The Smallholder Irrigation Market Initiative
Volume III: Capital and Credit

Prepared for
International Development Enterprises and Winrock International
by
Mennonite Economic Development Associates
April 30, 2002

Preface to Volume III

The Business Plan posits four fundamental factors that must be present in viable and sustainable market systems that serve the rural poor: technology, training, information, and capital.

Capital is required at all levels of the commodity value chain: at the input level, private sector enterprises require capital for the manufacture, distribution, and servicing of the smallhold sector; at the smallhold level, farmers need capital/credit for purchased inputs; and at the output level, private sector enterprises need capitalization to allow them to purchase, process, package, transport, and market the goods produced by the smallhold sector.

Volume III deals with the role of capital/credit in the smallholder market system. The study was financed through a special contribution to the preparation of the Business Plan by the Swiss Development Cooperation (SDC), and was executed by Mennonite Economic Development Associates (MEDA).

The study explores the role of capital and credit both at the smallhold level, as well as at the level of enterprises at the input and market output level. It makes an attempt to analyze capital and credit in relation to the specific context presented by the Smallholder Irrigation Market Initiative (SIMI).

As part of this analysis, the study explores the role of a special Fund that may be created at some future point in time-i.e., a Fund that would facilitate access to non-subsidized loans by participants in the emerging SIMI-inspired market systems. At this stage, the authors of the Business Plan do not yet take the step of recommending the creation of such a Fund. Rather, they wish to present this analysis to the donor community and the yet-to-be formed SIMI leadership structure for future consideration.

Table of Contents

Abbreviations & Acronymns

	CFS	Capital Fund Source (e.g., SIMI facility)
	CGAP	Consultative Group to Assist the Poor (World Bank)
	FSC	Farm Service Centre
	GLF	Guarantee Loan Fund
	IDE	International Development Enterprises
	ME	Micro-enterprise
10	MEDA	Mennonite Economic Development Associates
	MF	Microfinance
	MFI	Microfinance institution
	NABARD	National Bank for Agriculture and Rural Development
	NGO	Non-government organization
	OFI	Official financial institution
	SHG	Self help group
	SHPI	Self help promoting institution
	SIMI	Smallholder Irrigation Market Initiative
	SME	Small and medium enterprise

CAPITAL AND CREDIT IN THE SMALLHOLDER IRRIGATION MARKET INITIATIVE

CHAPTER <A>

ROLE AND REQUIREMENTS OF CAPITAL AND CREDIT IN THE AGRICULTURAL SECTOR

1.0 INTRODUCTION

1.1 Background and Context to this Report

IDE and Winrock International are in the process of developing a general proposal to the international development community on how to disseminate low-cost micro irrigation technology to up to 30 million smallholders over a period of 15 years. The general proposal is entitled, *Smallholder Irrigation Market Initiative (SIMI).* To that end, a "Business Plan" is being developed that is meant to provide a blueprint as to how to get the job done. This report is intended to provide input for the business plan.

While the entry point for intervention is low-cost micro irrigation technology (i.e., technologies related to water lifting, water storage, and drip and sprinkler irrigation) for the smallholder producer, such technology must be complemented by relevant agricultural production input supplies and technologies (seeds, fertilizers, management practices, etc.), as well as post-harvest processing and marketing facilities.

1.2 Primary Focus of SIMI

The overall goal is to reduce poverty among smallholder farm households by enhancing their productivity, enhancing their access to farm inputs and facilitating linkages to market outlets which, taken together, will result in generating higher levels of net income for the smallholder farmer. Hence, the smallholder farm unit becomes the centre of our attention with the input supply chain on one side and the output market chain on the other as portrayed in Figure 1.

Figure 1: Input-Farm-Output Model

It is important to note that, because we have chosen to see the world from the small-holder farmer's perspective, we will be concerned primarily about *his* livelihood, not the livelihoods of the players in the input and output chains. That is, we have identified the relatively poor, smallholder farmer as the one we are concerned about and whom we want to assist to develop a more viable farm-based enterprise. Those who are his suppliers and his customers will be viewed only as such – suppliers and customers. Their livelihoods are only important insomuch as they must viably be able to provide their services to the farmer. We are not so concerned about who the supplier is – we are only concerned that someone provides supplies to the smallholder farmer. Stated yet another way – whether the input supplier is a poor person, a wealthy person, or a larger company is not germane to our analysis of the markets serving our primary objective – the viable farm enterprise of the smallholder farmer.

This distinction will be important when we realize that many of those serving the smallholder farmer are indeed not poor. Therefore, even though the overall missions of both IDE and Winrock are about poverty-alleviation, we are in no way directly striving to alleviate the poverty of poor players in the supply and output markets of the farmer. Our clearly stated objective is to alleviate the poverty – through the development of viable farming enterprises – of smallholder farmers.

1.3 The Role of Capital and Credit

It has long been recognized that the commercial development of the agricultural inputs sector, the farmer/producer per se, and the agricultural output market sector is hardly possible without the capitalization of these sectors. Commercial business enterprises anywhere in the world (including the farm business) must have access to financial services. Access to savings and credit facilities can help to make lumpy investments affordable and allocate resources to potential investments with the highest returns.

While at this time IDE may have a strategy for certain agricultural technology, and for the provision of business development services to members of the supply chain, the smallholder himself, and members of the output market channels, it does not yet have a strategy for market capitalization and credit facilitation.

Discussions by IDE and Winrock International with representatives of the World Bank, the suggestion has been made that initially, some US$50 million would be made available to get the initiative started. Of that amount, US$20 million would be allocated for the "market facilitation role," that is, the kind of work that IDE has already been doing such as developing appropriate technology, setting up manufacturers and a distribution network, rural promotion, farmer training, establishing linkages between the farmers and wholesalers and retailers, etc.

The other US$30 million dollars would be a loan from the International Finance Corporation, to be used for the capitalization of new markets, including the financing of inventories, credits to dealers and distributors, and micro credit to smallholders.

It can be noted that with low cost micro irrigation, the typical farmer may need to borrow as little as US$50 (50% for micro irrigation equipment, and 50% for purchased inputs). This allows him to generate some US$100 of net additional income per year. IDE has observed that the typical farmer re-invests half of the net additional income to expand his production, up to the point where his net additional income is about $500 - $700 per year and that he usually gets to that level in five to six years.

An investigation of all aspects of the role of capital and credit is the focus of this report.

1.4 Objectives of this Report

Specifically, this report has a threefold objective for purposes of the Business Plan under consideration, regarding capital and credit, as follows. (The detailed Terms of Reference are found in Appendix 1.)

1. To explore the issues underlying capital-finance-credit of micro irrigation-driven market systems. This calls for an analysis of the role and requirements of capital and credit at the various levels of the chain, including:

(a) the supply chain;
(b) the smallholder as a farm micro-enterprise; and
(c) the output/marketing chain.

This analysis is to be both at the individual enterprise/micro-enterprise level (i.e., manufacturer, distributor, dealer, service delivery, individual smallholder farmer, wholesaler, processor, etc.), as well as at the aggregate level of a given market context.

2. To develop a set of alternative models for the delivery of capital and credit to participants in the input supply, farm producer and output market chain. Efforts will focus on identifying key issues and questions that would need to be addressed recognizing that the economic, marketing, regulatory, policy, cultural, etc. environments may be vastly different from one country to another, and that each

"market shed" will need to be carefully assessed in order to design an appropriate operational model.

3. To present a *modus operandi* with regard to the proposed "investment fund" of US$30 million to be used for the capitalization and provision of micro credit. The analysis will aim at the development of generic models that, to the extent possible, may be applied across socio-cultural and economic contexts in which SIMI will be operational.

1.5 India Context

It is envisaged that the SIMI intervention will focus, initially at least, on six geographic regions of the world in five countries; namely, Bangladesh, India, Nepal, China and Zambia. While the capital/credit analysis presented here will attempt to be fairly broad and comprehensive, identifying critical issues that apply in any context, preparatory field investigations were carried out in the state of Maharashtra, India. Therefore, some specific observations, examples and lessons are based on the situation in India.

2.0 NEEDS ANALYSIS RE RURAL CAPITAL AND CREDIT

2.1 Agricultural Inputs Sector

- This consists of inputs purchased by farmers for purposes of production, in this case primarily field crops, horticultural crops and tree crops. Animal husbandry inputs are not within the scope of this initiative.
- Inputs include such items as seed/seedlings, fertilizer, agro-chemicals, irrigation equipment, implements, agriculture extension information (i.e., improved cropping practices), etc.
- Inputs are typically provided by a variety of commercial suppliers, agents, and dealers. Unlike what one finds in North America, there are few if any one-stop farm service centres where farmers can go to purchase all or most of their needs from one outlet.
- In general, business enterprises, including the farm business itself, need capital investment to first of all get started or to expand, plus working capital for operations.
- Compared to smallholder farm enterprises, most input suppliers are larger in scale, even approaching that of an SME or larger and generally have ready access to bank credit (at 12%-15% interest in India, for example).
- Financing may be in the form of equity capital or loans (credit).

2.2 Smallholder Farm Sector

The farm as enterprise

At times, the smallholder farmer may be described as a subsistence farmer, or a hand-to-mouth operator who does not necessarily see himself as a business

enterprise. In the opinion of the International Programs director of CLUSA, this is the primary obstacle to poverty alleviation among smallholder farmers.[1] As such, it is important to further target those farmers whose personal or communal culture has enabled them to strive to develop their farm as a business enterprise. Generally, this will mean that IDE initiatives will be designed not to work with the "poorest of the poor", but rather the poorest of the economically able. Although their land, labour and financial resources are limited, they have the capacity and vision to adopt better technologies and use them to develop viable farm enterprises.

The farm as micro-enterprise

Having established that the farmer with whom this intervention is concerned is poor but able to conceive of his work as a business enterprise, it is also clear that he is a micro-enterprise. The conventional definition of a "small and medium enterprise (SME) is one with 20 – 10,000 employees and annual sales in the order of $200,000 to $20 million. A micro-enterprise, however, is owned, managed and operated by the entrepreneur and generally has fewer than five employees. Hence, the smallholder farmer fits that description.

Micro-enterprises, whether in the retail, manufacturing or farming sector, have been the focus of much development attention over the past fifteen years. It has been clearly understood that while healthcare and education are important social factors in a community's development, it is the development of business enterprises that will provide it the livelihood to flourish and eventually to self-establish social service institutions.

Within the global push for the development of enterprise solutions to poverty, and more specifically, micro-enterprise solutions to poverty, economists have long argued that productive enterprises are far more beneficial to a community than are trade enterprises. A farm that produces goods for sale within the community, will replace the necessity for food imports into the community, thereby making the community more self-sufficient and allowing its resources to be spent on other imports. A farm that produces goods for export out of the community will bring in new financial resources to the community and thereby expand the economic pie that the community has to work with.

The farmer's need for credit

Whether the farm production unit is large or small, most require credit from time to time in their operations. Commercial farming requires improved production techniques and a higher level and/or value of inputs, which increases total input costs and the investment of capital. A commercial farming operation cannot be developed nor function without access to credit services.

[1] Personal conversation with James Cawley, International Programs, Cooperative League of the USA (CLUSA), Washington, D.C.

The smallholder farmer especially needs access to credit to shift from subsistence/marginal farming to commercial operations since he has limited resources and few assets to start with.

Initially, the size of loan required is also “micro” in size, that is, generally under $100, and for a term of 12 months or less.

2.3 Marketing/Output Sector

- Food crops produced by the farm sector eventually ends up on the consumer’s table, whether the farm family’s own table or that of the urban dweller in a nearby city or one that is in another part of the world.
- The output sector includes marketing agents/buyers, processors, transporters, packagers, warehouse/storage services, wholesalers, brokers, retailers, distributors, and, finally, the consumer.
- In nearly all cases, these market players will be small, medium or large enterprises and as such are not faced with the same lack of credit as the smallholder, micro-enterprise farmer.
- While marketing systems may entail inefficiencies and weaknesses, it is a sobering thought to realize that the hundreds of millions of residents of all the cities of India, for example, find food on their tables every day. Even given the often-poor conditions of roads, transport facilities and communications, somehow tonnes of food find their way from the farmer’s field to the consumer on a daily basis. Before attempting to intervene in the output market chain, it is important to understand how existing markets function.
- Like input suppliers and farm producers, output/marketing businesses will often need access to credit to first of all get started or to expand their business, plus working capital for operations.

3.0 CURRENT SOURCES OF CAPITAL AND CREDIT

Capital, both in terms of owner participation as well as credit, flows to those places where the risk vs return equation is perceived to be most beneficial to the owner of the capital. By definition, there is no lack of capital in the world today. Capital can be obtained from many different sources, some of which are outlined below.

3.1 Public Debt and Equity Markets

Only larger companies can access these markets, which trade in commercial paper, bonds, stocks and various derivatives thereof. In our review of the large agri-food system beginning with the most basic manufacturer of inputs to the final consumer of food, it is clear that only the multi-national and a few national companies are of sufficient strength to access this source of capital.

3.2 Strategic and Trade Investors

Strategic investors are those that purchase ownership of a company, generally with a view to combining several companies and then selling them in a public offering or to a larger player in the sector.

Trade Investors are those companies in the agribusiness sector that wish to expand their reach to new horizons by purchasing total or partial interest in an existing company.

In MEDA's experience of working with finance for small and medium enterprises, strategic and trade investors represent an excellent opportunity for family-owned businesses to sell their ownership while allowing the business to flourish.

3.3 SME Finance Funds

There are a number of SME finance funds in developing countries, set up specifically to invest in growth-oriented companies. International fund management companies sponsor several such funds, while others have been initiated by the governments of these countries.

SME finance funds generally seek out companies with very high growth potential and expect high rates of return. They will provide loan financing, but because of the profit objective, tend to focus on equity capital. Because profit is of primary interest to such funds, the company's original owners (often family-owned) may have difficulty retaining control if a very good purchase offer lands on the table and is of interest to the fund investor.

3.4 Official Financial Institutions (OFIs)

3.4.1 Public and Private Commercial Banks and Credit Societies

The predominant players in the area of finance, of course, are the officially recognized financial institutions, whether publicly or privately owned, including commercial banks, regional banks and various types of cooperative savings and credit societies. All are subject to state legislation, government policy and regulations usually under a "central bank" authority.

For reasons of loan portfolio risk and performance, OFIs generally cater to the needs of SMEs and large businesses rather than micro-enterprises. As explained elsewhere, the individual smallholder farmer gets left out.

Nevertheless, OFIs are frequently required by government policy or decree to set below-market interest rates and to allocate certain portions of their lending activity to agricultural credit. This has led the World Bank to observe:

> *Subsidized interest rates have led to RFIs (rural financial institutions) often being perceived as governmental disbursement windows rather than solid financial institutions. Such perceptions have led to a poor loan repayment*

culture. Subsidies in the form of concessional lending rates and a high tolerance for defaults have often been captured by well-to-do and influential farmers, thereby crowding out poor farmers and further reducing the poor's access to credit.[2]

This is certainly consistent with what we have observed in India and China. For example, in the past 25 years, the Government of India has forgiven outstanding rural debts owed by farmers on four occasions; namely, 1977, 1983, 1989 and 1997. As one spokesperson from an NGO observed, it is little wonder then that the public's perception is that if they can obtain a loan from any public sector bank or institution, chances are very good that they will not have to pay it back. Unfortunately, this is now part of the "credit culture" of India and the context in which any new credit program will have to function.

In India the flow of institutional credit (from OFIs) to agriculture has nearly doubled in the latter five years of the 1990s, from Rs 264 billion to Rs 515 billion, with a growth rate of 15% to 21% per year. Interest rates are in the range of 12% to 17%. Unfortunately, loan recovery rates are only 60% to 70%[3] compared to recoveries over 90% reported by MFIs.

3.5 Informal, Non-bank Lenders

3.5.1 Moneylenders, Family Members and Relatives

Since the smallholder farmer most often does not have access to bank credit, his only other option might be to borrow from family, friends or the local moneylender. In India, NABARD reported that 36% of the rural population depends on moneylenders, who typically charge interest in the range of 5%-10% per month. It was indicated that 58% of poor households have no access to credit. The fact that a farmer is willing to borrow money at 60% may suggest that access to credit is more important than the rate of interest itself.

3.5.2 Dealers, Agents and Traders

As explained in more detail in Chapter B, 2.1 and 2.2 below, viewing dealers and traders as a source of credit for smallholder farmers has several important limitations; namely:

- Credit is linked to whichever input is being sold by the supplier, which does not meet the farmer's need for other inputs.
- Credit is not the supplier's primary business and he will not likely have the necessary skills to manage credit services.
- Because of the high risk, the input supplier may not be willing to sell his products on credit.

[2] *Rural Finance: Issues, Design, and Best Practices,* World Bank, 1997, pp. 3 and 102.
[3] IDE India office, New Delhi.

- There are few if any situations where an output buyer/trader would provide a loan to the farmer, since the farmer is the vendor, not the buyer.

3.5.3 Community Based Financial Groups[4]

This methodology was first documented in the late 1980s. Various terms are used for such groups including village or community banks, credit associations, group guaranteed lending and savings, credit management groups, solidarity groups, or simply self help groups. Characteristic features of community banks generally include:

- Both savings and credit services are provided.
- Membership is voluntary and there is a participatory management structure.
- The group's loan fund derives from member savings, loan portfolio interest earnings, and bulk borrowing from an OFI (e.g., commercial bank).
- Loan guarantees depend on peer pressure/co-signing and peer support.
- Size of loans are usually tied to the amount of savings deposits.
- Small loan sizes and quick turn over (less than a year).
- Majority of groups are made up of women.
- Village banks may join forces to form a second-tier association, apex body or federation of village banks.
- Because group members develop a strong sense of ownership, have significant management control and realize real growth in equity, repayment rates are typically over 90%. Even if interest rates seem high compared to commercial bank rates (which are often below market levels), members know that much, if not all, of the interest they pay will stay in their community rather than disappear into bank revenues.
- To build long term sustainability, care is taken so as not to mix a viable micro-finance methodology with poverty reduction objectives.

Since in India it is difficult for individual smallholders to access credit, Self Help Groups (SHGs) appeared there in the early 1990s. A brief description of how they function follows:[5]

- Each group is made up of 10 – 20 farmers (often women); voluntary membership; generally meet weekly.[6]
- The purpose is to work at mutual development, discuss problems, explore solutions, develop governance and leadership; training; and internal lending.

[4] *Reference Guide for the Microfinance Sector,* Canadian International Development Agency, 1999, p. 86. Also, *Village Banking: The State of the Practice,* by Candace Nelson, *et al,* Small Enterprise Education and Promotion (SEEP) Network

[5] Based on information obtained from NABARD, Pune and from Raghav Gaiha, *Microcredit and the Rural Poor: A Review of the Maharashtra Rural Credit Project,* Journal of Microfinance, Fall 2001, p. 135.

[6] *Ibid.* p. 148. According to the Companies Act, 1956, any company, association or partnership consisting of more than 20 members conducting business for gain must be registered.

- Savings are encouraged; Rs. 25 – 100 per month (equals US$ 0.50 - $2.00); open a group savings account at local bank; earn ~7% interest.
- After functioning for 6-12 months, start internal lending using their pool of savings as capital; loan interest generally at 2%-3% per month, as decided by the group; savings activity continues.
- With these interest rates, the SHG earns a margin of 12%-24% per annum on its loan portfolio.
- Loans are not necessarily for productive purposes but may be for consumptive reasons.
- After 1-3 years of internal lending experience, they can obtain a group loan from the bank at ~12% interest, starting off at 1:1 ratio with the amount in savings.
- Group on-lends to its individual members; the group assumes responsibility for repayment of the bank loan.
- Operations are monitored by the lending institution. Subject to good performance, the ratio of group loan to savings amount gradually increases over time.
- NABARD in India reports that 90% of the SHGs are made up of women.

Given that individual smallholder farmers in many developing countries do not have ready access to credit services, even from family or moneylenders, their only other option may be to join some type of community-based group. And since IDE's objective is to assist the smallholder, any intervention strategy may need to incorporate SHGs. When selecting a geographic region or watershed for the project, the existence of SHGs already formed would be an advantage, if not a necessity.

3.5.4 NGO Micro-finance Institutions (MFIs)

The term *micro-finance institution* can apply to community-based groups or village banks as such. It can also be used to describe a second or third level tier where it represents some type of apex body, a grouping, association or federation of smaller financial organizations. Such an apex body is often used to standardize and promote best practice management, to provide training and technical assistance, facilitate the use of collective savings and to leverage capital funds. More efficient provision of services can be attained through economies of scale.

Surprisingly few MFIs were observed in India. Perhaps it is because an MFI would have to compete with the relatively low interest rates (12%-15%) offered by NABARD, a government lending institution set up to service SHGs, either directly or by re-financing via the banks. (NABARD lends to the banks at 7.5% interest.) Financial sustainability for an MFI is not likely possible at these rates.

3.5.5 Role of Savings

The role and importance of savings should not be overlooked as observed by the World Bank and others.

> *Rural communities have been perceived as too poor to save, so efforts have been concentrated almost exclusively on the provision of credit, ignoring the perhaps more crucial benefit of rural savings facilities.*[7]

There is often a misconception that the poor cannot and do not save when in fact a variety of rural financial institutions have demonstrated unambiguously that rural communities can and want to save if given the appropriate instruments to do so (e.g., the Bank Rakyat Indonesia and the Bank for Agriculture and Agricultural Cooperatives, Thailand).[8] Savings mobilized by a rural MFI can become an important source of smallholder credit while at the same time enhancing clients' perception of having ownership in the MFI and increasing their commitment to repaying loans.

4.0 CONSTRAINTS ANALYSIS OF CURRENT CAPITAL AND CREDIT SERVICES

4.1 The Nature of Capital and Credit

The most basic of principles understood by economists is that wealth is created by the combination of three factors of production – *land, labour, and capital*. The enterprise of farming is an attempt to create wealth by taking raw material resources such as seeds, water and fertilizer (collectively known as 'land' in the world of economics) and growing something more than one had before by use of one's labour. Doing this, a farmer combines land with his labour and thereby creates wealth for himself. The third factor of production, capital, is the application of stored wealth in the wealth creation process. By adding capital, say in the form of a tractor, to the farming enterprise, the farmer can create more additional wealth than he could without it. Without capital then, without the use of stored-up wealth in productive assets, any economy and any economic enterprise is limited to very slow growth of wealth. Capital is therefore a very important factor in all aspects of the input-production-output chain associated with smallholder farmers.

A second aspect of capital that is important to recognize is that it is a long process for any person or entity to accumulate wealth and, in turn, use it as capital. It would take a long time, for example, for a farmer to accumulate enough wealth to be able to purchase a tractor. During this time of accumulation, his wealth would lie idle. Fortunately, economic systems have enabled us to firstly accumulate wealth, secondly, to quantify that wealth in monetary terms, and thirdly, to rent the accumulated wealth of another person. In this way a farmer, rather than accumulating wealth over a long period of time in anticipation of purchasing a tractor, may take a loan from another person, perhaps via a financial intermediary such as a bank, and purchase the tractor immediately. This act enables the

[7] Jacob Yaron, *et al., Rural Finance: Issues, Design, and Best Practices,* World Bank, 1997, p. 3 and 112ff.
[8] *Ibid., p. 112-113.*

farmer to accelerate his own accumulation of wealth, thereby paying off the tractor and adding to his own wealth long before he otherwise could have without such a loan. Credit, then, becomes an important factor for any business enterprise when contemplating an increase in its productive capacity.

Finally, it is important to note that in a relatively free market, where there is demand, there will be supply. Or, rather, where there is demand at the right price, there will be supply if supply is possible. There may be many constraints to the supply of goods and services, only one of which is capital. Because capital is one of the many inputs in the production and supply of goods and services, it cannot, in and of itself, solve a non-supply problem. Capital does not drive production – market demand does.

4.1.1 Risk

As noted above, access to capital is of critical important for a business enterprise. Certainly, a business enterprise wishing to remain *in stasis* in an otherwise stable economic environment can work without much capital and credit. However, whenever the application of additional capital is desired, business owners will seek such capital either through credit or the equity investment of other participants. Naturally, suppliers of credit are risk averse and seek to rent out their wealth to those who will pay good returns at minimum risk. As such, they evaluate risk. In return for accepting a higher level of risk, owners of wealth will demand higher rents.

Evaluation of risk involves numerous factors. A number of these, and the assumptions related to the outcome of these factors, directly relate to the situation before us.

- Agricultural *production* is seen as high risk. This assumption serves to reduce the amount of credit available to such enterprises and increase the rates that are demanded when such credit is offered. Agricultural production is seen as risky because it is subject to volatile weather patterns and commodity price fluctuations. History has borne out that such a view is indeed warranted. MEDA's recent conversations with a variety of private and multi-lateral development investment funds show a strong aversion to investment of any capital in the agricultural production sector. In fact, many such publicly funded multilateral development agencies have a strong aversion to any kind of agricultural activity, not just production.
- Small farmers are seen as high risk. Observations by the IDE India team confirm that financial institutions are generally reluctant, without reliance on express or implied government guarantees, to make any loans to small farmers.[9]
- Smaller enterprises have a more difficult time attracting capital than do larger enterprises. Suppliers of capital and credit will seek a high return, a low risk,

[9] Dr. Sanjiv Phansalkar, Amol Management Consultants, Nagpur, M.P., India

and high efficiency of administration. Because financial transaction costs (paperwork, due diligence, etc) do not rise as quickly as the size of the transaction, it is generally more profitable to work with larger sums.

- Start-up ventures are seen as higher risk than existing, otherwise stable enterprises undertaking a growth strategy. Many suppliers of credit and capital will not consider start-up ventures in their portfolio. MEDA's own Sarona Fund is one such entity. As a result, Venture Capital Funds have filled the niche, demanding exceedingly high rates of return for the additional risk associated with start-ups.

We note therefore, that of all the market players in our input-production-output chain, the micro-enterprise farmer will have the most difficult time finding access to credit. Because businesses in the input and output chains are involved in a less-volatile business, because they can more easily adapt to market changes, and because they are generally larger, more stable businesses, they will have an easier time attracting capital and credit and thereby meeting the market demand for their product or service.

4.2 Capital Constraints in the Inputs and Output Chain

Input suppliers are those enterprises supplying seed, agro-chemicals, equipment, technical expertise, etc. to the producer. What characteristics do these suppliers display? Generally, these suppliers will not be micro-enterprises.

- Agro-chemical supplies are generally produced by large businesses, often multinationals such as Monsanto, and then distributed through SMEs and, in some cases, through micro-enterprise dealers.

- Seed suppliers are generally country or region-specific SMEs. As with agro-chemical supplies, seeds may or may not be distributed through micro-enterprise dealers.

- Agricultural equipment such as hand tools and small implements will generally be manufactured by SMEs. Equipment of higher sophistication such as power tools and tractors will generally be produced by large businesses and possibly distributed through SMEs.

- Technical services are rendered by a whole host of suppliers, from local micro-entrepreneurs right on up to large business. In India, Tata Rallis, a division of India's largest private company, has recently begun offering technical services directly to smallholder farmers. Whereas equivalent services have often been provided by very small business or development agencies, Tata has clearly determined that there is a good business opportunity in providing such services directly and thereby, hopefully, capturing the large agro-chemical market as well.

- Distributors, dealers, assemblers, hawkers, etc. in the supply chain do not add value other than delivery, linking demand and supply, and combining certain inputs to fit the needs of the client. While it may be argued that an infusion of capital into these business entities might improve the timeliness, efficiency and even quantity of supply in the market, our observation is that such an infusion would be both hazardous as well as sub-optimal in its usage. We have observed that, particularly where technical assistance is available to communicate the farmer demand to the input supplier, there is ready and adequate supply of capital. The capital constraint occurs more frequently at the farmer level. That is, the farmer may wish to purchase a certain input but does not have the financial capacity to do so.

Business entities in the **output chain** include all manner of agents, brokers, traders, transporters, wholesalers, retailers and exporters. These entities move a product from field to table, but generally do not significantly change the product itself. In addition, the output chain also includes processors who do convert the product from one form to another.

- Movers of the product generally employ capital to buy and sell product – they need lines of credit for trade financing purposes. These entities range in size from the very small village agent (who often does not need to employ his own capital but rather works for a regional broker) to the large multinational distributors.

- Processors need capital, not only to purchase the product, but also to buy buildings, machinery, and employ people. Because processing is unique to each product and market, it is quite likely that the SIMI project will find significant need to convince existing processors to process new products or even to call new processors to life.

The question that needs to be asked is whether there is a dearth of capital in any of these input and output streams. If a large number of smallholder farmers significantly increase their scale of operations, as is envisioned by SIMI, would it create a demand for capital in the input chain that would not easily be met by existing suppliers of such capital? Because capital is just one of the many inputs, one could equally ask whether such an intervention might create a demand for other inputs such as plastic, or seeds, or water that could not be met. In this document however, we will concern ourselves only with capital.

As noted earlier, the larger the business enterprise, the easier it is for the enterprise to access credit. Because most of the suppliers of agricultural inputs to the smallholder farmer are SMEs or large businesses, it would generally not be a problem at least in the short run for these enterprises to absorb increased demand for their products and to meet that demand by an incremental increase in their business activities. In the longer run, if the increase in business is significant enough, a large business can seek capital through banks, bond markets, or equity markets. SMEs can generally attract capital through banks or strategic private

investment. In many parts of the world however, SMEs active in the agricultural sector have trouble gaining access to credit. In large part this is because, as noted above, banks have been solidly put off by their dismal experience in agriculture. Many have shunned the sector altogether, and do not differentiate between agricultural production and the supply of agricultural inputs. Banks in various countries have frequently been forced into agricultural lending by their governments and will now do so only if coerced or if their risk is guaranteed.

The Sarona Global Investment Fund Inc.,[10] based in North America and operating in Latin America, has indeed found significant demand for capital from SMEs in the agricultural sector. Anecdotal evidence of those applying for credit or equity investment suggests that, when liquidity becomes tight in a country, the agricultural sector is one of the first to be cut off by the banks. Sarona has found significant demand for credit, both on the input and especially on the output side.

One aspect to be considered is the business operations, corporate structure, and capital needs of entities that start up or are significantly altered as result of a large development initiative as proposed by SIMI. It is entirely possible that SIMI will initiate the need for new suppliers or market-stream entities, such as a Farm Service Centre or a product processor.

4.3 Credit Constraints for the Smallholder Farmer

Micro-enterprises have a decidedly more difficult time gaining access to credit than larger businesses. Commercial banks prefer not to lend to micro-enterprises and when they do, they avoid lending to agricultural production. Hence, micro-entrepreneurs generally must rely on informal sources for credit; namely, the extended family, community moneylenders, and from micro-finance institutions.

In most developing economies, micro-enterprises and certainly smallholder farmers, operate within the informal sector, which is generally outside of the purview of state laws and regulations. Many of the subjects of our interest will be farming on land that is theirs in practise, but not in law. This critical element has significant bearing on their ability to convert their apparent assets into capital. Hernando de Soto, in his recent book, *The Mystery of Capital*, clearly outlines the limitations which this places on those businesses, including farms, working in the informal sector.[11] This will also have a significant bearing on our attempted development of the smallholder farmer. Without the ability to chattel his land, barn or house, the farmer is extremely restricted in his ability to access the necessary

[10] Sarona Global Investment Fund, Inc. is managed by MEDA Investments Inc. and is based in Pennsylvania, USA. The Fund makes loans and equity investments in micro/small business banks and agribusiness.

[11] Hernando de Soto, *The Mystery of Capital,* Basic Books, New York, 2000.

capital to grow his business. Without the ability to leverage his capital with the capital of others, his growth strategy will be extremely limited.

Individual households in the farm sector are *price takers* and thus have little power in the marketplace. Individual smallholder farmers are often unable to obtain loans from OFIs/banks (NABARD says 58% of poor do not have access) for several reasons; namely:

- Lack of collateral; the farmer/operator may not have legal title to his land. In China, no agricultural land is under private ownership, therefore, the farmer cannot use land as collateral.
- Banks are more interested in fewer larger loans rather than many small loans.
- Documentation required is too onerous; requiring many trips/visits (e.g., "No Due" certificate from other lending institutions are difficult to get; the applicant often has to pay something to get it, which adds to overall cost of the loan).
- The application approval process takes 4-6 weeks compared to a few days from NGOs/MFIs.
- Women often don't qualify because even where the family has assets for collateral (such as land), since they are usually registered in the husband's name.
- The loan purpose and size is often defined or dictated by the lender, such as being tied to a specific purpose or crop.

Fortunately, the development of micro-finance programs in many parts of the world has allowed micro-entrepreneurs in the informal sector to borrow money based on character, group membership and history alone. This has indeed enabled smallholder farmers to access credit and is an important ingredient in the proposed IDE/Winrock initiative.

4.4 Key Issues to Include in an Analysis of Farm Credit

Since the farm credit situation will vary from one project area to another, financial services will have to be tailored accordingly. Any assessment or analysis of a market shed area should address the following key issues and questions regarding capital and credit.

(a) What are the traditional sources of capital and credit available at present, if any?
(b) What types of credit institutions exist in the region; who owns them; are they operating effectively; who are their clients, etc.
(c) How do similar businesses in the region manage their operations with respect to capital and credit? Are most sales on a cash basis only; on 30 or 60-day terms, or some other arrangement?
(d) Are smallholder producers eligible for existing credit? If not, what are the obstacles?

(e) Do players in the supply and output chain have access to credit services? If not, what are the obstacles?
(f) What economies of scale with respect to credit service providers need to be taken into consideration?
(g) Is lack of capital/credit in fact the obstacle limiting business/farm expansion or are there other socio-economic factors at play? Is the problem shortage of capital (supply) or lack of access by the farmer?
(h) Where credit is available, what is the real cost to the borrower, both in terms of transaction costs and interest charges?
(i) What is the nature of the "credit culture" in the region? Is there a history of past credit schemes that have failed?
(j) What are the realistic expected economic returns of the planned agricultural crops? How will the producer's cash flow be affected? What other on-farm and off-farm income sources does the typical farm household have to work with (e.g., livestock, fishing)?
(k) What are appropriate loan terms and conditions suitable for meeting the farmer's needs and his capacity to manage debt (e.g., length of term, size of loan, repayment schedule, interest, etc.)?
(l) Customer savings provide an important source of capital for credit institutions for on-lending. A financial institution can provide a safe place for farmer clients to park their savings, thereby mobilizing local resources for on-lending. For the given region, what is/should be the role of savings mobilization?
(m) What marketing infrastructures are in place; what are the weaknesses and bottlenecks, and how can they be improved?
(n) What is the legal and regulatory framework for rural finance?

In the event that the creation of new microfinance institution is contemplated, or the appropriateness of an existing MFI must be assessed in terms of how it can serve SIMI clients, there will be a host of additional design and management issues that will need to be addressed. This would include such things as financial services/products offered, non-financial services (commonly called business development services), institutional management/governance and ownership, growth of the group or individual, capacity building, financial information systems, performance indicators, long-term sustainablility, etc. An extensive body of literature has emerged in this regard. [12]

4.5 Is Capital the Primary Constraint?

Many have questioned why smallholder farmers seem so undeserving, both on the input side as well as the output side. Some have asked whether an injection of capital at strategic points in the whole agri-food chain might enable smallholder farmers to participate more actively in this market chain.

[12] See for instance the excellent guidelines found in Joanna Ledgerwood, *Microfinance Handbook, An Institutional and Financial Perspective,* World Bank, 1999.

MEDA has been involved in numerous agricultural market systems in Asia, Africa, Latin America, and North America, and we conclude that, while capital may be woefully difficult to access at certain points in this chain and warrants significant attention in the SIMI endeavour, it is not the most critical constraint. The most critical factor preventing smallholder farmers from participating more actively in the commercial agri-food system is their relatively small size. A small farmer acting on his own has very little bargaining power and hence, very little effect on input and output markets.

As clearly stated by Dr. Dixit, of the IDE India team, purchasers of farm produce do not care about the size of the enterprise producing the product. They do not have a preference, nor do they have an anti-preference towards smallholder farmers. What they do want though, is clear:

- Quality – adhering to high taste, aesthetic, and health standards.
- Quantity – sufficient volumes to meet demand
- Price – as low as possible, please
- Consistency – of all of the above.

Unfortunately, this sets any smallholder farmer at a severe disadvantage. It is not that the food markets have an inherent grudge against small farmers. It is simply that the small farmer is unable to deliver what they need.

The obvious answers to such a dilemma are to either group smaller farmers into associations/cooperatives/corporations, or to encourage a process of growth and attrition. Both of these scenarios have played themselves out in many parts of the world. North America has experienced a huge level of growth and attrition. The number of surviving farms is a small fraction of that of fifty years ago while remaining farms have grown. North American family farms, perhaps the equivalent of smallholder farmers of the developing world, have found it impossible to survive in a milieu of decreasing margins spawned by increasing mechanization and competition. Some of those that remain have formed new generation cooperatives in an effort to present a larger and stronger face to competitive markets.

The question facing developing economies in a global marketplace is, “Will it be any easier for smallholder farmers to survive than it was for family farms in North America?” If the answer to this question is acknowledged as ‘No’, then the concomitant question must be, “Should those concerned with poverty and development assist smallholder farmers even in the face of a necessarily losing battle and to help them make the transition to a restructured economy?” We hope, of course, that the answer is "Yes."

In Peru, we observed a development agency that provided technical assistance to smallholder farmers to help them grow high value crops, to group them into associations and corporations to create larger market forces, and to connect them

to a processor/exporter who sold the product to European buyers.[13] The processor could not deal with individual farmers, but through the growers association was able to do so.

In another Peruvian situation, a group of thirteen small/medium farmers create a 'new-generation' cooperative in the form of a corporation, through which they were able to build processing facilities and gain sufficient volume to enter the export market for table grapes.[14]

In Bolivia, a development agency organized large groups of smallholder farmers into producer associations, which then in turn created a processing and exporting company. The development agency provided technical growing, processing and marketing assistance for a number of years during start-up. A friendly SME finance fund provided an operating loan. The farmers now grow, process, and export independently.[15]

In Nicaragua, a development agency organized and provided technical assistance to groups of smallholder farmers and linked them up with an agricultural marketing company to export their products to Costa Rica and Mexico.[16]

[13] ADRA (Adventist Development and Relief Agency) organized farmers in the Andean highlands to grow certified organic sesame, quinoa, and amaranth, which were processed and exported to Europe by Gronsa, SA, of Lima, Peru.
[14] Corporacion Fruticola de Chincha; Sr. Felipe Jona, CEO
[15] Mennonite Economic Development Associates (MEDA) established the ASOPROF farmers Cooperative and the ASOMEX SA bean exporting company in Santa Cruz, Bolivia.
[16] MEDA organized farmers to grow black beans, a non-traditional crop, extended near-market-rate loans and connected the farmers to Cofam SA which purchased all production based on use of certified seed and other high quality inputs.

CHAPTER <B>

ALTERNATIVE CREDIT DELIVERY MODELS

1.0 INTERVENTION STRATEGY

As noted earlier, smallholder farmers will always need access to credit if they are operating their farm as a business enterprise. Generally, this will entail growing higher value crops, which in turn entails buying qualified seed and agro-chemical inputs. In many parts of the world, an improved farming enterprise will also incur costs needed to develop or operate a reliable water source, such as well-drilling/digging, water pumps, irrigation equipment, etc. All of these inputs increase the input costs and the investment of capital. A farmer that is unable or unwilling to take the risk of such outlays will not be able to participate in an improved farming enterprise.

How, then, is a smallholder farmer to gain access to the needed credit? This may indeed, be one of the most difficult elements that IDE and Winrock will need to address. As noted above, credit for micro-enterprises is generally available only through informal sources such as family members or local moneylenders (sometimes called loan sharks), or through MFIs. The experience of MFIs has, in one respect at least, been similar to that of commercial banks – agricultural lending is a risky business. Because of the uncertainties of weather, erratic government subsidy and debt-forgiveness programs, and because of commodity price volatility, credit extended to smallholder farmers is high risk.

In most parts of the world, it is also a costly business. Because of the relatively lower population density of rural areas compared to urban areas, it is difficult to attain efficiency of lending, resulting in higher loan transaction costs and therefore demanding higher interest rates. Having said that, it must be noted that many development agencies are indeed making progress in the development of rural agricultural lending and such programs should be sought out as an integral partner to any effort in developing improved agricultural enterprises for smallholder farmers.

2.0 ALTERNATIVE MODELS OF CAPITAL AND CREDIT INTERVENTION

Several alternative capital and credit delivery models are described below along with some of the important strengths and weaknesses of each. In most cases, this is done in a generic, conceptual sense while others would apply more specifically to India.

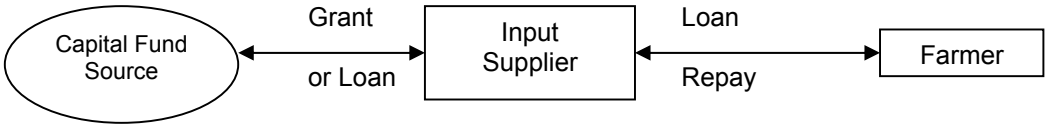
The models are not necessarily mutually exclusive and various combinations may be considered. Note that the term “Bank” used in the figures refers to Official Financial Institutions (OFIs), including commercial banks, national or regional banks, and credit cooperative societies.

All of the models assume the existence of a “Capital Fund Source” that represents some type of entity set up by the SIMI project designed to inject new capital into the system if needed. In some instances, existing financial institutions may already have sufficient capital and liquidity to support a growing demand for rural credit stimulated by SIMI. This would need to be assessed on a case-by-case basis.

2.1 Model I: Inject Loan Funds directly into Input Supply Chain

Under this model, credit funds are channelled directly from an outside source (such as a SIMI entity) to input suppliers who in turn extend credit to their smallholder farmer customers.

Figure Model I: Supply Chain Credit



Pros

- On the face of it, this appears to be a simple arrangement since no formal or informal financial institutions are involved and the input supplier is able to provide credit directly to his customers, facilitating the sale of his products.

Cons

- The farmer hereby obtains credit from one dealer for only one kind of crop input (e.g., irrigation equipment or seed) but may require credit for all or most other of his crop inputs as well. Now, it if one supplier is willing to extend credit, it is possible that others would be willing to do the same. However, the more credit sources the farmer has, the riskier each credit becomes, and the less willing the supplier of credit will be to extend such credit. Nevertheless, for this model to be effective, all input suppliers would need to be able and willing to provide credit.
- The provision of credit is itself a separate and specialized business. The supplier of farm inputs is primarily in the business of selling/servicing his product and not in the business of rural credit, which involves a number of financial functions such as setting appropriate terms and conditions of a loan, tracking disbursements and payments, collecting overdue accounts, etc. Only in

exceptional cases will the supply dealer have the technical skill or interest in performing such financial services.

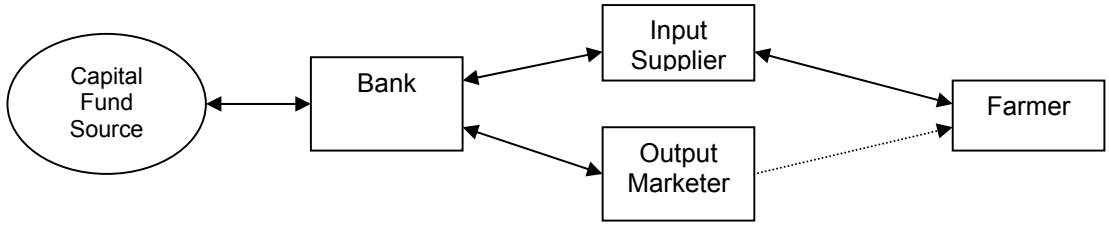
- Experience has shown that suppliers may not be willing to take the risk of selling on credit, except to a few selected customers who are known personally to the dealer. Someone may suggest, therefore, that the dealer should make greater efforts to get to know his customers so as to enable him to assess if they are a good credit risk. This may have some merit for a fairly small business enterprise serving a limited number of local customers, however, this is clearly not a feasible option for a commercial supply dealer with a customer base of several hundred or even thousands of potential customers.
- Funds may be made available to suppliers either as a grant or loan basis. Assuming that any model is to be based on a long term sustainable basis, funds made available to suppliers would also need to be on a loan basis needing to be repaid. Will the SIMI-related entity be in a position to manage and administer such loans to a large number of suppliers?

2.2 Model II: Channel Loan Funds to Supply and Output Providers via a Financial Institution

This model is similar to the first except loan funds are made available to a lending institution that extends a line of credit to suppliers or output providers to enable them to sell on credit.

There are few if any situations where those in the output chain would provide loans to the farmer/producer. After all, it is the marketer who is buying from the farmer, not the other way around as on the input side. A processor, for example, might pay the farmer an advance or an initial price for his commodity. To enable the processor to do this, he may well need access to operating capital in the form of a loan from the bank, but money he pays to the farmer is not money that needs to be repaid.

Figure Model II: Supply and Output Chain Credit via Bank



Pros

- This arrangement, in part at least, shifts the responsibility of managing the loan fund from the capital fund provider to a financial institution.

Cons

- As in the first model, credit is tied to each input product and will not likely meet all of the farmer's needs.
- The suppliers may not be willing to sell on credit as described above.
- While this model might not satisfy the credit needs of the farmer, it would be one way of meeting the needs of suppliers and processors/marketers to give them credit with which to operate their businesses.

2.3 Model III: Guarantee Loan Fund

To encourage otherwise reluctant lending institutions to extend credit to individual borrowers or micro enterprises, this model provides an incentive for them to do so. The incentive could take one of three forms:

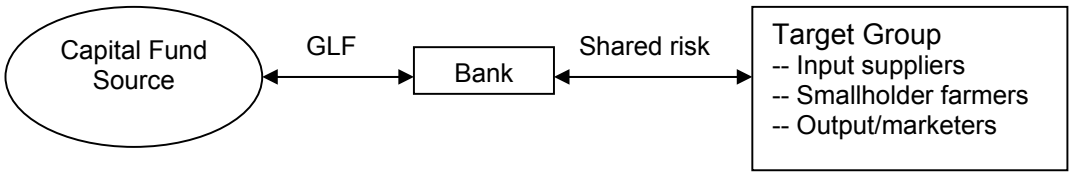
(a) The provider of the capital fund deposits a bulk amount with the lender and agrees to pay him a commission or service fee to administer and manage loans made to the target clientele in keeping with the donor's specifications;

(b) The provider of the capital fund deposits a percentage (say, 50%) of the total needed with the lender and the lender provides the other portion. Many different arrangements can be made, but for example, the donor and lender could share the risk of default, the lender would cover loan administration costs in return for most or all of the interest earnings collected from the borrowers.

(c) A guarantee contract is made, with or without an actual deposit of funds by the provider, whereby the provider agrees to underwrite all or a portion of onward loans.

The second or third type of arrangement is probably to be preferred where it "forces" the bank to take more ownership of the scheme by assuming part of the risk.

Figure Model III: Guarantee Loan Fund



Pros

- It encourages lenders to lend to a target sector of businesses by reducing risk to the lender.

- It increases access to credit for the desired target group.

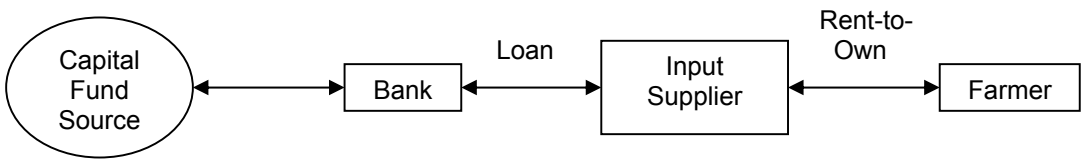
Cons

- In theory, over time this experience is intended to convince the lender that the target group is worth doing business with, or at least with those businesses who successfully grow to a larger, more mature stage as a result of being given access to credit services. In practice, this outcome is not guaranteed and examples demonstrating success are difficult to find.[17]

2.4 Model IV: Hire--Purchase Scheme

If the product being sold by the input supplier consists of a depreciable asset that could be re-possessed in the event of a loan default (e.g., a machine, irrigation pump or equipment), the supplier could offer a hire-purchase or rent-to-own scheme to his/her customers whereby the user pays rent to the dealer for a specified period of time, after which ownership of the asset transfers to the user. The Singer sewing machine company has used this approach with considerable success. The "hypothecation" of tractors, motorized rickshaws and other equipment is common practice in India.

Figure Model IV: Hire – Purchase Scheme



Pros

- Risk of default for the lender is reduced. Ownership of the asset remains with the lender until the last payment has been made.
- The asset can readily be re-possessed in the event of default of payments.

Cons

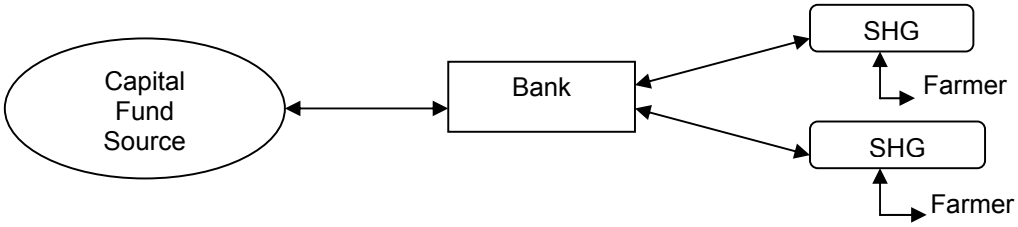
- Such a scheme can only be used for larger, discreet items of machinery and equipment. It is not suitable for farm inputs that are "consumed" in the production process (i.e., seed, fertilizer, plastic mulch, labor and materials for digging a well, etc.).

[17] Jacob Yaron, *et al., Rural Finance: Issues, Design, and Best Practices,* World Bank, 1997, pp. 78-80.

2.5 Model V: Solidarity or Self Help Group Formed and Financed by the Bank/Lender

Rather than direct lending to individual business or farm owners, under this model, banks themselves act as self help promoting institutions by forming and nurturing self help groups (SHGs). In India groups typically consist of 10 – 20 smallholder farm households, and function as described above.

Figure Model V: SHG Formed and Financed by Bank



Pros

- From the bank's perspective, lending to SHGs results in fewer, larger loans to deal with than in the case of individual loans.
- The risk is spread over individuals belonging to peer pressure groups, rather than individual loans backed by collateral.
- SHGs are more responsive to individual borrowers' needs.
- Individual borrowers deal with the SHG rather than with the bank (i.e., less documentation, quicker turn-around time).
- Mutual support and "empowerment" can occur in the SHG.
- SHG assets grow over time through savings deposits and the generation of interest earnings, which generally leads to a much greater sense of ownership of the credit scheme by its members.

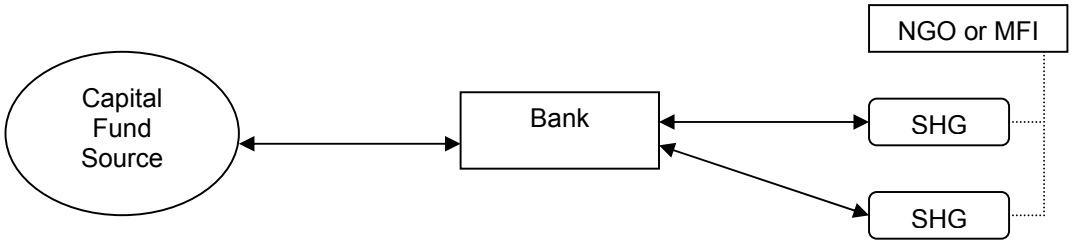
Cons

- Time, effort and patience is required for the process of group formation and smooth functioning. Skills needed for this process are not generally characteristic of OFIs and so may better be done by NGOs. This observation was also made during an interview with a representative of an NGO in India.

2.6 Model VI: Self Help Group Formed by an NGO or MFI but Directly Financed by the Bank/Lender

In this model, groups are formed at the initiative or with the assistance of an NGO or a Microfinance Institution (MFI), while financing of the SHGs comes directly from a lending institution.

Figure Model VI: SHG Formed by NGO/MFI Financed by Bank



Pros

- SHGs are formed and nurtured by an NGO rather than the bank.
- The same advantages related to SHGs as described in Model V apply here as well.

Cons

- No particular disadvantages other than the terms and conditions imposed by banks may be more restrictive than those of an NGO or MFI.

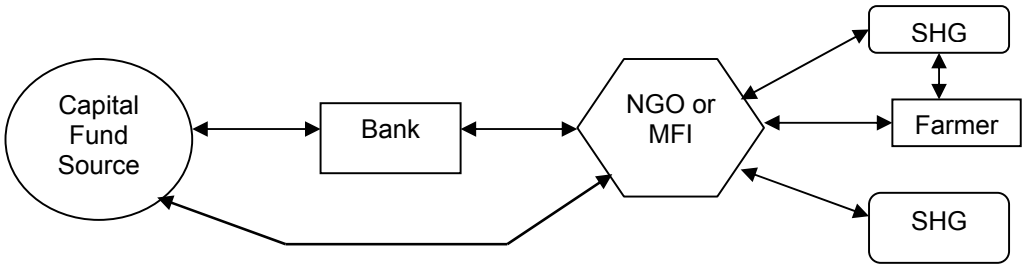
2.7 Model VII: Self Help Group Financed by the Bank/Lender via Intermediary MFI

Rather than the bank lending to each SHG as in the previous Model, a bulk loan is made to the NGO or MFI linked to the SHGs. A variation is where loan funds could go directly from the Capital Fund Source (CFS) to the NGO/MFI. The MFI box could also represent some sort of federation or association of SHGs/village banks that have joined together under one umbrella organization. In some cases, the methodology is that the MFI makes individually based loans to the farmer.

Pros

- Basically the same as for the previous Model.
- The bank would have fewer, larger loan accounts to administer than in Model VI.
- In addition, however, directing the flow of loan funds directly from the CFS to the MFI would result in a greater degree of flexibility since SHGs and informal MFIs have fewer restrictions and government regulations compared to official banking institutions.

Figure Model VII: SHG Financed by Bank via MFI



Cons

- No particular disadvantages.

2.8 Model VIII: Farmer Credit Card Scheme

In this case, the bank issues credit cards to farmers and the maximum loan size is fixed according to the individual's situation. Collateral will likely be required, which may prevent smallholders and women from being eligible. It is a relatively new innovation in microfinance and can only be used where adequate infrastructure is in place within the formal financial sector (e.g., automated teller machines).

The Kisan Credit Scheme was introduced in India in 1998 as a mechanism for facilitating short-term credit to farmers. The number of cardholders has grown rapidly in less than three years, reaching a total of 10.8 million by the end of 2000. Interest charged on these accounts in India is reported to be 12% - 15% annually.

Table 1: Kisan Credit Card Scheme, India

		1998-99	1999-2000	2000-2001 to Dec. 31/00 (9 mos.)
No. of cards issued	(thousands)	785	5,398	4,759
Amount sanctioned	(million Rupees)	23.14	73.96	115.12
Amount sanctioned	(US$ @ Rs 47/dollar)	$492m	$1,574m	$2,449m
Avg. amount/card	(US$)	$627	$292	$515

Source: Data obtained from the IDE India office, New Delhi.

Pros

- Inasmuch as this is a way of streamlining the process of issuing loans to farmer clients, it avoids having to go through the lengthy loan application process

for each new loan. Transaction costs are therefore reduced both for the lender and borrower.

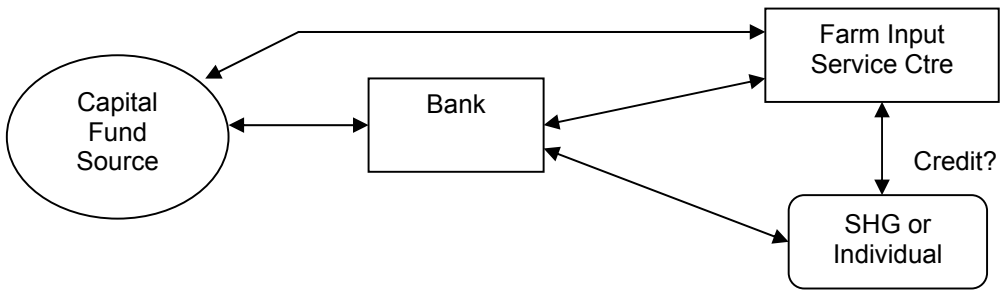
Cons

- This scheme essentially assesses each applicant as to their credit worthiness in a pre-approval process and benefits the bank's best clients and those with a good credit history. It will be of little benefit to smallholder farmers who currently have difficulty obtaining bank loans.

2.9 Model IX: Create Farm Inputs Service Centre

The main feature of this model is the farm service centre (FSC) that is set up to provide a wide range of farm inputs and may include credit (i.e., one-stop shopping concept). Financing could flow directly from the CFS to the service centre or via a bank.

Figure Model IX: Create Farm Inputs Service Centre



Pros

- The main advantage is the grouping of a broader range of farm inputs under one roof, otherwise this model is similar to the second one described earlier. So if the service centre allows farmers to purchase on credit, it could apply to several crop inputs rather than just a single input.

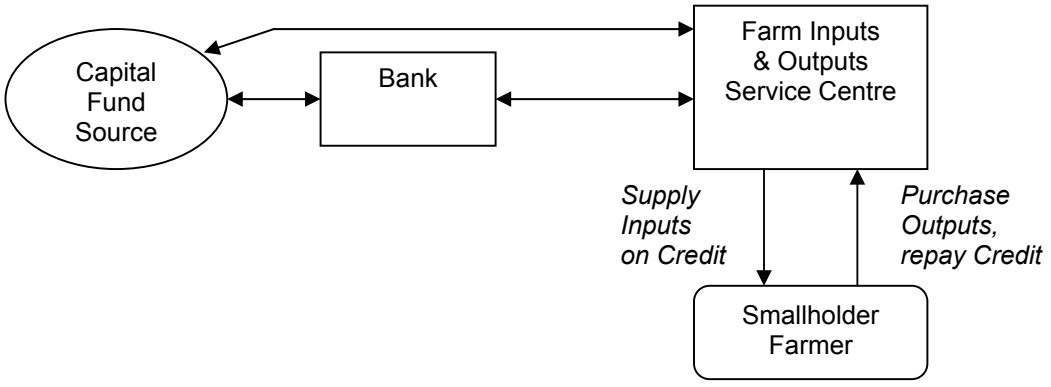
Cons

- As in Models I and II, the input supplier may not be equipped or willing to extend credit to farmers.
- Considerable time and effort would be required to establish this type of FSC in the context of a developing country where government regulations and bureaucracy often mitigate against business entrepreneurs.

2.10 Model X: Create Farm Inputs and Marketing Service Centre

This model is based on the creation of a farm service centre company that provides both farm inputs to the farmer (that could include credit) as well as output markets. In other words, such a service centre would be an active player in both the input chain and the output chain. For example, the FSC might contract smallholder farmers to grow selected crops while supplying them with a package of improved inputs and technical information, and a guaranteed market outlet.

Figure Model X: Create Farm Inputs & Outputs Service Centre



Pros

- It is convenient for the farmer in that the FSC takes care of both his input and output needs.
- The credit risk for the FSC is reduced since it can be offset against the value of the harvest output that the producer is obligated to sell to the FSC, and to that extent the FSC will be more willing to provide credit.

Cons

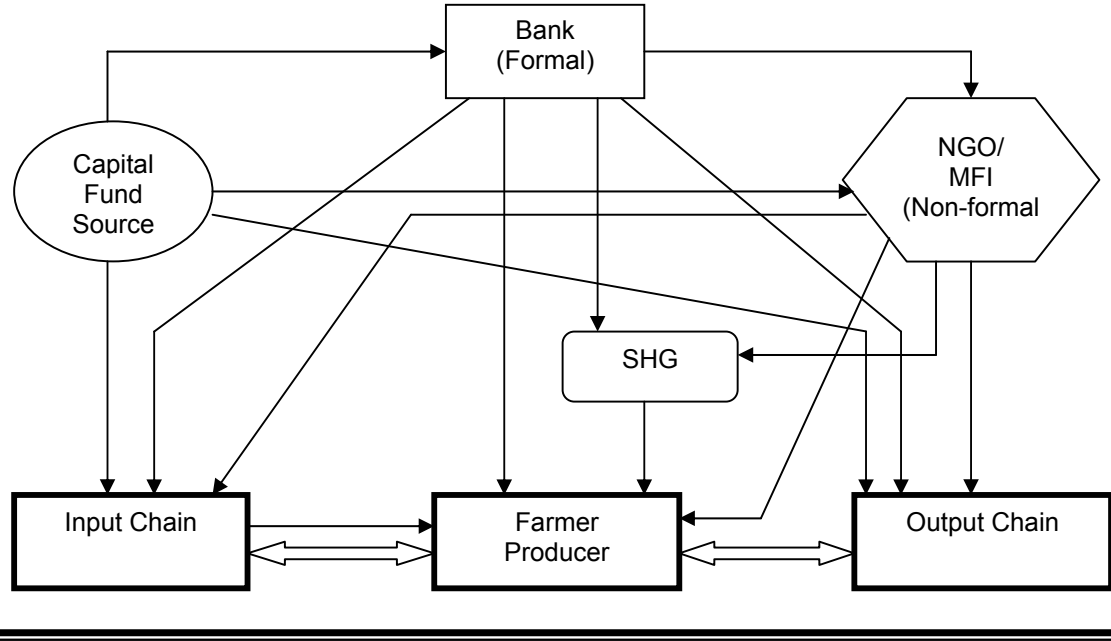
- There is no built-in incentive for the FSC to service smallholder farmers, in fact the opposite is true. In its objective as a business to maximize profits, the FSC will be inclined to contract with fewer larger producers rather than with many smallholder farmers.
- The well-being and improvement of smallholder farmers is of little or no concern to the FSC, at least not in the short-term.
- As a price-taker, the farmer gets locked into the FSC for both his inputs and sale of his outputs at prices largely dictated by the FSC.
- This model moves in the direction of vertical integration in that the FSC may well decide to buy up land and contract the now-landless farmers to grow crops of its choosing and set input and output prices to its own advantage.

- Considerable time and effort would be required to establish this type of FSC in the context of a developing country where government regulations and bureaucracy often mitigate against business entrepreneurs.
- To mitigate possible negative effects of an independent, profit-driven FSC, the interests of the farmers could be somewhat protected if the FSC was owned and controlled by a group of farmers. To organize such a farmer-owned association also represents a challenge.

3.0 SUMMARY OVERVIEW OF ALTERNATIVE MODELS

The following figure essentially portrays a summary overview of all of the alternative models in one picture and illustrates the complexity of designing credit services for the smallholder farmer. At the base of the figure are the three sectors identified by IDE; namely, the input chain, the farmer/producer and the output chain, which interact with each other.

Figure Model XI: Summary Overview



The line arrows show the potential credit channels. For instance:

- From the CFS credit might go to the Input Chain, the Output Chain, the Bank, or to an NGO/MFI.

- From the Bank, credit can flow to the Input Chain, the Output Chain, the individual farmer, a SHG, or to an NGO/MFI.
- From the NGO/MFI, credit can go to the Input Chain, Output Chain, a SHG or the individual farmer.

It may be worth noting that while systems might be put into place to provide credit to businesses in the input and output chains, there is no guarantee that this will solve the farmer's need for credit. We can conclude, therefore, that the two most effective sources for the smallholder farmer will likely be through membership in a SHG to gain access to credit from a bank or an MFI, or through an individual loan from an MFI, where this is an option.

4.0 COUNTRY OBSERVATIONS – INDIA AND CHINA

Of the approximately 235,000 SHGs in India in 2001, 13% conformed to Model V, 76% conformed to Model VI, and 11% to Model VII.[18] Clearly, the most popular arrangement is Model VI where NGOs rather than the banks themselves form SHGs. The fact that Model VII isn't more popular likely reflects the fact that relatively few MFIs have emerged in India.

In China, current banking legislation makes no provision for non-government, informal financial institutions. All are within government jurisdiction and the People's Bank of China, although several alternative institutional arrangements are being tested on an experimental basis under foreign donor-sponsored projects. Arrangements that involve community-based financial groups but which seek to conform to government regulations would generally fall under Model VI where all lending and savings deposit transactions are done at the local bank (e.g., Agricultural Bank of China). Since interest rates in the formal sector are highly regulated rather than being market driven based on the supply and demand of capital, critical issues of sustainability arise.

Experimental micro-finance schemes in China operating outside of formal regulations would generally fall under Model VII where loan funds would flow directly from the source to the NGO/MFI, not via the bank.

[18] National Bank for Agriculture and Rural Development (NABARD), *NABARD & Micro-finance, 2000-2001,* Mumbai, India.

CHAPTER <C>

THE SIMI INVESTMENT FUND

1.0 THE SIMI FUND: CAPITAL AND TECHNICAL ASSISTANCE

The SIMI Business Plan endeavours to significantly improve the livelihoods of many smallholder farmers. The question is, "Given the various capital and credit constraints faced by smallholder farmers and the markets that serve them, how can we use an available resource to directly mitigate the effects of those constraints or motivate others to mitigate those constraints?" Obviously, one solution would be to provide financial grants along with technical assistance. But of equal interest is whether it is possible to set up a financially viable capital fund that one could use to directly or indirectly achieve positive economic results for smallholder farmers. If so, how would such capital resources be best applied?

This chapter outlines some possible ways in which a Fund may be used for both of these purposes: Capital Investment and Technical Assistance.

1.1 Capital Investment Fund: Where and How Much?

In a free economy, *all production and supply is driven by market demand*. As long as consumers demand food, farmers will grow crops. As long as farmers demand inputs, input suppliers will produce the demanded product. All along this whole supply chain, from input producer to food retailer, there will also be demand for capital – which, in itself, is also an input. What we are interested in is those situations where this demand for capital is not being met and where such non-provision of capital in fact frustrates the inclusion of smallholder farmers in the agri-food chain. Therefore, we are looking for points along the chain where:

- There is a demand for capital,
- Where this demand is not being met,
- Where such non-provision is harmful to the smallholder farmer, and
- Where such a situation is able to be remedied by a SIMI capital fund.

In the model below (Tables 2 and 3), we identify the points of possible capital intervention by size of business entity as well as by placement on the agri-food chain, beginning with the manufacturer of basic inputs all the way to the food consumer. In almost all cases these business entities already exist and are presumed to have a

desire to serve the needs of their clients. In several cases however, there may be need for the creation of new business entities to best serve the need of a changing market – a change that SIMI is making in the market.

Specifically, we envision the possible creation of Farm Service Centres, which could be created on a large scale to serve many smallholder farmers in a larger region. Alternately, one might envision the creation of numerous smaller Farm Service Centres to serve the needs of smaller groups of farmers. Such a Farm Service Centre could provide packaged inputs, including credit and technical assistance, as well as product marketing services to smallholder farmers. The model (Table 3) assumes that the Farm Service Centre is of a smaller size, providing input and minor output services to the farmer. Other services, such as microfinance lending and product processing are assumed to be performed by other business entities. In any such scenario where the Farm Service Centre provides those services, one would simply have to combine the indicative numbers of those various service providers.

A second type of business entity that may be called to life as a result of the SIMI intervention is a processor of certain products that are new to the region. Such potential processing may be performed by an existing processor or a newly-created one.

1.2 Capital Investment Fund and Microfinance

The spreadsheet model in Appendix 2 is an attempt to estimate in an approximate manner the amount of loan capital that might be needed over time per smallholder farmer, which is then extended to an entire watershed area and finally to many watershed areas. The shaded cells are the assumed parameters of the model that in a spreadsheet program can be altered to test a variety of “what if” scenarios. A set of line-by-line explanatory notes is also attached that describe the basis for calculations in the model.

It may be noted that in this model the size and growth of a farmer’s annual loan is simply and directly based on his savings deposits. This simplifying assumption does not take into account his land base nor net income that he may have earned in previous years. The model also does not distinguish between the returns on capital assets and operating capital.

Based on the given assumptions, the model shows that one would require about $3.0 million for one watershed (line 52) involving 40,000 farmers in 8 years, which translates to about $18 million (line 57) in 6 such watershed areas.

1420

Table 2: Characteristics of Agri-Food System Participants

	Micro Enterprises	Small Enterprises	Medium Enterprises	Large Enterprises
Legal structure	Informal, usually non-registered	Move from informal to formal with growth	Incorporated with limited liability	Incorporated with limited liability
Ownership	Family-owned	Family-owned	Family-owned, with move towards public company	Publicly traded company
Economic profile of owners	Owned by the poor	Lower middle class	Middle class	Professionally managed, shares owned by companies, funds, and professionals
Sales	From family subsistence to $100,000	$100,000 - $1,000,000	$1,000,000 - $20,000,000	>$20,000,000
Employees	0 – 20	20 – 100	100 – 2,000	>2,000
Capital needs – type	Loan	Loan	Loan Equity, although this is difficult due to ownership and governance structure	Loan Equity - through public equity markets
Capital needs – volume	$50 - $5,000	$5,000 - $20,000	$20,000 - $10,000,000	>$10,000,000

Notes:

- The size and characteristics of the business entities will affect their possible relationship with a SIMI Capital Fund.
- A Capital Fund will not be able to make direct loans to micro or small enterprises. It can however, relate to microfinance institutions and commercial banks which are medium enterprises serving the needs of the micro and small.

1430

- An exception to this rule may be the creation of a SIMI-related Farm Service Centre, which could be classified as either a small or medium business, and financed by the SIMI Capital Fund.
- Equity investment opportunities are generally limited to medium enterprises. Even at that point however, they are often fraught with problems related to ownership and management control.

Table 3: Indicative Agri-Food System Capital Requirements [a]

Business Entity	Microfinance Group Loans	Microfinance Individual Loans	Bank Loans	SIMI Capital Fund Debt /Guarantees	Equity/ Subordinated Debt Financing
Large input suppliers: • Multinational agro-chemical co. • Multinational seed producer • Multinational pump manufacturer					Not applicable[b]
Medium input suppliers: • National plastics manufacturer • National seed producer				(per company) $200,000	(per company) $200,000
Small input suppliers: • Regional wholesaler/assembler • Farm service centre • Hand tool manufacturer • Regional seed producer			(per company) $5,000-$25,000	(Farm Service Centre) $200,000	
Micro input suppliers: • Village retailer		$100-$500			
Small farmers: • Diesel pumps, seeds, fertilizer		$100-$500			
Micro farmers: • Drip system, seeds, fertilizer • Water control structures	(per farmer) $20-$100 $120-$700				
Micro output dealers: • Village market retailer • Ambulant hawker	(per trader) $50-$100				
Small output dealers: • Village/town wholesaler/agent • Farm service center		$500-$1,000	(per company) $5,000-$25,000		
Medium output dealers/processors: • National processor, distributor • National exporter				(per company) $200,000	(per company) $200,000
Large output dealers/processors: • Multinational food processor/distrib					Not applicable
Microfinance Providers • Savings and Credit Cooperatives • Microfinance Banks			(per institution) $1,000,000		(per institution) $300,000

Notes:[a] Capital requirements are estimated averages over the life of the loan or equity investment (in U.S. dollars). Projected terms are as follows.
[b] It is assumed that multinational companies have access to cheaper capital internally than can be provided by a SIMI fund.

1.3 Capital Investment Fund: Why?

Having recognized in other parts of this document that there would indeed be a demand for capital, we must ask whether it would simply be "nice" to meet this demand or whether doing so is absolutely critical to the outcome of the SIMI business plan.

Because this plan is being undertaken in a global marketplace, one must view any intervention in the context of those global forces. What is clear, both by theory of natural advantage in trade specialization, as well as by history of practise, is that developing economies have much to offer the global markets: the advantages of many developing economies include relatively low-cost labour and tropical or sub-tropical climates. Both of these lend themselves well to agricultural production, especially the production of high value crops such as fruits, vegetables, herbs, and spices.

Developing economies in all parts of the globe, have often relied on extraction of raw materials as a source of income. However, because of a lack of perceived political stability, expertise, and capital investment, many products and commodities have been exported without much value added. In the realm of growing international agricultural trade, it is becoming ever more critical to add value to one's products prior to export. Sanitary, phytosanitary, and ISO standards demand ever more investment in production, processing, and trade management in order to remain competitive. Developing economies that wish to survive this trend towards higher standards must make such investments, without which they will not survive.

Equally important in this analysis of the need for capital investment is the very strong move toward consolidation in the retail sector – including the retail markets in developing economies. Developing economies have experienced a phenomenal change over the past five or so years in their food retail sector. In many countries, where food was once sold primarily through open markets and corner shops, today food is being sold primarily in retail supermarkets. These supermarkets, at first owned by locally-held companies, are quickly being sold to very large international retailers such as Ahold of Netherlands and Carrefour of France.[19] A number of developing countries have seen supermarket food sales move from under 20% to over 60% in less than five years.[20] Whether locally owned or not, the effect of the "supermarketization" of the food retail sector has dramatic effects on the production, processing, and distribution of food. Standards, which were non-existent in the street market, have now become extremely important. Retailers cannot concern themselves with multiple small produce suppliers. Rather, they demand high volume, high quality, low price, and

[19] *The Economist,* Dec. 15, 2001.
[20] Dr. Thomas Reardon, Department of Agriculture, Michigan State University.

consistency in each of these. Without investment in the systems that aggregate, process, and distribute farm produce, smallholder farmers will be out of the game altogether.

1.4 Capital Investment Fund: Factors to Consider in Developing an SME Finance Fund

The SIMI business plan envisions an investment fund that would apply needed capital to effect positive solutions for smallholder farmers. What is envisioned is an SME Finance Fund. This Fund would not make loans directly to smallholder farmers, but rather to the SMEs that serve these farmers – both on the Input and Output sides. While this SME Finance Fund is not the same as a Venture Capital Fund, it does carry significant similarities. Rather than likening a mutual fund that invests in liquid securities, this fund would invest directly into businesses. The field of SME Finance, from a fund perspective, is a relatively new field of endeavour in developing economies. While SME Finance Funds have existed in the West for quite a number of years, they are just now beginning to develop in Low Income Countries, financed both by development funding agencies (ADB, IFC, etc) as well as by national governments. An excellent resource in the field of SME Finance is the recently established SME Finance Institute in Washington, D.C.[21]

It will be necessary to perform a feasibility study along with a business plan for such a capital fund. Factors that must be considered in such a plan:

1.4.1 Size of Fund

In the field of SME Finance, it is generally assumed that one needs a minimum of $10,000,000 in a country-specific fund to ensure viability, and a higher sum if it is to have a multi-country focus.[22] A SIMI Fund of $20 million covering five countries would be at the outer limits of operating efficiency. A mitigating factor is that four of the five countries are in Asia, and three of them in the Indian sub-continent.

1.4.2 Size of Individual Transactions

$200,000 to $2,000,000. Again, SME finance funds have found that they cannot achieve operational efficiency with transaction below $200,000. SME finance funds spend a lot of energy generating deal flow. This requires working the various business networks to ensure that potential investees knock on your door to consider you as their first choice investor. Of all the potential deals flowing in the

[21] SME Finance Institute; Tom Gibson, CEO; Johns Hopkins University, Washington, D.C. www.smefinance.org.

[22] Small Enterprise Assistance Funds, Washington, D.C., operates 14 country-specific funds with a total asset base of $140 million, and still seeks support of technical assistance grants for them and their investees. Vista Ventures, LLC, Philadelphia, PA., suggests that a country-specific fund of $15 million better assures financial efficiency.

door, only 2-3% actually come to closure.[23] Because each deal takes a lot of work to complete and manage, it is impossible for Funds to entertain requests for financing below $200,000.

1.4.3 Type of Investments

An SME finance fund should be prepared to make both loans and equity investments in the investee company. Clearly, a loan is more liquid, much easier to negotiate, less expensive to arrange, and less risky. However, many SMEs needing capital will present a real need for equity. In order to meet such needs, it should be anticipated that at least a portion of the fund will need to be employed in equity investments.

Whether making loans or equity investments, it is important that at least one other person, besides the fund manager, is losing sleep. It is important therefore that the focus be on shared risk and private ownership.

1.4.4 Return on Equity

An SME finance fund, if it is to operate viably in perpetuity, will have to be managed so as to earn a Return on Investments that is commensurate with the risk and the market. In actual fact, most SME Finance Funds working in developing economies earn somewhat less than a normal risk-adjusted rate of return. In any case, we would suggest that the SIMI fund should operate to expect a return on equity of at least 10%.

1.4.5 Risk

An SME finance fund operating in a developing economy will experience several types of risks.

- Country Risk. This risk includes the risk of political/economic instability, currency inconvertibility, currency devaluation, and ineffective contract law. One indication of the value of this risk is reflected in the spread that a sovereign country must pay to its creditors on the bonds it issues. This spread is, however, not a clear assessment of this risk because it also contains the sovereign's own enterprise risk – ie. The government's future cash-flow ability to honour its obligations.
- Enterprise Risk. This risk relates to the viability and repayment ability of the company in which one has placed capital. In some cases, the enterprise is in fact stronger than the country in which it operates.[24] The enterprise risk takes into account industry factors, operations, management, etc.

[23] Per SME Finance Institute, John Hopkins University, Washington, D.C.

[24] Several investment rating agencies, including Moody's, changed their rating policies in 2001 in order to allow a company to receive a higher investment rating than the country's government. This reflects the fact that there are situations where the sovereign government may experience an inability to come up with the cash to honour its debt obligations, but without undue suffering of the companies in that country. (Latin Finance Magazine, Oct, 2001).

Generally, investors will seek risk-adjusted rates of return. As such, a European investor will expect a higher rate of return on an investment in Bangladesh because it carries a higher country risk than does a European country.

1.4.6 Loans

Loans from a SIMI Fund should be made at market or near-market rates. These market rates will vary from country to country and from currency to currency. Interest rates will vary because of several risk factors:

- Country risk, which includes political and convertibility risk
- Currency risk
- Enterprise risk, which includes sector risk

Because the world economy is fixing its standard on the USD and the Euro, it is advisable that all loans be made in these currencies. If the Fund is to accept currency risk, it should be very conservative in analyzing that risk and expecting a real rate of return in hard currency.

Some developing economies, notably the poorest ones, operate within an artificial economic environment. Because these economies are so heavily subsidized by donor capital, the market allows interest rates to exist that could never be sustained in a market economy. As such, one sometimes finds negative real rates of return in such economies.[25] It is extremely difficult for an SME Finance Fund to make loans in such economies. Normally, the fund would then attempt to make only equity investments and seek to leverage other low-interest-rate funds to increase its potential for return.

Obviously, if one is to include below-market rates as may be necessary to motivate existing financial institutions to make smallholder farmer loans, one would experience an equal loss of revenue. Assuming one is running the fund with normal expectations of return, it would be advisable to seek donor support to cover the loss of revenue resulting from the extension of below-market loans.

1.4.7 Equity Investments

Equity investments present a fund with much greater risk and work than a loan fund. This calls for a very experienced and reputable investment manager.

The expected rate of return on equity investments will be higher than that of loans. The great variation in the expected rates of return will turn on the perceived risk. Because equity investments are so much riskier, the fund will find that numerous

[25] India has a history of interest rates in the agricultural sector that are far below a normal risk-adjusted rate of return. Indian losses on agricultural loans exceed the interest revenue, resulting in a negative rate of return. Some countries such as Mozambique and Haiti from time to time operate with a lot of donor funds in the micro-finance sector, thereby effecting a low interest rate in local currency and a negative real rate of return in USD.

investments will fail, while others will return in excess of 50% per annum. It is critically necessary, when engaging in equity investments, to consistently seek a high rate of return. Without this, the fund will fail.

Of utmost importance in the equity investment field is the negotiation of shareholder relationships and exits out of the investment. Exit strategies are the single largest challenge facing equity investment funds and require a high-skilled person to negotiate and manage.

1.4.8 Management

In order to instil confidence in the fund investors, it is important to appoint a manager who carries the credibility of experience. Also, because of the complexities of equity investments, the manager and staff must be fully conversant in exit strategies and well accustomed to negotiation of shareholder agreements.

1.4.9 Management Costs

The management expense ratios (MER) of large mutual funds trading in liquid securities runs from under 2% of assets to almost 3% annually. SME funds tend to have higher expense ratios because they have a smaller asset base, because of the work related to making and managing direct investments, and the high level of work related to work-outs.[26] As such, SME funds tend to charge from 3.5% to over 4% to cover all costs related to fund management and administration. If the Fund were made as an open fund with an ongoing offering for participation by new capital providers, then the valuation costs would drive the Fund's expense ratio up to at least 5% or 6%.

1.4.10 Financial Indicators

Gross Financial Revenue	12%
Provision for loan losses	3%
Management expenses	5%
Net revenue	4%

[26] Work-outs are arrangements whereby a fund takes control or co-management of a business due to the business' failure to succeed. Such arrangements are generally not necessary when dealing in liquid securities because of the ease of exit. In SME funds however, where one's capital is tied directly into the investee/borrower company, a failure to succeed often results in the investor working with his networks to find a business solution to salvage his investment.

1.5 Capital Investment Fund: Fund Structure Options

Investment funds are generally set up such that the owners of the capital are not at the same time the managers thereof. That is, whereas in this case either SIMI or the donor-contributor would retain ownership of the capital, a fund management company would have to be created or contracted to manage these funds. The distinction between owner and manager is important for several reasons:

- Generally, the owner is skilled in other matters than the manager. In most cases, the owner is interested in a solid return on equity but does not have the skills to achieve it. A manager with expertise is therefore hired.
- The manager (either a company or individual) must be forced to work within a set management reward structure, while covering all of the short term and long term costs of fund operation. Management contracts therefore generally stipulate that the management company will cover all costs related to fund management. As compensation, the manager will receive a fee as a percentage of assets under management, plus a fee based on assets placed, plus a fee based on short term returns on equity, plus participation in the long term earnings of the fund after eventual exits from equity investments.

1.5.1 Set up New Country-Specific Investment Funds

The SIMI program could set up new country-specific funds to operate within each country of intervention. This would enable each fund to employ a management team that would be fully conversant with the agriculture and investment sectors in that country.

The difficulty with the country-specific fund model is that, because it generally takes $10,000,000 of activity before a fund achieves financial efficiency, some country funds would take a long time to achieve efficiency, while others never would.

1.5.2 Set up a Global or Perhaps Several Larger Regional Funds

This model may allow the SIMI capital to achieve efficiency of scale more quickly. While the fund manager would still have to employ staff in each country, one could achieve efficiency by employing top staff to cover a larger region. Back office administrative work could also be done in a central management office, thereby saving admin costs.

1.5.3 Management Options for Country-Specific Funds would Include:

- Setting up a new fund management company
  This option is fairly onerous as it would entail finding the right key management personnel and then setting up a management structure to serve the fund purposes. It may also be more risky in that hiring new managers may not provide one with as much assurance of successful past experience as the hiring of an existing fund management company.

- Sub-contracting management services to an existing fund manager
  There are a few SME fund management companies operating in developing economies, but not many. MEDA Investments Inc. and Small Enterprise Assistance Fund are two such management companies.

1.6 Capital Investment Fund: Other Factors to Consider

It is dangerous to set up an investment fund connected too directly to a development program.

- The pressure brought to bear on the investment manager by the development program is significant. The pressure to invest or make loans is high, even when the investment would not pass the test of an independent investment manager. This may lead to bad investment decisions.
- The ethos of a development program is different than that of an investment company. This difference can lead to conflict. Past experience of such conflict has led at least one development agency to excise its investment fund division out of the family.[27]

Whereas development agencies are infused with an ethos of caring for the poor, an investment fund must, by necessity, be infused with an ethos of return on investment. The investment fund manager, having accepted that he will work in a country of higher risk, will seek to maximize profits on his investment portfolio. This manager will believe that seeking such profits will drive the investee business to improved efficiency and therefore be of maximum benefit to the company and the sector within which the company operates. It is rare that one finds a development agency willing to pursue profit to its maximum. The two are not mutually exclusive, but it is very rare indeed that one can be successful in both of these at the same time.

Besides the investment of capital out of a SIMI investment fund, the fund manager should also be mandated to seek to meet capital demands through other means. For example, instruments such as an OPIC guarantee can be used to encourage US investors to invest directly in companies that present a demand for capital. Also, the USAID Office of Development Capital Authority[28] will provide guarantees on locally-sourced loans on a pari-pasu basis. As noted earlier, there are also a number of local government initiatives that finance or otherwise provide support to SME finance funds operating in their countries.

[27] A conflict of ethos, among other matters, drove CARE and its investment division, CARESBAC, to separate some years ago. CARESBAC, under a changed name and ownership structure, went on to a successful history in development investments.
[28] USAID – Office of Development Capital Authority, Washington, D.C., John Wasielewski, Director.

1.7 Technical Assistance Fund: Requirements

The SIMI plan envisions creating a supportive network of entities that would enfranchise smallholder farmers in "micro-irrigation driven market systems." To do so, we are suggesting the injection of loan and equity capital at certain points along the agri-food chain. The success of the project will however, depend heavily on the provision of technical assistance to the various players along the as shown in Table 4.

Table 4: Technical Assistance Requirements

1720

Business Entity (TA Recipient)	TA Required	TA Provider
Large input suppliers: • Multinational agro-chemical co. • Multinational seed producer • Multinational pump manufacturer	Not applicable [a]	Internal
Medium input suppliers: • National plastics manufacturer • National seed producer	Technical specifications and design	SIMI IDE Winrock
Small input suppliers: • Regional wholesaler/assembler • Farm service centre • Hand tool manufacturer • Regional seed producer	Farm Service Centre: - company development - supply source and output market - research and linkages - linkages to farmers - staff training - accounting & systems development	
Micro input suppliers: • Village retailer	Links to credit groups	SIMI IDE Winrock Farm service. centre
Small farmers: • Diesel pumps, seeds, fertilizer	Links to markets	
Micro farmers: • Drip system, seeds, fertilizer • Water control structures	Ag and technical input	
Micro output dealers: • Village market trader • Ambulant hawker		
Small output dealers: • Village/town wholesaler/agent • Farm service center	Output market research and linkages; linkages to farmers; ISO/USDA/etc standards research	IDE Winrock
Medium output dealers/processors: • National processor, distributor • National exporter		
Large output dealers/processors: • Multinational food processor, distributor	Not applicable	Internal
Microfinance Providers • Savings and Credit Cooperatives • Microfinance Banks	Best practices support Branch expansion Technical and Ag business analysis	MEDA Local MF Network

[a] It is assumed that multinational companies have access to all necessary technical assistance internally. Moreover, multinationals such as Ralles Tata in India are significant providers of technical assistance directly to farmers.

1.8 Bringing it All Together: The SIMI Capital Investment and Technical Assistance Funds

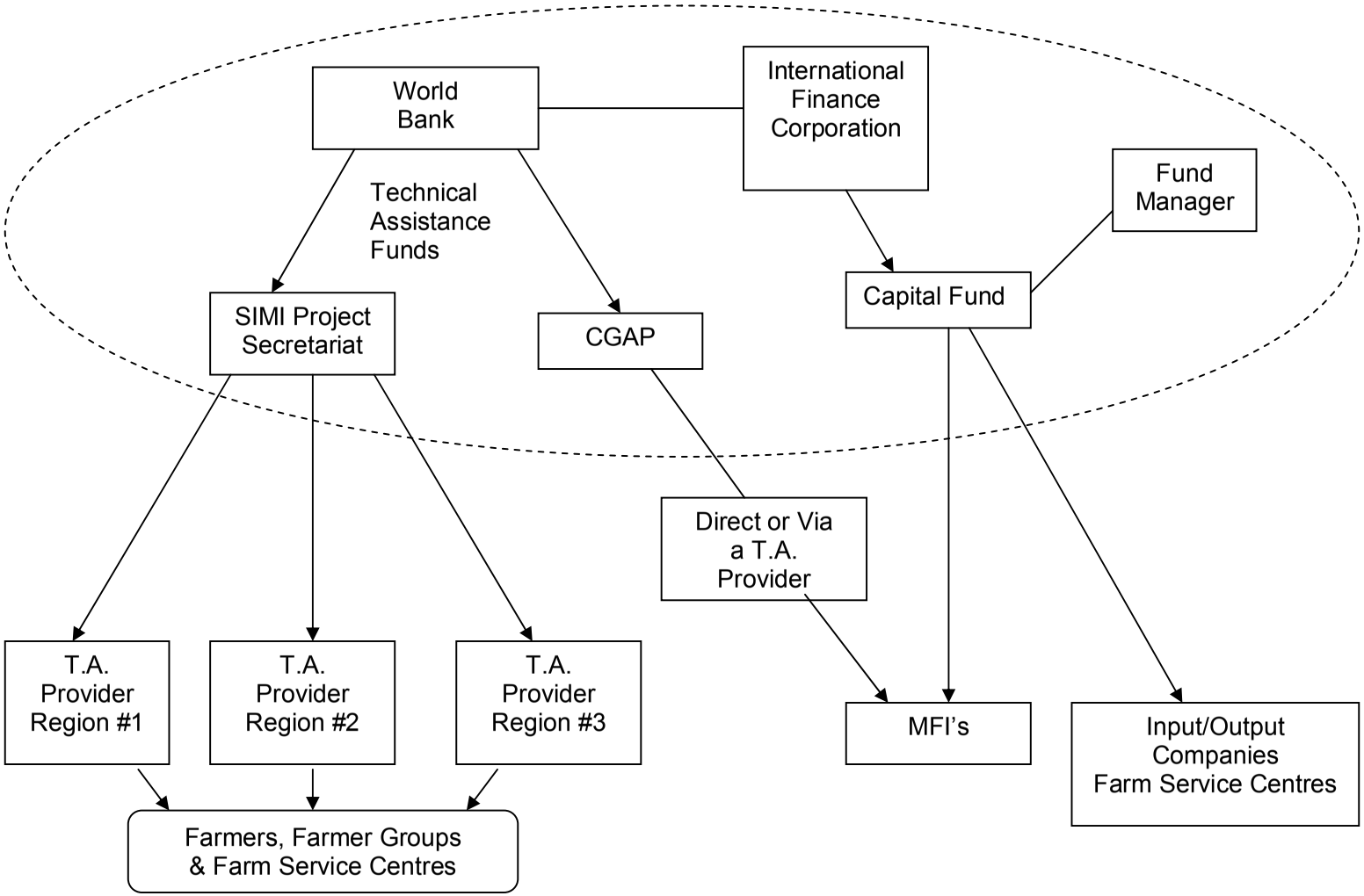
If smallholder farmers are to succeed against all odds, they will need the support of development efforts such as SIMI. Concurrently, the goods and service providers serving these farmers will need significant injections of capital, through loan and equity investments, in order to meet both the needs of farmers and the consumer marketplace. Table 5 below outlines indicative needs, per region of SIMI intervention, for both technical assistance as well as capital investment. This is followed by a chart outlining a possible way of structuring such an intervention.

Table 5: Target Requirements per Region of SIMI Intervention Over Five Years

	Farmers	Micro-Finance Providers	Input Companies	Farm Service Centres	Output Companies	Total
Number of units	30,000	2	1	6	1	
Business volume per year	$500		$7,000,000	$1,000,000	$15,000,000	
Capital required from SIMI	None	$2,000,000 total, but 50% from existing supply	$500,000	$200,000 each $1,200,000 total	$500,000	$3,200,000
Capital source	Microfinance Providers	Commercial Bank; Central Bank; World Bank/IFC	IFC	IFC	IFC	
Tech assistance Requirements	Links to credit groups Links to markets Ag and technical input	Best practices support Branch expansion Technical and agri-business analysis	Farm Service Centre - Company development; Supply source and output market research and linkages; linkages to farmers; staff training; systems development; accounting Other companies – Supply source and output market research and linkages; linkages to farmers			
Tech assistance required	$600,000 per year $3,000,000 total	$500,000 per inst. $1,000,000 total	$50,000 per inst.	$50,000 per inst. $300,000 total	$50,000 per inst	$4,400,000

	Per Region of SIMI Intervention	Total for Six Regions
Total Capital Requirements	$3,200,000	$19,200,000
Total Technical Assistance Costs	$4,400,000	$26,400,000
Management and oversight		$2,250,000
		$47,850,000

SIMI Steering Council



TERMS OF REFERENCE

BACKGROUND

IDE and Winrock International are in the process of developing a general proposal to the international development community on how we could disseminate low-cost microirrigation technology to up to 30 million smallholders over a period of 15 years.

The proposal is being developed in two parts: Part I (which has already been completed) is the assessment of the potential. Part II is in the form of a "Business Plan" and is meant to provide a blueprint as to how to get the job done.

The **technology** underlying the concept is, of course, low-cost microirrigation (i.e., technologies related to water lifting, water storage, and drip and sprinkler irrigation). It is meant to enable the smallholder to have the basic means to become a producer to supply markets. While water-related technologies are a necessary component, they are not sufficient components to ensure significant additional income for the rural poor. The water technologies must be complemented by relevant production technologies (seeds, fertilizers, management practices, etc.) to enhance farm productivity per se. Also, post harvest technologies (e.g., low cost cooling, storing, transportation) must come into play to ensure access to markets.

To create new markets via smallholder irrigation, some sort of outside **intervention** is required. That is, technology must be adapted to local conditions, supply channels need to be set up, a system for farmer training needs to be set up, and output market channels need to be created and developed.

As part of the Business Plan, we are proposing how such intervention can be done and managed. Based on IDE's past experience, we are putting together an outline of an intervention strategy and how it can be applied on a massive scale.

THE ROLE OF CAPITAL AND CREDIT

We have long realized that market creation/market development is hardly possible without the capitalization of these markets (i.e., the farmer supply channels, and the output market channels), and without making credit available to all participants (manufacturers, distributors, dealers, the smallholders per se, food processors, wholesalers, retailers, etc.).

While at this time we may have a strategy for technology, and for the provision of business development services to members of the supply chain, the smallholder himself, and members of the output market channels, we do not have a strategy for market capitalization and credit facilitation.

In discussions concerning the Business Plan with representatives of the World Bank and with Winrock International, the suggestion has been made that initially, some 50 million dollars would be made available to get the initiative started. Of that amount, 20 million dollars would be allocated for the "market facilitation role" i.e., the kind of work that IDE has been doing very effectively:

20 million dollars discussed here would be considered a “social cost” or if you will, a subsidy.

The other 30 million dollars would be a loan from the International Finance Corporation, and would need to be used for the capitalization of new markets, including the financing of inventories, credits to dealers and distributors, and micro credit to smallholders.

It should be pointed out that with low cost microirrigation, the typical farmer may need to borrow as little as US$50 (50% for microirrigation equipment, and 50% for purchased inputs). This allows him to generate some US$100 of net additional income per year. It is our experience that the farmer re-invests half of the net additional income to expand his production, up to the point where his net additional income is about $500 - $700 per year. He typically gets to that level in five to six years.

The entire initiative on creating new markets via microirrigation rests on a strong bias towards private enterprise, absence of subsidies, and a general market orientation. To the extent possible, we would like to ensure that smallholder development occurs based on market forces. That is the only way we can have assurance of true sustainability. In this context, we would hope that much of the micro credit for smallholders is channeled directly through the supply chain, as we are afraid that the inclusion of third-party lenders might lead to inordinate transaction costs.

WHAT WE WOULD LIKE TO GET DONE

For the Business Plan under consideration, we are looking at three items to be completed in the area of capital and credit.

1. First, we would like to include in the Business Plan a chapter (15-30 pages) that explores the issues underlying capital-finance-credit of microirrigation-driven market systems. This calls for an analysis of the role and requirements of capital and credit at the various levels of the chain, including:

   (a) the supply chain;
   (b) the smallholder as a farm microenterprise; and
   (c) the output chain.

This analysis is to be both at the level of the enterprise/ micro-enterprise (i.e., manufacturer, distributor, dealer, service delivery, individual smallholder farmer, wholesaler, processor, etc.), as well as at the aggregate level of a given market context.

Given the broad scope of the above called-for analysis and the limited time available, the analysis would attempt to identify the key issues and questions that would need to be addressed by any subsequent investigation or feasibility study for a particular “market shed” area. To illustrate, such issues might include:

   (a) What are the traditional sources of capital and credit available at present, if any?
   (b) How do similar businesses in the region manage their operations with respect to capital and credit? Are all sales on a cash basis only; on 30 or 60-day terms, or some other arrangement?
   (c) Are smallholder producers eligible for existing credit? If not, what are the obstacles?
   (d) Do other players in the supply and output chain have access to credit services? If not,

there other socio-economic factors at play?

(g) Where credit is available, what is the cost to the borrower?

(h) What is the nature of the "credit culture" in the region? Is there a history of past credit schemes that have failed?

(i) What are the potential crops that would be produced by farm users of microirrigation technology? What are the realistic expected economic returns?

(j) What marketing infrastructures are in place; what are the bottlenecks?

(k) What types of credit institutions exist in the region; who owns them; are they operating effectively; who are their clients, etc.

(l) What is the legal and regulatory framework for rural finance?

(m) Customer savings provide an important source of capital for credit institutions for on-lending. And a financial institution can provide a safe place for customers to park their savings, thereby mobilizing local resources for on-lending. In a given region, what is/should be the role of savings mobilization?

(n) Etc.

2. Second, we would like to develop a set of alternative models for the capitalization of microirrigation-driven market systems, with special emphasis to be given to micro credit for the smallholder. These alternative models should be sufficiently elaborate so that we can evaluate them (on a reasonably small scale) in the field, and across different settings (i.e., different types of smallholder systems, different market systems, etc.).

The analysis further extends into viable capital and credit delivery mechanisms (i.e., alternative methods of delivering capital and credit to participants in the supply and output market chain in the form of equity financing, inventory financing, enterprise development credit etc.; and alternative methods of delivering micro credit to the smallholder micro enterprises.

Again given time constraints, consulting efforts will focus on identifying key issues and questions that would need to be addressed. It is recognized that the economic, marketing, regulatory, policy, cultural, etc. environments may be vastly different from one country to another, and each "market shed" will need to be carefully assessed in order to design an appropriate model.

While we might be able to suggest several alternative delivery models, they will of necessity be generic and general in nature.

3. Third, as in the Business Plan we will need to present a modus operandi with regard to the funding of the initiative, amongst other things we will need to specify how the initial funds ($50 million) would be dealt with. Of particular interest here is the portion (the loan of $30 million) that is to be used for the capitalization and provision of micro credit).

The analyses as described here will be in relation to capitalizing the market systems to be created and developed under the SIMI umbrella, and will aim at the development of generic models, i.e., models that—to the extent possible—may be applied across socio-cultural and economic contexts in which SIMI will be operational.

To that end, we may first want to address the issues of credit and capital in a more generic sense

the input/advise from MEDA. Much of this will be discussed during our stay in India.

JOINT PARTICIPATION

We seek to work with a financial expert that could take the lead in the development of the three items described above. From our side (IDE and Winrock) we can participate and provide much input—but since capital, finance, and credit is not in our expertise, we can only provide a supporting role. But it should be understood that because we need to smoothly integrate all aspects of capital, finance, and credit into the Business Plan, a direct and continuous participation from members of the Business Plan Development Team would be necessary.

TIME LINE

The items as described here would need to be completed by the end of February 2002.

BUDGET

Given the fact that for Part II of the Business Plan we only have outside funding of US$100,000, both Winrock and IDE are using organization-internal resources to get the job done. Within the scheme of things, we may be able to set aside up to US$30,000 for the completion of the three items as described above.

INDICATIVE MICROFINANCE MODEL

1950

INDICATIVE MICROFINANCE MODEL

		Year							
	Value	1	2	3	4	5	6	7	8
BASIC PARAMETERS OF THE MODEL									
Individual Savings per month	$1.00								
Percent Invest in Consumables	50.0%								
Interest on member loans per year	24.0%								
Interest paid to Capital Source	8.0%								
Interest paid on Savings Deposits	3.0%								
Available for lending	90.0%								
Loan length of 12 months; balloon payment after end of period									
Loan to Savings ratio		6	5	4	4	4	4	4	4
Net Return on investment		100.0%	100.0%	75.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Number of Watersheds	6								
INDIVIDUAL BORROWER	Pre-loan Year								
	Period	1	2	3	4	5	6	7	8
BEGINNING OF YEAR ACTIVITY									
Loan received	0	72	120	144	192	240	288	336	384
Consumable Inputs		-36	-60	-72	-96	-120	-144	-168	-192
Investment in capital items		-36	-60	-72	-96	-120	-144	-168	-192
Total Farm Outlays		-72	-120	-144	-192	-240	-288	-336	-384
END OF YEAR ACTIVITY									

28	Farm net revenue		144	240	252	288	360	432	504	576
29										
30	Loan repayment - principal		-72	-120	-144	-192	-240	-288	-336	-384
31	Loan repayment - interest		-17	-29	-35	-46	-58	-69	-81	-92
32	Savings		-12	-12	-12	-12	-12	-12	-12	-12
33										
34	Available for discretionary spending		43	79	61	38	50	63	75	88
35										
36	**SAVINGS ACCOUNT**									
37	Savings	12	12	12	12	12	12	12	12	12
38	*Cumulative Savings*	*12*	*24*	*36*	*48*	*60*	*72*	*84*	*96*	*108*
39										
40	**IMPLEMENTATION SCHEDULE for one Watershed**									
41	New Smallholder Farmers		5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
42	Cumulative No.		5,000	10,000	15,000	20,000	25,000	30,000	35,000	40,000
43										
44	**MFI FOR ENTIRE WATERSHED AREA**		Year 1	Year 2	Year 3	Year4	Year 5	Year 6	Year 7	Year 8
45	Loan Portfolio	000s	360	960	1,325	1,690	2,175	3,015	4,096	5,296
46	Total Savings deposits	000s	60	180	305	430	555	735	975	1,275
47	Loan interest income	000s	86	230	318	406	522	724	983	1,271
48	Less Interest expense paid on Sav.	000s	- 2	- 5	- 9	- 13	- 17	- 22	- 29	- 38
49	Total Savings plus Net Interest Inc	000s	145	405	614	823	1,061	1,437	1,929	2,508
50	CAPITAL SOURCES FOR LENDING									
51	Available from Savings & Int Income	000s	130	365	552	741	954	1,293	1,736	2,257
52	**Required from Cap Fund Source**	**000s**	**230**	**596**	**773**	**950**	**1,221**	**1,722**	**2,360**	**3,039**
53	Equals Loan Portfolio	000s	360	960	1,325	1,690	2,175	3,015	4,096	5,296
54										
55	Interest paid back to Cap Source	000s	18	48	62	76	98	138	189	243
56										
57	**CAPITAL REQD FOR ALL AREAS**	000s	**1,379**	**3,573**	**4,635**	**5,698**	**7,325**	**10,334**	**14,158**	**18,232**
58	Aggregate number of Farmers	000s	**30**	**60**	**90**	**120**	**150**	**180**	**210**	**240**
59										

EXPLANATORY NOTES by Line No.

L

21 Amount of client loan based on cumulative savings deposit at end of previous cycle. (L.13 x L.38)
23 Amount of investment in the form of consumable inputs. (L.7 x L.21)
24 Amount of investment in the form of capital assets. (L.21 - L.23)
25 Total farm outlay. (L.23 + L.24)
28 Net return on investment. (L.25 x L.14)
30 Repayment of loan principal. (L.21)
31 Payment of interest on the loan. (L.8 x L.30)
32 Amount put into savings. (L.37)
34 Amount of cash available to the farmer at end of year. (Sum L.28 to L.32)
37 Amount of annual savings, including a one-year period prior to the first loan. (L.6 x 12 months)
38 Cumulative savings. (L.37)
41 The assumed number of new smallholder farmers added to the program year by year.
42 Cumulative number of farmer participants. (L.41)
45 The total amount of loans outstanding each year, reflecting increasing loan sizes each year and the length of time a farmer has been in in the program. (L.21 x L.41). For example in Year 2, those who joined in Yr. 1 move up one step in loan size, while those new farmers joining in Yr. 2 begin with Yr. 1 sized loans.
46 This line tracks the build-up of savings as new members are added and as each member continues to make savings deposits. (L.38 x L.41).
47 Amount of interested received on loans outstanding. (L.8 x L.45).
48 Amount of interest paid to members' savings deposits. (L.10 x L.46).
49 Savings deposits plus interest income minus interest expense paid on savings deposits. (L.46 + L.47 - L.48).
51 Amount of internal capital available to the MFI for lending. (L.11 x L.49).
52 Amount of additional capital funds needed by the MFI to enable it to meet the total loan portfolio demand. (L.45 - L.51).
53 Total loan portfolio. (L.51 + L.52).
55 Interest paid by the MFI to the Capital Source. (L.9 x L.52).
57 Total capital required for all Watersheds. (L.15 x L.52).
58 Total number of participating smallholder farmers. (L.15 x L.42).

LIST OF REFERENCES

1960 Canadian International Development Agency (CIDA), *Reference Guide for the Microfinance Sector,* August 1999.

Fast, Henry, *Sustainable Microfinance in China: A Summary Analysis Paper and Recommendations,* Integrated Rural Development Poverty Reduction Project, Mennonite Economic Development Associates (MEDA), November 2000.

Food and Agriculture Organization, "Microcredit: Effects on Rural Poverty and the Environment," in *The State of Food and Agriculture 2000,* Rome, 2000.

1970 Food and Agriculture Organization website: <www.fao.org/> Look under Databases for FAOSTAT for agricultural statistics, under Economics and Development, then look for AgriBank-Stat for info on rural formal bank institutions.

Gaiha, Raghav, *Microcredit and the Rural Poor: A Review of the Maharashtra Rural Credit Project,* Journal of Microfinance, Fall 2001, p. 125.

National Bank for Agriculture and Rural Development (NABARD), *NABARD & Micro-finance, 2000-2001,* Mumbai, India.

1980 Nelson, Candace, *et al.*, *Village Banking: The State of the Practice,* Small Enterprise Education and Promotion (SEEP) Network, July 1995.

Satish, P., *Institutional Alternatives for the Promotion of Microfinance Self-Help Groups in India,* Journal of Microfinance, Fall 2001, p. 49.

Shell website: <www.Shell.com>. Shell is involved in marketing affordable solar units in Sri Lanka and works with local banks, NGOs and micro credit organizations to ensure credit facilities are available to customers. Plans for the future include work in India, Indonesia and Philippines. This is an example of a multinational corporation marketing appropriate
1990 technology in low income countries.

Solar Electric Light Company (SELCO), USA website: <www.selco-intl.com>. Similar to Shell, SELCO markets solar photovoltaic power systems in rural Sri Lanka and has sister companies in India and Vietnam. Also works with World Bank and SEEDS (Sarvoday Economic Enterprises Development Services), one of Sri Lanka's best established microfinance agencies.

World Bank and Oxford University Press, *World Development Report 2002: Building Institutions for Markets,* Washington D.C., 2002.

2000

World Bank, *Non-Bank Financial Institutions: Development and Regulation,* Washington D.C., Dec. 2001. [Pub. 14839]

World Bank, Albert J. Nyberg & Scott Rozelle. *Accelerating China's Rural Transformation,* Washington D.C., 1999.

World Bank, Joanna Ledgerwood. *Microfinance Handbook: An Institutional and Financial Perspective,* Washington D.C., 1999.

2010 World Bank, Jacob Yaron, McDonald P. Benjamin Jr. & Gerda L. Piprek. *Rural Finance: Issues, Design, and Best Practices,* Washington D.C., 1997.

World Bank, *Credit Policies: Lessons from East Asia,* Washington, D.C., 1995. [Pub. WPS1458].