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Training Modules on Agricultural Value Chain Finance








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Training Modules on Agricultural Value Chain Finance

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This report is published during the incumbencies of Mr. Shitangshu Kumar Sur Chowdhury (APRACA Chairman), Mr. Maha Prasad Adhikari (APRACA Vice Chairman), Mr. Chamnong Siriwongyotha (APRACA Secretary General) and Dr. Marlowe U. Aquino (FinServAccess Project Manager).

Acknowledgement

As we look forward on the increasing concern for the development of agriculture and rural areas in our region, we are happy to note that APRACA and its partners are doing a great job in improving the lives of its clientele and their communities.

We, strongly believe that with our joint activities, we can make a difference. The preparation and packaging of this important publication is one of our initiatives to continuously support our members and bring forth the innovations and strategic approaches through capability building activities for those institutions and individuals engaged in making a difference and providing an opportunity of hope to all.

We would like to thank the International Fund for Agricultural Development (IFAD) through the FinServAccess Project for providing the financial support in publishing this document. We have known that the document had passed series of testing/evaluation and application in the various trainings conducted through our technical experts in the field of agricultural value chain finance.

We would like also to acknowledge and commend the module writers, Dr. Prasun Kumar Das and Dr. Marlowe Ubaldo Aquino for taking time in writing, editing and packaging the different modules including exercises and Training PowerPoint presentations in order that this would be used by budding trainers and specialists in the rural finance sector.

We take pride on this document for everyone to use it and develop a more participatory and interactive training on agriculture especially dealing on value chain finance. The insights and perspectives to be gained while using this document will be an added benefit as lessons learned are tailored to the ever growing challenges we face today.

May we all benefit from this and share the word that we are indeed making a better life for our farmers, fishers, entrepreneurs/traders, women and youth and most especially the rural finance officers who work in enhancing the access to finance and strengthening the networks of institutions providing the needed financial products and support services.

SHITANGSHU KUMAR SUR CHOWDHURY
APRACA Chairman

Notes to Training Participants

Dear Participants,

As you take the initial step in learning the basic concepts, perspectives, experiences, tools, techniques and lessons on agriculture, rural development and value chain finance, we are certain that you will have a more competitive edge in dealing with the key players and stakeholders in the value chain. This document was developed and packaged to serve as guide and resource material for institutional staff to understand agriculture and value chain finance combined especially during actual situations and engagement in the field.

We have arranged the training modules in such a way that these will provide theoretical and practical application while undergoing the activities. It includes exercises and cases which allow the participants to critically analyse in bringing the most appropriate and possible recommendations and insights while going through and experiencing a reflective teaching-learning approach.

The following are the different modules which could stand alone for in-depth discussions:

- MODULE 1 Value Chain Finance-Concept, Context and Approach
- MODULE 2 Role of Agriculture Value Chain Finance
- MODULE 3 Implementation of AVCF: Evaluation Tools and Techniques
- MODULE 4 Financial Instruments used in AVCF
- MODULE 5 AVCF Strategy and Business Models
- MODULE 6 Risk Mitigation through Value Chain Approach

Each module is built on specific concept and ideas which were obtained from products of practical application and experiences. Furthermore, it provides detailed insights necessary for small group discussions and exchange.

May you all find this document interesting, relevant and provoking while learning on the process of actualization and application. We, further encourage everyone to share the lessons gained while undergoing the different training activities necessary to counter check and evaluate the institutional agricultural value chain finance operations at the ground.

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List of Abbreviations

AVC	Agricultural Value Chain
AVCF	Agricultural Value Chain Finance
BAAC	Bank for Agriculture and Agricultural Cooperatives, Thailand
CM	Collateral Management
CMA	Collateral management agreement
CMS	Collateral Management Services
NCDEX	National Commodity exchange, India
CGAP	Consultative Group to Assist the Poor
DBP	Development Bank of the Philippines
WDR	World Development Report
DID	Development International Desjardins
IOFPCL	Indian Organic Farmer Producer Company Ltd.
ICT	Information and Communication Technology
IAFP	Integrated Agricultural Food Parks
IFC	International Finance Corporation
IFPRI	International Food Policy Research Institute
IFAD	International Fund for Agricultural Development
ITC	International Trade Centre
KCC	Kisan (Farmer) Credit Cards, India
MIS	Management Information System
MIS	Market Information Systems
MSMAE	Micro, small- and medium-scale agri enterprise
MFI	Microfinance Institution
MCX	Multi-Commodity Exchange, India
NABARD	National Bank for Agriculture and Rural Development, India
NBHC	National Bulk Handling Corporation, India
NCMSL	National Collateral Management Services Limited, India
NSEL	National Spot Exchange Ltd., India
NGO	Non-Governmental Organisation
NFC	Northern Foods Corporation (NFC), Philippines
PPP	Public-Private Partnership
RRTS	Roll-On-Roll-Off Terminal System
RCGC	Rural Credit Guarantee Corporation, Philippines
RTCs	Rural Transformation Centres
SACO	Savings and Loan Cooperative
SMS	Short Message Service
DFID	UK Department for International Development
UNCTAD	United Nations Conference on Trade and Development
USAID	United States Agency for International Development
VC	Value Chain
VCF	Value Chain Finance
VOs	Village Organizations
WHR	Warehouse receipt
WOCCU	World Council of Credit Unions

Introduction

The challenges associated with delivering rural and agricultural finance are well known, complex, and difficult to overcome. Most commercial financial institutions are not interested in financing farmers and other rural clients because they represent a less familiar market that is seen as risky and less profitable than more traditional urban clientele. As a result, financial institutions are hesitant to put resources and time into hiring and training specialized staff, adapting existing and proven credit technologies, and developing new loan products necessary to reduce risk and increase profitability in serving the agriculture sector. In addition, it is almost always more difficult to secure rural loans using traditional collateral, something that further fuels the perception of high risk and keeps most banks on the sidelines. Needless to say, farmers and fishers on the other hand are bankable which must also be given importance especially in the field of rural, agriculture and fisheries including livestock and poultry activities.

In large parts of the world, small-scale farmers, traders and processors are constrained in their business operations due to a lack of finance. Farmers want to be paid immediately, but traders do not have the ready cash to buy their produce. Traders need working capital so they can buy and transport produce, but lack the collateral to get loans. Processors cannot get the money they need to buy equipment or ensure a steady supply of inputs.

Value chain finance is a solution to such dilemmas. Value chain finance is when specialized financial institutions are linked to the value chain and offer services that build on the business relations along the chain. For example, a bank may loan money to a trader because the trader has a regular supply of produce from a farmers' group and a supermarket as a loyal customer. When lead firms are willing to vouch for their suppliers, even smallholder farmers become creditworthy.

This training material have been organized in 6 modules which covers almost all aspects of the value chain finance both in terms of conceptualization and references drawn from various countries around the world with special reference to Asian continent where the innovations have changed the financing matrix of agricultural value chains, improved the lives of the rural poor, produced more and higher-quality agricultural products, and made the value chain more profitable for all concerned. Also, it will be useful for the stakeholders ranging from commercial banks to development banks, microfinance institutions, development sectors and donors.

MODULE 1

Value Chain Finance: Concept, Context and Approach

1.1 Introduction

Majority of the Asian economies have been registering impressive growth aided by the growth in the manufacturing sector and by the services sector in particular. The growth trajectory for these economies could have been far better if the agricultural sector also participated in this rewriting of the story. Strengthening agriculture is critical for facing the challenges of rural poverty, food insecurity, unemployment, and sustainability of natural resources. Agriculture is the science and practice of activities relating to production, processing, marketing, distribution, utilization, and trade of food, feed and fiber. This definition implies that agricultural development strategy must address not only the growers but also those entrepreneurs involved in marketing, trade, processing, and agri-business. In this context, efficient linkage amongst and within these actors is the critical success factor for agricultural development.

While the supply side (both quantum and quality of production) and agriculture value chain[1] development has not been able to keep pace with time, the demand side trends in the emerging and developing economies of Asia (Japan, Korea, China, Thailand and India) have been quite attractive with changing consumer preferences which are fast catching up with those of the developed economies. There is thus a significant gap between the supply and demand sides of the agriculture value chains. This gap again observed to be wider due to the non-competitiveness of the small holder growers and the micro and small Agri-entrepreneurs (MSAEs) who usually play a critical role in movement of the agricultural commodities from *farm* to *fork*.

Driven by gains from economies of scale and globalization of the food chains and access to resources, multinational and other integrated or inter-linked agribusinesses have a greater impact in the sector that is characterized by increasing vertical and horizontal integration. The consequences of globalization of the agro-food sector are profound, especially for smallholders and others who are non-member of the inter-linked chains. Enhancing smallholders' productivity, competitiveness and their participation in these global value chains have been noted as priorities of the agriculture-for-development agenda (World Bank, 2008[2]).

Despite the changes happening in agriculture and agribusiness space, the typical offer for financial products and services for agricultural and rural production system has been deficient and not particularly innovative; financial intermediaries still lack much depth in rural areas, and primary producers, especially smallholders, are still underserved in many parts of the globe. Conventional thinking is that the agricultural sector is too costly and risky for lending. The products and services offerings by the financial sector to agriculture are still relying on *standalone* approach. The current environment for value chain finance (VCF) is also influenced by the fast-growing concentration of control in the agricultural sector.

[1] Food and Agriculture Organization of the UN (FAO) defined 'Agriculture Value Chain' as a series of activities that add value to a final product, beginning with the production, continuing with the processing or elaborating of the final product, and ending with the marketing and sale to the consumer or end user.

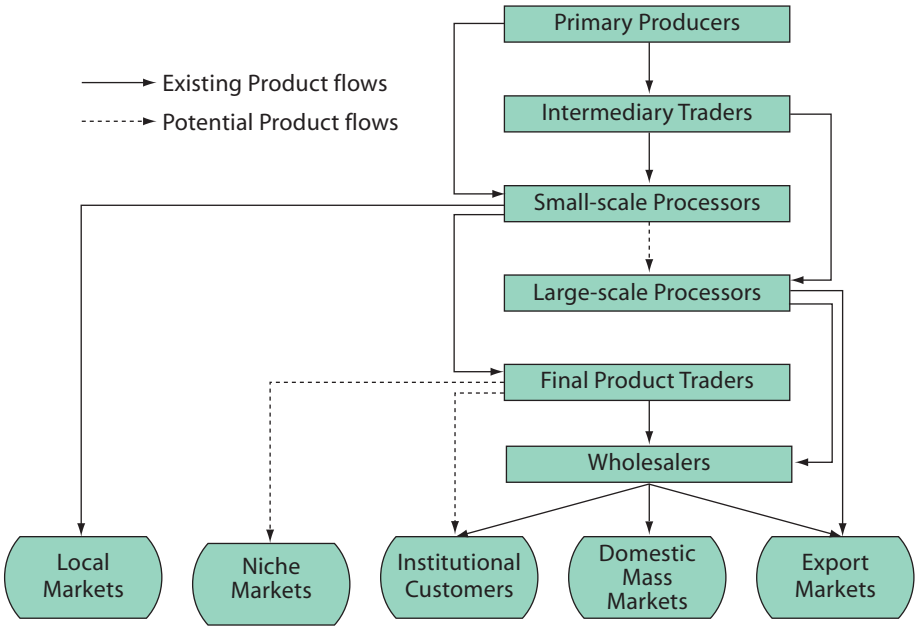
[2] As per World Development Report "Agriculture continues to be a fundamental instrument for sustainable development and poverty reduction"; yet, "financial constraints in agriculture remain pervasive, and they are costly and inequitably distributed, severely limiting smallholders' ability to compete..."

1.2 Defining Value Chain Finance (VCF)

Movement of the agricultural produce from *farm* to the *fork* (grower to the consumer or user) involves many processes or steps. Each step calls for a direct link to the next in order to form a viable and competitive chain. At each stage of this movement, some additional transformation or enhancement is made to the produce which is regarded as the value chains. Hence, a value chain is often defined as the sequence of value-adding activities, from production to consumption, through processing and commercialization. Value chains, or supply chains, in agriculture thus can be thought of as a set of processes and flows – from the inputs to production to processing, marketing and the consumer. Each segment of a chain has one or more backward and forward linkages. A chain is only as strong as its weakest link and hence the stronger the links, the more secure is the flow of products and services within the chain. Figure 1 below presents a simplified structured value chain in agriculture which shows the existing flow of the products and the potential flows for more efficiency in the system.

In the present development context, VCF is an evolving term that has taken on a range of meanings and connotations. The flows of funds to and among the various links within a value chain (VC) comprise what is known as VCF. Stated another way, it is any or all of the financial services, products and support services flowing to and/or through a VC to address the needs of those involved in that chain, be it a need for finance, a need to secure sales, procure products, reduce risk and/or improve efficiency within the chain. This can be internal financing directly from one VC actor to another or external from a financial institution or investor based upon the borrower's VC relations and activities. The above discussion related to VCF does not include conventional agricultural financing from financial institutions, such as banks and credit cooperatives, Microfinance Institutions, unless there is a direct correlation to the VC as mentioned above.

Figure 1. Simplified structured value chain



(Source: Das, 2009)

1.3 Context of Agricultural Value Chain Finance (AVCF)

After many years of declining investment, recent years have witnessed a renewed interest in agricultural financing in lower- and middle-income countries in the Asian continent. This trend is underpinned by several structural factors. Population growth, increasing rates of urbanization (which expand the share of the world's population that depends on food purchases) and changing diets (such as growth in consumption of meat and fast foods in some large industrializing countries) are pushing up global demand for food.

The rapid rise in food prices and a shortage of basic commodities experienced since early 2008 has motivated increased attention from the public sector; the higher prices and consequently increased opportunity for profits is generating interest from the private sector. As agriculture and agribusiness modernize with increased integration and inter-dependent relationships, the opportunity and the need for VCF becomes increasingly relevant.

Financing agriculture continues to be perceived as having high costs of operation, high risks and low returns on investment. Despite good intentions for directing credit to agriculture, the results of the agricultural lending programme in developing countries commonly have unsatisfactory results with low rates of repayment in spite of (or often partly because of) high subsidies. Agricultural development banks have been slow to innovate, often due to a certain degree to governmental directives on them. Commercial banks have traditionally shied away from this sector because of uncontrollable and systemic risks, higher costs and fear of the unknown for bankers not familiar with the sector and setting.

Under the above mentioned prevailing situation, reinforcing of finance in a systematic manner to this sector is a big challenge to the policy makers and development finance practitioners in Asia and pacific continent.

1.4 Opportunities of financing agricultural value chains

Value Chain Finance (VCF) offers an opportunity to expand the breadth of financing space for agriculture and SMEs, improve efficiency, ensure repayments, and consolidate AVC linkages among participants in the chains. VCF can improve the overall effectiveness and efficiency of both those providing financing to and within the chain but also those operating in the agricultural chain by:

a) identifying financing needs for strengthening the chain;
b) tailoring financial products to fit the needs;
c) reducing costs through direct discount repayments and delivery of financial services; and
d) using VC processes and participants to mitigate risks to businesses in the chain, and to their production and value addition activities.

The specific opportunities that access to finance can create within a chain are driven by the business model and the relative roles of each participant in the chain. Finance often looks different when provided within a VC than from a financial institution. Not only is the nature of the finance often different, but so are the motives. In majority of the countries of Asian continent value chain actors are driven more by desire to expand markets than by the profitability of the finance.

- Traders commonly use finance as a procurement facility and input suppliers use it primarily as part of a sales incentive strategy.
- For financial institutions, it offers an approach to lower risk and cost in providing financial services.
- For the recipients of VCF, such as smallholder farmers or those purchasing products, VCF offers a mechanism to obtain financing that may otherwise not be available due to a lack of collateral or high transaction costs of securing a loan, and it can be a way to secure a market for products.

1.5 Importance of finance along AVC smallholders' perspective

It is recognized that increases in finance and investment are needed at all levels of the food chain, with special interest in increasing the access to finance by those agricultural households and communities who are most vulnerable to food insecurity and poverty. Of late, significant consideration is being given to the effects of financial intervention on small farmers and agribusinesses that have the most to gain or lose in today's rapidly changing agricultural and economic environment with special reference to AVCs.

Small farmers play a critical and often undervalued role in ensuring global food security. When food supply is threatened and global commodity prices rise, the work of small farmers becomes more important than ever. Their crops feed not only their own local communities, but also the millions of people migrating to crowded towns and cities. Without affordable financial services, reliable information on market demand or direct market linkages, many small farmers remain in the unprofitable trap of low-investment and low-return production cycles. They also need improved inputs to break into more profitable commercial production. However, many of them do not have capital to invest at the outset, own traditional forms of collateral or even do not have safe places to save their money. Small farmers who do have access to bank loans frequently find the terms to be too rigid, the amounts too small or fees too high to permit the kinds of investments that can significantly increase production. As a result, they often borrow from family, friends or moneylenders who typically charge high interest rates and have limited potential to expand.

In some cases, small farmers borrow their working capital from other non-financial participants within the VC (whether formal or informal), such as input suppliers, associations, buyers or traders. While borrowing from these sources may be appropriate in some situations, it offers little transparency and can put significant constraints on financing due to the lenders' limited liquidity and lending knowledge. Many financial institutions have been hesitant to work with VCs because of the complexity of relationships (partnerships etc.) and the risks, costs and associated with financing. Credit unions in some countries, however, make promising partners in VCF due to their deep community ties, presence in rural areas and lending experience with low-income individuals and small firms. In addition, they are finding new ways to manage the risk of lending to these important producers.

MODULE 2

Role of Agriculture Value Chain Finance

2.1 Introduction

The policy focus of agriculture sector in the developing nations of Asian continent per se has been through the credit lens. While it is important to acknowledge the role of credit, it is also important to flag the important issues that would make credit more effective – which would be in reducing risk and uncertainty in agriculture – both at the level of yields and at the market place, making agriculture economically viable and ensuring that there are sufficient surpluses generated from agriculture which in turn is ploughed into the household level savings/capital which would act as a cushion in times of adversity. Overall the concerns are that there is a disproportionate growth of credit in relation to "savings" and there is also a disproportionate growth of credit in relation to the agricultural productivity itself in all the developing countries across the continent.

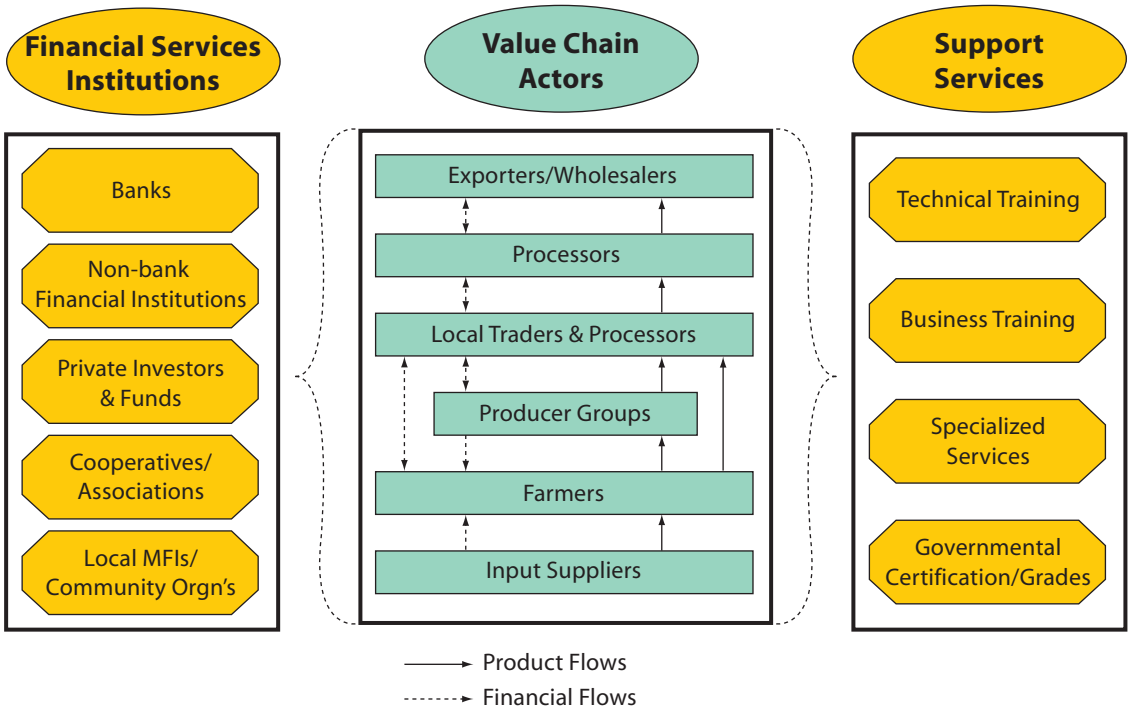
2.2 Flow of Products and Finance along the AVC

While the flow of products along the value chain is quite understandable, the flow of finance is quite complex due to participation of variety of players. Understanding of the conceptual framework of VCF is important because VCF is a combination of both an approach to financing, business models adopted as well as a set of financial instruments, which are utilized to expand and improve financial services to meet the needs of those involved in the VC. Many of the instruments are not new but they are often applied in VCF more broadly and frequently in combination with others. Most importantly, VCF is as an approach to financing that recognizes the entirety of the chain and the forces, which drive it, and responds accordingly to the specific requirements for supplying finance to them – the producers, traders, processors and others in the chains. It is a tailor-made approach, which is designed to meet the needs of the businesses most efficiently keeping an eye on the nature of the chains in order.

A simplified framework for understanding VCF is presented through Figure 2. As described above, it illustrates that finance is provided both by those within the VC itself as well as various types of institutional entities. Product flows in one direction through the chain with varying levels of value addition at each level. Within the chain, the finance flows in two directions, depending upon the VC and/or region and the dynamics of the participants involved.

For example, in the rice industry, large wholesalers often finance traders who in turn advance to the growers. At the same time, many processors receive unprocessed rice from farmers and producer groups with only a partial payment with the understanding that final payment will be made after the rice is processed and sold.

Figure 2. Product and Financial Flow within the Value Chain



(Source: Adapted from Fries, 2007 & Miller, 2007)

2.3 Demand and Supply of Value Chain Finance

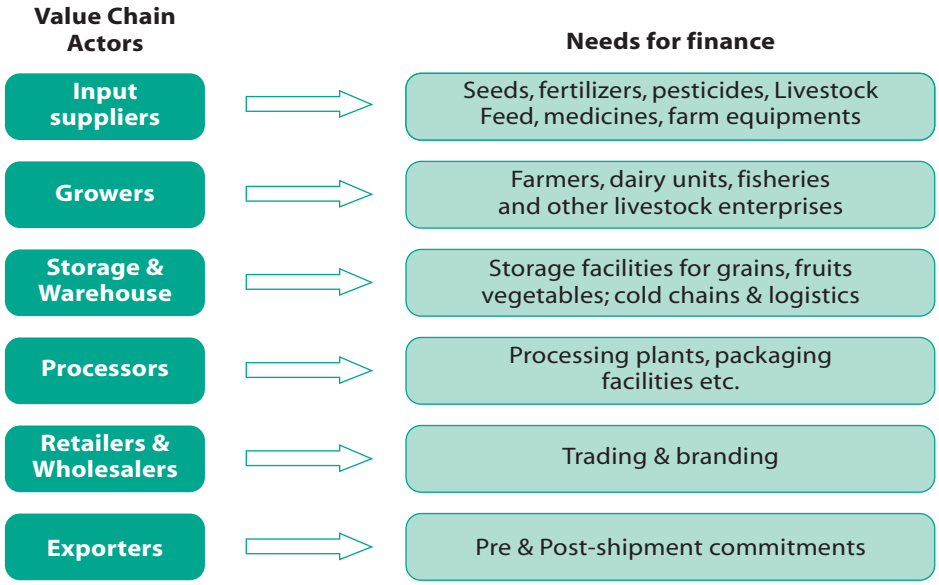
2.3.1 Demand side of AVCF

The demand in agriculture finance starts with the primary producers' need for finance for inputs such as fertilizers, seeds, agrochemicals, fuel, tools and equipment, adoption of improved technology and the labour used to plant, harvest and transport their crops to market. For some, only short term working capital is needed, while for others, investment capital is important to carry out the production at a sustainable scale. Financial services such as short and longer-term loans, line of credit, letters of guarantee, payments and transfers, leasing and insurance can help producers overcome seasonal income fluctuations and adopt more competitive technologies such as irrigation systems, farm mechanization etc. Other value-chain actors (e.g. input suppliers, agro processors, aggregators and traders) also require access to customized financial products, such as product financing and equipment leasing to support their short and longer term capital needs. Figure 3 below illustrates the demand side of the agriculture value chains and their various requirements.

2.3.2 Supply side of AVCF

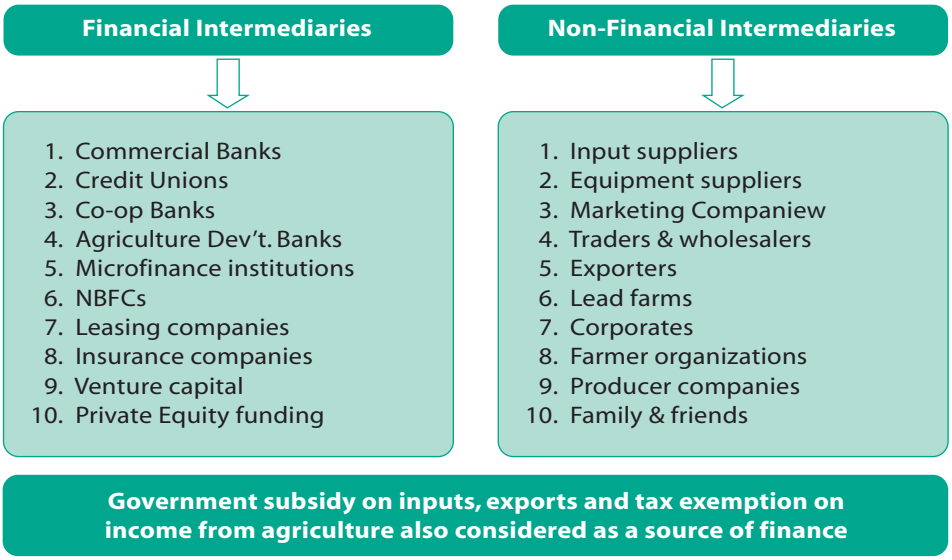
Both formal financial institutions and VC actors (non-financial intermediaries) supply agricultural finance as per the need arises. In urban areas, financial institutions tend to be the primary provider of financial services. In rural areas, however, high transaction costs and risk associated with agricultural production keep financial institutions away from playing as active a role. As a result, the predominant source of finance for agricultural production is often agribusiness enterprises with direct links to and vested interest in agricultural producers. The Figure 4 below illustrates financial and non-financial supply side of agriculture vale chain.

Figure 3. Demand side of AVCF



(Source: Das, 2009 and Das and Aquino, 2013)

Figure 4. Supply side of AVCF



(Source: Das, 2009 and Das and Aquino, 2013)

2.3.3 Financial vis-à-vis non-financial intermediaries in AVCF

Providing financial facilities by the non-financial intermediaries (as shown in figure above) to the value chain actors generally builds on established relationships between value chain actors that facilitate credit screening and monitoring, resulting in faster service and fewer obstacles to reach. Financing the value chains by the formal financial institutions is a longer term process that complements and builds on the strength of VC relationships and risk perception. The benefits of these relationships – secure markets, improved skills – make potential borrowers more creditworthy (attractive) to financial institutions. Lending by financial institutions is more explicit than by the non-financial intermediaries because it is not embedded into another commercial transaction – financial institutions know how profitable their lending is, whereas VC actors generally look only at their overall profitability. Ultimately,

lending by financial institutions may well be more sustainable, as it taps into a larger potential pool of funds and transfers responsibility for the actual lending to a specialized entity that sees lending as their core line of business, rather than as a necessary but secondary activity. Finally, because of the involvement of regulated financial institutions, clients may have access to a greater range of services, including savings, transfers and investment credit. In this document of AVCF, the terminology used for financing facility provided by the formal financial system and non-formal system are indirect finance (external) and direct finance (internal) respectively. The successful direct and indirect financing model along the VC has been further explained in Box 1 below.

Box 1. Internal VCF in Myanmar and Kenya

An example of internal VCF (direct finance) is the case of input supplier credit in Myanmar where agro-input retailers offer deferred payment sales to smallholder farmers. A typical case of external finance VCF (indirect finance) is exemplified in Kenya where small fruit and vegetable growers are able to access bank finance for agro-chemicals thanks to their export contract. The exporter pays the farmers through the bank, which deducts the scheduled loan payments before releasing the net proceeds to the farmer group.

Source: Myint, 2007[3] & Marangu, 2007[4]

2.4 Innovations in AVCF

Advances in VC knowledge and experience have taken place in parallel with the evolution of financial services, but these two have often developed as separate processes. An AVC is no longer viewed as a single channel that tracks a product from a farmer to a market, but as a complex chain that depends on relationships within the chain, enabling environment, availability of appropriate services and inputs from technology to raw materials, and most importantly, changing market demand.

2.4.1 Financial innovations

Innovations in VCF have been largely driven by the developments in VCs such as integration and formalization of relationships, globalization of agricultural food chains, the support from donors, facilitators and others to the role that small farmers can play in these chains, and the willingness of financiers to look at new ways to support them. Further, with the growth of microfinance, social investment, and other forms of non-conventional funding, creative forms of financing are being developed, and existing financial institutions have become more flexible and resourceful. These efforts are supported by donors who frequently offer loans, grants, guarantees, capacity building and other forms of assistance that can help financial institutions to lend with less collateral and low risk. With the increasing concerns of poverty alleviation together with the growing food crisis and the realization that even very small farmers can make an important contribution to global food security, it is anticipated that VC development and finance will continue to change and progress. Adaptation will spur increased refinements and innovation in VCF, leading to new products and services that are responsive to specific situation and contexts, and help in mitigating risks for the lending institutions (Box 2).

[3] Myint, K. (2007) "Value chain finance", Presentation at International Conference: Agri Revolution: Financing the Agricultural Value Chain, Mumbai, India. (Website http://www.ruralfinance.org/id/48291).
[4] Marangu, K. (2007) "Kenya BDS Program, Experience in value chain facilitation", Presentation at the AFRACA Agribanks Forum: Africa Value Chain Financing, Nairobi, Kenya. (Website www.ruralfinance.org/id/54740).

Box 2. Kisan Credit Card in India

Credit products like the Kisan (Farmer) Credit Cards (KCC) in India provides more accessible production, investment and consumption credit to farmers. The KCC, which has been in operation since 1998, is implemented across the country by all public sector commercial banks, regional rural banks and co-operative banks with an outreach of over 83 million cards through March 2009 and a credit limit of US$ 8 billion. By providing both timely access to loans as well as crop and health insurance, it reduces the risk not only the producers but also of their suppliers and buyers. Similar products like *Grameen* (Village) cards in vogue for rural people and *Bhumiheen* (Landless) cards for landless farmers/sharecroppers have been developed and introduced in the market.

Sources: Balakrishnan, 2007[5] and NABARD, 2009[6]

2.4.2 Technological innovations

New technologies and their innovative application have supported and spurred the development of finance in general and of VCF in particular. From the use of Management Information System (MIS) to monitor stored goods in a network of warehouses to the access to remittances through mobile phones, the proliferation of technologies has enabled more rapid development of affordable and accessible finance in agriculture. Enabling technologies have been well documented elsewhere, so this section focuses on the trends and specific applications that have been particularly significant to recent developments in AVCF.

The fast-growing popularity of technological innovations for use in financial transactions is evident in Kenya where the M-Pesa service has attracted 7 million registered users who are making $ 2 million a day in transfers in a country where fewer than 4 million bank accounts exist (CGAP, 2009[7]). Users can exchange cash at a retail agent in return for an electronic record of the transaction value. This virtual account is stored on the server of a non-bank service provider, such as a mobile network operator or an issuer of stored-value cards. The use of cellular devices can play a central role in both financial and VC activities, as when mobile phones are used for remittance transfers, loan repayments, and other financial transactions with important identification data stored on the phone. This innovation goes beyond the hardware itself, and includes new kinds of relationships between banks, clients, agribusinesses and communication companies.

2.4.3 Infrastructural innovations

Another type of innovation for improving AVCF is the physical infrastructure. One of the major constraints in the use of warehouse receipt financing is the lack of suitable warehouses. Other constraints are that of road, rail, river and port infrastructures. One innovative project developed to address the logistical constraints by the Development Bank in the Philippines as shown in Box 3 below.

2.4.4 Policy and Public sector innovations

Policy and public sector innovations for VCF are often subtle and indirect. In fact, in some cases, improvements have been made by simply having less governmental intervention – less subsidy or price controls, for example, that stifle strong VC development. Public support to producer groups, market support programmes or even research will not be effective if not linked to VCs. Innovative public

[5] Balakrishnan, R. (2007) "Poor reach, poor repayment: Problems with agricultural finance in India and NABARD's plans to tackle them", presentation at International Conference: Agri Revolution: Financing the Agricultural Value Chain, Mumbai, India. (Website http://www.ruralfinance.org/id/48291).

[6] NABARD, (2009), 2008-2009 Annual Report, http://www.nabard.org /financialsreports.asp.

[7] CGAP, (2009) Poor People Using Mobile Financial Services: Observations on Customer Usages and Impact from M-Pesa, CGAP Brief, August 2009, World Bank, Washington, DC.

interventions focus on the demand and address the key weakness in the vertical and horizontal linkages within agricultural chains, giving priority to those, which are strategic in terms of the economic and social impact.

Box 3. Transportation Innovation in the Philippines

A flagship program of the Development Bank of the Philippines (DBP) is the Sustainable Logistics Development Program (SLDP) to address the logistical needs of distribution of goods and services within the context of the government's goals of global competitiveness, poverty alleviation and food sufficiency at local, regional, and national levels. The financial assistance of SLDP focuses on the physical asset requirements for a sustainable distribution system of maritime transport and related land transport means. It is geared towards the development of progressive long-haul shipping to constitute a national transport system of bulk agricultural products and the development of short-haul ferry system to link the islands to the growth centres of the country. One component of the SLDP is a terminal system for farmers and traders: Roll-On—Roll-Off Terminal System (RRTS). Terminals and ferry operations will be established in areas where such services are absent or are only serviced by small wooden boats. The RRTS form part of the national highway system providing the necessary linkage and efficiency to inter-island travel and transport. The concept is effective in archipelagos like the Philippines because it uses vessels to function as bridges in connecting roads on both sides of the seas. With the RRTS in place in strategic regions of the archipelago, fast and efficient movement of goods can enable farmers and traders to simply roll on their vehicles to these "floating bridges", and roll off from the vessels to their respective destinations. This will not only spur growth in rural areas, but also reduce migration to urban centres. Working capital needs of small farmers, traders and entrepreneurs are also assisted through DBP's micro and small enterprise lending programs. Larger investments in capital equipment and fixed assets, including ferries and bulk carriers, reefers, silos and other cargo handling and storage equipment, are supported by DBP's project financing programs such as the SLDP.

Source: Lazaro, 2007[8]

[8] Lazaro, P. (2007) "Sustainable logistics development program", paper presented at Southeast Asia Regional Conference: Agricultural Value Chain Financing, Kuala Lumpur, Malaysia in Digal, L. (2009) Southeast Asia Regional Conference On Agricultural Value Chain Financing Conference Proceedings, Asian Productivity Organization, National Productivity Council and FAO, Rome. (Website: http://www.ruralfinance.org/id/68010)

MODULE 3

Implementation of AVCF: Evaluation Tools and Techniques

3.1 Introduction

VCF can be viewed as a series of tools and mechanisms, yet, most importantly; it is also an approach that takes a systemic viewpoint, looking at the collective set of actors, processes and markets of the chain as opposed to an individual lender-borrower within the system. Decisions about financing are based on the health of the entire system, including market demand, and not just on the individual borrower. This means that in order to offer VCF; knowledge of the agricultural production and its value chain system is required.

In conventional finance, whether internal financing within the chain, such as trader credit, or financing originated externally, such as finance by the commercial banks, the view is less comprehensive, and therefore incorporates significant risk. The additional risk is due in large part to "uncertainty"; not being able to fully understanding the risks and consequently not being able to assess and mitigate against those risks. Uncertainty often also leads to a higher perception of risk causing conventional lending to the sector to be unavailable.

A bank, for example, that knows that a farmer is connected to a viable buyer, and that the buyer in turn has solid market access, is more likely to give a loan to the farmer. In the past, without such VC knowledge and inter-connectivity, the farmers would have been refused to avail loans and therefore unable to finance their operations to take advantage of a market opportunity. The familiarity of the players in a specific chain with each other supports the promotion and development of effective arrangements to facilitate financing. The main purpose is sharing risks among various actors, transferring defined risks to those parties that are best equipped to manage them and, as possible, reducing costs through direct linkages and payments.

3.2 Complementary role of Financial and Non-Financial Intermediaries

As discussed in previous modules, the AVC comprises of three broad categories. The first is made up of farmers, the primary producers. The second category consists of the Micro, Small- and Medium-Scale Agri Enterprises (MSMAEs) that generally act as the link between the farmers and the larger companies. These MSMAEs could play the role of small processors; consolidators etc. who advance resources to producers before the start of actual production, or traders who buy the farmers' produce and sell it either to the larger firms or in the open market. The MSMAEs in the chain could also be the actual processors who buy the produce and either process it into the final product or carry out interim processing before selling the products to larger entities. The last category along the VC includes the larger companies, which process the products into different forms that eventually reach the store shelves. At every stage in this chain, some value is added (processing, space and time) to the product and also opens the scope of financing by the formal financial system.

The uncertainty inherent in all agricultural activities affects each of the actors, in particular with regard to their access to finance. As we move from the larger firms to the small farmers, the credit risk progressively increases. Therefore, the larger firms find it easier to raise finance at convenient interest rates, while smaller players receive finance at much higher rates. Small farmers with little or no security may not even be able to raise loans, as financial institutions have no other way to recover their money

in case of intentional default by the farmer. This has been the commonest of problems for the fragmented agricultural industry of developing countries. The financing facilities extended by the non-financial intermediaries are playing a crucial role in fulfilling the gap of finance by the formal system and that is why we may say that the role of both the financial and non-financial intermediaries are complementary to the growth and development of AVC. However, when this AVC is viewed in its entirety, VCF through capturing the cash flow emerges as a way of ensuring that all the actors have access to finance as and when necessary. This system allows financial institutions to mitigate the risks of the lack of security of actors lower in the VC. In an ideal VCF system, a financial institution enters into an arrangement with some or all the actors in a particular VC to extend finance to them.

If we take a typical example, a bank ties up with a dairy for the purpose of VCF. The bank will be able to assess the milk procuring records at the dairy's collection centres. The procuring register contains the procuring records of the few hundred farmers who supply milk to the centre daily. If the bank finds that a number of suppliers have consistent procuring records, it is able to extend loans to these on the basis of their consistent supply. These loans will help the suppliers purchase better quality cattle, improve their facilities and become more profitable in the long run. In this system, the repayment of the loans to the financial institutions really comes in from the dairy, which pays the bank before paying their dues to individual farmers. The financial institutions do not have to rely on the farmers' intent to repay the loans. Financial institutions can also cut down on the exorbitant infrastructure they otherwise need for accessing individual farmers for loans. As they can avoid investing in a team to reach out to the farmers, financial institutions can cut costs and thus lower their own prices, offering the farmers lower interest rates. VCF, thus, benefits farmers by allowing them access to loans at a cost that makes their ventures viable. In most cases, financial institutions approach the strongest player in the VC to propose the arrangement.

3.3 Assessment for AVC for Financing

3.3.1 Modeling of the Assessment

It will be easy for the financial institutions for analysis of credit proposals if they follow the VCF approach where the loan analysis for a specific borrower comprehensively considers many aspects and processes of the VC, including assessing the actors within the chain who is best placed to be the borrower(s). It has been established that the key issues for consideration in VCF in the Cooperative Bank of Agriculture in Africa (Mwangi, 2007[9]) are:

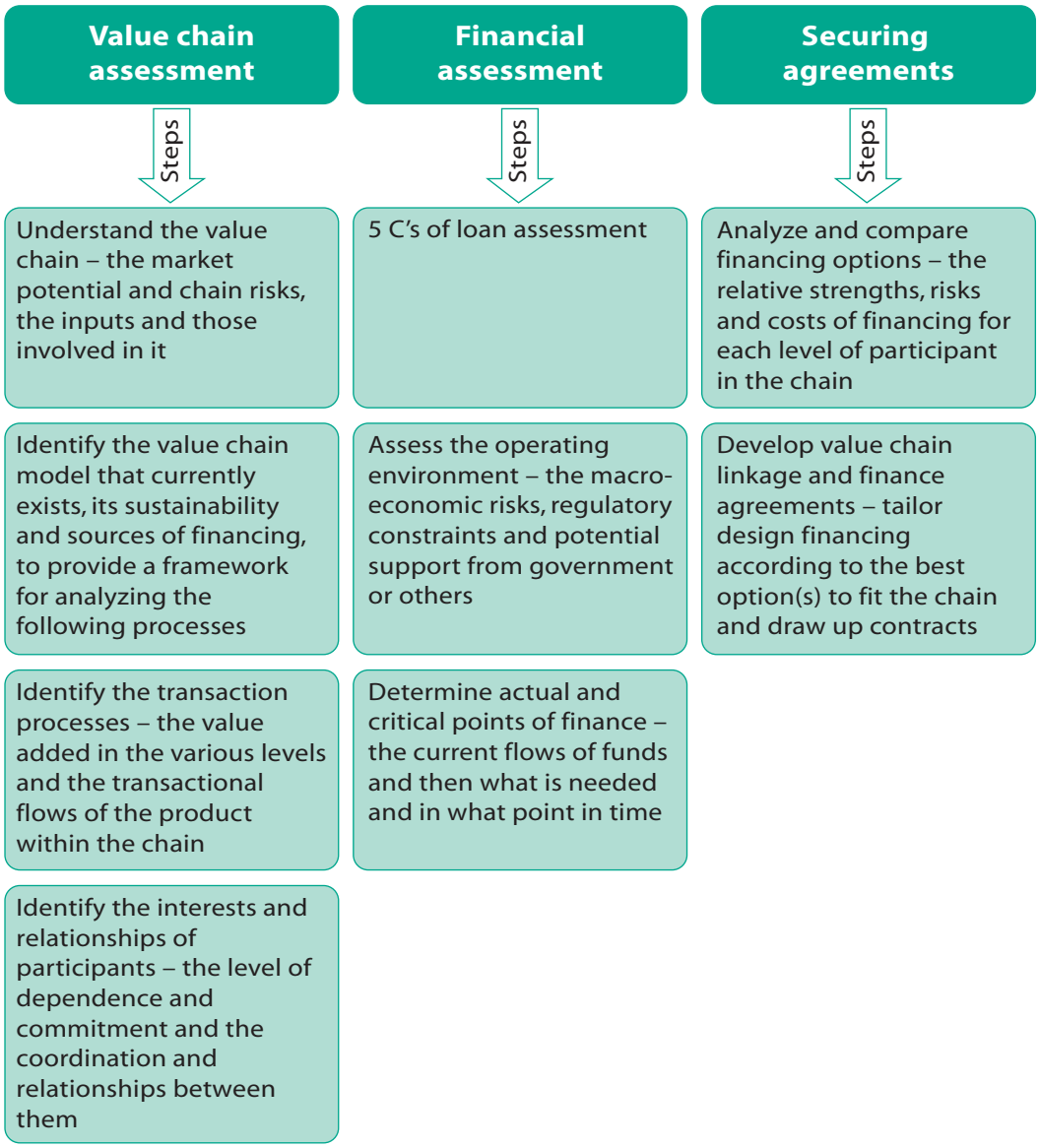
a) the strength of the VC and its opportunities and challenges,
b) the risks,
c) the technical, business and financial services and support, and
d) the business model for VCF.

In essence, the process involves a combination of value chain assessment, financial assessment and securing agreements. A few simple steps that can be employed by such an institution are presented in Figure 5 below.

Financial institutions are typically focused upon assessing the first three factors, while the commercial banks give highest priority to collateral and the microfinance institutions gives priority to character and capacity. These remain valid in VCF, but a higher weight is now assigned to the conditions – both the health and market conditions of the VC and the "fit" of the financial conditions and cash flows to those clients within the chain. Hence, a risk assessment moves well beyond client credit risk and requires careful assessment of the risks of market, price and production. Similarly the cash flow capacity of the VC must be sufficient and in total synch with that of the loan conditions.

[9] Marangu, K. (2007) "Kenya BDS Program, Experience in value chain facilitation", Presentation at the Africa Agribanks Forum: Africa Value Chain Financing, Nairobi, Kenya. (Website www.ruralfinance.org/id/54740)

Figure 5. Assessment of AVC for financing



(Source: Das, 2009)

3.3.2 Borrower Assessment Tools

While much of the emphasis in a VCF approach is on the health of the chain and its value-adding transactions and linkages, a well-rounded assessment of all borrowers is still critical. The borrower assessment may be undertaken by looking at key areas commonly called the 5 C's of loan assessment (Box 4). These refer to:

I. Character,
II. Capacity,
III. Collateral or Capital,
IV. Conditions and
V. Cash flow

Box 4. 5 C's of Lending Assessment in Value Chain Finance

The 5 C's	Assessment Triggers
1. Character	• Suppliers, producers, purchasers and others in a value chain who interact regularly can assess of the character and management savvy of each other better than a banker, with whom he has infrequent interaction
2. Capacity	• Assessment is broadened from the borrower's individual capacity toward a focus on the health and growth potential of the value chain and the competitiveness of those involved in it; also one's borrowing capacity can be strengthened because they are integrated into a strong value chain
3. Capital	• The capital of the borrower alone is less emphasized in value chain finance, as increased attention is given to the capitalization within the whole chain
4. Collateral	• Cash and commodity flows which can be predicted from past relations or contracts can replace or enhance traditional collateral; also in tightly integrated chains the collateral of the strongest partners can be used for attracting finance, which can also be a benefit to others in the chain
5. Conditions	• Conditions for financing are more adapted to the chain; tailoring finance to fit the specific needs becomes paramount to its success and can improve "bankability" of the clients.

Source: Miller & Jones (2010)[10]

3.4 Enabling environment for AVCF

The collection of institutions, policies and support services that define the setting where enterprises operate is known as the enabling environment, or business climate. The constituting elements of an enabling environment in any given economy are multi-faceted, covering themes such as the rule of law, public sector governance, overall macro-economic conditions, infrastructure and regulations affecting business, among others. Acknowledging that a conducive business climate is an essential pre-requisite for investments in new enterprises and for the sustained growth and competitiveness of the existing ones, governments and international organizations are now paying increased attention to the assessment and promotion of reforms of enabling environments. The "Doing Business" survey (World Bank, 2009) established itself as an authoritative benchmark in this area of concern, generating country rankings that have been instrumental in engendering business climate reforms worldwide.

To be effective, VCF depends upon the environment in which it operates. Some financial instruments can only be applied if certain regulations or compliance is in place. Macro-economic instability or erratic policies adversely affecting risk perceptions, on the other hand, undermine the potential of VCF instruments. While financial instruments have been developed as a method of alternative finance when conditions for convention are not in place, a proper business climate is essential, if VCF is to be applied to its full potential. Similarly, the business models for VCs and their financing are developed according to the operating conditions and the characteristics of those involved in the chain. Sub-optimal models are prone to result in the absence of enabling environments.

[10] Miller, C. and Jones, L. (2010) Agriculture Value Chain Finance: approach, tools, lessons and innovations. Practical Action Publication, UK.

More often than not, work on building an enabling environment requires interventions on multiple levels in order to be effective. For example in Tanzania, IFAD (Cherogony, 2007[11]) found that reforms were needed on three levels. Enabling Environment Support on Multiple Levels include:

- Macro level – policy level to create an enabling environment (warehouse receipt act, taxation and marketing policy);
- Meso level with private sector intermediaries (insurance, collateral managers, commercial banks);
- Micro level with various institutional forms of farmer associations and community-based microfinance institutions like savings and loans cooperatives (SACOs).

Some of the elements of enabling environments that are of particular relevance for the successful design and implementation of VCF initiatives are suggested below:

- Extension services to be strengthened
- Promoting farmers' and producers' company/organization, contract/corporate farming helping the farmer to bring in economies of scale
- Sharing of land records and land tenures online.
- Promotion of agriculture and agri-business in the priority list.
- Encourage export competitiveness
- Rationalise tax structure for the processed foods

[11] Cherogony, M. (2007) "IFAD's experience in value chain financing in east and southern Africa", Presentation at the AFRACA Agribanks Forum: Africa Value Chain Financing, Nairobi, Kenya. (Website www.ruralfinance.org/id/54740

MODULE 4

Financial Instruments used in AVCF

4.1 Introduction

Effective and efficient financial products and services require a sound appreciation of the market actors and dynamics of the economic activities that they facilitate. Innovation, which is necessary to expand access to effective and efficient financial services to rural customers, should also build on existing relationships. Non-financial actors within value chains (VCs) are currently providing significant volumes of financial services, often embedded in non-financial services.

Financing the value chains in agriculture (AVCF) presents a more complex proposition than conventional agriculture finance programme. The products are designed in a different perspective, as there are many actors involved in the process. Before going into the details of the categorization and modalities of financing this dynamic sector of the economy, we need to understand the different phases, which are involved in designing the financial products or instruments to meet the financing needs of all the actors involved in the VCs.

4.2 Methodology of developing financial products and services for AVCF

The World Council of Credit Unions (WOCCU, 2009[12]) has developed a four-phase value chain finance (VCF) methodology in Peru that is designed to assess and mitigate the specific risks associated with financing existing rural VCs. It also serves to determine at which point in the process—from production to retail distribution—financing add value to the participants in the chain. They also suggest that the credit unions use the methodology to design a variety of products with characteristics that meet the various financing needs along the chains. The four phases described below may be considered as a base line methodology for extending the formal financial services to the AVCs.

Phase I: Identify and evaluate potential VCs

The market demand for a particular product and the ability of producers to meet this demand is assessed in the first place. Box 5 below provides relevant indicators to guide the evaluation.

Phase II: Facilitate and leverage market linkages

All the VC participants are brought together to identify problems, review their needs based on the evaluation in Phase I and commit themselves to find solutions. The direct commercial connections provide reliable market information to strengthen the small producers' business relationships and secure market access for years to come.

Phase III: Design the financial products and evaluate capacity to repay

Product design takes place in this phase, which directly reflects the financing needs of the borrowers and the specific characteristics of each commodity and VC. Then the best combination of collateral and signed selling contracts to cover the loan is developed. This phase reduces the financial risk of granting loans with unrealistic conditions and/or inadequate amounts.

[12] WOCCU (2009): Technical Guide on Integrated Financing for Value Chain, World Council of Credit Unions. Madison, USA. (Website www.woccu.org/publications)

Box 5. Broad Indicators of VCF

Market Demand

- Is the VC connected to a viable market?
- Is there sufficient demand to incentivize production?
- Can the producers compete with their peer group to successfully meet demand?

Producers' Technical Ability

- Do the producers have the appropriate level of technical skills to understand and meet demand?
- Will the producers receive technical assistance from strategic partners who can ensure product volume and compliance?
- How will technical assistance services be financed?

Producers Organizations

- Are the producers organized?
- Do the producers need training to strengthen their association?

Market Access

- Does the local infrastructure allow basic market access, e.g., public transportation for goods and people, modes of communication, etc.?

Environmental Factors

- Does supporting the VC encourage the employment of underage workers or interfere with the completion of their schooling?
- Does supporting the VC encourage environmentally friendly practices?
- Does supporting the VC encourage practices that violate local or national laws?

Source: WOCCU – Technical Guide Integrated Financing for Value Chains, 2009

Phase IV: Grant, monitor and collect loan repayments

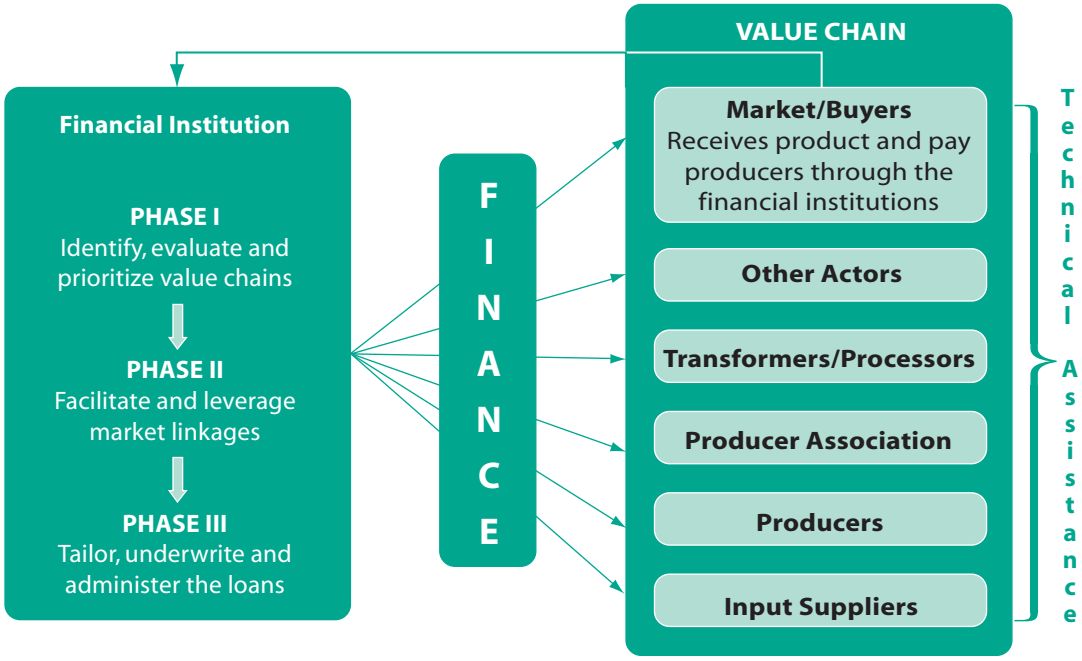
This phase deals with disbursement of loans in cash or through vouchers that permit the borrowers to obtain inputs such as quality seeds, fertilizers, pesticides, tools, labour and equipment from other VC participants.

WOCCU's value chain finance methodology (2009) provides credit unions (Figure IV-1) with the technical and operational capacity to put resources into rural finance lending while maintaining an adequate margin and still mitigating the risk of loan default. The methodology includes tools for evaluating opportunities, designing products and administering loans—all crucial for rural financial institutions that want to control the risks of agricultural lending when they do not have access to subsidies, grants or guarantees. The model is adaptable to any type of financial institution. It may be applied to non-agricultural value chains. It can be used to deliver finance to any actor along the value chain.

4.3 Financial Products and Instruments for AVC

The ideal situation of AVCF is that the actors of the value chains should be more dependent on financial products and services offered by formal financial intermediaries rather than internal finance (i.e. the finance available within the chains, please refer lesson-2) to get a competitive edge and more options. Nevertheless, a majority of the primary producers are still dependent on the actors up in the value chain to meet their financial need. So while designing the financial products the financial institutions need to keep in mind this factors and should opt for designing a variety of value chain loan products-with individual terms and conditions to meet the potential financing needs for the identified AVC.

Figure 6. Value Chain Finance Methodology



(Source: WOCCU (2009). Value Chain Finance Implementation Manual)

There are many ways to categorize the modalities and describe the various financial products and instruments that can be used to meet the need of finance by the various actors in the AVCs. This course adopts the typology provided by Miller and Jones (2010) who divided the financial instruments into five categories as under:

a) Product Financing
b) Receivables Financing
c) Physical Assets Collaterlisation
d) Risk mitigation products
e) Structured finance and other enhancements

It is needed to organize the modalities differently, according to the analysis of the practical application of the various mechanism described in greater detail below. It must be noted that the use of terms varies somewhat between countries and even between sectors. In some cases, a precise legal term may be applied in some contexts but the use of the terms in agriculture may often encompass a broader meaning and application.

4.4 Product Financing

The first category in the above-mentioned typology refers to product financing. The instrument has been further divided into four types of products, which are represented in the Table 1 below:

Table 1. Product Financing

Products	General Purpose of Credit	Brief Description
1. Trader Credit	Trader credit enables the trader to procure products, and provides a farmer with needed cash until harvest (for farm or livelihood use) as well as guarantees the sale of farm produce.	A traditional form of finance in which traders' advance funds to producers to be repaid, usually in kind, at harvest time. Less commonly, trader finance can also be used "upward" in the chain whereby the trader delivers products to buyers with delayed payments.
2. Input Supplier Credit	Input supplier credit offers the supplier an opportunity to sell to cash-strapped farmers, and enables farmers to access needed inputs for agricultural production.	An input supplier advances agricultural inputs to farmers (or others in the VC) who agree to repay at harvest time or at an other agreed time. The cost of credit (interest) is generally incorporated in the price.
3. Marketing Company Credit	Buyer credit from marketing companies, processors, and consolidators secures the procurements of raw materials to companies and provides farmers with needed cash until harvest as well as guarantees the sale of their crop.	A marketing company, processor or other company provides credit in cash or in kind to farmers, local traders or others in the VC. Repayment is most often in kind.
4. Lead Firm Financing	Lead firm financing, often in the form of contract farming, ensures that quality products are available in time to the lead firm (as loans to farmers are generally accompanied by technical support and possibly inputs), and provides farmers with finance for agricultural production together with technical assistance and market access.	A lead firm either provides direct finance within the VC or guaranteed sales agreements enable access to finance from 3rd party financial institutions. Lead firm financing involves a contract and is usually accompanied by technical assistance.

4.5 Receivables Financing

The receivable financing instrument has been further divided into three types of products, which are represented in the following table (Table 2).

Table 2. Receivables Financing

Products	General Purpose of Credit	Brief Description
1. Trade Receivables Finance	Trade receivables finance provides advance working capital funds to agribusiness companies (supplier, processor, marketing and export) against confirmed accounts receivables or sales contracts.	A bank or other financier advances funds to input suppliers, agro processors or wholesalers against accounts receivables or confirmed orders to producers. Receivables financing takes into account the strength of the buyer's purchase and repayment history.
2. Factoring	Factoring results in financing for inputs or sales of raw and processed outputs that are sold to reliable buyers. It reduces seller risks for input supply sales and/or sales from agribusiness producer or marketing companies.	A supplier sells or assigns receivables from contracts of sales of goods to a specialized agency called a factor who assumes the responsibility for the buyer's ability to repay. (Factoring combines working capital, credit risk protection, accounts receivable bookkeeping and collection services).
3. Forfaiting	Forfaiting improves an exporter's cash flow situation by providing cash for its receivables, taking on the risk of payment, and easing buyer-seller flow.	A specialized forfaitor agency purchases an exporter's receivables of freely negotiable instruments (such as unconditionally guaranteed letters of credit and 'to order' bills of exchange) at a discount, and takes on all the risks involved with the receivables.

4.6 Physical Assets Collateralization

The physical asset collateralization is divided in three types of products, which are presented in the Table 3 below:

Table 3. Physical Asset Collateralization

Products	General Purpose of Credit	Brief Description
1. Warehouse Receipts	A warehouse receipt system enables farmers (or other VC actors who store goods) to access credit from 3rd party financial institutions. Such a system ensures quality of storage, which in turn provides opportunities to sell for a higher price at a later date.	Farmers or other VC actors obtain a receipt for storage produce from a certified warehouse that can be used as collateral to access bank loans.
2. Financial Lease (Lease-Purchase)	Lease-purchase finance allows VC actors, including farmers, to use and purchase machinery and vehicles and the seller to secure the payment by maintaining ownership until fully paid.	A purchase on credit which is designed as a lease with an agreement of sale and ownership transfer once full payment is made (Usually through instalments with interest). The financier maintains ownership of said goods until full payment is made, thus facilitating the recovery of goods when payment is not made.
3. Repurchase Agreements (Repos)	Repurchase agreements provide a buy-back obligation on sales that secure the "loan" by owning the asset, and are therefore employed by trading firms to obtain access to more and cheaper funding due to that security.	The buyer receives securities as collateral and agrees to repurchase those at a later date. Commodities are stored with accredited collateral managers who issue receipts with agreed conditions for repurchase.

4.7 Risk Mitigation Products

The risk mitigation products have further been divided into three types of products, which are represented in the following table (Table 4).

Table 4. Risk Mitigation Products

Products	General Purpose of Credit	Brief Description
1. Insurance	Insurance products to VC actors including farmers mitigate the effects of loss from natural disasters (weather, fire, pests, etc.), death or illness, and other calamities.	Insurance products are used to reduce risks by pooling regular payments of many clients and paying out to those affected by disasters. Payments of premiums are set according to statistical data of loss occurrence.
2. Forward Contracts	Forward contracts allow price hedging that secures a price and future sale. The contract can also be used as collateral for obtaining credit.	A forward contract is a sales agreement between two parties to buy/sell an asset at a set price and at a specific point of time in the future, both variables agreed to at the time of sale.
3. Futures	Futures provide price hedging, allowing trade companies to offset price risk of forward purchases with counter-balancing of futures sales.	Futures are forward contracts – see definition above – that are standardized to be traded in futures exchanges. Standardization facilitates ready trading through commodity exchanges.

4.8 Structured Finance and other Enhancements

Structured finance products are more complex products, which are divided into three types of products, which are presented in the Table 5 below:

Table 5. Structured Finance Products

Products	General Purpose of Credit	Brief Description
1. Securitization Instruments	Securitization is used to reduce the cost of financing medium to longer term assets and commodities of similar characteristics and cash flows.	Cash-flow producing financial assets are pooled and repacked into securities that are sold to investors. This provides financing that might not be available to smaller or shorter-term assets and includes instruments such as collateralized debt obligations.
2. Loan Guarantees	Loan guarantees can be offered by private or public actors to support increased lending to the agricultural sector and VC actors.	Agricultural loan guarantees are offered by 3rd parties (private or public) to enhance the attractiveness of finance by reducing lending risks. Guarantees are normally used in conjunction with other financial instruments.
3. Purchase order Finance	This financial product is a transaction driven form of working capital financing which takes in to consideration all actors in the VC.	The approach of this loan product is to leverage existing relationship among those actors to guarantee loans.
4. Joint Venture Finance	Joint venture finance creates opportunities for shared ownership, returns and risks, often with complementary partner technical, financial and market access assistance.	Joint venture finance is a form of shared owner equity finance between private and/or public partners or shareholders.

MODULE 5

AVCF Strategy and Business Models

5.1 Introduction

For an enterprise, the term business model refers to the way by which a business creates and captures value within a market network of producers, suppliers and consumers, or, in short, "what a company does and how it makes money from doing it" (Vorley et al., 2008[13]). The business model concept is linked to business strategy (the process of business model design) and business operations. For a value chain (VC), the business model refers to the drivers, processes and resources for the entire system, even if the system is comprised of multiple businesses. If finance is to be successful, the VC must be viewed as a single structure, and the model of this structure provides a framework for further analysis.

The term "business model" describes the way in which a company structures its resources, partnerships and customer relationships in order to create and capture value – in other words, a business model is what enables a company to make money. This lesson focuses on a specific aspect of a business model, namely the relationship between agribusiness, on the one hand, and local landholders and operators, on the other. It discusses arrangements for sharing ownership, decision-making, risk and reward between these two parties. Business models are considered to be more inclusive if they involve close working partnerships with local landholders and operators, and if they share value among the partners. In other words, for a business model to be inclusive it must not only involve a collaborative relationship, but also fair and equitable terms.

More inclusive business models encompass a wide range of arrangements, such as shared ownership of key assets, formalized joint ventures, profit sharing arrangements, contract farming or local content schemes, community land leases and management contracts, or local service agreements. Some models involve large-scale farming but with closer involvement of local landholders. Others bring smallholder farmers into the value chain. Many are thoroughly tried and tested, while others are confined to narrow sectors and could be applied more widely, or else are still isolated, interesting pilots. None of these models is perfect – the intention here is not an overview of "best practice", but a survey of a range of possible business models, considering their pros and cons, opportunities and constraints, and options for scaling up.

As discussed in the previous lessons that although agricultural value chain finance (AVCF) deals with a range of agribusinesses both large and small, value chain finances (VCF) is particularly useful in helping integrate small farmers and agribusinesses into effective market systems. The models that promote economies of scale and reduce risks for lenders and buyers linking the smallholder farmers with market and other support services are more viable business models for financial and non-financial institutions and contributors to modern VCF systems.

5.2 Effective Value Chain Development: Role of Business Models

While smallholder farmers can supply primary and processed produce into local and global value chains, ensuring that investment in the value chain delivers both commercially viable products and value to the smallholder presents several structural challenges. Decades of under-investment mean that small-scale producers in developing countries often operate in areas with inadequate infrastructure (roads,

[13] Vorley, B., Lundy, M. and Macgregor, J. (2008) "Business models that are inclusive of small farmers", paper written for the Global Agro-Industries Forum: Improving Competitiveness and Development Impact, New Delhi, India.

electricity, and irrigation). They lack access to skills and services (training, credit, inputs), and are highly dependent on favorable weather. Their lack of uniformity and scattered locations require creative solutions to aggregating production.

Low incomes mean that many smallholders lack education, have poor health, and have limited capacity to deal with 'shocks', e.g. sickness or extreme weather events. If contracts are not adaptable to changing market conditions, offer less than adequate returns, or don't work within farmers' income needs at key times, problems of 'side selling' – i.e. selling contracted crops to a third party – may arise.

Various on-farm issues such as management of waste, safe use and storage of chemicals, water quality, soil management, and the treatment of farm labor, often need to be addressed to make value chains socially and environmentally responsible. Without investment to overcome common barriers, supply problems may arise, reinforcing the impression that smallholder involvement inevitably raises costs and leads to variations in product quality and problems with integrity and traceability.

5.3 Value Chain Business Models and it's Drivers

The majorities of business models that link large-scale and small-scale economic operators in agriculture have been in existence for some decades, and are therefore well documented and familiar to those working in this sector. Here the endeavour is to present the wide range of these business models (e.g. contract farming, management contracts, tenant farming and sharecropping, joint ventures, farmer-owned business and upstream/downstream business links) in to four broad categories for better understanding of the need for intervention by the formal financial sector.

The choice among different business models does not add up to a simple either/or, based on the strengths, weaknesses and applicability of each. Nor can the set of choices be encapsulated in a decision tree. This is because the models overlap and can be combined into various hybrids. For example, a farmer-owned business can enter into a joint venture with an agribusiness and this legal partnership can undertake a management contract with a specialized provider. Also, the details of how ownership, voice, risks and rewards are shared within the business model can be just as significant to partners as whether the model falls within one broad categorization or another.

As the focus is on smallholder growers, their system of production and marketing linkages emerged as the key issues in sustainability of many of the value chains in both economic and social terms; special emphasis has been given to organize the small growers into various business models so that they could fully participate in growth and development of the VCs. The following table (Table 6) adapted from Vorley et al. (2008), illustrates the typical organization of smallholder centric linkages in the AVC – that is, the relation of farmers to the backward (e.g. input, machines, technology etc.) and forward linkages (e.g. logistical support, infrastructure, market and/or the larger system). This analysis offers a basis for VC business models, and the accompanying finance.

5.4 Producer-driven VC Models

Smallholder producers forming 'Producer Associations' are a critical component of many Ag VCs. In certain cases, the association becomes the driver for VC development – providing technical assistance, marketing, inputs and linkages to finance as in case of the Indian Organic Farmer Producer Company Ltd. (IOFPCL) shown in Box 6 below.

Producer organization models such as co-operatives are established to provide members with economic benefits in terms of access to dynamic markets. These differ from social organizations in their entrepreneurial focus, and may build on existing informal networks of farmers and traders as well as inputs and support from buyers or other chain actors. Producer-driven models have had a mixed record

Table 6. Typical business models and their drivers

Types of Business Models	Drivers of Organization	Rationale
Producer-driven	• Small-scale producers, especially when formed into groups such as associations or cooperatives • Large-scale farmers	• new markets • higher market price • stabilize market position
Buyer-driven	• Processors • Exporters • Retailers • Traders, wholesalers and other traditional market actors	• assure supply • increase supply volumes • supply more discerning customers
Facilitator-driven	• NGOs and other support agencies • National and local governments	• 'make markets work for the poor' • regional development
Integrated	• Lead firms • Supermarkets • Multi-nationals	• new and higher value markets • low prices for good quality • market monopolies

(Source: Vorley et al., 2008)

of performance in the provision of economic benefits to the producers, but collective action remains an important strategy for increased small farmer participation in emerging modern markets. Steps to improve the effectiveness of producer organizations in business-oriented services provision are critical.

The main advantage of the model driven by a Producer Organization is its sustainability, as it usually takes the responsibility for maintaining the relationship with a long term perspective. In this model, growers are usually more empowered in terms of both backward and forward linkages. However, these systems rely mainly on a widespread network of producers already in place and an efficient management based on the leadership and initiative of a few, without which the model would not work.

Box 6. Indian Organic Farmers Producer Company Ltd.

The Indian Organic Farmer Producer Company Ltd. (Kerala, India) is a company of farmers producing organic products incorporated under the Indian Companies Act, 1956 (No. 1 of 1956) under Part IXA at Kochi, Kerala, India on 10 September 2004. They are the first company incorporated in India, which helps the producers with cultivation, warehousing, finance and procurement. They are dealing with farmers producing cashew, coffee, cocoa, coconut, black pepper. Producers with organic certification are only eligible for membership of the company, where patronage for one share is fixed at INR 40,000 (US$ 850). Thus, the holder of one share can market his/her own organic products worth a maximum of INR 40,000 (US$ 850) through the company.

The company provides advice to farmers on mapping and assessing resources (mainly soil and water), sustainable resource utilization and scientific production methods. The company markets organic products after branding. 'Healthy People, Wealthy Farmer, Healthy and Wealthy Nation' is the motto of the company. One of the company's future plans is attracting environmental funds from farmer-friendly groups abroad who are interested in supporting fair trade.

Source: The HINDU (Newspaper), Sep. 23, 2004.

5.5 Buyer-driven VC Models

Buyer-driven models form the foundation for many of the applications in VCF. It is often in the buyer's interest to procure a steady flow of products and finance is used as a way of facilitating and/or committing producers, processors and others in the chain to sell to them under specified predetermined conditions. Most often, when financing is involved, the conditions are binding through bipartite/ tripartite contracts. Whether these are formally registered or not, the agreements form the basis for loan recovery.

Buyer-driven models seek efficiencies in the chain to the benefit of processing and retail companies. There are some very promising cases where organizing supply from a small farm base – frequently a necessity with milk procurement – has led to sustained inclusion of small farms. Much has been written about contract farming, which can be successfully used by businesses to link small producers to modern markets where capital, technology and market access constitute key limiting factors. New models of rural retailing such as the *Hariyali Kisaan Bazaar* in India are emerging. These use a 'bottom of the pyramid' approach for poor producers as well as poor consumers. Working with small farmers is also a means to build up community goodwill, contributing to a company's long term license to operate.

5.6 Facilitator-driven VC Models

It has been noted that in many countries a dual agricultural systems exists in which developed agro-industry coexists with poor producers living at subsistence levels. A lack of proper and continuous information on prices and markets also prevents the poor producers from being integrated. Facilitation by development organizations, both non-government organizations and governmental ones has shown that it can open the opportunities for VC integration and financing to these small producers.

Larger buyers and wholesale chains often seek out large-scale suppliers due a number of factors that are challenging when dealing with small-scale farmers who:

- may not be well organized
- have not demonstrated commitment
- result in higher transaction costs
- often pose increased risks such as side-selling
- lack both technical capacity and the technologies to reliably produce the high quality and quantity required in a consistent manner
- tend to lack organizational capacity and resources to deliver the required products of in a timely fashion.

5.7 Integrated VC Models

An integrated VC business model not only connects producers to other actors in the chain – input suppliers, intermediaries, processors, retailers and service providers including finance – but it integrates many of these through co-ownership and/or formal contractual relationships. The integrated model has many of the features of the other models presented such as strong linkages with multi-party arrangements, technical guidance and strict compliance, and also incorporates an amalgamated structure of VC flows and services. Two types of integrated models are presented below for discussion.

The first and most common integrated model involves vertical integration within the VC. Integration is normally sought by the large retailers or wholesalers/importers who are focused on consumer demand, and wish to ensure that inputs, production, post-harvest handling and processing will result in products that are responsive to that market demand. This vertically (and often horizontally as well) integrated

model goes beyond contract growing and other buyer models in the degree to which the levels are tightly linked from control of production through retail. Vertically integrated supermarket VCs are a prime example of this model. A supermarket works closely with importers or domestic wholesalers in order to convey information about acceptable product specifications such as variety, quality, volume, and standards relating to hygiene, traceability and residues. Information and services are passed down the chain to producers, frequently accompanied by quality control, technical training, appropriate inputs, record keeping and finance. Such vertical integration particularly applies to fresh fruits, vegetables and livestock products.

MODULE 6

Risk Mitigation through Value Chain Approach

6.1 Introduction

Agriculture is an inherently risky business. It is subject to a number of random price, climatic, biological, and geological shocks that require coping strategies and financial management instruments to deal with the implications. Traditional risk management strategies and ex post government provided emergency relief have often not proven to be sufficiently effective and robust in preventing serious economic loss, broken value chain or permitting a speedy recovery.

Agricultural productions to marketing activities are subject to a range of risks, both as individual growers/processors/traders and as member of various groups. Generally, these risks are expressed qualitatively rather than quantitatively. Risks are quantitatively assessed only in classic games like gambling, in insurance business and in government regulatory framework. The manner in which society adapts to risks tends to make appear the concept of risk simple, although in reality it is very complex. As a result, the analysis of data for evaluation of risk occurrence is not easy.

Risk is defined as a quantified possibility of the occurrence of an undesirable event. This may be single event, a combination of events, or a continuing process, and the consequences may affect individuals, groups of people or a whole society and its institutions and they may affect physical and economic systems.

Reducing risk is one of the most critical considerations in agriculture as well as for financing this activity. There are three types of risk in the agricultural operation: production, price, and credit (client) risk. The major advantages of the value chain approach of finance is to mitigate the price risk through secured market linkages, and production risk through improved access to inputs, better farming practices and technology, agricultural development services etc. Client risk can also be mitigated through a better knowledge of clients and the risks they face by and it is a common practice to adapt loan repayments schedules to specific features of the agriculture business activities.

VCF in agriculture includes many financial instruments, which are specifically designed to better, manage both systemic and individual risks. These instruments will be discussed in detail in this lesson. They include physical tools for managing product and price risk (e.g. market linkages, storage facilities, access to inputs and information etc.) and financial tools which support prices, insurance systems and creation of risk funds.

6.2 Risks in Agricultural Value Chain (AVC)

Farming is a high-risk business. A farmer can use the best seed, chemicals and crop management practices, but the weather can still destroy this crops. Crop production in most of the developing countries has been subject to the vagaries of the climate. Weather risks are specific to a given value chain (VC) in a specific region. For example, too little or too much rain at specific stages of the development of a crop can be disastrous. Some of the other problems, with which agriculture is constantly struggling with, are the damages caused by pest and diseases. A detailed set of risks faced by the agriculture sector and financial institutions (Das, 2005[14]) presented below:

[14] Das, P. K. (2005): Emerging Tools for Mitigation of Risks in Agro-Business. Paper presented in Bankers' Conference (BANCON) – 2005, held at Kolkata, India during 11-12 November, 2005: 75-83.

- **Credit Risk**

  Credit risk is the most significant risk associated with agricultural lending. A farmer's production and ability to service his debt can be affected seriously by natural factors which are not directly under the farmer's control. Also, agricultural markets are sensitive to highly variable supply and demand conditions in both domestic and international markets that may directly or indirectly affect both the borrower's repayment capacity and the value of this product. Credit or loan default risk – refers to borrowers who are unable or unwilling to repay the loan principal and the interest.

- **Market and Price Risks**

  One of the major problems faced by farmers is the fluctuation of farm product prices. Often, when the crop is good, they receive lower prices and thus are not able to get the full benefit of a good production during the year. This hampers their repayment capacity for the loans.

- **Operational Risks**

  Risks and uncertainty are pervasive in agricultural production and are perceived to be more serious than in most non-farm economic activities. Production losses are also impossible to predict. They can have serious consequences for income generation and for the loan repayment capacity of the farmer borrower. The type and the severity of risks which farmers face vary with the type of farming system, the physical and economic conditions, prevailing policies, etc.

6.3 Risks Mitigation through Insurance

While AVC financing can reduce crop procurement, market and repayment risks, dependence on a single economic activity can also increase risk when there are external, uncontrollable problems that affect the crop. A common example is weather. To a certain extent, VC leaders can diversify their sources of procurement and markets to reduce product risk, but even so, these risks can be significant. An increasingly common form of risk mitigation in AVCs is insurance, which is often bundled with other services, such as finance and commodity management. The ICICI bank in India provides a number of insurance services to cover the risks of the farmers which are: a) weather risk, b) accident, c) theft, d) fire, e) critical illness, f) life, g) motor vehicles and h) cash in transit.

Until recently, poor farmers in developing nations, where agricultural insurance is rarely available, had no other alternative than to bear their own risk, increasing their poverty. Insurance services may give these farmers and other vulnerable people around the world an affordable way to manage the effects of a variable and changing climate on their current and future livelihoods. The resulting farmers' economic stability may make lenders also more willing to extend credit, thus allowing them to invest in new seeds, fertilizer and equipment — increasing steadily their agricultural productivity.

6.4 Forward Contracting

Producers of agricultural commodities are faced with price and production risk over time and within a marketing year. Furthermore, increased global free trade and changes in domestic agricultural policy have increased the price and production risks of agricultural producers. As price and production variability increases, producers are realizing the importance of risk management as a component of their management strategies. One means of reducing these risks is through the use of the commodity exchange markets.

Agricultural commodity forwards and futures are market-based instruments for mitigating risks and they help in orderly establishment of efficient agricultural markets. Future markets are used to hedge commodity price risks. They also serve as a low cost, highly efficient and transparent mechanism for

discovering prices in the future by providing a forum for exchanging information about supply and demand conditions. The hedging and price discovery functions of future markets promote more efficient production, storage, marketing and agro-processing operations and help in improvement in overall agricultural marketing performance.

Forward markets and futures options are risk mitigating instruments that are used in agricultural marketing by producers, investors and traders. Forward contracts obligate to buy or sell a certain amount of product at a future date. Usually, forward contracts are settled between agents who receive payment by commodity unit. The commodity amount, date and price parameters (fixed price or method for price fixing at time of sale) are set by the agreement.

6.5 Futures Trading

Futures are trade contracts of given amounts of commodities at a specified future date. Futures options provide the holder with the right (but not under obligation) to buy or sell contracts of products at an agreed rate within a period of time, in return for a fee paid to the seller of the option. The use of futures trading is understood to be a tool for large companies to mitigate risks of trading in major commodities. Hedging through the use of futures is a relatively complicated financial process. Most farmers do not understand all the nuances of futures transactions on commodity exchange markets. While it is used primarily by larger companies such as millers and traders, it is found that futures can and often do play an important role in financing in AVCs. This role can be both direct and indirect and can affect producers and agribusiness enterprises of all sizes.

Whereas forward contracts are tailor-made for specific products and are based on an expectation of physical delivery or sale transaction of the product at the time specified in the contract, futures are "packaged" in a number of standardized, readily tradable contracts, which can be bought and sold by investors through Futures Exchange Markets. The value of futures in finance is two-fold – as a price reference tool and as an instrument to reduce risk. On one hand, the futures markets prices are used as a reference for calculating expected returns and for price bidding on future deliveries. This allows both buyers and sellers to have a point of market reference, thus reducing speculation.

A second and important benefit of futures is that they allow traders to hedge (offsetting or counter-balancing) a position established in one market with an opposite obligation or position in another market. For example, a trader can purchase a product for future delivery and simultaneously hedge that purchase by a counter-balancing sale on the futures market. In doing so, he reduces his exposure to price risk. This makes it easier to obtain needed financing. In addition, by having a higher price certainty, the buyer of the commodity can offer a better price to the seller.

6.6 Risk Mitigation through Commodity Management

In order to reduce risk in a warehouse receipt system – both for the producer and the lending institution – it is critical to ensure that standards and regulations are well understood and observed, warehouses are well managed, receipts are recognized as collateral, and that transparency exists throughout the system. Specialized commodity management companies are relatively new, but they are beginning to play an important role in facilitating VCF through the services that they provide in commodity management, risk control and facilitation of financing.

AVCF Cases

Over the years, the operation and management of the different financial institution in the Asian region has been considered the most dynamic and innovative in terms of their strategies and approaches in bringing in the necessary interventions for agriculture and rural development. Based on this, the institutions developed and implemented their own intervention in response to the needs of their clientele.

As a strong network working and supporting the agriculture and rural finance, APRACA is pleased to share the following cases relevant and appropriate for technical and creative analysis for teaching-learning purpose. The following ten (10) exciting cases are intended to serve as basis to solicit ideas, insights and perspectives necessary in intellectual exchange for conceptualization, development, implementation, monitoring and evaluation, utilization, modification and application of the tools in agricultural value chain finance.

Case 1. BRAC Integrated Finance and Value Chain Services

Overview and Background

BRAC is a very large development organization founded in 1972 to alleviate poverty by empowering the poor, and helping them to bring about positive changes in their lives by creating opportunities for the poor. It has assets of USD 1.45 billion and earned income of approximately USD 371 million plus grant funding of USD 217 million. It provides microfinance services, including credit and savings and other services to over 4.4 million households across Bangladesh. Their many activities include agricultural value chain development as well as financial services as part of their credit plus services (including providing technical support to the farmers). Its value chain development is both in agricultural value chains as well as with artisan crafts. BRAC has many examples of having led or played an important role in the development or strengthening of agricultural value chains through intervening in developing the missing or weak links within them. BRAC develops the supporting social enterprises which complement its financing in order to increase its social impact. Since its founding, BRAC has developed 18 social enterprises whit aim to be financially profitable investments and financial service businesses that provide social as well as financial returns.

BRAC Cold Storage and BRAC Seed Enterprise

BRAC Cold Storage was established in 1980. It is owned by the BRAC non-profit development agency and operates as a profit center. The cold storage enterprise was established in Dawodkandi, Comilla to facilitate the storage of potatoes for farmers in the mid-eastern region of the country as the area yields a good harvest of potatoes but lacks adequate storage facilities. It was the first commercial BRAC enterprise that started its journey to provide better service with regards to maintaining the quality of the stored products. The cold storage purpose is to help small farmers take advantage of price gains from storing as well as preserving for home consumption by providing product preservation and access to finance. It allows these farmers to keep their potatoes fresh for much longer periods, enabling them to sell their potato crop over time to realize price gains. They also may take potatoes back for home consumption. Originally, the enterprise had intended to provide reliable cold storage to fruit and vegetable farmers, as well as traders with leftover produce. However, since fruits and vegetables require distinct and costly preservation processes, BRAC Cold Storage soon limited its storage to potatoes.

BRAC Seed Enterprise started in 1996 and produces high quality seeds of both hybrid and inbred varieties of rice, maize, vegetable and potato on own farms as well as through contract growers. BRAC

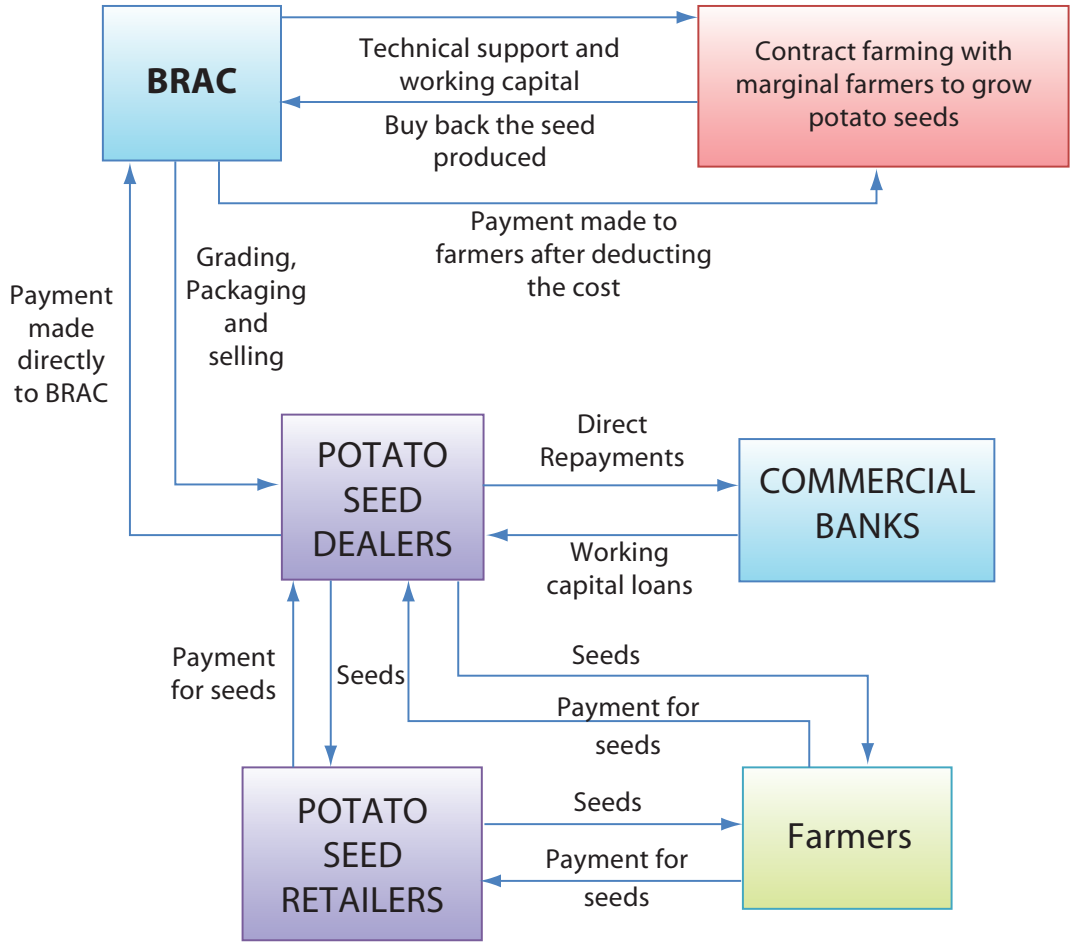
provides the contract growers with quality foundation seeds, credit and technical support and as well as training on better cultivation practices. It has two modern seed processing and packing plants in Sreepur, Gazipur and Sherpur, Bogra where yearly capacity is around 5,500 metric tonnes. There are 345 listed seed dealers and 4,120 sub-dealers who sell BRAC seeds. It also established two agricultural research and development centres. Through such research, BRAC was the pioneer in hybrid rice and maize development in Bangladesh and has developed three varieties of hybrid rice but released eleven varieties and developed three varieties of hybrid maize, but released eleven varieties of maize, one of which is quality protein maize (QPM) and nine vegetables varieties.

BRAC VCF operations for potatoes and seed

BRAC, through its banking services, can provide financing for the whole production and marketing cycle. BRAC interventions are driven by a strategic need to be addressed. Lack of storage and high price fluctuations were underlying reasons for the cold storage development and the program on potato seed supply to the growers began due to the non-availability of quality potato seeds in the country and thus to ensure supply of potato seed to their growers. Rice paddy seed development aimed to address a shortage in quality seeds through introduction of hybrid and improved seeds for increased production for its clients.

For seed production, BRAC Seed and Agro Enterprise are producing 6 varieties of potato seeds, 5 varieties of hybrid maize seeds, 9 varieties of hybrid rice seeds, 11 varieties of HYV and inbred rice seeds and 38 types of open pollinated vegetable and hybrid vegetable seeds.

Chart 1. A schematic of the potato seed production



The potato production, cold storage and eventual sale to traders or wholesalers follows a logical path with financing coming from BRAC's financial institutions to various actors in the value chain. Repayment of the loans is done directly from the cold storage facility at the time of sale of the potatoes, and/or withdrawal of those used for home consumption. By using the potatoes as collateral and ensuring repayment through direct discount at time of sale, the risks and costs of financing are reduced. When potato prices are very low, farmers may find that the value of stored potatoes is not enough to cover their loan repayment and provide them with a price margin. In such instances, they may be unwilling to come to the cold storage to take out their potatoes. The cold storage will then provide a discount (of about 50 to 60 percent) on the amount of service charge payable and also reduce the interest on loans to encourage loan repayment by the farmers. Since the amount financed is normally only 40 percent of the expected sales, the price risk and client non-payment risks are significantly reduced. The cold storage also has insurance coverage for the stock of stored potatoes from the Green Delta Insurance Company Ltd. In addition, production risk is minimized through technical support, provision of quality seed and the use of insurance.

For those clients with a history of using the cold storage facility, it can provide "forward" financing for production up through the storage and marketing period. Rates vary as some of the poorest benefit from special, reduced financing support from BRAC and/or the government.

At harvest, warehouse receipt financing is provided at time of storage through funding by the BRAC bank. Storage and warehouse financing are provided for a maximum of six months (in the period from March to November) at a usual interest rate of approximately 2 percent per month (10-12 percent over 6 months). BRAC offers farmers loans of up to 40 percent of the total value of the potatoes they have stored (exceptionally increased up to 60 percent due to low market prices.

Cold Storage Operations and Finance

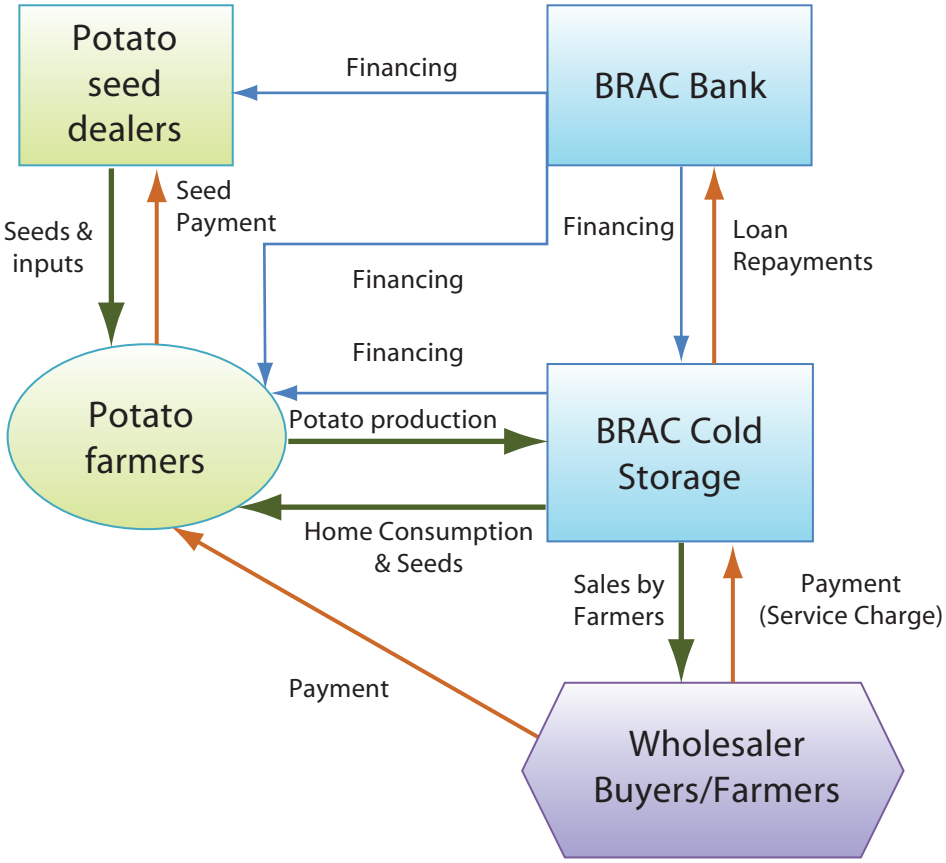
BRAC Cold Storage has capacity for 62,500 bags of potatoes with each bag holding approximately 80 kilograms. Seed potatoes account for almost 40 percent of the total stored potatoes. It serves over 1,000 storage customers and is open to anyone on a first come basis. The demand in the region is estimated to be double that capacity. However, there are no plans to increase this capacity since there are a growing number of private organizations who have followed the lead of BRAC and set up their own cold storage facility businesses. Moreover their expansion scope is also limited by the lower demand for storage of seeds relative to table potatoes (BRAC had originally established this facility to address the demand for storage of seed potatoes). One of the goals of the cold storage facility was to provide a demonstration to its viability, which has been accomplished.

BRAC's storage and financing are linked but a farmer can use the facilities with or without financing. Financing for the farmers who store their potatoes is provided by the BRAC bank. Those storing their potatoes are small and medium farmers and some traders. There are relatively few farmer groups so transactions are normally on an individual basis, with farmers having 20 to 500 bags each. The storage centre does quality control upon entry and during the constant monitoring of the inventory.

Implications for VC performance and results

BRAC has a proven model for addressing the strategic needs of its clients in the potato value chain. Through its banking facilities, it can provide financing to the farmers, traders, the cold storage enterprise, etc. as needed and by being engaged at different levels of the value chain, it has a strong understanding of the sector, the markets and most importantly the clients. Not all need the financing and according to BRAC, during its many years with the cold storage program, many of the potato producers have become financially independent and no longer need loans in order to store their crop. This has allowed the cold storage enterprise to operate as a profitable enterprise rather than a microfinance programme.

Chart 2. Potato Production, Storage, Marketing and Finance



While BRAC is involved in seed production for rice and other crops but it has only developed a storage and marketing programme for potatoes. To do so with other crops would involve both heavy investment and high competition. In cold storage, BRAC was an early mover and even though there is now considerable competition, it has an established clientele and recognized service, plus though its integration is able to address financing needs more readily than many of its competitors.

Nevertheless, the programme faces many challenges. The potato glut in 2014 significantly reduced potato prices and as a result needed higher financing for the framers. They also did not want to sell at the usual time requiring longer storage and during the season when cooling costs increase. BRAC has a social impact focus so unlike many competitors, BRAC Cold Storage does not spare the high diesel costs to properly run the generators for the sufficient cooling of potatoes but this has an economic effect.

BRAC is a large conglomerate that is hard to replicate but many of its value chain approaches can be replicated. Through careful selection of value chains for intervention, others can intervene in creating strong value chains with value addition and financing. For most organizations, the model will require strategic partnerships in order to address the many requirements of the value chain and its actors.

Guide Questions

1. How does BRAC achieve its social performance?
2. What are BRAC main processes and products? Please explain briefly.
3. Does BRAC provide any form of forward financing? If yes please explain.
4. Please explain Cold Storage financing mechanism.
5. What are the main BRAC VC results?

Case 2. Dairy Value Chain Financing in Pakistan: HBL Experience

Overview

Pakistan is amongst the top 8 countries in respect of dairy animal population (cows and buffalos) and 4th largest in terms of milk production. However the productivity is low and ranges approximated between 1,200-1,600 liters per animal per annum which is much below the world averages. The population spread explains the behavior of low yield where 90 percent of the milk production is attributed to backyard dairy farmer with 0-20 animals instead of commercial farms. The table above gives an idea that the majority of the animals belong to 0-5 herd size which does not have the economies of scale to operate commercially.

Herd Size	Animal %	Land Holding %
0.5	80	38
5-10	12	22
10-20	5	16
20 & more	2	14

Although there is a high potential for enhancing the on-farm productivity, the backyard farmers could not access to these technology due to financial and cultural limitations. The studies reveal that access to formal credit and lack of technical expertise has been the major constraints to smallholder and medium-scale milk producers to expand and improve their commercial activities. A well-functioning dairy value chain can help to realize that potential.

The Production growth rate of milk is less than growth in domestic demand for processed dairy products which prompted the market players to target enhancing the supply of raw milk. There are many channels of milk procurement for processors of which the most untapped are the small/medium backyard farmer segment. These farmers have low milk yields and lower milk pricing for which they are being focused as a priority. Many of these farmers currently lack access to adequate working and investment capital to seize the opportunity of on-farm investment returns by increasing dairy farm productivity and income.

The Model

The largest local commercial bank and leading milk processor of country along with the support of loan guarantee from multilaterals devised collaborative models which with interventions in value chain model which attempted to draw smallholder and small commercial dairy farmers into the formal dairy value chain through the combination of credit, a marketing channel and technical assistance. The Processor acted as the originator and servicer under the credit program, while the Bank attempted to establish appropriate credit origination and risk management processes.

The actors directly involved in the dairy value chain model are:

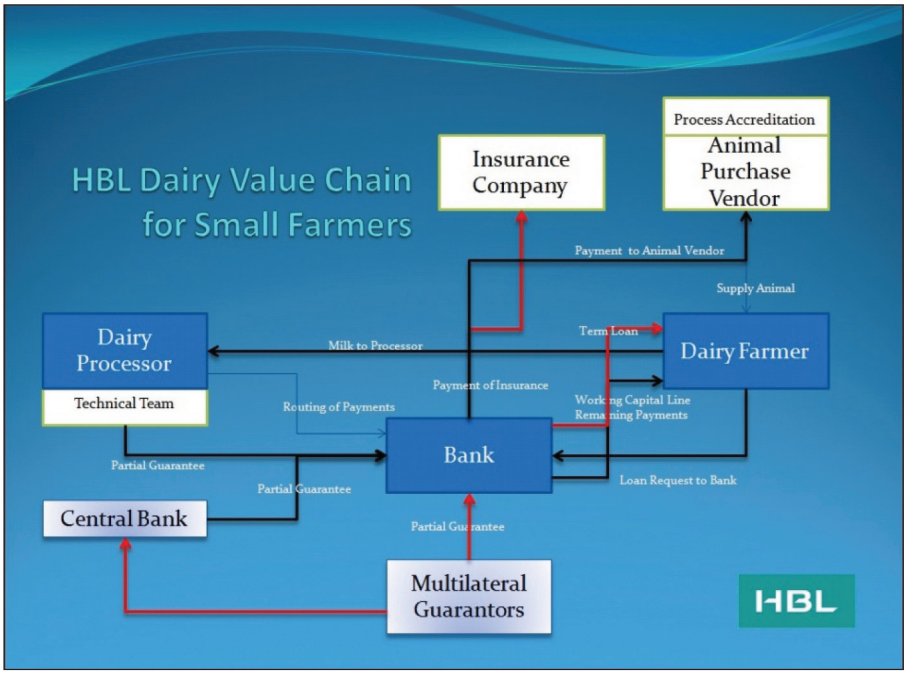
a) *Animal Purchase Vendors*: The milk processor is responsible to accredit animal vendors, who selected the animal heads given definite parameters and a pre-purchase quarantine and measuring method to ensure maximum yield. This would ensure gene pool enhancement for the farmers.

b) *Dairy Farmers*: The model includes lending to high credit risk, small backyard dairy farmers and small/medium scale farmers which contribute 90 percent of milk supply in the economy. The idea is to select progressive farmers, provide them financing for purchase of better animal breed, assist on feed, vaccination, husbandry practices and improve the yields.

c) *Processor*: The processor is the anchor of the value chain is responsible for targeting, selecting and recommending eligible farmers to the bank for financing. At the same time, the processor would also be involved in selection and purchase of the animals, advice on feeding practice, vaccination and deworming, and general management of the animals and in settlement of the loan through proceeds of milk purchased from the farmers.

The value chain supporters involved in the model are:

a) *Bank*: The Bank would provide financing to the eligible farmers recommended by the processor. Loan amount would be disbursed directly to the animal vendor and the repayment to the Bank would be routed through the processor at the time of procurement of milk from the farmers. The Bank would also assist the farmers in the insurance process. The bank has expanded to provide higher amounts of financing and a larger ambit of items which can be financed then the usual practice to farmers which were earlier non bankable.



b) *Insurance Company*: Borrowers will keep all animals insured from a reputable Insurance company throughout the tenure of loan including but not limited to the mortality and diseases of all biological assets in existing and new Dairy Livestock.

c) *Multilateral Guarantors*: Since the selected small backyard farmers are high credit risk sector thus there are two multilateral guarantors under this model to provide cover in case of loss. One multilateral approved to provide the first loss cover and milk processor to provide subsequent 10 percent cover, milk processor guarantee to also ensure that the responsibilities are directly linked to the associated risks. The rest of the exposure to be shared between a second multilateral and the bank.

Financial Framework

The Bank extended loans for a) purchase of animal including the price of the animal accreditation through vendors, b) vaccination and expenses related to husbandry practices, c) development of farm sheds to ensure relief in high temperatures and any cutting machines required and d) to cover feed expenses for both milch and dry animals in the herd. The pilot of the model is estimated at a term finance facility of up to US$ 6.2 million and US$ 1 million for running expenses.

Key Lessons Learned

a) This project requires the will to execute all arrangements at all levels by all actor and the institutions involved. The actors also need to have an appetite for risk to cater to the requirements.

b) The credit model requires an in-depth research and a detailed cost-benefit analysis. This model spelt out the responsibilities of the bank and the dairy processing company as well as the associated financial risk of guarantees.

c) The insurance scheme is crucial to address some of the key risks associated with this model.

Guide Questions

1. What could be the ideal model for scaling up the pilot tested by HBL?
2. What kind of enabling environment you suggest for plugging the risk emanated from the transactions?
3. What is the current business model and what action may change this model to farmer led model?

Case 3. Value Chain Financing of Doi Chaang Coffee, Thailand

Introduction

Coffee, one of the world's economic crops, was first found in the Ethiopian province of Kaffa. It was first cultivated in Yemen in the fifteenth century. In 1616, the Dutch brought live coffee plants back to the Netherlands to grow in greenhouses. By the late 1600s, the Dutch were growing coffee in Malabar in India and in 1699 they took some plants to Batavia in Java, which is now Indonesia. Within a few years, the Dutch colonies had become the main suppliers of coffee to Europe, where coffee had first been brought by Venetian traders in 1615. Coffee growing and drinking now take place throughout the world. In 2012, total coffee production was 8.71 million tonnes. The major producers are Brazil and Viet Nam, which produced 4.37 million tonnes of coffee, accounting for 50 percent of global production. Total coffee consumption was 8.68 million tonnes (ICO, 2012).

Thailand Coffee Production and Consumption

Two varieties of coffee are cultivated in Thailand, Robusta and Arabica. Robusta is cultivated mainly in the southern provinces such as Chumphon, Ranong and Surat Thani. The production of Robusta accounts for 98 percent of the country's total production. Most of this variety is consumed domestically. Arabica is cultivated mainly in the northern provinces such as Chiang Mai, Chiang Rai, Mae Hong Son and Lampang. Nearly 10 billion tonnes of Robusta coffee are produced, indicating that the land and climate are favorable for coffee cultivation. Before 1977, Thailand was a coffee-importing country. After 1977, the country became an exporter of coffee. Sixty thousand tonnes of coffee were exported in 1997 (Office of Agricultural Economics, 1998). Thailand is a member of the International Coffee Organization (ICO), aiming to be granted a quota for the export of coffee. However, the global market encountered problems of oversupply and strong competition, which lowered the price of coffee. In response to that situation, the Thai government issued a policy to decrease coffee cultivation in the south in 1989 in order to limit the supply of coffee and ease the burden of the government budget in the intervention scheme.

Table 1. Production demand and export of coffee in Thailand

Quality (tonnes/yr)	2007	2008	2009	2010	2011
Production	55,660	50,442	56,315	48,955	42,394
Demand	52,000	53,479	53,803	58,000	61,480
Surplus	3,660	-3,037	2,512	-9,045	-19,086
Import	11,138	1,539	234	320	720
Export	374	14,542	6,214	14,268	34,374

(Source: Office of Agricultural Economics, Govt. of Thailand)

The initial stages Doi Chaang coffee

The cultivation of Arabica coffee in Doi Chaang, Chiang Rai Province of Thailand, was first introduced by the Hill Tribe Development Centre in 1983 in order to replace the cultivation of opium. Arabica coffee grows well in the highlands in the northern part of the country. Arabica production is 2,000 to 2,500 tonnes per year. With its superb aroma and taste, it became popular among tourists. This popularity has been extended worldwide, thus inducing the expansion of the coffee business.

Doi Chaang is the name of a village situated in the mountain of the same name. With favorable climate and altitude, coffee grows well in this area. However, in 1983-1993, the production of coffee was low because of the lack of capital, know-how, proper facilities and capital as well as low prices. The poor roads and poor transportation system were great barriers to coffee growers for selling their coffee. During that period, Doi Chaang farmers also cultivated tomatoes and cabbages, which gave them higher income. In 1995, most of the coffee trees were cut down to grow more tomatoes and cabbages. These crops became the main sources of income. Nonetheless, a few years later, cultivation of those crops also brought farmers mounting debt. Their earnings could not cover their expenses because of the increased volume and prices of their inputs such as chemical fertilizers and pesticides together with the fluctuating prices of their crops.

Table 2. Statistical highlights of Doi Chaang Village

Population	5,000
Number of households	1,200
Composition of tribes	Akha, Lisu, Yunnan and Hui
Area under:	
– Horticulture	1,732 hectares
– Forest cultivation	1,088 hectares
– Agricultural cultivation	476 hectares
– Village common	80 hectares
– Village rite place	320 hectares
– Reserved and community forest	2,034 hectares
Number of BAAC client-farmers	500
Number of community enterprises	24
Total loans outstanding	THB 69 million
Coffee-growing area	20,000 hectares (estimated in 2012)
Coffee production	15,000 tonnes of cherries

Challenges faced by Doi Chaang

Having been affected by marketing constraints for two decades, the coffee growers decided to establish Doi Chaang Fresh Roasted Coffee Company Ltd. as their own company in 2003. This was the start of a complete supply chain of coffee from production and processing to marketing. The major problem is

financial constraints. Since the company's factory and facilities were built on high mountain land, they were not granted a land title deed and possessed no other assets to secure their loans. Consolidating and processing a large amount of coffee required a large amount of capital. As such, BAAC's financing is an important source that the growers can access.

Key Factors of Success

The key factor driving farmers' interest in expanding their farms, scaling up their production and paying more attention to the quality of their coffee is the test results of coffee conducted by international agencies showing that Doi Chaang coffee was ranked among the top three of best coffees in the world. This significantly attracted the coffee market and coffee lovers from across the globe. Consequently, Doi Chaang coffee has been produced mainly for export. Coffee prices (green beans) per kilogram increased significantly from US$ 1-1.50 to $ 2-3 in 2007 and rose to $ 5-6 in 2011. Today, the green coffee beans' price surpasses $ 7.

Following the world recognition and the rising prices of their coffee, the farmers expanded their farms. The total cultivated area increased from 500 to 1,500 hectares in 2007. To date, total cultivated area is now approximately 4,000 hectares. More than 90 percent of the total numbers of coffee growers are BAAC's client-farmers. They receive credit service in terms of short-term loans for working capital and medium- or long-term loans for investment in coffee plantations, housing, infrastructure, machinery and processing facilities. The Doi Chaang coffee company collectively buys coffee cherries from farmers, processes coffee cherries into roasted coffee and sells the processed coffee mainly to overseas markets, for instance, Canada, the United States, England, Switzerland, Germany, Republic of Korea, Japan, Australia, Singapore, etc.

Roles of BAAC

Before the operations of BAAC in the Doi Chaang area, those hill tribes lived their life from subsistence agriculture. They grew opium for cash and practiced slash-and-burn farming. In 1983, coffee cultivation was introduced to replace the cultivation of opium. Subsequently, cabbages and tomatoes were cultivated. During that period, underprivileged farmers of Doi Chaang could not access any formal financial services because they were poor and possessed no land title deed or any other assets to secure a loan. The land they lived on is in the high mountain, which cannot be granted any title deed or certificate. Some were able to borrow from local moneylenders that usually charged them very high interest rates.

After BAAC established its branch in Wa Wi, which covers Doi Chaang, the first loan extended to Doi Chaang farmers was a short-term loan for the main crop. A joint liability group was used to secure the loan. This type of loan facilitated BAAC lending in terms of scale and speed. The maximum amount of this loan is THB 150,000 or approximately US$ 5,000 for each farmer. At least five client-farmers are required to co-sign each loan contract. The loan is payable within 12 months or in some special cases not beyond 18 months.

Investment loans are also offered for investing in new plantations; infrastructure; purchases of machinery, livestock or other processing facilities; housing; etc. The maximum investment loan is THB 25 million (approximately US$ 830,000). However, in the case of using at least two persons as guarantors, the maximum loan is THB 150,000 (approximately $ 5,000). This type of loan provides farmers an opportunity to start or top off their business or investment in order to earn income or secure their livelihood in the long run.

Value chain financing

Realizing this fact, BAAC designed tools and methods to ensure that farmers would be given a fair share of benefit from added value. Agricultural Marketing Cooperatives (AMCs) have been established as

a tool or marketing arm of BAAC in every province across the country. Their main functions are (1) to market their members' products, (2) to supply their members with good-quality farm inputs at reasonable prices, and (3) to provide other services such as plowing, harvesting and transporting. Without AMCs, farmers are at risk in marketing their produce. Private merchants or traders tend to exploit farmers by offering relatively low prices or cheating when weighing farmers' produce.

In 2012, BAAC extended a short-term loan amount of THB 100 million (US$ 34 million) for the purchasing and processing of coffee cherries. AMC offered THB 18-20 per kilogram, an increase of 400 percent over the past 10 years.

In addition to individual loans and farmer institutional loans, BAAC introduced community enterprise loans to support income-generating activities such as processing of farm produce to create added value. The simple processing or consolidating of coffee cherries can also create added value. In response to the marketing constraint in the case of Doi Chaang, BAAC facilitated the establishment of community enterprises and provided them with loans for consolidating and processing coffee. As a result, small farmers could sell their cherries at reasonable prices, probably much higher than average prices.

- **Coffee production**

  In order to maintain its world-class-standard coffee, the farmers of Doi Chaang established an Academy of Coffee. The theme of the academy is education, environment and creation of wealth. Farmers are being educated not only on how to cultivate and harvest coffee but also on processing, and expenses and money management. Farmers are being further educated on the benefits of cultivating their coffee under the canopy of shade trees. Farmers were encouraged to practice organic farming. The pulp and peel of coffee cherries discharged from a factory can be best used as organic fertilizer. It is given to farmers for free. This allows coffee cultivation to expand without any impact on the environment. So far, more than 500 farmers have been educated and the benefit is already reflected in improved productivity.

- **Organic practice and certification**

  In the decade of cultivation of tomatoes and cabbages, farmers and their family members were exposed to the intensive use of agro-chemicals. Farmers negatively experienced the threat of agro-chemicals. The leader of Doi Chaang Village revealed blood test results showing that more than 80 percent of the test samples were contaminated with toxic chemicals. A campaign took place to inform villagers to be aware of this threat. The shift from those crops to coffee cultivation positively responded to the health and environmental issues. Organic farming techniques were extended to and by coffee growers through the Academy of Coffee. Growers adopted them and practiced them enthusiastically. Comprehensive care at all stages from planting to nurturing, picking, cleaning, sorting, processing, testing and packaging has significantly contributed to the quality and value of this premium coffee. Consequently, Doi Chaang coffee was certified as an "Organic product" by USDA Organic and Bioagricert. It has been globally recognized as a specialty coffee. Today, the quality of life of the farmers in Doi Chaang Village has improved significantly. Those who sought employment opportunities in big cities have returned home to work happily with their families, and their children have a better education in both domestic and international academies. The environment also revived strongly as trees and forests grew and wildlife returned.

- **Coffee processing**

  In the past, coffee processing was manually conducted by a simple method. Coffee cherries were picked and brought to a simple container. Subsequently, they were manually cleaned and crushed to separate the peel and pulp of cherries. The coffee bean was then sun-dried for 5 days and was ready to be sold. Doi Chaang coffee is now processed by wet processing, using modern processing facilities as shown in the pictures below. Nevertheless, hand sorting is still

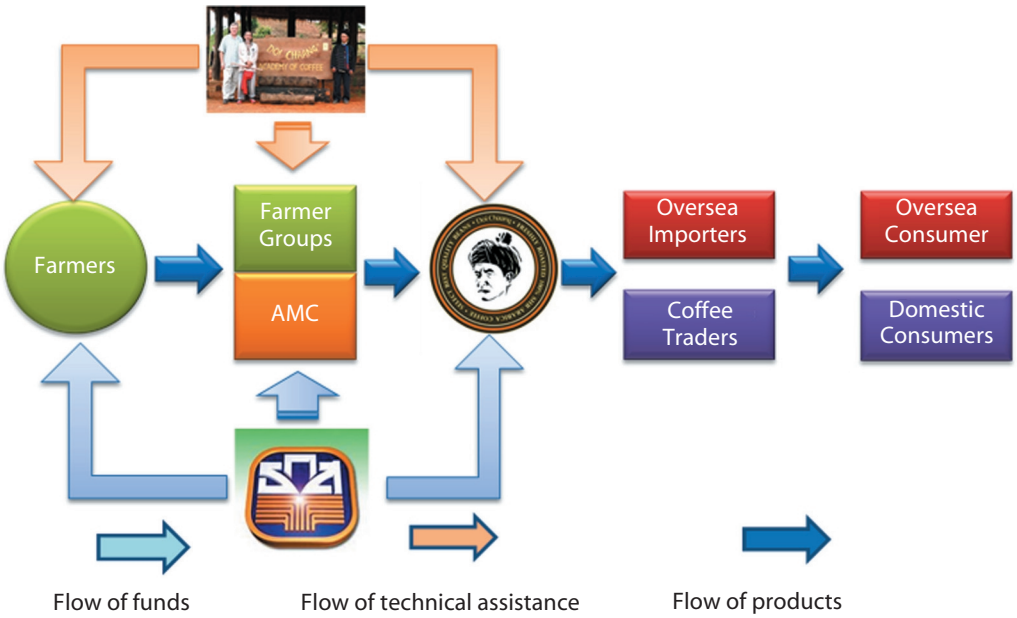
used in order to ensure the quality of coffee and promote local employment. AMC Chiang Rai collectively bought coffee cherries from farmers and community enterprises. AMC then hired Doi Chaang Company to process those cherries, transforming them into coffee beans. Coffee beans were periodically sold to Doi Chaang Company to further process them by hulling, using its own mill. The raw beans were exported to Canadian Group. Some beans were roasted and packaged mainly for overseas export and some for domestic markets.

- **Coffee marketing**

  In the past, the farmers of Doi Chaang sold their coffee beans in Chiang Mai, more than 100 kilometers away on a very rough road. Chiang Mai was the only coffee market where the prices were relatively higher than those of the local traders in Chiang Rai. However, the farmers were exploited by the buyers in Chiang Mai, who broke their verbal agreement to buy Doi Chaang coffee at agreed prices, forcing those farmers to sell it at lower prices demanded by the buyers because the farmers could not afford the cost of transportation back to their home.

Farmers sold their coffee cherries to either Doi Chaang Company on behalf of AMC or to community enterprises. The processing of cherries into coffee beans was conducted by Doi Chaang on behalf of AMC. Then, AMC periodically sold coffee beans to Doi Chaang Company according to the purchase order of customers. Next, Doi Chaang Company conducted milling or hulling, roasting, packaging and exporting. A limited volume was sold domestically.

Figure 1. Doi Chaang Coffee value chain financing



Lessons Learned

During the early years of Doi Chaang, it was financed by a commercial bank, using the stock of coffee as collateral for packing credit. In an effort to widen the scope of lending to assist farmers and farmer institutions, BAAC developed various types of credit services. Packing credit and trade finance were recently introduced, thus enabling BAAC to extend comprehensive credit services to Doi Chaang Company, which is owned by hill tribe farmers.

The success of integrated value chain financing in the case of Doi Chaang has brought increased income and improved quality of life. Families are happy when all family members live together. The community is healthy when most people enjoy living and cultivating coffee and caring for their natural resources and environment. The children have received a better education, both in-country and abroad.

Case 4. Leveraging ICT for end-to-end linkage of the smallholders: a case study of the e-choupal initiative of ITC Ltd.

(Source: www.itcportal.com/rural-development/echoupal.html)

Introduction

ITC Ltd. is an Indian company with a market capitalization of US$ 19 billion and a turnover of over US$ 5 billion (as of 31 March 2009). It has diversified business interest in tobacco, the hospitality industry, agri commodities, Information Technology (IT) and consumer goods. The Agri Business Division (ABD) of ITC Ltd. was set up in 1990 and envisaged to procure, process, and export of agricultural commodities such as soybean, wheat, shrimp and coffee. ITC's unique and now widely acknowledged *e-Choupal* initiative began in June 2000, with soybean farmers in Madhya Pradesh. It was conceived as an IT-enabled rural channel to unshackle the potential of the farmers who had been trapped in a vicious cycle of low risk-taking ability, low investment, low productivity, weak market orientation and low value addition, all culminating into a situation of low profit margins.

ITC's strategic intention has been to develop *e-Choupal* as a significant two-way, multidimensional delivery channel, efficiently carrying goods and services out of and into rural India. By progressively linking the digital infrastructure to a physical network of rural business hubs and agro-extension services, ITC is transforming the way farmers do business, and the way rural markets work. As per the figures given in Table 1, this channel proved its enormous efficiency in procurement of commodities, resulting in value creation for both the company (ITC) and the large number of farmers in a diverse geographical region.

Table 1. e-Choupal multidimensional delivery channel

States covered	10
Villages covered	40,000
No. of e-choupals	6,500
e-empowered farmers	4 million

Source: http://www.itcportal.com/businesses/agri-business/e-choupal.aspx

Encouraged by the success of the e-choupal, ITC's first rural mall, christened *'Choupal Saagar'*, was inaugurated in August 2004 at Sehore district of Madhya Pradesh. On the rural retail front, 24 'Choupal Saagars' are now operational in the states of Madhya Pradesh, Maharashtra and Uttar Pradesh.

The Concept

Choupal is a Hindi word that means 'village meeting place'. ITC Ltd. has initiated a project called e-Choupal, which provides computers with Internet access to rural farming villages. This serves both as a physical social gathering place for exchange of information and an e-commerce hub. It is a 'click and mortar[15]' initiative to re-engineer the procurement process for soybean, wheat, tobacco, coffee and shrimps. It provides a virtual market place through the low-cost e-commerce platform where farmers

[15] 'Click and Mortar' – Best Buy follows the click-and-mortar business model. Customers have the choice between visiting one of Best Buy's physical locations or using the website to complete transactions. Both the store and website allow customers to compare and search for goods and purchase products.

can transact directly with a processor and can realize better prices for their produce since they have a wide range of options. The e-Choupal system has also catalyzed rural transformation that is helping to alleviate rural isolation, create more transparency for farmers, and improve their productivity and incomes.

The Project

The e-Choupal project is ITC's unique initiative to provide a platform for carrying out trade at a number of locations. To achieve this, ITC sets up a physical service support at the village level, called a *choupal*, under the management of a *Sanchalak* (manager), for example, a lead farmer who acts as the interface between the computer and the farmer. Information on weather, inputs, farming practices, market prices of produces from sources such as the Meteorological Department, agri-universities, regional markets (*mandi*) and others are aggregated centrally and uploaded on to the e-Choupal website. All information is customized according to local farmer's requirements and provided into the local language. The computer, typically housed in the managing farmer's house, is linked to the Internet via phone lines or, increasingly, by a VSAT connection, and serves an average of 600 farmers in ten surrounding villages within about a 5-km radius. It is estimated that each e-Choupal costs between US$ 3,500 and US$ 6,500 to set up and about US$ 150 per year to maintain.

The Model

ITC Limited made significant investment in the e-Choupal model to create and maintain its own IT network in rural India and to identify and train local farmers to manage each e-Choupal. Farmers were not required to pay for using the services, but the host farmer (Sanchalak) incurs some operating costs and is obligated by a public oath to serve the entire community. The tangible benefits for the *Sanchalak* are in the form of commissions paid to him for all e-Choupal transactions. The intangible benefit is the social prestige and status that he acquires.

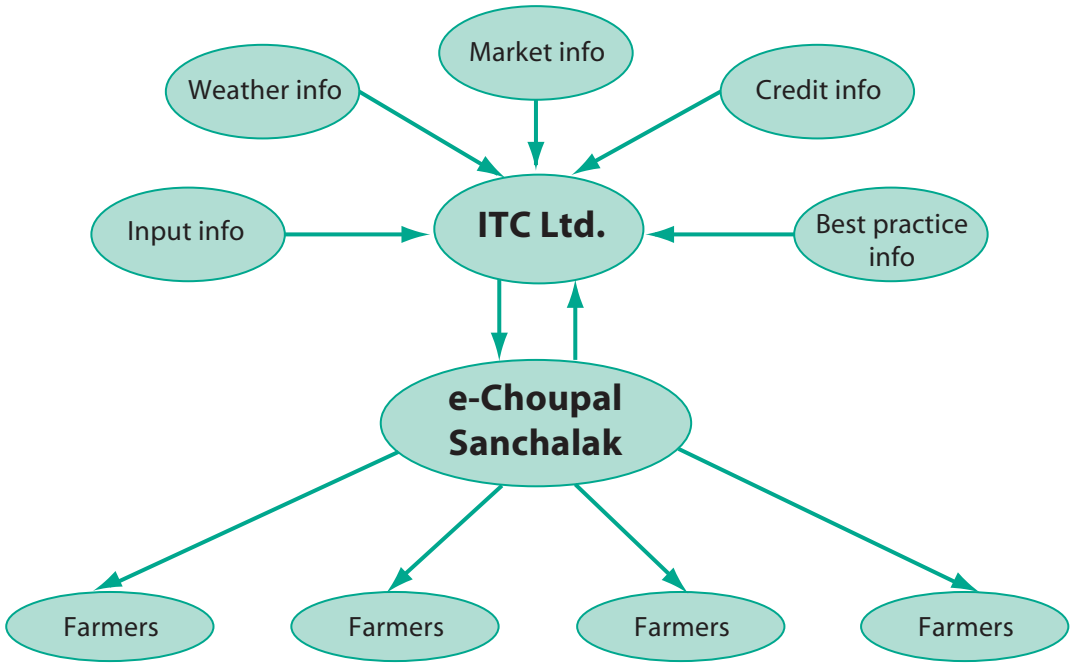
The farmers can use the computer to access daily closing prices on local markets (*mandis*), as well as to track global price trends or find information on new farming techniques, either directly or via the *Sanchalak* since many farmers are illiterate. They also use the e-Choupal to order seed, fertilizer and other products such as consumer goods from ITC Ltd. or its partner organizations at lower prices than those available from village traders; the *Sanchalak* typically aggregates the village demand for these products and transmits the order to an ITC representative. At harvest time, ITC offers to buy the crop directly from any farmer at the previous day's closing price; the farmer then transports his crop to an ITC processing centre, where the crop is weighed electronically and assessed for quality. The farmer is paid for the crop and also for transportation. Bonus points, which are exchangeable for products that ITC sells, are given for crops with quality above the set norms. Figure 1 shows the flow of information, goods and services.

The Benefits

E-Choupal is an information and communications technology (ICT) platform that facilitates the flow of information and knowledge, supports on-line transactions, and connects farmers and the market, as follows:

- It provides *information* (weather, prices, news).
- It provides *knowledge* (farm management, risk management).
- It facilitates sales of *farm inputs* (screened for quality).
- It offers the choice of an alternative *output-marketing channel* (convenience, lower transaction costs) to the farmer right at his/her doorstep.
- It is an interlocking network of partnerships (ITC + Met. Dept + Universities + Input Cos + commission agents/aggregators) bringing 'best-in-class' information, knowledge and inputs.

Figure 1. Flowchart of information, goods and services in the e-choupal model



Farmers benefit from more accurate weighing, faster processing time, and prompt payment, and from access to a wide range of information, including accurate market price knowledge, and market trends, which help them decide when, where, and at what price to sell. Farmers selling directly to ITC through an e-Choupal typically receive a higher price for their crops than they would receive through the *mandi* system; e-choupal is thus a distributed transaction platform that brings together sellers and buyers, along with information and service providers.

E-choupal is a model with a number of non-conventional characteristics:

- customer-centric;
- capable of being used for many commodities and multiple transactions;
- easily scalable once it is verified;
- uses local talent and local people and develops local leaders;
- can be extended to local as well as global procurers;
- stimulates local entrepreneurs to extend their innovativeness;
- uses all the existing institutions and legal frameworks;
- many others can join the market as transaction time is low.

Scalability

The total benefit to farmers includes lower prices for inputs and other goods, higher yields and a sense of empowerment. The e-Choupal system has had a measurable impact on what farmers chose to do: in areas covered by e-Choupals, the percentage of farmers planting soybean/wheat has increased dramatically, while the volume of soybean/wheat marketed through *mandis* has also dropped to a great extent. At the same time, ITC benefits from net procurement costs as they save the commission and part of the transport costs that it would have to pay to traders/buying agents at the *mandi* and it has more direct control over the quality of the produce.

ITC has also collaborated with banks to offer farmers access to hassle-free credit, insurance and other services at their doorstep. Moreover, on demand from the potato-growing farmers, ITC started buying potatoes to feed their potato-processing plant and thus the farmers are becoming a source of product innovation for ITC.

The Success Factors

The e-Choupal experience highlights that ICT platforms can provide rural connectivity and e-commerce support. These platforms have enormous potential provided that they are conceptualized for the specific needs of the community and business. Some of the elements that contributed to the success of the e-choupal initiative are as follows:

- *Vibrant rural markets*: Understanding the operations of rural market is vital before the systems are conceptualized. The use of local resources helped in accepting the changes.
- *Win-win Model*: The success of the model derives from a win-win situation for both farmers and processors by ensuring timely availability of information.
- *User interface*: The technology interface used was very simple and suitable for India's rural settings, having being piloted before actual use.
- *Developing entrepreneurship*: The e-Choupal project brought out latent entrepreneurship skills of farmers and the *Sanchalak*.

Replication

The success of e-choupal and its huge potential for setting up an electronic market stimulated several other players to foray into building portals and setting up of kiosks to increase their outreach. Some of the services combine the use of IT with satellite mapping techniques to advise farms on adopting farming practices that maximize agricultural yields. Some restrict themselves to the supply of inputs and marketing of the produce. The Tata group of companies has taken up farm management services in some places to support growers and is also undertaking contract farming on horticultural crops in different parts of India, which again attests to the success of the e-choupal as a model.

Lessons Learned

The e-Choupal model demonstrates that for-profit organizations can also play a critical role in recognizing the application of ICT to improve the market accessibility of the farming communities to improve the efficiency of an agricultural system. The case study also shows that IT can be used by the local farmers if it can be leveraged to reach the desired direction with extensive knowledge about the user. The e-Choupal model has been specifically designed to tackle the challenges posed by the unique features of Indian agriculture, characterized by fragmented farms, weak infrastructure, and the involvement of numerous intermediaries, among others.

Guide Questions

1. What are the most critical elements of the *e-choupal* system?
2. What are the challenges in implementing this model in other developing countries?
3. What are the alternative methods to achieve similar objectives?
4. Are there risks to the sustainability of the model in the long term? If so, what are the risks and what can be done to minimize them?
5. Does the model have potential to confer excessive market power to ITC both in input selling and farm product purchases?

Case 5. Market Facilitator Partners with Bank to Develop Credit Franchisee Model: International Development Enterprise India (IDEI)

Background

IDEI is a market facilitator that operates in 12 Indian states. The focus of IDEI is to create demand for affordable irrigation technologies and ensure a sustainable supply for technologies such as low cost drip irrigation, treadle pumps and family nutrition kits. IDEI concentrates on serving small and marginal farmers holding fewer than two hectares of land. To date, IDEI has reached over 800,000 with its affordable drip irrigation system.

In the Indian state of Maharashtra, farmers often request credit from dealers (small shops) to purchase drip irrigation systems. Since dealers know many of the farmers in the area, they often provide credit advances for small farmers who do not have all the cash to purchase the irrigation technologies they demand. But the reality is that dealers cannot meet all the farmers' requests because the dealers lack working capital. They simply do not have enough of their own funds to lend to so many farmers.

The Model

Recognizing this gap, IDEI approached different banks to encourage them to lend to small farmers. Unfortunately, most banks were not interested because they felt that the loan sizes were too small. Administering small loans is very costly for banks. (Loans of drip irrigation range from USD 113-226). In addition, banks view agriculture as risky because it is affected by external factors such as weather, plagues, and by fluctuating market prices for agricultural products.

One bank, ICICI Bank, was an exception and was interested in forming linkages with dealers (or small shops) to increase their scale and outreach in rural areas. ICICI Bank, the second largest commercial bank in India, is a leader in creating linkages to reach underserved market segments. Where there is not sufficient scale to justify opening an ICICI Bank branch office, they establish a credit franchisee. A credit franchisee, like a business franchise, is a person or company accepting the right, granted by the franchisor to retail or provide services, using the franchisor's trade name or service marks, within the terms set in the franchise agreement.

IDEI had a network of established drip irrigation dealers who fit the desired profile for ICICI Bank credit franchisees. The bank partnered with IDEI to develop a franchisee model[16] that would deliver credit to small farmers to purchase drip irrigation systems. In order to be a credit franchisee, the dealers contribute an equity amount that they can leverage up to 10 times from ICICI Bank to lend to farmers. This means that if a drip irrigation dealer contributes 1,000 USD, they can leverage their equity and get 10,000 USD from ICICI Bank so they can lend to farmers.

The loans are always accounted for using ICICI Bank's management information system. The bank trains the credit franchisees in credit appraisal. The credit appraisal process is designed to take two days and the repayment period varies according to crop cultivation cycles, with a maximum two-year loan term. The interest rate is 14 percent per year, which includes a 3 percent margin for franchisees.

Expected Benefits from Participating in the Model

With the franchisee model, the farmers have access to tailor-made loans using a simple procedure from a local agribusiness, not the standard loan amount with fixed conditions offered by most banks. In this case, farmers are able to purchase drip irrigation, which can increase productivity rates and crop

[16] For more information related to this model, refer to Suresh Subramanian, "Credit Franchisee: Increasing Farming Incomes through Irrigation," voice-recorded PowerPoint presentation for the SEEP Network Annual Conference, Washington, DC, October 2006.

diversification and thus raise incomes. Drip irrigation can increase farmers' yields by 40-70 percent and reduces fertilizer and labor costs by 50-70 percent, depending on the crop.

Because of their association with ICICI Bank and IDEI, farmers trust the credit franchisees more, attracting more farmers wishing to purchase drip irrigation or other products sold at the franchisee-dealer retail outlet. The credit line to the dealers will enable them to finance more farmers, and the 3 percent margin will be an additional income source. With this model, ICICI Bank is able to increase their rural customer base in India. It reduces the costs and risk of lending, since the credit franchisees will use local knowledge of client credit histories and process loans. IDEI will be able to expand the scale of purchase and use of drip irrigation systems in rural India using this model.

Some Challenges

In the beginning, structuring a win-win scenario that benefited all actors was not easy. ICICI Bank wanted credit franchisees to be able to finance any product sold in the dealer's shop while IDEI wanted to limit the dealers to only finance drip irrigation systems. After negotiation, they agreed that during the first six months of the pilot, the credit franchisees would only offer loans for one product, the registered trademark KB drip irrigation.[17] After this initial period, if the credit franchisees perform well, they can add financing of other non-drip products in their retail outlets, such as seeds and fertilizer.

Deciding the amount that dealers should contribute as equity was another challenge. ICICI Bank felt the minimum equity share should be USD 22,000, while IDEI thought USD 2,200 was appropriate. In the end, they agreed upon USD 11,000. Furthermore, ICICI Bank wanted the minimum loan size to be USD 222, while IDEI said it should be USD 44. The loan amount was discussed with all three stakeholders, and USD 110 was decided as the minimum loan size.

Guide Questions

1. Why was the existing financing arrangement insufficient to meet the needs of the farmers?
2. What value chain finance instruments are involved in this case?
3. Map the financial flows for the drip irrigation loans
4. Do you think the dealers should get involved in financing seed and fertilizer in the future? Why/why not?

Case 6. Maize value chain in Odisha, India: a case of inadequate financial instruments to support the growth

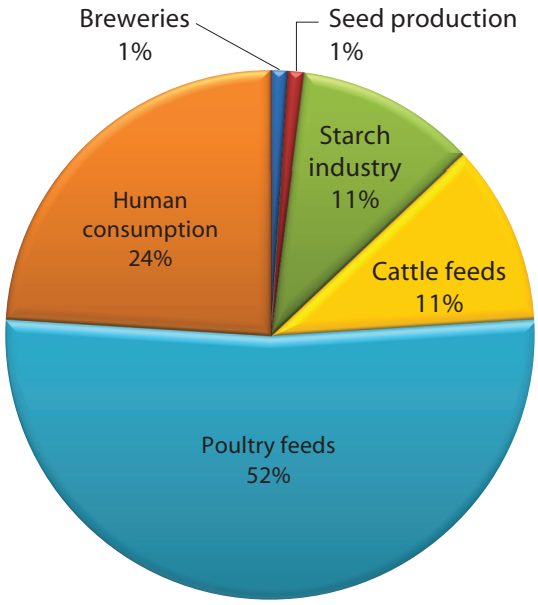
Introduction

Agriculture accounts for 13.7 percent of India's gross domestic product (GDP)[18] during 2012-2013. Although rice and wheat are considered the most important staple foods in the country, maize emerged as another important and accepted staple diet, and its demand has been increasing significantly, making it the third most important cereal crop after rice and wheat in terms of production and area under cultivation.

The current level of maize yield in the country (2.47 MT/ha) is far behind the global average of 5.14 MT/ha. There is a huge scope for improvement in yield by improving the adoption of hybrids, particularly in traditional maize growing regions, with the growing demand from feed and starch sector,

[17] Other drip irrigation brands, which vary in quality and price, are available in India, but the KB drip irrigation is the system marketed and approved by IDEI.
[18] As per the report of Central Statistics Office, Govt. of India based on 2004-05 price.

Figure 1. Maize consumption categories



(Source: Directorate of Maize, Government of India, New Delhi)

and a huge potential to increase its market share nationally and globally. As per the current estimates, 52 percent of maize output is used as poultry feeds, 11 percent as cattle feeds, 24 percent for human consumption, 11 percent in starch[19] industries, and 1 percent both for breweries and seed purposes (Figure 1). t is estimated that the demand for maize from the poultry industry will rise by approximately 6 percent, which is likely to substantially hike maize consumption to over 30 million tonnes by 2020.

Maize Production in Odisha

The total maize area in the State of Odisha has increased by 27.8 percent in area planted and 146.3 percent in production between 2000-2001 and 2010-2011, with the average yield of maize increasing by 86 percent during this period due to the adoption of hybrid varieties and an increase in irrigated area. During this period, the Government of Odisha took important measures to improve maize cultivation practices in the State, taking into consideration its importance as an agrarian economy: it linked up with the seed companies to ensure an uninterrupted supply of hybrid maize to the farmers; and in 2010, it entered into a public-private partnership (PPP) with leading seed companies of the country and allotted them 21 districts to avoid conflicts of interests.

Value Chain of Maize in Odisha

- **Input suppliers**

  Seeds are the most critical input for maize production; proper seed use could change the level of production significantly. Farmers are mostly dependent on private seed companies for maize seed, which supply them with seeds through credit, with repayment in cash or produced maize grains. With the reduction of the public sector stake to around 10 percent in the total volume of maize seeds supply, the private sector seed companies are entering into the market to fill up the gap. The farmers in Odisha largely use home-saved maize seeds, and only 35 percent purchase improved seed and only 40 percent are estimated to use recommended doses of fertilizers and pesticides.

[19] In India, the prime source of starch is maize, and the textile industries in the country are the largest consumers of maize starch.

- **Growers**

  Small-scale farmers represent 48 percent of the total maize farmers in Odisha, and are estimated to produce 40 percent of the total output, followed by the medium-scale farmers (26 percent) who produce 30 percent of the output. The marginal farmers in Odisha represent 16 percent of the maize growers.[20]

- **Traders**

  Traders are very active in the maize value chain in the State of Odisha and virtually control the output market. The mall-medium traders are present in the block towns and district headquarters across the state while smaller rural traders operate in villages especially in the tribal districts and are the major market outlet for subsistence farmers. Transactions with farmers are conducted on a spot market basis (purchase at the farm gate) and with immediate cash payment, but at a very low price compared to the minimum support price (MSP). Most of these traders are meeting their need for finance from the district-level traders and the millers. The rural traders do not have storage facilities, so they immediately dispatch the maize to nearby district headquarters where the district-level traders have the storage facilities. These traders also sell maize grains to the millers.

  Some of the large traders are located in the state capital. They often provide short-term cash advances to the rural traders so that they can in turn pay cash to the growers and also supply a significant amount of maize in the national market. They assemble stocks in storage facilities as well as clean fumigate, rebag and bulk the maize. They also act as sources of market information regarding prices and volumes in their areas of operations. These state-level traders are generally self-financed, and are a source of finance to the district-level suppliers.

- **Processors**

  Maize is processes by two types of industries: millers convert maize to maize meal (corn flakes) for human consumption, while animal feed manufacturers use yellow maize for the manufacture of poultry and cattle feeds. Maize processing is an important activity of the medium-level industries in the State, which are categorized as micro, small and medium enterprises (MSME) units. The processing units get subsidies from the central government and some other benefits from the state governments. An average investment in a processing plant with 30,000 tonnes (TPA) capacity of maize grain processing is US$ 400,000.[21] Commercial and governmental banks finance these processing units. Most of the maize processing plants are in the Nabarangapur District of Odisha, which produces almost 50 percent of the maize production and whose three small-scale maize processing units have an installed capacity of 4 ,720 tonnes – insufficient to cater to the production of 1.25 million tonnes. The Government of Odisha gave clearance to establish some new large maize processing units, which will improve the processing capacity and facilitate higher revenue by the farmers.

- **Exporters**

  Substantial exports of maize are flowing to Far East nations such as Malaysia, Singapore and Indonesia and growing in Viet Nam and Egypt. The total export of maize from India was recorded at 2.4 million tonnes in 2010-2011, which is 33 percent higher than in 2009-2010. Indian maize is US$ 260 per tonne f.o.b. in the international market for the crop harvest during *Rabi* (spring) and US$ 250 for the harvest during *Kharif* (autumn), compared to US corn quoted above US$ 270 f.o.b. Most Indian exporters are located in the states of Andhra Pradesh, Tamil Nadu, Maharashtra and West Bengal states, rather than Odisha, but have regional offices in Odisha.

[20] Government of Odisha (2011). Based on operational land holdings, Indian farmers are broadly classified in to five categories by the NSSO: marginal farmers (up to 1 ha of land); small-scale farmers (more than 1 ha up to 2 ha); small-medium farmers (2.01-4.00 ha); medium-scale farmers (4.01-10.0 ha) and large-scale farmers (more than 10 ha).

[21] NABARD Consultancy Services (consulting arm of NABARD); available: www.nabcons.com/maize.aspx.

- **Commodity Exchanges**

  Commodity exchanges play an important role in the maize market with special reference to availability of industrial grade maize. Both of the national-level commodity exchanges (NCDEX & MCX) deal with the maize spot and future price, and the volumes traded are significant. The average spot price of maize in the National Commodity Exchange (NCDEX) analyzed for the autumn and spring arrivals in the Nizamabad market is US$ 22.8 per quintal, which is more than the minimum support price US$ 19.6 per quintal declared by the Government of India for 2011-2012.[22] The National Spot Exchange Limited (NSEL) of India has plans to open a trading platform in Odisha to facilitate marketing of maize to allow farmers to trade and take advantage of the price risk mechanism.

Comprehensive maize value chain map

Value chain functions of maize in Odisha can be divided in to three sectors: the primary sector consists of input suppliers (especially the seed suppliers), primary producers and local traders; the secondary sector consists of district- and state-level traders, millers and animal feed manufacturers; and the tertiary sector consists of regional-level traders, retailers and transporters and the commodity exchanges who also play important roles in product flow.

In addition to the direct functions within the value chain, supporting services are required for the system to function efficiently. These supporting services can take the form of interconnected value chains, such as public and private sector laboratories. In addition, research and development institutions support hybrid seed production. Agribusiness companies ensure availability of these seeds in the villages through a network of dealers and retailers. Services, such as management services rendered by the seed companies, extension services provided to the farmers, or financial services such as investment capital, working capital, or insurance cut across each function of the value chain. Commercial banks, regional rural banks and cooperative banks are also very active in extending the much required credit facilities to the maize farmers.[23] Commodity exchanges, where the product can be transparently traded, are the other important service within the value chain (Figure 2).

Finance to maize value chain

Despite the importance of the crop in the state of Odisha, there is relatively little formal or informal finance directed to any of the actors in the maize value chain. This might be due to the market governance structure and price volatility, which constrain value chain actors from entering into any advance contracts with other actors.

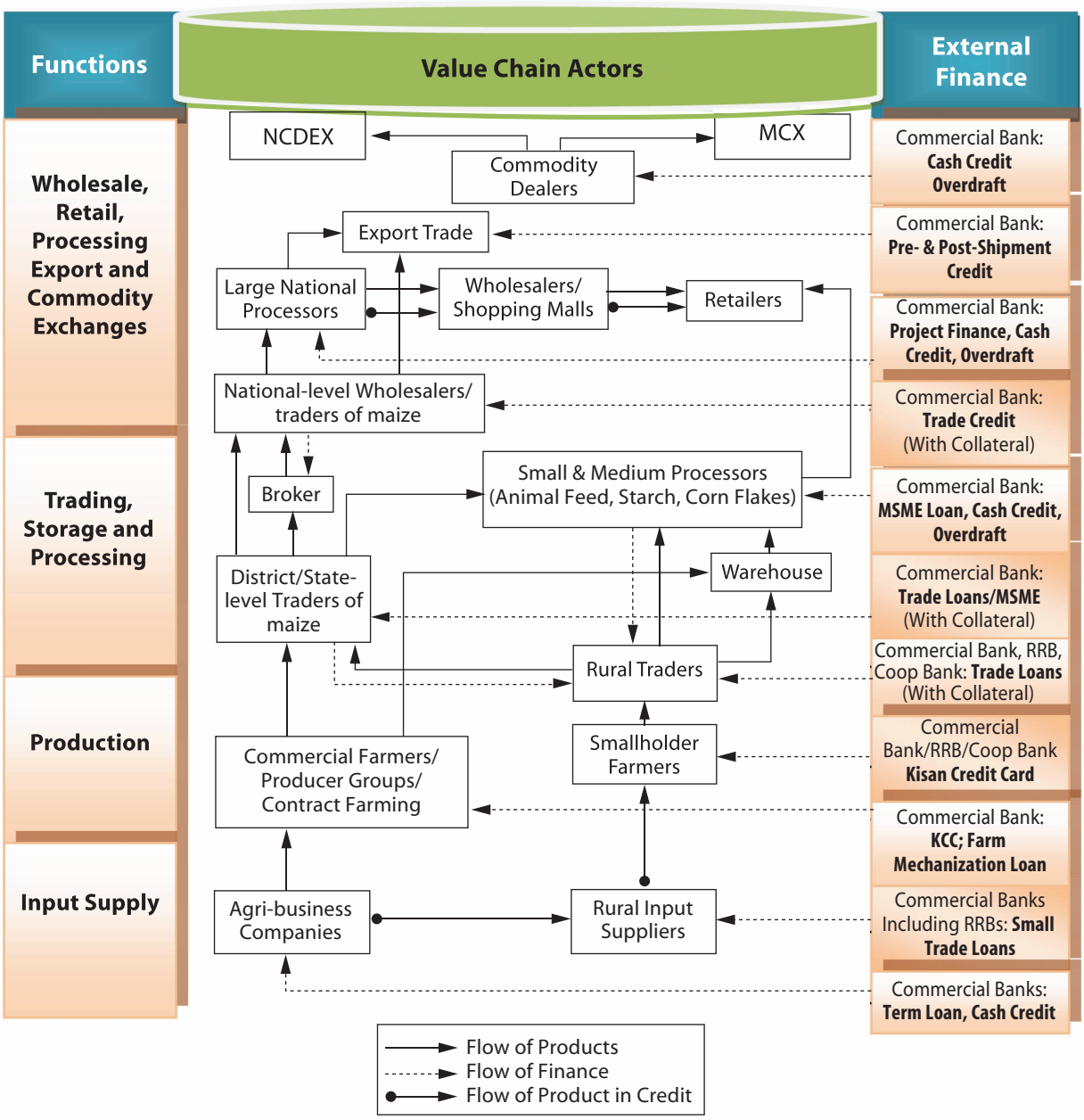
At the base of the value chain, productivity is low (average yield in Odisha is 2.5 tonnes/ha); a very low proportion of growers use improved inputs (fertilizer or improved seed), and when they are used, they are purchased at market prices. Therefore, there is less demand for input credit, except in Nabarangapur District of the State, where most of the farmers are smallholders who depend on the input suppliers to supply the inputs on credit in addition to bank finance. The banks extend finance to the maize growers in the form of a Kisan (Farmer) Credit Card.[24] The cost of cultivation, together with some consumption credit, is also included while fixing the limit for each of the farmers. During the 2011-2012 cropping season, the Government of Odisha launched a special scheme to popularize maize cultivation by reimbursing[25] the cost of fertilizers, which will benefit 45,000 maize farmers across the State. The finance

[22] Minimum support prices (MSP) for maize as declared by the Government of India for the 2011-2012 cropping season (as at 25 October 2011) was INR 980 (US$ 19.6) per quintal.

[23] Financing maize cultivation and processing are categorized as direct credit to agriculture and MSME respectively which recognized as the priority sector credit in India.

[24] KCC has emerged as the strongest instrument to extend short-term credit facilities to the growers, which is hassle-free and renewable after every three years.

[25] The amount of reimbursement is limited to US$ 70 for every hectare that the farmer cultivates.



Source: Field survey, 2011-12.

extended by the banks is inadequate to meet the requirement of the maize farmers so they resort to credit facilities extended by the rural input suppliers, who charge interest at 4 percent per month. A few of the growers also being contracted by the rural traders, and the finance charge is 3 percent per month.

The next step in the chain, purchasing from farmers by traders, is exclusively market-based. No examples of former contract farming were found in the maize value chain, but some of the farmers are selling maize to the traders due to their long-standing relationship. However, at the next step of trade, from rural and district-level traders to Bhubaneswar-based traders, there is no contracting. The final step in the large volume segment of the value chain – the sales to the processors or export markets – is the only place where buyers and sellers regularly enter into contracts at established prices. These contracts enable access to finance from financial institutions.

Scenario analysis

While analyzing access to finance by the value chain actors of maize, it was observed that there is a strong network of rural and semi-urban bank branches in the state of Odisha.[26] It was also observed that there are quite a few cases of combined finance by both the value chain actors and the external financing entity. In the case of large traders and processors, it was observed that at times they finance their activities from their own resources.

With this in mind, a scenario analysis[27] was carried out in order to understand the efficiency of financing to the value chain actors. The scenario analysis of the value chain finance in maize (Table 1) clearly states that the internal and external finance are equally important to cater to the needs of the maize value chain actors.

Table 1. Scenario analysis for financing the maize chains
(All values are expressed in US$)

Category of transaction	Scenario 1	Scenario 2	Scenario 3
1. Input retailers			
Total cost of inventory	198	203	201
Pricing by retailer	215	215	215
Value added	18	12	14
Return on investment (RoI) %	9	6	7
No. of months	1	1	1
Annual return on investment (%)	106	71	84
2. Production			
Total cost of production	400	406	460
Farm gate price	500	500	500
Value added	100	94	40
Return on investment (RoI) %	25	23	9
No. of months	12	12	12
Annual return on investment (RoI) %	25	23	9
3. Local/district-level traders			
Total cost at traders' level	610	625	615
Selling price by the traders	650	650	650
Value added	40	25	35
Return on investment (RoI) %	7	4	6
No. of months	2	2	2
Annual return on investment (RoI) %	39	24	34
4. Processing of maize (dry rolled corn)			
Total cost at processors level	760	767	756
Selling price by the processors	780	780	780
Value added	19.7	13	24
Return on investment (RoI) %	3	2	3
No. of months	2	2	2
Annual return on investment (RoI) %	8	5	10

Source: Field Survey, 2011-2012.

[26] As at 31 March 2011, there are 2,643 branches of commercial banks in rural and semi urban areas in the state of Odisha (www.orissa.gov.in/finance/slbc/SLBC_Banking_Glance.pdf).

[27] Scenario 1: When all the actors in the value chain depend on formal financial institutions; Scenario 2: when all the actors in the value chain are depending on both the external (financial Institutions) and internal (value chain actors) sources; and Scenario 3: when the chain actors depend on the internal sources and from own sources to meet the cost of the operation.

While the producer, national-level traders and processors are availing finance from the formal financial system (external finance), the rural input suppliers derive a large share of their financial requirements from the agribusiness companies in the form of trade credit. When the input suppliers (Scenario 1) are obtaining the finance from the commercial banks, Regional Rural Banks (RRBs) and cooperative banks, this proved to be the most efficient, where the margin of the input suppliers is higher (US$ 17.5) and lowest (US$ 12) in case of finance obtained from the agribusiness companies. Here, the selling price has been kept constant, at US$ 215 for the inputs required for 1 ha of land cultivated under maize. The cost of production of maize in each ha of land is lowest (US$ 400) in the case of finance received from the commercial banks, and highest (US$ 460) in the case of finance received from the retail traders (who deal with the maize seeds). The combination of finance from the input suppliers and the banking system is also efficient (US$ 406 per ha), and due to of the lack of adequate finance available from the financial system, this combined financing mechanism is working successfully.

Guide Questions

- Based on the scenarios, what would be the most efficient financing in the maize value chain in Odisha – traders' credit, commercial banks or a combination of the two?
- What kind of assets capitalization scheme would you recommend as needed for securing the access of farmers to liquidity and to build the basis for price risk management services?
- Should investment in commercial production, storage, transport and services be encouraged? If so, how?
- What other measures and interventions could increase access to formal finance for growers and foster their inclusion in the value chain?

Case 7. Innovative Financial Tools for Agricultural Value Chain Financing of Manaveeya – IIMF: Financing to achieve better price realization for women dairy farmers through incubation of a Producer Company

Introduction

In order to strengthen the dairy value chain, various activities need to be encouraged and financed, including fodder production, input management and output management. On the input side, the activities include providing appropriate breed of animals, adequate and high quality fodder, and timely veterinary services. On the output management side are activities such as collection, procurement, chilling, processing and marketing of milk and related products.

Financial requirements of the dairy sector are diverse. While it requires very short term loans for production of fodder, it also requires medium term loans for cattle purchase and long term loans for infrastructure development, especially processing facilities. The nature of the financial products varies with entity seeking financial support and the collateral they can extend. While the loans for fodder cultivation and animal are accessed by the small producers who have very little to offer as collateral, the larger dairy processing plants are owned by larger corporate bodies or cooperatives, who can offer collaterals more easily. In between, there are diverse medium enterprises owning cattle feed plants, distribution units, bulk milk cooling units, and so on.

Financing Dairy Value chain through Processing Facilities

A financial institution looking to invest in a dairy value chain must then be sufficiently knowledgeable about milk production and processing activities. It will also have to be willing to lend to multiple parties, and in the process take on the increased due-diligence, transaction and monitoring costs. As a result,

most financiers of the dairy sector end up financing the processing and post-processing part of the value chain only. However, as an alternative, some financial institutions have found a reliable and knowledgeable aggregator (not of milk, but of financial needs of different players) who takes on the task of engaging with different entities of milk production, processing and marketing, and aggregating all their financial needs. This agency then works as a financial intermediary between the large number of small producers and the financial institution. The potential of a productive partnership between a reliable aggregator and a financial institution to bring about intensification and strengthening of the dairy value chain in a region.

The Partners

GRAM: A large NGO in Andhra Pradesh

For the advancement of their collective interests, GRAM encouraged the Mutually Aided Thrift and Credit Cooperative Societies (MACS) societies in Nizamabad and Adilabad districts to register as a federation in the form of Indur Intideepam Mutually Aided Thrift and Credit Cooperatives Federation (IIMF). GRAM promoted the formation of IIMF, registered in 2002, to federate the microfinance operations supported by it and transferred the employees involved in microfinance operations of GRAM to IIMF.

Oikocredit/Manaveeya: A pro-poor international financial institution

Oikocredit Ecumenical Development Cooperative Society is a Netherland-based financial institution that offers loans or investment capital for microfinance institutions, cooperatives and small and medium-sized enterprises in developing countries. It is one of the world's largest private financiers of the microfinance sector. Manaveeya Development and Finance Limited is the Indian subsidiary of Oikocredit.

Indur Intideepam Mutually Aided Thrift and Credit Cooperatives Federation (IIMF)

It is a federation, registered in 2002, of 20 Women's Mutually Aided Thrift and Credit Cooperative Societies. IIMF, as a community owned and community managed savings and credit institution, evolved from the work of GRAM in the Nizamabad and Adilabad districts of Andhra Pradesh. It comprises entirely of women from excluded and marginalized communities. IIMF extends crop loans, agricultural investment loans, agriculture allied loans, non-farm micro enterprise loans, asset loans, general purpose loans, and dairy loans to individual SHG members through their SHGs.

Intivelugu Mahila Dairy Producers Company Ltd. (IMD)

IIMF, with support from Manaveeya has successfully promoted India's first all women milk producer company, Intivelugu Mahila Dairy Producers Company Ltd. (IMD).

Deccan Star: A private company promoted by producer collectives

Recognizing the limitations of the various legal forms in India, the promoters of GRAM, IIMF and IMD decided to promote a private limited company as well to overcome some bottlenecks imposed on cooperatives and producer companies. This made it easier for IIMF and IMD to invest into capital assets without going through the bureaucracy of the Registrar of Cooperatives and facilitated investment from non-primary producers into the producer company. Equity of this private limited company is held by IIMF and a few development professionals. IIMF invested in a processing plant which it had purchased with the Manaveeya loan and has a controlling interest in Deccan Star.

Description of the Intervention

The focus on initially building adequate dairy processing and transportation infrastructure, and more recently, to finance the adoption of better milk producing animals necessitated that IMD search for financers for both these efforts. Banks were reluctant to lend to IMD as they had very little Net-Owned-Funds and did not have a three-year balance sheet, which are generally required for bank lending. IIMF, having established investor linkages, took up the task to secure adequate funding for the intervention.

IIMF had established credit relationships with premier private sector banks like Axis Bank, HDFC Bank, ICICI Bank, and RBS; public sector banks like SIDBI, Indian Overseas Bank, and Corporation Bank; and development NBFCs like Ananya Finance for Inclusive Growth Pvt. Ltd., BASIX, and Bellwether Microfinance Fund. However, IIMF soon found out that although they had built a good credit history and banks were comfortable lending to them for on-lending purposes, they were reluctant to extend investment for dairy value chain financing to IMD for creation of adequate infrastructure.

Hoping to secure investments under the government's efforts to intensify dairy production and processing, IIMF also approached the National Dairy Development Board (NDDB) but the ultimately the negotiations failed.

In 2007, IIMF approached Manaveeya for the investment required for IMD. Manaveeya, as a pro-poor commercial financial company, was more sympathetic and agreed to extend a loan for setting up the infrastructure and facilitated a grant through Agriterra to IMD for education and mobilization of members and technology transfer. The loan officers of Manaveeya argued to their loan committee that in the absence of a three-year balance sheet, another way to verify the track record of the company for lending is to look beyond the individual company to the credibility of the group as a whole including GRAM, a reputed organization and IIMF with its excellent credit record. When the argument failed to convince the loan committee, which wanted greater security for the loan, an innovative solution was devised. Instead of funding the producer company, Manaveeya extended a long-term loan of INR 80 million to IIMF, which had an established banking credit history, for buying some infrastructure and incubating IMD. IIMF in turn lent the money to member SHGs who invested in the necessary assets for IMD.

In 2012, a further loan of INR 50 million was needed by IMD to invest in more productive cattle and they approached Manaveeya through IIMF. Although the previous loan was being repaid on time, the trends in international financial markets had made Oikocredit more risk averse in their lending. Manaveeya facilitated the second loan by highlighting the excellent payment record of IIMF and also obtaining a counter guarantee from Rabobank for Euro 300,000 of the loan amount. Rabobank, having had extensive experience with cooperatives internationally and being familiar with the context and evolution of IIMF, conducted an evaluation of IMD and IIMF before providing the guarantee. The fee charged by Rabobank for extending this guarantee was structured as part of the loan extended to IIMF through Manaveeya.

Financial Design Innovations through Partner Relationships

By routing the loan through IIMF, Manaveeya, the principal financing agency, has created an intermediate layer of accountability that significantly reduces the credit risks of lending to emerging grass-root producer companies. This is not only due to IIMF's credible banking history but also because it looks at nurturing other people's institutions as a part of its own mandate. Furthermore, IIMF is able to monitor the performance of IMD much more effectively than external agencies.

In the first stage, the loan amount is extended by Manaveeya to IIMF for incubation of IMD. IIMF at this stage is completely liable for timely repayment of the interest and principal amounts to Manaveeya. IIMF then extends this amount, interest free, to IMD through its member SHGs; the liability of IMD to repay

the loan is towards IIMF, and not Manaveeya. This has ensured that even when IMD is not in a position to pay an instalment to IIMF on time, IIMF pays the required amounts out of its reserves to Manaveeya, thus maintaining the credit discipline. The arrangement has enabled Manaveeya to get timely repayments even in the initial period when IMD is establishing itself as a producer company in competition with other private dairies in the area. In return, when IIMF's financial reserves are running low, the instalments of IMD can be restructured to give relief to IIMF.

Table 1. Overview of the roles of different agencies

Agency	Financial Services provided	Non-financial services provided
Manaveeya	Extending loan for infrastructure development to IIMF (2008)	Facilitated a grant from Agriterra for technology transfer and education and capacity building of producers
	Extending loan for cattle purchasing to IIMF (2013)	Facilitated a counter guarantee from Rabobank for a portion of the loan
IIMF	Extends loans to member SHGs which are then invested in IMD	Provides veterinary and other input services
	Extends loans to member SHGs for on-lending to individual members for purchase of cattle and fodder cropping	Undertakes education and capacity building of individual producers to increase dairy production
	Provides insurance for milk animals of individual members of SHGs	
	Absorbs credit risk on occasions of delayed instalment by IMD by paying Manaveeya from their reserves	
IMD		Milk procurement from dairy producers engaged with IIMF
		Transportation of milk to the bulk chilling centers
		Chilling and sale of procured milk.
		Exploring and establishing market linkages
Deccan Star		Processing of milk purchased from IMD
		Packaging of milk procured
		Marketing of processed and packaged milk

Lessons and Recommendations

- *It's better to finance an aggregator than individual dairy enterprises*

The people's collective model is best suited for the fragmented and diverse nature of dairy production in India which is dominated by small producers. But it has also made institutional financing of any kind in dairy value chain difficult. The success of this intervention lies in the meeting of a financing institution such as Manaveeya (with a positive bias for social enterprises) and IIMF as a knowledgeable, committed and competent aggregator of the different financial needs of the activities involved in dairy value chains.

- *The need for a consolidated balance sheet*

As the financial requirements and the risks of the different components of the dairy value chain are being managed by different organizations, some for profit and some not for profit, it will be useful to look at their aggregated balance sheet, as in the case of all subsidiaries of a holding company, for assessing the credit risk on a regular basis. If possible, a regular forum of exchange and monitoring of these various entities should also be developed.

- *The need for an appropriate legal and taxation framework for commercial activities of the poor*

To strengthen collective livelihood activities for the poor, often diverse financial support is required, such as investment capital for setting up processing units, grant-based capital for mobilization, education and training of members, and subsidies which may allow such enterprises to compete with others in the industry. Currently there is no common regulatory framework to meaningfully integrate such activities. In fact provisions in laws like Companies Act (as amended up to 2013), state level Cooperative Acts, and Income Tax Act (1956), are often not well aligned and pose difficulties for the financer and the implementing agencies of the projects.

Applying learning to agri value chain financing

The insight that the case delivers on the role and impact of a competent and community based aggregator of financial needs on the development of a dispersed value chain like dairy is very valuable. It holds implications for the sustainable development of other value chains where large numbers of fragmented small producers are engaged, and, by extension, for poverty alleviation and eradication in the rural context of not just India but typically, many developing nations like Bangladesh, Kenya, and Uganda among others. The due diligence for each product be it paddy, potato or any other crop will have to be different. But in principle, agro-finance companies can start looking for such models of lending.

Even in the paddy/potato value chain there will be multiple players requiring different kinds of finance. Unless they are very large firms like ADM, Bunge or Cargil who have the ability to integrate all the value chain operations, it will always pay off to identify a financial integrator, who understands the intimate details of the value chain and its players, and can aggregate their financial needs. Now whether this aggregator has the ability to play the role of a financial intermediary would depend on locations.

Techno-legal barriers like not being able to lend to a recently promoted Farmer Producer Company can be overcome by designing creative loan products like for 'Initial Investment in Infrastructure for Nurturing the company' to its promoting institution, whose credit history can be established, as per banking norms.

Guide Questions

1. What was the main benefit from IIMF partnering with Manaveeya?
2. Briefly explain the mechanism of the joint GRAM/Manaveeya/IIMF/IMD/Deccan Star intervention.
3. What are the main lessons learned from the model?
4. Can the model be replicated outside India and on different commodities?
5. How can some legal barriers be removed?

Case 8. Innovative Financial Tools for Agricultural Value Chain Financing: A Case study of the NABARD – PACS – ORIGO partnership in India

Background

Despite major emphasis on priority sector lending in agriculture and significant easing of norms and processes to enable farmers to access credit through formal sources, banks have been by and large reluctant to lend to small and marginal farmers as they have little collateral to offer in exchange and limited demonstrable capacity to repay. The absence of credible credit and marketing infrastructure makes agricultural value chain financing in India largely dependent on informal sources of financing and

traditional methods of marketing. Interventions to provide extension services to farmers, like negotiable warehouse receipt financing and warehouse receipt financing that can integrate the creation of marketing infrastructure with better price realization for farmers, have been encouraged but have had mixed results due to structural and regulatory shortcomings.

Description of the PACS

A Primary Agricultural Credit Co-operative Society (PACS) is the basic unit of the Indian agricultural financial framework and works at the *Panchayat*[28] level to cater to the credit and thrift needs of member farmers. As of March 2013 there are 93,488 PACS covering 99 percent of villages and 71 percent of rural households. The PACS are viewed as basic cooperative institutions that function as creditors, aggregators, government procurement agencies and marketing entities that aim to enhance livelihood opportunities for their members. However, recently the role of PACS has become limited to extending input-centric credit loans to farmers, often refinanced by financial organizations at higher tiers like the State Cooperative Banks or NABARD (National Bank for Agriculture and Rural Development), and their poor financial health and viability has become a cause of concern. The share of PACS in agricultural credit has been falling steadily, from 56 percent in 1986 to less than 18 percent during 2013. Recently, NABARD has started an intensive effort to transform PACS into multi service centres (MSCs) that go beyond pre-harvest credit facilities to farmers to building income generating activities that both provide enhanced livelihood options to farmers and build their financial health.

The Warehousing Act

The Warehousing (Development and Regulation) Act, 2007, which came into force with effect from October 25, 2010 created a much-needed regulatory authority for setting the bench-marks for quality of warehousing. As losses during storage were a major bottleneck for warehouse financing, this made it possible to develop Negotiable Warehouse Receipt which could attract finance. For managing this quality of infrastructure and for offering extension services to farmers educating them about this new financial instrument the Warehouse Development and Regulatory Authority (WDRA) was set up. Warehouses accredited by the WDRA can issue Negotiable Warehouse Receipts (NWRs), which are a tradable negotiable instrument. These derivative instruments are a significant improvement over warehouse receipts. Over 40 agricultural commodities against which NWRs can be issued have been announced and include cash crops, staple crops and coarse grains.

The Intervention

It was recognized that if appropriate facilities of Negotiable Warehouse Receipts, enabled by the WDRA, could be brought closer to the farmers using the PACS, revitalized as MSCs by NABARD, and linked with banks, much larger benefit of these policies could be realized for farmers. Towards this end, a collaborative venture between NABARD, ORIGO Commodities India Private Limited[29] and selected PACS was formed to implement a pilot intervention for the same in Andhra Pradesh. To ensure that PACS can develop the requisite knowledge, skills and linkages to enable better price realization for farmers, ORIGO was selected as the technical and supporting partner for the pilot in Andhra Pradesh in June 2013.

Role of Development Bank

NABARD is the principal financing agency and provides multi-pronged financing support for the intervention. It refinances the agricultural loans extended by PACS against the NWRs and has extended an interest subvention of 7 percent to farmers availing the scheme for loans up to INR 300,000. It undertakes extensive capacity building of PACS functionaries and farmer-members through trainings,

[28] Panchayat consists of 2-5 revenue village.

[29] ORIGO is a private sector commodity management company which undertakes collateral management on behalf of financing institutions and trains PACS to act as aggregator and traders in commodity exchanges.

field demonstrations, and exposure visits. It provides loans to the state Governments from its Rural Infrastructure Development Fund (RIDF) to build storage capacities and warehouses at the PACS level. Under its Producer Organizations Development Fund, NABARD directly finances PACS for establishing procurement, storage and processing infrastructure. One subsidiary of NABARD, NABCONS undertakes accreditation of PACS warehouses on behalf of the WDRA.

Business Model

- ORIGO gets into a contract with a PACS. Spruces up the warehouses to standard required by Warehouse Development and Regulatory Authority (WDRA).
- Farmers bring their produce to the PACS, where ORIGO representatives take charge of the stock and do quality assessment. Prevailing market prices are displayed on the National Commodity and Derivatives Exchange (NCDEX) display. Farmer gets choice of:
  - Selling to PACS at current price,
  - Selling the produce at NCDEX, leaving the stock in the accredited warehouse.
  - Keep the stock in the accredited warehouse and wait for prices to rise.
  - Handover the stock to ORIGO, who contacts various buyers they are in touch with and negotiates a price.
  - Decide to take the stock back.
- A warehouse receipt (WR)/negotiable warehouse receipt (NWR) is issued to the farmer. They can get a loan from the PACS/Commercial Bank based on the NWR/WR.

Strengths and Weakness

Strengths	Weaknesses
As PACS have been created all across the country and NABARD has been mandated to strengthen them, the possibility of scaling up is very high. It also aligns with the Government's focus on improving infrastructure.	1. The concept of NWRs is still new in India. Banker's education and extension amongst farmers were financed by NABARD and undertaken by ORIGO. 2. The PACS selected for pilot were hand-picked. But in general PACS are riddled with malpractice and politically motivated corruption.

Guide Questions

- What are the probable impact of this type of arrangements?
- What are the financial tools used in this type of arrangements?
- What are the non-financial support and the agencies involved in this undertaking?

Case 9. Sugarcane Value Chain Financing in Pakistan: HBL Experience[30]

Overview

Agriculture represents one-fourth of Pakistan's GDP and employs two-fifths of the workforce; the rural areas also sustain four-fifths of Pakistan's population. Over the years, despite expansion in production of sugarcane, which is a major crop in Pakistan, productivity enhancement has been non-significant. Pakistan is the 5th largest sugarcane producing country in the world, however, it ranks low on the productivity scale. This unfortunate fact has often been attributed to inadequacy of credit markets in the agrarian rural societies which can fuel the progressive farmers with improved inputs like seed, pesticide and fertilizers.

[30] Contributed by Mr. Abdul Rehman, BDM Rural Linkages, Rural Banking, HBL, Pakistan, April 2015

The farmers in the conventional lending are largely non-bankable due to lack or acceptable security[31] as collateral to offer against their credit needs and secondly due to absence of off-take arrangements the cash flows are uncertain. These factors augment the perceived risk by the commercial banks and they are reluctant to increase their exposure to this sector of the economy.

HBL a large commercial bank in two separate initiatives with leading sugar mills in Punjab and Sind intervened in the natural value chain to provide farmers credit through formal banking channels which replaced the informal lending through middlemen and thus provide a chance to adopt progressive farm practices but also improve upon livelihood. In the second value chain intervention (Sind Province) had additional goals of:

a) To study the factors affecting the productivity of cane growers and increase agriculture credit effectiveness through elaborate[32] and timely provision of funds or in-kind input availability through service provider.
b) To study impediments to formal lending versus the informal lending[33].

Model and Background

The sugarcane value chain actors mainly include the farmers, the bank and the sugar mill. The schematic diagram of the value chain can be drawn as follows:

Sugar Mill: The Sugar Mill is the anchor company in the sugarcane value chain. They are the most prominent actor in the sugarcane value chain who possesses the technical skills and sound knowledge about the rural setup of the area. In some of the occasions, they also take in-kind exposure by extending input loans to the sugarcane producers. Apart from the above, the sugar mill also performs the following sub roles;

a) Provision of technical assistance in land and soil testing
b) Supply of seed, fertilizer and pesticides
c) Provide loan guarantee to the banks
d) Provide confirmed sales of produce to borrowers
e) Routing of payments to the bank

Financing Partner: The Bank provides loans in-cash or in-kind through the nominated vendor of the sugar mill to the selected farmers against the security of "Sugar Mills Corporate Guarantee".

[31] Landless farmers with insufficient or disputed land records
[32] As per the requirement of the crop rather than what the lender can provide
[33] Informal lending reflects towards a wide range of extortionate financial and non-financial benefits of the market

Financial Framework

The loan extended for the following items:

a) Expenses of land development (where ever required) after every 3/4 years
b) Expenses for purchase of seed
c) Expenses of pesticide and fertilizer
d) Part expenses for diesel and tube well costs

The markup charged is as per the commercial banking rates which is much lesser then MFI/MFB's and informal lenders. The total financing amount depends upon the crushing capacity of the sugar mill and the number of farmers who have been selling to the sugar mill for at least last two (2) years.

Research Findings and Lessons Learned

- Small growers accounted for the highest percentage of demand for credit
- Informal lenders play a very important role in providing credit to small farmers but they tend to have multiple arrangements with the farmer
- Most of the borrowers are uneducated, having little knowledge of formal credit market and the procedures.
- The impediments include: collateral requirements; paper work; payback timing; and delays to fulfill standard operating procedures.

Guide Questions

- What is the business model in this case? Please enumerate some typical challenges faced by the producers in this business model?
- Can you suggest some policy level reforms which would make this model more successful?
- Which financial products/instruments you would suggest to cater all the actors in the sugarcane value chain?

Training Exercises

Exercise 1. 'Factoring' as a tool for Agricultural Value Chain Finance

Background

Star-Agro is a small Indian food product unit collects the chicken grown by the group of growers as per the set standards of Star-Agro under their technical advices. The company also supplies the required inputs including the Day Old chicks (DOC) etc. They have their own processing facilities where they process the chicken as per the standards/requirement of the supermarkets like Big Bazar, Spencer's etc. and specialized retail chains like McDonald's and KFC etc.

In one transaction, the Star-Agro sells US$ 15,000 of processed chicken to McDonald's as per their supply order. McDonald's pays Star-Agro 90 days after receipt of the processed chicken while Star-Agro has to make payment to the suppliers of chicken within 15 days after delivery. Star-Agro is family owned with annual sales of just over US$ 75,000. Star-Agro does not have cash in hand to fund the entire payment due to its suppliers and the local commercial banks are not interested in providing a line-of-credit or revolving loan for this purpose. Then the Star-Agro (the Seller) factors their receivable with CFCS Ltd. as they do not want to lose this business from McDonald's (the Debtor) who is an important client for them. CFCS Ltd. (the Factor) advances US$ 12,000 to Star-Agro for the receivable that is due in 90 days.

Flow Chart of the problem

- *Sale of Goods/Services* – Star-Agro sells processed chickens valued at US$ 15,000 in to McDonald's.
- *Receipt of Bill of Lading* – McDonald's verifies receipt of US$ 15,000 of Star-Agro processed chickens.
- *Sale of Receivables at Discount* – Star-Agro factors $ 15,000 in receivables to CFCS Ltd.
- *Notification of Factoring* – CFCS Ltd. notifies McDonald's that US$ 15,000 has been factored with them and also the terms and conditions.
- *Advance Payments* – CFCS Ltd. pays US$ 11,700 (after deducting commission upfront@2% on the receivables) to Star-Agro (on the day of acceptance by McDonald's) for the 90-day receivable and Star-Agro issues a US$ 15,000 promissory note to CFCS Ltd.
- *Billing* – CFCS Ltd. invoices McDonald's for US$ 15,000 to be paid in 90 days.
- *Payment* – McDonald's pays US$ 15,000 to CFCS Ltd. 90 days later (on the due date).
- *Settlement* – CFCS Ltd. acknowledges receipt of $ 15,000 from McDonald's and intimated the Star-Agro and returned US$ 2,250 (after deducting interest for 90 days) to Star-Agro and also returns promissory note of US$ 15,000.

Assumptions

1. Cost of funds to CFCS Ltd. is 10 percent
2. McDonald's has paid US$ 15,000 to CFCS Ltd. on the 90th day

Guide Questions

From the above transaction,

- Calculate the amount of commission and interest earned by the CFCS Ltd. (Factor).
- Calculate the effective cost of funds to Star-Agro keeping in view the fact that commission is collected in advance and the interest collected in arrears.
- List out various factors of these transactions impacting both CFCS Ltd. and the Star-Agro.
- What are the keys for doing a business well?

Exercise 2. Value Chain Financing Requirement

Calculate the finance requirement of Wang Nam Yen Dairy Cooperative to meet the gap between suppliers' terms and payment terms to farmers:

- Assume one price of milk: 16 Baht/kg
- Total milk sales 252 tonnes/day
- 80 tonnes sold to Foremost and Danone
- 172 tonnes processed sold to others
- Payment terms:
  - SC to Danone and Foremost: 15 days
  - SC to others: an average of 30 days
  - Farmers are paid after 15 days

Guide Question

How much will the financing requirement be reduced if the suppliers' credit to the "other buyers" can be shortened from 30 days to 20 days?

Training Schedule

Training on Agricultural Value Chain Finance
For Bankers, Financial Officers and Agricultural Development Specialists
(Date to be determined)
(Venue to be identified and scheduled)

SUGGESTED SCHEDULE OF ACTIVITIES

Date and Time	Activity	In-Charge
Day 0	Arrival of Participants	Accommodation Reception
Day 1 **(Monday)** 08:00 – 08:30 am 08:31 – 10:00 am	**OPENING PROGRAM** Registration Welcome Remarks Introduction of Participants Opening Message Rationale of the Activity Presentation of Activity Schedule Leveling of Expectation Photo Session	To be handled by the Training Management Team To be handled by the Training Program Coordinator and Facilitator
10:01 – 10:15 am	**TEA BREAK**	
10:16 am – 12:00 nn	**MODULE 1 Agricultural Value Chain Concepts, Context and Approaches** • Introduction, background and rationale of Agriculture Value Chain Finance • Defining Value Chain Finance (VCF) • Context of Agricultural Value Chain Finance (AVCF) • Opportunities of financing agricultural value chains • AVCF-Approaches • AVCF-Smallholders' perspective	To be handled by the invited Technical Experts and Resource Speakers
12:01 nn – 01:30 pm	**LUNCH BREAK**	
01:31 – 03:15 pm	**MODULE 2 Role of Agricultural Value Chain Finance** • Flow of products and finance along Agricultural Value Chain • Demand side of Agricultural Value Chain Finance • Supply side of AVCF • Innovations in AVCF	To be handled by the invited Technical Experts and Resource Speakers
03:16 – 03:45 pm	**Institutional Presentation 1, 2 and 3 (Pre-Selected)** • Participant 1 • Participant 2 • Participant 3	The participants are given 8 to 10 minutes each to present their institutional program on AVCF

Date and Time	Activity	In-Charge
03:46 – 04:30 pm *WORKING BREAK is encouraged at this point*	**MODULE 3 Implementation of AVCF: Evaluation Tools and Techniques** • Complementary role of financial and non-financial intermediaries • Assessment of Agricultural Value Chain for Financing (AVCF) • Enabling environment for AVCF	To be handled by the invited Technical Experts and Resource Speakers
04:31 – 04:45 pm	**Institutional Presentation 4 and 5 (Pre-Selected)** • Participant 4 • Participant 5	The participants are given 8 to 10 minutes each to present their institutional program on AVCF
04:31 – 05:30 pm	**MODULE 4 Financial Instruments on AVCF** • Methodology of developing financial products for Agricultural Value Chain Finance • Financial products and instruments applicable for Agricultural Value Chain • Product Financing • Receivables Financing • Physical Assets Collateralization • Risk Mitigation Products • Structured finance and other enhancements	To be handled by the invited Technical Experts and Resource Speakers
05:31 – 06:00 pm	**Institutional Presentation 5 and 6 (Pre-Selected)** • Participant 5 • Participant 6	To be handled by the invited Technical Experts and Resource Speakers
06:30 pm – onwards	**WELCOME DINNER FOR THE PARTICIPANTS**	
Day 2 (Tuesday) 08:00 – 09:30 am	Wrap up of Day 1 Activities Slide-Presentation of Experiences and Cases of Agricultural Value Chain Finance of Selected Countries • Roles and responsibilities of rural financial institutions in AVCF • Programs and System Operation of AVCF including products and services	Discussions to be facilitated by the Training Program Coordinator and Facilitator to identify key features of AVCF which will be used in the group activity
09:31 – 10:00 am	**Institutional Presentation 7, 8 and 9 (Selected)** • Participant 7 • Participant 8 • Participant 9	The participants are given 8 to 10 minutes each to present their institutional program on AVCF
10:01 – 10:15 am	**TEA BREAK**	
10:16 – 11:30 am	**MODULE 5 AVCF Strategy and Business Models** • Effective value chain development: Role of Business models • VC business models and its drivers • Producer-driven VC Models	To be handled by the invited Technical Experts and Resource Speakers

Date and Time	Activity	In-Charge
	• Buyer-driven VC Models • Facilitator-driven VC Models • Integrated VC Models	
11:31 am – 12:00 nn	**Group Activity 1** Identification of Effective Features of AVCF Implementation • Issues, Problems, Constraints, Opportunities and Challenges • Product and Service Development	To be facilitated by the Training Program Coordinator and the technical Experts
12:01 nn – 01:30 pm	**LUNCH BREAK**	
01:31 – 02:00 pm	**MODULE 6 Risk Mitigation through Value Chain Approach** • Risks in Agriculture Value Chain (AVC) • Risks mitigation through insurance products • Forward Contracting • Futures Trading • Risk Mitigation through Commodity Management • Understanding yourself in rural financing and agricultural development particularly on risk management	To be handled by the invited Technical Experts and Resource Speakers
02:01 – 03:00 pm	**Group 2 Activity** • Identification of Roles and Responsibilities of AVCF officers • Identification of risks and possible solutions in AVCF	To be facilitated by the Training Program Coordinator and the technical Experts
03:01 – 03:15 pm	**TEA BREAK**	
03:16 – 03:45 pm	**PRESENTATION OF GROUP OUTPUTS**	To be facilitated by the Training Program Coordinator and the technical Experts
03:46 – 06:00 pm	**Group 3 Activity** Role Playing on the Planning, Programming and Implementation of AVCF INTEGRATION OF LESSONS LEARNED	To be facilitated by the Training Program Coordinator and the technical Experts
Day 3 (Wednesday) 08:00 – 05:00 pm	Field visit to the some successful AVCF projects and communities • Crop-based • Animal-based (Livestock or Poultry) • Fishery-based • Post production • Marketing and agricultural input supplier • Banks and Financial Institutions	To be coordinated by the Training Management Team before the actual training program

Date and Time	Activity	In-Charge
Day 4 **(Thursday)** 08:00 am – 05:00 pm *WORKING BREAKS are encouraged for AM and PM sessions*	Wrap up of Day 2 and 3 Activities Preparation of re-entry plan for each of the participants • Development of an Institutional Framework on AVCF focused on plans, program, M&E including development of products and services • Delineation of roles and responsibilities for enhanced institutional capacities and strengthened partnerships on AVCF	To be facilitated by the Training Program Coordinator and the technical Experts The preparation of re-entry plans will be prepared by
Day 5 **(Friday)** 08:00 am – 12:00 nn *WORKING BREAK is encouraged at this point*	**PRESENTATION OF OUTPUTS** Each of the participants will be given at least 10 minutes to present their outputs. Comments and suggestions are encouraged from the technical experts, resource speakers and other participants The outputs should be submitted for documentation purposes and as part of the training deliverables and materials	To be facilitated by the Training Program Coordinator and the technical Experts
01:30 – 05:30 pm	INTEGRATION, EVALUATION AND CLOSING PROGRAM Sharing of Insights and Lessons Learned Training Program Evaluation CLOSING PROGRAM • Synthesis • Participants Impressions • Distribution of Certificates and Tokens • Closing Message • Vote of Thanks	To be facilitated by the Training Program Coordinator and the management team
Day 6 **(Saturday)**	Departure of Participants HOMEWARD BOUND	

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