inflexible hours, and buildings, dress-code or other behaviour intimidating to poor people;

- their lending procedures (form-filling, collateral, business plans, savings and reference requirements) exclude them;
- the poor want to borrow small amounts which are relatively costly to administer (per \$ lent); and
- rural populations need loans for agricultural activities, but banks consider these risky, and the applicant has no records to show otherwise.

Even where donors make funds available for farmers, if they are channelled through conventional banks, they may never be disbursed. A recent review of the credit component of a large donor project in Uganda, which was intended to assist farmers procure inputs, found that after two years only 10% of the allocation of US\$ 8.8 million had been disbursed. The outreach and procedures were quite inappropriate for the target group.

In some countries, recent deregulation of the banking sector is leading to greater competition and interest in expanding rural networks. However, some of these banks are primarily interested in access to rural savings. Once banked these savings are more likely to fuel urban rather than rural investments.

Micro-finance

Micro-finance is the response to market failure in 'conventional' banking services for the rural poor. It responds to the needs of low-income households. Sound schemes tend to be characterized by:

- small, short-term loans, and savings mechanisms;
- simplified loan appraisal procedures;
- innovative approaches to collateral;
- rapid approval/disbursement of repeat loans after repayment;
- high transaction costs;
- high repayment rates; and
- savings and loan services provided at a location and time convenient to the poor.

Thus, micro-credit schemes are often associated with group-lending (where peer pressure effectively substitutes for collateral, and other group members may take action to prevent one member from defaulting, by providing labour to assure timely harvest, for instance). Schemes may include extension inputs arranged by the micro-finance institute (MFI). Whilst the latter facility has attractions there may be dangers, for example, where extension advice fails to produce results and recipients may be disinclined to repay if they lack a sense of ownership. Micro-finance may also offer mobile banking arrangements. Cash-flow analysis may concentrate on overall ability to repay the loan rather than a particular investment project. This process may be linked to a programme of loans, starting small and increasing over time in pace with the borrower's capacity to repay. In some respects, MFIs try to imitate the strengths of the informal sector (using local information to ensure repayment, for instance) and some MFIs are experimenting with ways to link their operations with some of the informal sector financial agents.

MFIs can include government and commercial banks, NGOs and savings and loan co-operatives. Some of the largest MFIs are Asian (for instance, Grameen Bank in Bangladesh has 2 million borrowers and savers, Bank Rakyat Indonesia/Unit Desa system has 2 million borrowers and 12 million savers, and BAAC in Thailand has 2.5

million clients). Coverage is less in Africa, but still growing. K-Rep in Kenya has 15 000 clients and the FECECAM credit movement in Benin has 200 000 clients.

Whilst these figures are impressive, they point up a major difficulty: there are too few services to go round and still fewer are likely to become sustainable. Many schemes find it difficult to graduate from subsidized operations to full cost recovery (although a growing number of MFIs now recognize the problem). Un-costed but critical inputs by NGO staff are commonplace. Interest rates are often set below market rates (even at negative real rates, where high inflation prevails). Too little attention may be focused on repayment and follow-up; and farmer experience of subsidies, free inputs and loan amnesties may all contribute to low repayment rates.

Contract farmer schemes

Contract farmer or outgrower schemes focus on very specific needs. They usually operate in situations where a processor or trader faces a supply constraint, wishes therefore to promote production of crop *x*, and has access to sufficient resources (own or loaned) to do so. Inputs are usually provided in kind (to reduce diversion to other activities), accompanied by extension, and the cost of these services is recouped out of the price paid to the farmer when the crop is harvested. The degree of supervision and type of inputs provided vary greatly. High-value horticultural products produced for export may be very closely supervised, for instance, whilst supervision of a cotton crop (which still has to undergo considerable processing before it reaches the consumer) may be minimal.

Factors affecting the viability of outgrower schemes are shown in Box 2. These types of schemes are common for smallholder annuals grown for export such as tobacco, cotton and horticultural products, where the on-farm investment costs are relatively low, and the pay-back period short. (Thus, greenhouse production of flowers for export in Zimbabwe is *not* a smallholder activity). In Africa the cotton schemes are undoubtedly the largest. About 300 000 Ugandan farmers benefit from an input scheme organized by the cotton ginners. In Zimbabwe about 60 000 communal farmers take input loans from cotton companies (and many more participate in other schemes intended to increase cotton output). In Mali about 100 000 rural households participate in the cotton input schemes.

Inventory credit

A fourth mechanism for financing agricultural trade exists in inventory credit or warehouse receipt systems. This involves a tripartite agreement between a bank, a borrower (usually a trader), and a warehouse operator. Essentially, a trader is able to use an existing stock of, say, grain as collateral for a bank loan, provided certain conditions are met. The grain must meet certain verifiable specifications and be stored in a warehouse operated by a third party. The bank will usually lend up to a certain percentage (perhaps 80%) of the value of the grain at that time (at harvest time when prices are low). The trader can then use the loan to acquire additional stocks of grain, and is usually required to repay the loan during the 'lean' season before grain prices start to fall once more with the next season's harvest. The trader must settle all the warehousing costs before s/he removes the grain, and is generally required to repay the loan at this stage too. In the event that s/he is unable to repay the loan, the bank can seize the grain and sell it.

Box 2: Factors which influence the viability of contract farmer or outgrower schemes

Crop market characteristics

If there is limited on-farm consumption and local marketing, it may be possible to collect loan repayments at the point of sale. However, unless there is a crop purchase monopoly, or agreement to share information between different buyers, the farmer may be able to avoid repayment by 'side-selling' (selling to another buyer).

Input qualities

Inputs are often provided in-kind to reduce 'diversion' of the input away from the targeted crop. Diversion is lessened if there is limited alternative use or market for the inputs, or if (unusually) returns to use of the input are greatest for the crop in question.

Commercial/credit context

Prospects for viable operation of the scheme are greater if farmers treat farm as a business and are integrated into markets, and if there are supportive legal/political/contract enforcement institutions. A recent history of loan amnesties, default without penalty, and subsidized inputs may undermine the operation of viable scheme.

Modus operandi of scheme – best practice

1. Group schemes for peer pressure.
2. Group or individual schemes backed up by monitoring/good information, support staff, and ability to act.
3. Incentives for repayment and penalties for non-repayment.
4. Appropriate incentives for field monitors/co-ordinators.
5. Training provided to farmers – extension and business management.
6. Developing relationship/trust/loyalty through field presence/contact.
7. Accessibility of scheme – minimize red tape and transaction costs; organize so location and timing of contact are convenient to farmers.
8. Effective and timely monitoring of input use and crop marketing.

There is a lot of interest in inventory credit at the present time, because of the scope it offers to provide traders with capital, to fuel agricultural marketing. However, its use is limited by a number of factors: it can only be used for crops that are relatively non-perishable, with reasonably predictable pricing scenarios; by definition it is targeted at larger more sophisticated traders, able to purchase initial stocks and fairly confident in their negotiations with banks and warehouse operators; and it is critically dependent on the necessary institutional infrastructure (bank willingness to lend against inventories, warehouse systems which can operate to the standards and within the necessary legal framework, and supportive and enforceable legal institutions).

Informal financial channels

In most countries the poor obtain more loans from the informal sector than from the formal sector. Savings are also an important source of finance. An important constraint on the informal sector is that finance is almost invariably locally obtained. This creates two major limitations: (i) it limits the resources available; and (ii) finance is vulnerable to covariate risk. Thus, when the crop fails, everyone is obliged to default on their locally obtained informal loans. Or, if everyone sells livestock (held as savings) during a poor year, the price of livestock will fall – just when the need for cash is most acute.

Own savings (including sale of assets)

The poor may save to avoid having to take loans on deleterious terms, or because there are no sources of loan available. They rarely use banks, and if they do, deposits do not acquire interest. Instead they save cash, or accumulate assets (such as jewels or cattle) that can be exchanged in times of need. In extreme circumstances, poor households will have to sell assets (such as land) or deplete natural resources (reduce fallow periods so soil degradation occurs) on which their future incomes depend.

Loans from family and friends

Loans from family and friends are an extremely important source of finance for the poor. Loans are usually small and of short duration, often with no interest or collateral, although they may carry an implicit agreement to reciprocate when required. Their major drawback is that such funds are very limited (poor people tend to have poor friends and relatives).

Loans from other sources in the community

Other sources of loan within rural communities include moneylenders, merchants, shop-keepers, pawnbrokers and employers. It is impossible to generalize about the terms of these loans, which vary considerably depending on the place and circumstances*. Certainly arrangements which attract very onerous terms feature prominently in the arguments of those who put forward a strong moral case against middlemen, and it is certainly true that some of these loans are made on terms which are very unfair to the farmer. However, it is also important to remember that these informal sources of loan are often important in communities where there are no other sources of credit.

Rotating and accumulating credit and savings schemes

There are many local variants on rotating or accumulating savings and credit. A broad distinction is drawn between Rotating Credit and Savings Associations (ROSCA) and Accumulating Savings and Credit Associations (ASCRA), but the principal common features are:

- a group of people with some common link, such as area of residence or origin, ethnicity, trade, or religion;
- most groups are either all male or all female, and everyone participating has roughly similar monetary objectives/means inasmuch as all will contribute and withdraw equal amounts from the common fund (the former may be very small or very large);
- everyone makes regular and identical contributions to the fund; and
- the fund is then disbursed in turn to each member of the group.

Some funds have small numbers of participants and very straightforward procedures. Others have more members and may operate sophisticated procedures where members may bid for a part of the fund, with the highest bidder winning and the interest offered contributing towards an accumulating fund. Other variants include groups that contribute labour, with the pooled labour team then able to work on each member's land in turn, and a food-for-work scheme seen in Zambia,

* Dorward (1998) suggests that contractual form may depend on transaction costs and risk, whilst the terms of the contract are determined by the balance of power between the borrower and lender

where women contributed part of the food, so that each periodically had access to a larger (marketable) quantity of oil or flour.

In some parts of the world ROSCAs and ASCRAs are very common. In rural parts of West Africa, several studies show that 50-95% of the adult population are members of ROSCAs/ASCRAs. In Cameroon, membership in certain ethnic groups may be as high as 80-100%.

Other names used to describe the same groups include: *Tontine* (Francophone west Africa), *Esusu* (Nigeria), *Susu* (Ghana), *Stockvel* (South Africa), and *Bishi* (India).

RURAL FINANCE AND THE RESEARCH PROCESS

How might rural finance – its characteristics, its extent, and the people and activities involved – affect the identification, design and conduct of RNRKS research projects? The explanations below draw heavily on examples from actual projects.

Project identification

Information on rural finance – both mechanisms and needs – can contribute to research identification, because it may yield information on poverty and vulnerability. For instance, the poorest groups in India are invariably indebted. Indebtedness is particularly common amongst fishing communities, not just because they are poor, but because their fishing livelihoods are subject to unpredictable fluctuations, and scope to balance these with other activities is limited (fishing communities may not have access to farming land). At its simplest, this indicates a need for income diversification, and ways to improve savings. (Traditionally, the drying of bumper catches by fisherwomen provided a short-term savings mechanism, but declining catches and increased competition from outside fresh-fish merchants has limited the fish available). Organizations working with such communities now place a strong emphasis on the establishment of formal savings mechanisms, as a route out of indebtedness, and to reduce vulnerability.

In Cameroon, poor urban women used non-membership of a ROSCA as an indicator of poverty (because the poorest cannot commit themselves to regular contributions).

Information on the high and low points for revenues and cash needs in the rural calendar can help indicate needs and opportunities for the development of income-generating activities or technologies (particularly when combined with information on labour use). Production of sesame increased rapidly after its introduction to The Gambia. Being drought tolerant, it could be grown at the end of planting season, once other crops had been harvested, and field labour requirements were minimal. However, it was the potential for women to make and sell oil, in the off-season, that made it really popular.

A very specific case arises where credit initiatives lead to the identification of research needs. Two examples are provided.

- Inputs are distributed ‘free’ to cotton farmers in Uganda. The ginners supply the inputs and recoup costs via a uniform deduction per kilo of seed cotton paid to the farmers. The scheme is administratively relatively simple, but one problem with it is that efficient farmers, that is, those who produce more cotton with the inputs pay a higher price for them (because they sell more cotton) whilst the inefficient producers pay less. There is clearly a need to develop similarly straightforward mechanisms that do not generate perverse incentives.
- Group lending schemes have much to commend them, especially where ‘tricky’ decisions can be transferred to the authority of the group. With cotton farmer groups, responsible for crop assembly and the channelling of input loans and crop payments to farmers, a problem arises in the transparency of cotton grading (and apportioning income to individual farmers on the basis of cotton quality as well as quantity). The development of more transparent grading criteria and methods would greatly assist this process*.

In general, the collection of information on rural financial markets may serve to underline the need for more research on credit programmes and the conditions for their viable, sustainable operation. However, beyond noting it, this is not further explored here, because although important and within the scope of the RNRKS, it falls outside the remit of most of the research programmes.

Taking account of uptake pathways during project implementation

The main interface between research projects and rural finance relates to technology uptake. At its most straightforward this is represented by a viable piece of plant, but one that rural people can neither afford nor obtain credit for. Box 3 provides some examples of how project outcomes can be affected by rural finance mechanisms.

Research leaders should be aware of certain situations where rural finance mechanisms need to be given careful consideration before they can be assumed to contribute to uptake pathways:

- (1) where a project generates technology that includes a component which needs to be purchased (e.g. recommendations on the use of inorganic fertilizer);
- (2) where a new technology increases throughput such that a need for additional working capital may arise (e.g. more efficient oil processing technology whose viability depends on higher volumes of oil than that processed using traditional methods);
- (3) perversely, where the new technology obviates the need for an existing source of credit (the IPM cotton example in Box 3);
- (4) a special case of (1) and (2), where not only does the technology need to be purchased, and encompasses a much larger scale of operation, it is assumed this can be done as a group activity (by farmers, women, etc.); and

* Cotton grading is a highly skilled process. Graders employed by the cotton companies in Zimbabwe take three years to train.

Box 3: Examples of how rural finance affects RNR research projects

Project

Genetically male tilapia (GMT) – project to develop, promote and disseminate GMT.

Improving productivity in small-holder cotton – (a) testing/validating existing low-input pest control measures; (b) developing appropriate recommendations for inorganic fertilizer.

IPM in cotton and reducing use of pesticides – development of IPM strategy to reduce dependence on purchased inputs.

Development of oil processing equipment for women producers of sesame seed in The Gambia

Development of coconut graters to improve artisanal processing of oil.

Developing farm-budgeting techniques for smallholders

How rural finance affects project

Technology adoption largely limited to medium/large farmers; small farmers more risk-averse, could not afford technology, and could not access credit in absence of land title.

(a) focuses on existing techniques, with limited effect on demand for rural finance. Outputs from (b) focus on a purchased input that may require credit, and generate results farmers cannot use if credit is unavailable.

IPM technology should have increased farmers' net income because their cash costs were lower. However, the analysis had ignored the fact the cotton input and cotton crop merchants were the same people. Losing revenues from pesticide sales and credits, the merchants offered lower prices to IPM cotton farmers.

The initial success of this sesame project was unsustainable because the focus was on expensive expellers. It had been assumed that groups could run, maintain and replace these. Group capacity was weak – and there was no sustainable source of credit for such large investments. A focus on smaller, manual presses might have proved more sustainable.

Even small investments may be too much for the very poor. Simple manual coconut graters (costing about the same as a length of cloth) were developed for women oil processors in Tanzania. Cloth is purchased on credit, however, from itinerant traders. The grater project should have given more attention to how workshops would fund the marketing and distribution of the graters, for which women could not afford to pay cash.

This project aims to help farmers plan their activities, and may indirectly facilitate access to formal loans. To be really useful, however, its methodologies must take account of non-agricultural demands on income, access to finance (formal and informal), and savings strategies.

- (5) where the research project affects a resource used as an insurance substitute (e.g. savings held as livestock, or varietal selection based on drought tolerance, or early harvest date rather than yield).

The need to think about rural finance in the context of the first case is self-evident. What merits emphasis, however, is to consider the relevance of this to even relatively

small expenditures, particularly if the technology is targeted to especially cash-scarce groups (women for instance), and to stress its importance even where the cash return on the use of the new technology is unequivocally positive. To put these expenditures in perspective it is useful to compare them with other rural household expenditures, and to consider whether these existing demands on cash resources are easily covered or not, and whether this changes throughout the year. The coconut grater example in Box 3 showed that although the researchers did attempt to compare costs with other expenditures of a similar magnitude (e.g. cloth), they overlooked the importance of paying by instalments.

The second case, where the new technology increases the need for working capital, often arises. Sometimes an input that was formerly obtained on farm, may now have to be purchased, or working capital at the level required by the old technology may not have posed a problem, but would with the new technology. Researchers sometimes overlook this, because they often focus on the costs of physical inputs, and the technical relationship between inputs and outputs. Working capital is a cost over and above the cost of the inputs *per se*. Where it is available, it may nonetheless add to uptake costs, or where it is not available (or where it is too dear) it may prevent the uptake of new technologies.

The third situation is probably fairly unusual – where the IPM farmers were offered less for their cotton – ostensibly because they had, after all, incurred lower costs. However, it does underline the importance of understanding the economic context in which target populations operate. Stakeholder analysis might have identified this problem (see the *Best Practice Guide* on Stakeholder Analysis). Pesticide traders would clearly stand to lose from a switch to IPM technologies, and if pesticide traders are one and the same as the cotton purchasers, some form of recriminatory action might be expected (particularly in the context of exploitative interlocked transactions that often apply in the sub-continent).

The fourth situation, the group enterprise, is the most problematic of all. It is often a feature of development projects because it seems to offer a solution to the dilemma that larger-scale technologies often appear more profitable, but are unaffordable to individual farmers (/women, etc.). It often arises in the context of post-harvest technology, although it is not limited to this. The most common problems that arise include:

- the group is formed just for the purpose of operating the new technology and there is no real cohesiveness or experience of group enterprise;
- the group already existed but had much less onerous tasks; the management, organizational and commercial skills needed to manage the group enterprise significantly exceed their capacity;
- the research project takes account of the need for capacity building (directly or via partners, such as NGOs), but the extent and duration of the required inputs is substantially under-estimated; and
- groups sometimes receive preferential access to credit (group lending schemes where peer pressure within the group is an explicit design feature, or because some credit projects assume that group activities are positive and ‘community-

oriented'); access to credit, however, does not confer ability to repay the loan, and capacity to manage the funds may be very poor; moreover, credit access for such groups may contribute to the false impression that this a feasible technology, without assuring sustainability or replicability.

It is best to assume that there is very little capacity for group enterprise in rural communities, unless there is genuine, robust evidence to the contrary.

The fifth situation is harder to signal – where a project affects a resource that poor people use as an insurance substitute – but it is important to consider this issue because it may have implications for technology uptake. Such problems may be identifiable where a sensitive socio-economic analysis of people's activities has been undertaken at an early stage of the research.

What action research leaders can take

1. Investigate rural finance when carrying out needs assessment and project identification work. It may highlight particular needs, as well as providing a useful economic context that may affect uptake of research results. Seek advice (*see below*) on what questions to ask at an early stage in project design.
2. For a particular project, consider whether any of the five situations highlighted above apply. If they do, seek further advice (*see below*) and adapt the project as necessary. For instance, a group-focused processing project may be redesigned to target a better-off entrepreneur, but in such a way that the target group may still benefit through custom processing or through employment. (*In extremis*, honest consideration of the rural finance context could identify an insurmountable problem with the project concept and hence the need to seek a completely different alternative).
3. Where credit is a legitimate and justifiable aspect of the uptake pathway envisaged, work with the credit-providers from an early stage in the project to:
 - see if they have particular information needs that need to be addressed in the project;
 - find out if they have experience of similar technology types, and factors that influenced uptake; and
 - find out what sort of dissemination outputs would be helpful to them.

Where to go for information on rural finance

Discuss the project with social scientists, in UK institutes, or employed overseas with collaborating institutes, universities, projects and consulting companies. Consult NGOs and rural development projects that cover the areas where the research is proposed – they often have very good information on the breadth of issues and resources that influence rural people's livelihood decisions. Extension agents and district development offices should be well-acquainted with the rural context too. Avoid using jargon and be prepared to take time to tease out the issues, particularly relating to the informal financial mechanisms which are important to the rural poor. Be sceptical of blanket statements on the availability of credit. Consult as widely as possible.

Talk to banks, NGOs, micro-credit project staff and donors about rural finance initiatives. It is an area that is currently attracting a lot of interest, and it should be possible rapidly to identify people intimately acquainted with the more visible, formal financial institutions. They will not only know what is available – they will also have a good idea of what works well (and less well).

Where a role for group activity is proposed or likely, ask about community-based organizations, farmer organizations, and women's organizations. Some schemes will only lend to groups, but this can lead to adverse selection, where groups are formed just to access finance, and lack sufficient commitment and experience to work together effectively. If groups are to be used there will also be a need to ensure that effective linkages are in place between the various institutions involved.

The analysis of credit needs and issues may be assisted at a general level through the effective integration of social-science inputs throughout the research cycle. In particular it may be helpful to have an effective socio-economic analysis of communities and potential beneficiaries at an early phase of the research. There may also be scope for participatory approaches (see *Best Practice Guide* on Participatory Approaches). The need for such analyses may be greatest when potential beneficiaries are the poorest, or women, or where groups within such communities are likely to play an important role.

GLOSSARY OF COMMON ACRONYMS AND TERMS OFTEN USED IN RURAL FINANCE

adverse selection	where scheme attracts/signs up unsuitable applicants, usually as a direct result of the way it is designed (e.g. where intermediaries are rewarded on the basis of numbers recruited to a scheme rather than loan performance of recruits)
ASCRA	accumulating savings and credit association – a special case of a ROSCA (see below) such that the pooled fund grows
collateral	borrower's assets against which a loan can be secured
consumption credit	credit to meet a consumption (not business) need
contract farmer	farmer growing crops for a larger farm or company, often receiving inputs and advice, under agreement to sell his/her crop to the company
covariate risk	risk that hits everyone simultaneously (e.g. drought)
FFI	formal financial institution, e.g. a bank
formal sector	usually the more visible, regulated and 'official' activities (e.g. banks rather than pawnbrokers)
Grameen Bank	Bangladeshi bank whose name has become associated with group-lending, small-loan schemes
IFI	informal financial institution, e.g. ROSCA or moneylender

inflation	general rise in the price of goods (<i>see</i> entry on real interest rate)
informal sector	unregulated ‘unofficial’ transactions, which are of much greater importance to the rural poor than the meagre services offered by the formal sector
institution	increasingly used to mean more than just ‘organization’, but rather the rules and customs which guide human interaction
insurance substitute	mechanisms used by the poor such as savings (in cash or kind to cover unforeseen expenditures or a poor crop) or risk-reducing activities (e.g. diversified income sources, cultivation of drought-tolerant varieties)
interest rate	sustainable interest rates need to cover the cost of running the lending scheme (unless other fixed costs are charged), and still offer a reasonable return on the investment (i.e. comparable with commercial returns) after inflation. Interest is linked particularly to the concept of return on investment and this should not be confused with inflation. Where the default risk is high, the interest rate may be raised to reflect this higher cost of running the scheme
interlocking	where credit is linked to sales of crops (or other goods)
inventory credit	where a crop stored in a warehouse provides loan collateral
livelihood promotion	improving livelihoods (e.g. income-generating activities)
livelihood protection	protecting existing livelihoods (e.g. savings mechanisms or consumption credit)
market failure	where market forces result in inappropriate pricing or poor supply despite an obvious demand; e.g. banks are rarely able to offer affordable credit in rural areas because of high screening costs and high perceived risk
MFI	micro-finance institution where lending practices are tailored to the needs and constraints of the poor (<i>see</i> text for more detail)
micro-credit	often implies an emphasis on micro-enterprise
micro-finance	includes savings, insurance, and other financial services needed to improve the stability of poor families, not just business development
money guard	someone who is paid to safeguard someone else’s money
moral hazard	risk that client changes his/her behaviour to exploit a characteristic of the scheme (e.g. expectation that lender will be ‘soft’ on defaulting clients leads to borrower willingness to invest in risky enterprise)
outgrower	<i>see</i> contract farmer
pawnbrokers	informal moneylender who takes possession of borrower’s assets as collateral until the loan is repaid (usually tradable items such as jewellery)

productive finance	finance used for enterprise development
real interest rate	interest rate net of inflation
ROSCA	rotating savings and credit association, where all members make regular identical contributions, and the pooled amount is distributed to each in turn
tied credit	see interlocking
transaction costs	costs of 'doing business' other than the cost of the item exchanged <i>per se</i>
savings mobilization	encouraging and developing savings mechanisms
screening	checking the creditworthiness of prospective borrowers
side-selling	taking a loan from one trader on condition that s/he can be repaid by deduction from crop revenues, but selling to another trader to avoid repayment
strategic default	deliberate decision to default (not caused by e.g. crop failure) where borrower judges the benefits of default to exceed the cost (e.g. where there is an expectation of loan amnesties, for instance)
warehouse receipt systems	see inventory credit

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