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CONFERENCE PROCEEDINGS

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ASIAN PRODUCTIVITY ORGANIZATION

TABLE OF CONTENTS

SUMMARY	7
INTRODUCTION	14
1 VALUE CHAIN FINANCING IN AGRICULTURE	17
I. INTRODUCTION	18
II. WHAT IS A VALUE CHAIN?	19
III. WHY ARE VALUE CHAINS RELEVANT FOR AGRICULTURAL FINANCE?	20
IV. WHAT IS “FINANCING ALONG THE VALUE CHAIN”	20
V. OPPORTUNITIES AND CHALLENGES	22
VI. MOVING FORWARD WITH VALUE CHAIN FINANCE	22
A. <i>Value Chain Growth</i>	22
B. <i>Knowledge</i>	23
C. <i>Innovation</i>	23
VII. THE FUTURE OF VALUE CHAIN FINANCE	24
2 VALUE CHAIN FINANCING MODELS: BUILDING COLLATERAL AND IMPROVING CREDIT WORTHINESS	26
I. USING VALUE CHAIN FINANCE TO INCREASE EFFICIENCY AND CREDIT WORTHINESS	27
A. <i>Introduction</i>	27
B. <i>Understanding the challenges of risk and cost in agricultural finance</i>	28
II. MODELS AND APPROACHES FOR INCREASING ACCESS TO FINANCE USING THE VALUE CHAIN	29
A. <i>Value chain product linked financial products</i>	29
B. <i>Producer and production chain risk mitigation products</i>	31
C. <i>Other Financing Options and Factors</i>	34
D. <i>Technology and Innovation</i>	34
E. <i>Typology of Options and Approaches</i>	35
3 INCREASING COMPETITIVENESS THROUGH VALUE CHAIN FINANCING CASE EXAMPLES OF VCF SUPPORT IN LATIN AMERICA	38
I. THE IDB GROUP AND ITS ROLE IN THE LATIN AMERICAN REGION	39
II. IDB INSTRUMENTS TO PROMOTE AND SUPPORT VALUE CHAIN FORMATION AND VALUE CHAIN FINANCE	39
III. LESSONS LEARNED AND EXPERIENCES FROM TWO CASES OF SUPPORT TO THE AGRICULTURAL VALUE CHAIN	40
A. <i>Working with Lead Firms in Paraguay</i>	40
B. <i>Rural Microfinance and Value Chain Finance in Honduras</i>	43
4 PHILIPPINE GOVERNMENT FINANCIAL INSTITUTION PROGRAMS	47
A. THE ROLE OF FINANCIAL INSTITUTIONS IN VALUE CHAIN	48
I. <i>A Schematic View of Financing in the Value Chain</i>	48
II. <i>Sources and Types of Finance in the Value Chain</i>	50
III. <i>The Philippine Rural Finance Setting</i>	50
B. AGRICULTURAL VALUE CHAIN FINANCING IN THE PHILIPPINES	53
I. <i>Overview of Agricultural Financing in the Philippines</i>	53
II. <i>Value Chain Financing by QUEDANCOR and the Development Bank of the Philippines</i>	57
5 EFFECTIVE WAY TO INTEGRATE SMALL FARMERS IN THE VALUE CHAIN EXPERIENCE OF BRAC	65

I.	INTRODUCTION	66
A.	<i>Poverty in Bangladesh</i>	66
B.	<i>Major Constraints of Agricultural Sector</i>	67
C.	<i>Agriculture Value Chain</i>	67
II.	ABOUT BRAC	68
A.	<i>BRAC programmes</i>	68
B.	<i>BRAC in Agriculture</i>	69
III.	INTEGRATION OF SMALL FARMERS IN THE VALUE CHAIN	70
IV.	IMPLEMENTATION STRATEGY	72
A.	<i>Selection and Group Formation</i>	72
B.	<i>Training & development</i>	72
C.	<i>Agricultural Input Supply</i>	73
D.	<i>BRAC Microfinance for value chain</i>	75
E.	<i>Key issues in agricultural activities</i>	81
F.	<i>Impact of BRAC Microfinance on agricultural activities</i>	81
G.	<i>Major Achievements of BRAC Micro-finance during the last five years</i>	82
H.	<i>Technical support</i>	82
I.	<i>Marketing</i>	82
V.	CONCLUSION	82
6	DRUMNET: AGRICULTURAL OUTGROWER FINANCING USING A TRANSACTION MANAGER AND INFORMATION AND COMMUNICATION TECHNOLOGY INNOVATION	84
I.	CASE OVERVIEW	85
II.	DRUMNET AND FAO – EXPANDING THE MODEL TO FARMER FIELD SCHOOLS	87
III.	DRUMNET MODEL FINANCING	88
7	LINKING SMALL SCALE RURAL PRODUCERS TO HIGH VALUE MARKETS: THE ROLE OF TECHNICAL ASSISTANCE AND CREDIT	89
I.	INTRODUCTION	90
II.	THE MODEL	91
A.	<i>Farmer linkage to high value markets (eg supermarkets)</i>	91
A.	<i>Benefits of small farmers in clusters</i>	96
B.	<i>Sustainability of Benefits for Small Scale Farmers</i>	97
8	SOUTHEAST ASIAN COUNTRY CASES ON AGRICULTURAL VALUE CHAIN FINANCE	105
A.	ESTABLISHMENT OF SMALL FARMERS INCOME GENERATION (P4K) THROUGH A SUSTAINABLE PARTICIPATORY SYSTEMS APPROACH :RIGP’S EXPERIENCE IN ALLEVIATING POVERTY	106
I.	BACKGROUND	106
II.	IMPLEMENTATION OF AGRICULTURAL VALUE CHAIN FINANCE ON RIGP PROJECT	107
III.	CONCLUSIONS	108
B.	THE CASE OF VALUE CHAIN FINANCING IN SHRIMP INDUSTRY IN THAILAND	110
I.	<i>Background</i>	110
II.	<i>The Shrimp Industry Value Chain</i>	111
C.	MAKING A DIFFERENCE: THE NORMIN VEGGIES EXPERIENCE	114
I.	<i>Introduction</i>	114
II.	<i>Supporting Functional Upgrading</i>	114
III.	<i>Conclusions</i>	116
D.	VALUE CHAIN FINANCING FOR AGRICULTURE SECTOR IN MYANMAR	118
I.	<i>Introduction</i>	118
II.	<i>Analyzing Agriculture Value Chain in Myanmar</i>	119
III.	<i>Sample Success stories</i>	120
IV.	<i>Challenges and Conclusions</i>	121
E.	AGRICULTURAL VALUE CHAIN FINANCING IN NEPAL (GENERAL PERSPECTIVE)	123
I.	<i>Background</i>	123

<i>II.</i>	<i>Challenges in Agriculture Value Chain</i>	123
<i>III.</i>	<i>Conclusion</i>	125
APPENDICES		126

Tables, Figures, Box/Diagrams

- 1 Value Chain Financing in Agriculture
 - Box 1 A Value Chain at Work
 - Box 2 Financial Flows within the Rice Chain
 - Box 2 LAFISE Group Integrated Service Model
 - Box 5 BASIX Livelihood Services Model
- 2 Value Chain Financing Models: Building Collateral and Improving Credit Worthiness
 - Figure 1 Understanding the Uses and Sources
 - Figure 2 Understanding the Flows and Funds in the Chain
- 4 Philippine Government Financial Institution Programs
 - A. The Role of Financial Institutions in Value Chain
 - Figure 1 Schematic diagram of value chain
 - B. Agricultural Value Chain Financing in the Philippines
 - Figure 1 Agricultural Production Loans Granted vis-à-vis Total Loans Granted to Agriculture, Fishery & Forestry Sector, 2000-2006
 - Figure 2 Agricultural Production Loans Granted by Commodity % Share, 2006
 - Figure 3 Process Flow of the QUEDANCOR Financing Program
 - Figure 4 NFC's Supply Chain
 - Table 1 Agricultural Loans Granted
 - Table 2 Brief Description of QUEDANCOR (Other) Programs
 - Table 3 Sustainable Logistics Development Program Matrix
- 5 Effective Way to Integrate Small Farmers in the Value Chain *Experience of BRAC*
 - Table 1 Input demand and supply
 - Table 2 Present demand and production (at output level)
 - Table 3 The Context: Growing Demand for **High Value Agriculture** (HVA) Products
 - Table 4 Extension Worker developed by the programme
 - Table 5 Participants of the programme
 - Table 6 volume of input supply by different programmes
 - Table 7 Describing the loan products of BRAC

- 6 DrumNet: Agricultural Outgrower Financing Using a Transaction Manager and Information and Communication Technology Innovation
- Figure 1 Drumnet Sunflower Model
- 7 Linking Small Scale Rural Producers to High Value Markets: the role of technical assistance and credit
- Figure 1 Regoverning Markets Program Framework: Inclusion and exclusion of small scale producers in dynamic markets
- Figure 2 The rapid rise of both supermarkets and wholesale markets in China
- Figure 3 Trend in farm size, by region
- Figure 4 Price, Margins and Costs, Brown vs. Organic Rice
- Table 1 Retail sector indicators
- Table 2 Role of Modern Grocery Distribution (MGD) indicators
- Table 3 Modern retail sales by type of outlet
- Table 4 Sales of Modern Retail, Average Growth rates, 1999-2007
- Table 5 Average farm size, hectares by region
- Table 6 Farmers surveyed by crop, October 2007
- Table 7 Percentage of profit to sales per cluster in USD
- Table 8 Percentage of profit to sales per cluster net of assistance cost
- Table 9 Percentage of Profit to sales per cluster
- Table 10 Percentage of profit to sales per cluster
- Table 11 Percentage of profit to sales per market by cluster
- 8 B. The Case of Value Chain Financing in Shrimp Industry in Thailand
- Table 2 NVCC storage fees
- Table 3 Normincorp Income Statement in Pesos (1 US \$: 53 pesos) (From NVCC Marketing Operations), May to July 2006

SUMMARY

Summary

This summary attempts to capture the key messages transpired in the Southeast Asia Regional Conference on Value Chain Financing held in Kuala Lumpur, Malaysia in December 12-14, 2007. These key messages are organized into issues, challenges and opportunities as well as lessons learned from cases in value chain financing. Finally, conclusions and recommendations from these messages are presented.

Issues, Challenges and Opportunities

Financing strategies need to change to respond to the changing agrifood systems. Product markets have restructured driven by changing consumer demand due to increasing income, changing lifestyles and government policies. As a result, value chains have become more coordinated, integrated, concentrated, interdependent, complex and global. Standards have changed and have become more stringent in terms of quality and food safety. More recently, there is more emphasis on marketing than production, product differentiation and niche marketing.

Due to the restructuring of agricultural value chains, all actors in the chains must adjust to be able to respond to the changing rules of the game. This includes not only input suppliers like financial institutions but also producers, marketers, government and development agents. Adjustments however, may be difficult for small scale enterprises who have limited resources and access to assets like finance. They face the possibility of being excluded in the chain if they are unable to adjust to challenges or tap opportunities brought about by these changes in the chain.

Financing value chains in the agribusiness sector amidst restructuring in the system becomes more challenging as agricultural sector is inherently risky relative to other sectors. This is particularly true in the context of improving access to finance by small scale producers. This is compounded by the fact that transaction costs in the rural areas are also very high. Farms particularly in Asia are getting smaller and fragmented with an average farm size of 1.6 hectares compared to 121 and 67 hectares in North America and Latin America respectively.

Underlying these changes in the agricultural value chains is the goal of all actors to maximize benefits, minimize costs and risks. In the development point of view, promoting equitable distribution of benefits can be added as another dimension of chain performance. That is, to promote the concept of competitiveness and market efficiency in the chain.

The usefulness of the value chain approach in understanding how to achieve these goals has led some actors in the chain to embrace the concept particularly the business sector. For example, a business group like LAFISE in Central America applied a value chain approach in providing banking and non-banking services to various nodes in the chain that include technical assistance, quality certification, crop collection, processing, storage, identification of markets and buyers and product placement.

Producers and marketers in the chain have the incentive to be part of the chain to attract financing. Financial institutions face lower risks if clients are part of the chain. In fact in a survey done in Latin America, about half of the financial institutions required clients to have formal sales contract and more than a third requested their clients to be part of the chain.

For producers particularly the small ones, organized value chains can improve access to credit because there will be more funds available from suppliers and buyers who are directly part of the chain. This will also improve creditworthiness of chain actors since participation enhances security of loan repayment, lower transaction costs and reduce risks.

There are various financial products and services that have been developed to finance value chains. These include value chain product linked financial products, producer and production chain risk mitigation products and other financing options such as structured finance. Many of these are relevant to helping small scale enterprises in chain but their applicability varies across regions, countries and industries.

Lessons Learned from Cases on Value Chain Financing

A number of lessons learned and strategies in value chain financing particularly those that involve small scale enterprise linkages can be gleaned from 17 cases highlighted in the papers presented.

1) Work with lead firms where impact on poverty alleviation is significant

Lead firms are those that have established a niche in the chain and play a strategic role in terms of linking other actors in the chain such as small scale producers.

MEDA Paraguay, a business development association for assisting the poor used private social investment capital to develop a starch factory in order to address poverty of manioc (starch) producing farmers. The starch company acts as a lead firm in the industry. A market for the manioc was guaranteed and technical assistance was given to groups of small farmers particularly in improving quality and yields and with a good price for their manioc, they invested in improved seed varieties. This technical assistance also helped to ensure high repayment rate. Based upon the success of the starch plant and the overall competitiveness and profits generated, a second factory was set up in an adjacent region. Inter-American Development Bank (IDB) provided long term financing to help make it possible to put up a second factory for starch production. The first starch factory was buying manioc from 1,000 farmers before the start of the second one. In both cases, the farmers are encouraged and often do invest in the companies.

Another evidence that supports the approach of working with lead firms in the chain is the case of Loofah in Paraguay. A non-profit organization working with indigenous communities ventured in product development, diversification and differentiation of loofah into sophisticated kitchen scrubs and specialty pet products and toys. IDB under its Social Enterprise Program (SEP) provided funding to expand manufacturing facilities of the company which in turn provided financing and technical assistance to farmers. The funding also eased out cash flow pressures due to lag of payment from buyers to about 3 months after delivery.

This lead firm approach also proved effective in the case of Hierbapar, a company in Paraguay that successfully competed with foreign brands in the marketing of high quality and reasonably priced herbal teas and condiments in major supermarket chains in the country. The company established purchasing centers in various areas and worked closely with

farmers in growing varieties needed by the market and provided financing for the seed and harvest. IDB provided medium term financing under SEP to expand its operations.

2) Focus on sustainable, primarily commercial markets

Participation of the private sector from the buying end of the chain is important to be able to sustain growth and attract resources including financing in the chain. Private sector buyers are important but the market may not necessarily be corporate and profit oriented organizations and can include non-government organizations like the Population and Community Development Association, the largest non-government organization in Thailand. They provided and facilitated the delivery of an integrated package of finance and technical assistance in the development of red jasmine organic rice which was sold in their chain of restaurants.

Beans and pulses exporters in Myanmar provided finance to farmers in order to expand production and productivity. Export and domestic demand for these products has increased rapidly and exporters seized the opportunity by providing credit to producers to increase supply. Export of these products was centrally controlled by the government before 1989. With the implementation of the market-oriented policy, private sector expanded production and Myanmar is now the 2nd largest exporter of beans and pulses in the world.

There are also instances where the private sector involvement may not necessarily come from the buyer end to support value chain financing but through a corporate social responsibility (CSR) program which can be participated in by any profit-oriented corporations. An example is the case of vegetables in Northeast Thailand. Financing is done through the support of the private sector that covers irrigation, supply of seed organic fertilizer and marketing of produce. The CSR program included companies such as Exxon, Philip Morris, Isuzu, Bridgestone, Schering, Bristol Myers, Siam Commercial Bank and East Water. This, however, was supported with an integrated package of assistance given to members of vegetable banks that are usually established on public land along railway tracks. This includes irrigation, training in techniques particularly in organic farming, formation and operation of cooperative.

3) For poverty reduction, support markets or value chains

This is an approach taken by the Inter-American Development Bank (IDB) as well as BRAC, the largest non-government organization in the world. IDB financing schemes address the evolving and increasingly complex value chains and the needs of small farmers and microenterprises. This is to ensure that opportunities created through financial and non-financial assistance provided by IDB are accessed by small scale enterprises. The support provided in various chains as in the cases of loofah, herbal teas and condiments and manioc has shown to enhance participation of small scale producers in these markets. BRAC's key strategy, on the other hand, in integrating small scale enterprises in the value chain is through microfinance services coupled with comprehensive package of services that include training and development based on different needs of small scale enterprises.

Development support for the chain does not necessarily be given directly to small scale farmers or enterprises. Chain intermediaries or actors such as lead firms, buyers or non-government organizations that are in a strategic position to improve linkage with small scale producers and enterprises can be tapped as well. This is exemplified in the case of branded organic rice in the Philippines. The intermediary, a non-profit organization called Upland

Marketing Foundation Inc. (UMFI) that established a strong foothold in the largest domestic supermarket in the Philippines helped link small scale organic rice farmers in these modern retail outlets. Through the credit provided by Oikocredit and technical assistance support from Interchurch Organization for Development Cooperation (ICCO), UMFI was able to finance inventory and working capital. Supermarkets pay about 30 to 120 days after delivery while UMFI pays farmers within the maximum limit of 45 days after delivery.

4) Use technical assistance to address market requirements and improve repayment rate

Technical assistance is an essential element in value chain financing which can be effective and sustainable as long as they are based on market requirements. In many instances involving participation of small scale producers, technical assistance is essential to help them meet market requirements. As such, it improves repayment. The example of Norminveggies shows that an integrated package of technical assistance provided to develop clusters of small scale producers proved effective in meeting market requirements in terms of quality, volume, variety and frequency of delivery.

The free trade agreement between Honduras and the United States created agribusiness opportunities for production of “nostalgia” food products for immigrants in the US. For small scale producers to tap these opportunities, various issues had to be addressed such as quality, proper labeling and sanitary standards. In addition, IDB also created a network of laboratories and testing facilities for these enterprises to measure and identify their quality and sanitary gaps to be able to prepare a plan of action to address these gaps. This program was done in partnership with Escuela Zamorano, the leading school for agriculture and agribusiness development.

5) Reduce transaction costs and improve efficiency of chain through the use of information and communication technology

The role of information and technology is important in reducing transaction costs in the chain including the costs of delivering services to various actors in the chain. This is illustrated in the case of DrumNet, a third party supply chain management company in Eastern Africa that employs a commercial information and communication technology based information exchange platform to promote efficient delivery of financial and non-financial services in linking the market, small scale enterprises and the formal sector. It provides secure structured finance, documents credit histories, creates self-financed credit insurance and formalizes commercial relationships and enforces exchange rules and standards required. It also allows actors in the chain to transact and focus on their main functions by taking over functions such as search for markets and inputs, price negotiation, securing trade credits from stockists and assuring production process is consistent with standards such as EUREPGAP. Farmer clients organized themselves into groups which co-guarantee credit and which pre-pay for credit insurance so that DrumNet can co-guarantee repayment of credits to financial institutions. DrumNet acts as an intermediary between producers and buyers and links them through an integrated marketing and payment system. It negotiates contractual arrangements between buyers and sellers and coordinates consolidation, grading and transportation at harvest time through agreements with field agents and transporters. Its key focus on financial service is the pooling of farmers’ savings in Transaction Insurance Fund (TIF) with emphasis in linking savings performance with access to credit facilities. To sustain its operations, it generates revenues by deducting 10% on gross proceeds on every marketing transaction as well as from fees for managing credit program by DrumNet from participating banks.

6) Identify market opportunities where small scale producers have competitive edge

Identification of market opportunities where small scale producers have competitive advantage and developing an integrated package of assistance including credit towards strengthening this advantage is important. Often this requires product differentiation or niche marketing and therefore technical assistance and finance are vital development components. This is illustrated by the cases of Manioc and Loofah products in Paraguay, branded organic rice in the Philippines and branded herbal teas and condiments in Honduras. In all these four cases, working with lead firms in the chain shows to be a key success element. However, these lead firms are also firms which have the mandate or desire to help small scale producers. Except for herbal teas and condiments, these firms are non-profit organizations.

7) Differentiate products to establish niche in the markets

Knowledge and information about value chains are key ingredients not only in improving delivery of financial services but also in enhancing participation of small scale producers. This is demonstrated by the DrumNet case as well as on cases involving niche markets and product differentiation which are based on knowledge of markets that have not been met by suppliers. Development interventions that aim to improve participation of small scale enterprises should be geared toward lead firms who have the knowledge but involve greater participation of small scale enterprises. As shown by the cases, this is not exclusive to non-government or non-profit organizations but also to profit organizations that see the benefit of involving small scale enterprises.

A case that shows how technical assistance can be used to promote product differentiation that can support involvement of small scale producers is the case of red jasmine rice. This product has a high nutritional value as it contains 20% higher dietary fiber, higher iron content and the red seedcoat contains some carotene and anthocyanin that are good for health. It is not only healthy it also grows in adverse conditions in Northeast of Thailand and was promoted by PDA, the largest NGO in Thailand in one of their development centers using organic methods. Considering these quality attributes it able to tap the high value market outlets which happened to be the chain of restaurants of PDA with higher price for farmers but at cost for PDA. Product differentiation allows a higher price for the quality premium and working with an NGO, the premium for farmers is maximized as PDA is non profit organization.

8) Develop small scale groups to improve access to credit

The development of producer groups to manage financing for value chain is important but this requires development of systems and capacity building. In some instances, they may need an external facilitator to monitor and assist in ensuring the credit delivery system is performing well. The Rural Income Generation Project ventured into value chain financing through self-help group development and implementation of microfinance services and capacity building. A field extension worker is assigned to the self-help group to improve its entrepreneurial skills. Another example is the crab value chain financed through village development banks (VDB). These VDBs follow a standard system and procedure with regards to accounting, loan, savings and standard documents. Members of VDBs are trained to implement the system. Beneficiaries in these two examples have increased their income

through improved value adding and management of producer groups involved in mobilizing finance for chain actors.

9) Effective chain-wide coordination requires a well-defined direction and functions

A well-coordinated chain with a specific purpose can maximize the use of finance to improve productivity and income. This is demonstrated in the case of Tan Chin Shrimp Cooperatives in Samutsongkhram and Samutsakorn provinces in Thailand that aimed to revive the shrimp enterprise by addressing market issues on food safety and environmental degradation. Functions of the targeted actors in the chain are well-defined contributing to overall goal of the program. The Bank of Agriculture and Agricultural Cooperative provided finance which is managed by a project committee composed of representatives from various chain actors involved in the project who were appointed by the governor of Samutsakorn province. Shrimps produced fetched good price in both domestic and international markets as they meet the market requirements for safe and environmental friendly shrimp products.

Conclusions

Integrated and strategic approach is necessary in value chain financing particularly in dealing with small scale enterprises. Financing alone may not be enough. In many cases, underlying issues are multi-dimensional and therefore solutions or strategies are also multi-dimensional or integrated. These include technical assistance to meet market requirements, private sector involvement, product differentiation, development of small scale producer groups, use of information and communications technology and effective coordination in the chain are essential in ensuring success. Moreover, these strategies are constrained if the enabling environment that includes policies and institutions is not conducive to the development of agricultural value chains.

In addition, it should not be always the case that financing programs that target small scale producers as beneficiaries should give finance directly to these producers. Other actors that are in the strategic position to enhance linkage with small scale enterprises may be directly tapped to ensure sustained benefits to target beneficiaries. Lead firms for example are in a better position to manage risk in providing financial assistance to their suppliers than traditional financial service providers such as banks as they have a better understanding of the requirements of the chain they operate in.

Value chain financing is not yet well developed in some countries in Southeast Asia. It has been observed in Myanmar for example that value chain financing is mainly provided by the government financial institutions. In Nepal, value chain financing is a relatively new concept. Policies, institutions and services need to be in place to promote value chain development.

Best practice cases on value chain financing in Southeast Asia should be documented and lessons learned should be used to develop action research programs that will eventually develop replicable models.

INTRODUCTION

Introduction

Agricultural value chains have increasingly become complex over time. Market requirements rapidly change driven by increasing demand, changing lifestyles and government policies. In response to these changing market requirements, value chains have become more coordinated leading to more integration and concentration to achieve efficiency and minimize risks. Product and market standards change which in turn, require changes from various actors in the chain that supply these products including their inputs to meet market requirements.

A critical input in the business of creating value in these changing agricultural chains is finance. Financial products need to also respond to the changing market requirements in the output markets. Mechanisms in terms of improving effectiveness of financial products, access and repayment need to be examined. It is in this context that the South East Asia Regional Conference in Agricultural Value Chain Financing was held last December 12-14, 2007 in Kuala Lumpur Malaysia. This brought participants from various countries particularly those in Southeast Asia.

This document presents the papers presented in the conference. It begins with a paper in Chapter 1 on “Value Chain Financing in Agriculture” by Calvin Miller and Carlos da Silva which provides an overview of the value chain financing concepts and applications. It elaborates on the issues on commercialization of agriculture, agribusiness finance and the benefits and costs in value chain financing. An important point highlighted in the paper is the role of policies, institutions and services that make up the enabling environment that is essential in improving access to financial services particularly in the agricultural sector in developing countries.

Value chain concepts are important in understanding the business competitiveness, risks and improving transaction efficiencies. Thus, a value chain approach is useful in developing strategies to improve access of financial services by farmers and other actors in the chain. This is the key point stressed in Chapter 2 in a paper by Calvin Miller on “Value Chain Financing Models-Building Collateral and Improving Creditworthiness.” Various approaches in financing value chains are discussed including issues, recent developments and best practice models in securing additional financial resources in funding agribusiness ventures.

The role of financial institutions is critical not only in providing access to finance to develop supply chains but also in ensuring that disadvantaged actors in the supply chains like small farmers are not left out. In Chapter 3, the paper by Alejandro Escobar on “Increasing Competitiveness Through Value Chain Financing” discussed the role of the Inter-American Development Bank (IDB) in the Latin American and Caribbean region in promoting and supporting value chain development and finance. Key programs of IDB on this regard are highlighted including lessons learned from financing agricultural value chains that promote poverty alleviation and reach underserved markets.

Two examples are discussed in Chapter 4 to show the role of institutions. Programs implemented particularly by government financial institutions in the Philippines towards developing value chains in the agribusiness sector are discussed. A paper by Minda Mangabat provides an overview of the role of financial institutions in value chains with some examples in the Philippines. These examples are elaborated in the paper by Lazaro. The other example demonstrates the role of non-government (BRAC) in Bangladesh particularly

in financing small scale farmers through market linkages in high value commodities. This is discussed in a paper by Md. K. Saleque in Chapter 5.

The role of information and technology is critical in reducing transaction costs in the chain including the costs of delivering services to various actors in the chain. This is illustrated in the paper by Calvin Miller in Chapter 6 on “DrumNet: Agricultural Outgrower Financing Using Transaction Manager and Information and Communication Technology Innovation.”

The role of technical assistance and finance in linking small scale farmers in high value chains is examined in a paper by Digal in Chapter 7. Restructuring in agrifood markets and their implications particularly for small scale farmers are discussed. Examples highlighted show that technical assistance enhanced participation of small scale producers in high value chains. Also, finance need not be directly provided to small scale farmers to enhance their participation but to intermediaries that link small scale farmers in the chain.

Cases on agricultural value chain finance in different countries in Southeast Asia are presented in Chapter 8. These include the case of the Population and Community Development Association in implementing three projects on value chain financing in crab, red jasmine rice and vegetables. The case of the Rural Income Generation Project in Indonesia provides an example of financing small scale agribusiness ventures through the development of self-help groups, provision of micro finance services and institutional development and capacity building. Participatory and empowerment are key elements in this case in alleviating poverty in the rural area. An example of the importance of finance in a changing agrifood market is the case of the Thailand shrimp industry where various actors in the chain worked together to produce shrimps that meet international standards on food safety and promote sustainable development. An example that shows how financial assistance from donors and government agencies can help a group of vegetable farmers venture into functional upgrading in the chain is the case of Norminveggies. Finally, two country level examples are presented. Finally, two country cases are presented to show the level of development of value chain financing in Myanmar and Nepal and the need to develop value chain financing programs to accelerate agribusiness and rural development.

1 Value Chain Financing in Agriculture

Calvin Miller and Carlos da Silva
Food and Agriculture Organization, Rome

This paper provides an overview of value chain financing concepts and applications. It highlights issues and directions in the commercialization of agriculture, value chain development, agricultural and agribusiness finance and discusses the potential benefits and cautionary pitfalls associated with value chain financing. It is argued that value chain development supported by the appropriate policies, institutions and services that constitute an enabling business environment can be instrumental in leveraging access to financial services in agriculture in developing countries. In this regard, ideas for promoting value chain financing are proposed and questions on its future are offered for reflection.

I. Introduction

Agrifood systems worldwide are being transformed in unprecedented ways. Farm production and distribution are rapidly evolving from the simple relationships and points of interaction of the past to the highly integrated linkages and closer alignments among business partners we witness today. Value chains are being promoted as the business development frameworks of choice in the agrifood sector. There is much more attention being paid to inter and intra-organizational efficiency in production, processing and logistics. There is increased focus on marketing, product differentiation and product niche development. Furthermore, the competition is now global: prices are less affected by local conditions, seasonality and markets. All these developments make a solid financing structure even more important than it has always been. Market competitiveness and market risks are becoming the drivers of financing decisions in the new agrifood systems.

While the world agriculture, agribusiness and finance are evolving rapidly in many parts of the globe, in others the pace of change has been much slower. Entire countries and entire sectors, even in progressive economies, are losing competitiveness because of their inadaptability to the changing nature of agrifood systems. Without the development of efficient supply chains, there is little hope that agribusiness and agro-industrial market opportunities, domestically or internationally, can be competitively tapped. Developing countries that have most of their economies based on the agrifood sector are being particularly affected by this new competitive scenario. It is within this general context that value chain development and upgrading is receiving so much attention in the international development community.

Indeed, governments and donors have realized that a majority of rural households in the developing world effectively do not have access to finance, especially for agriculture and agribusiness related activities. At the same time, business leaders in both finance and agriculture have come to realize that with the new innovations in communication technology, information management and business models, there is a wealth of new opportunities for them to profitably work directly and indirectly together. Traditional adversarial relations can be replaced by a win-win situation where transaction costs and mutual risks are reduced.

With the increased attention to value chains in the agrifood sector, the opportunities for utilization of the chain framework to promote and facilitate access to financial services became rather apparent. Value chain financing thus grew out to be a subject of special interest among development planners, governments, international organizations, NGOs, donors, academics and financing practitioners internationally. Nonetheless, value chain finance is not entirely new. Especially in agriculture, much of what it offers is not any more

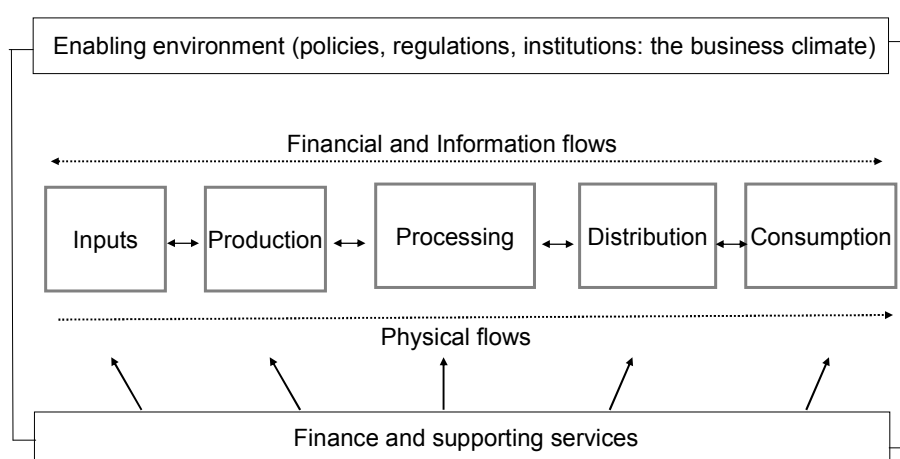
novel than most other forms of finance. What is new are the numerous new ways of providing such financing, as well as the convergence and inter-linking of agribusiness and finance. What is also new are the innovations in supply chain financing modalities: the experiences are recent and there is much to be learned and shared. Yet, not only the strengths and opportunities of value chains to improve efficiency and access to markets and finance should be stressed; there is also a need to realize the limitations thereof and to offer alternatives for dealing with those left behind.

This paper provides an overview of value chain financing concepts and applications. It highlights issues and directions in the commercialization of agriculture, value chain development, agricultural and agribusiness finance and discusses the potential benefits and cautionary pitfalls associated with value chain financing. It is argued that value chain development supported by the appropriate policies, institutions and services that constitute an enabling business environment can be instrumental in leveraging access to financial services in agriculture in developing countries. In this regard, ideas for promoting value chain financing are proposed and questions on its future are offered for reflection.

II. What is a value chain?

In order for a product to reach the consumer or user, there often are many processes or steps involved. Each step must have a direct *link* to the next in order for the processes to form a viable *chain*. At each stage, some additional transformation or enhancement is made to the product. 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 can be thought of as a “farm to fork” 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.

Box 1: A Value Chain at Work



Adapted from da Silva and Batalha, 2000

As shown in Box 1, products typically flow from stage to stage along a chain in one direction, while financial resources mostly flow in another. Funds can also flow into the chain at any stage. Chains operate within a complex environment of policies, regulations, institutions and support services. Achieving chain competitiveness is thus no simple task: it requires operational efficiency in each of its segments, coordination of transactions among chain actors and insertion within a supportive business environment.

III. Why are value chains relevant for agricultural finance?

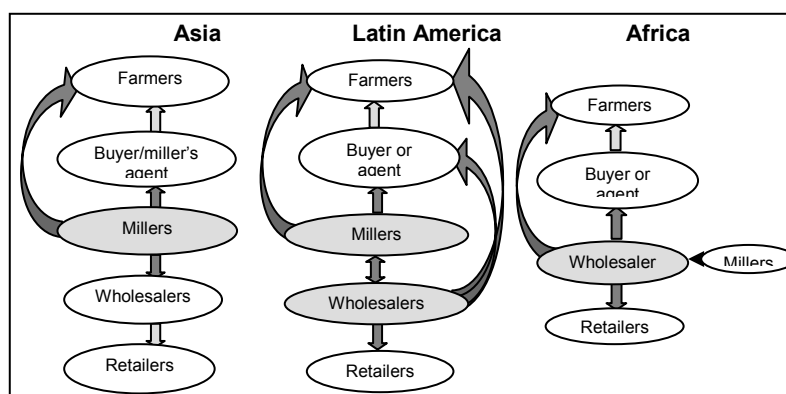
The inter-dependent linkages of a chain and the security of a market-driven demand for the chain's products provide producers, processors and other chain actors the access to the markets they all need. Being part of a chain reduces risk, thus making it easier for chain actors to obtain financing from banks and other lenders and do so at a lower cost. For example, in case studies in Africa, Asia and Latin America, FAO found that agro-enterprise firms are turning to business alliances and related contracts in order to manage risks, gain access to resources, improve logistical efficiency, reduce inventories and, in general, achieve increased control over competitiveness factors that are beyond their firm boundaries. The linkages also allow financing to flow along the chain. For example, inputs can be provided to farmers by a processor or exporter and be repaid directly from the sale of the product, without having to go through traditional loan processes.

IV. What is “financing along the value chain”

For centuries traders have provided finance to farmers for harvest, inputs or other needs such as emergencies. Many of the traders in turn receive finance from millers and processors who in turn may be financed by wholesalers or exporters who are farther “up” the chain from production to marketing. These remain important today but there are often differences between regions as shown in Box 2 for the rice chain. For example, the case studies found that millers played the central financing role for rice in Asia and wholesalers were central in financing within the rice chain in Africa.

Box 2. Financial Flows within the Rice Chain

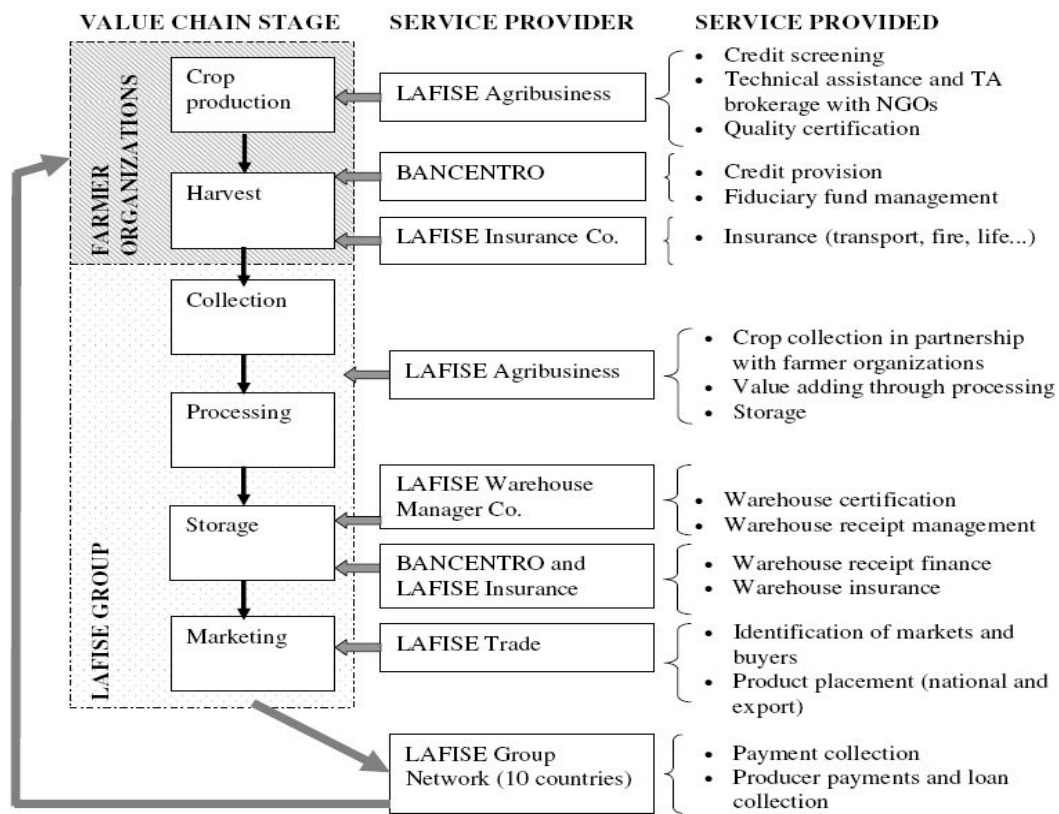
Even traditional forms of “farming on shares” is a form of value chain finance since the farmer shareholder receives inputs and other required financing from the business shareholder in a formal or informal contractual arrangement. Similarly, finance can flow up the chain such as from



input suppliers who provide seeds and inputs on credit or farmers who deliver products to a warehouse or processor and wait for payment, as is often the case in industries such as dairy, sugar cane, rice and cotton. Even many products in supermarkets are sold on consignment through supermarkets or with delayed payments, thus reducing their costs of inventory.

Finance and agribusiness today often go far beyond simple linkages and have often moved into integrated systems. Large agribusinesses may integrate credit and other financial services directly or indirectly at many or all of the steps in the value chain. Directly they can

Box 2. LAFISE Group Integrated Service Model



Source: LAFISE

provide funding upstream or downstream in the chain, at whatever level in the farm-to-fork continuum. Indirectly they do so in two manners. First, they can facilitate or intermediate funding from a third party to the client or company in the chain, such as when an export company helps arrange funding for the companies or producers it buys from or sells to. Alternatively, the mere fact of being within a value chain is often sufficient for the chain actor to obtain funding from financial organizations.

As found in Latin America, financial institutions can find security through the value chains of its partners. As part of their credit approaches, nearly half of the sampled regulated institutions required clients to have a formal sales contract (compared to only 11% of the non-regulated institutions in the sample) and 39% requested clients to be part of a value chain.

Value chain finance is built not only upon physical linkages but also through knowledge integration. A key to success in finance is to “know the business.” Those who know the business the best are those persons and companies directly involved in the value chain. Having and using that knowledge of the chain, they can understand the risks and work to mitigate them more easily than a traditional banker who works with all types of businesses and clients.

For this reason, some business groups have formed conglomerates which provide both formal banking and a range of agribusiness services to serve the value chain. As shown in Box 2, LAFISE in Central America provides an array of financial and non-financial services through both a business group structure and through strategic linkages with others. The logic is to increase efficiency, ensure tighter control and accountability within the supply chains, and consequently increase profits. While this creates greater competition for other financial service providers, it can also create opportunities for collaboration and partnership.

On a smaller scale, El Comercio in Paraguay found that by studying and using the agricultural value chains, such as with soybeans and sesame, it has been able to improve their

financial services to small farmers. By partnering with storage providers, the financial institution has benefited by reducing the cost of crop supervision, reducing the cost for loan recovery and credit supervision and by sharing risk with the storage providers. It also uses that knowledge of value chain finance to develop new products such as insurance, savings, and current account facilities to meet the needs of “unbanked” farmers.

On the producer side, can access to finance increase when chains are organized? The answer is affirmative and this can be due primarily to four reasons:

1. Increased funding coming from suppliers and agribusinesses directly involved in the chain,
2. Increased credit worthiness, since participation in the chain can enhance the security of loan repayment,
3. Reduced transaction costs for obtaining loans in cash or kind, and
4. Decreased risk as a borrower due to secured markets and reduced income variability.

V. Opportunities and Challenges

Value chain finance can provide many opportunities. Yet, in order for the financial industry to be able to take full advantage of its opportunities there are many challenges to address, especially in serving smallholders in less developed parts of the world. As shown in the following table, most of the challenges are due to a lack of capacity, both human and physical. For example, for small producers to be able to integrate into value chains, they require organization to have the economies of scale required. They require technical and management training and they must have roads and communications systems that are adequate to compete in the marketplace. Similarly banks and MFIs need increased understanding on market assessment and need to gain experience in working with the various traders and agribusinesses in the value chains in order to structure their products and services to their precise needs in a way that can maximize the benefits of value chain finance.

VI. Moving Forward with Value Chain Finance

As earlier indicated, FAO and a number of partners have organized two regional conferences on Value Chain Financing, in Latin America and Asia. In these events, finance, agribusiness and international business development leaders concluded that the key issues and recommendations were:

A. Value Chain Growth

1. The integration and intensification of agricultural value chains is expected to continue. Rapid growth is envisaged and can offer opportunities for chains to achieve competitiveness through lower costs and risks.
2. Public investments in rural areas are needed in developing countries and should be used for creating and sustaining growth in agriculture and rural development. With growth and competitiveness, private financial and agribusiness services will develop.

Opportunities	Challenges
• Value chain financing (VCF) linkages	• Required bundle of services for

offer increased financial access: <ul style="list-style-type: none"> ○ Lower transaction costs to banks and producers ○ Reduces financial risks to lenders ○ Tailored to fit specific chain needs 	investment in value chains is lacking: <ul style="list-style-type: none"> ○ Small, unorganized productive capacity of many producers ○ Missing physical and financial infrastructure
<ul style="list-style-type: none"> • VCF concept provides increased understanding of agricultural and agribusiness finance: <ul style="list-style-type: none"> ○ Better understanding, coordination and control of the marketplace ○ Improved long-term horizon for financial entities ○ Adaptation to future market trends 	<ul style="list-style-type: none"> • Capacity, understanding and hence commitment are missing: <ul style="list-style-type: none"> ○ Small farmers lack capacity and often production competitiveness ○ Agribusiness and finance institutions lack experience and tools ○ Governments lack understanding and supporting policies
<ul style="list-style-type: none"> • Increases opportunities for equity finance and capital market interventions: <ul style="list-style-type: none"> ○ Increased chain competitiveness ○ Improved understanding and risk mitigation for investors ○ Structured finance opportunities and new products 	<ul style="list-style-type: none"> • Required investment and support services are not available: <ul style="list-style-type: none"> ○ Risk reducing services not universally available (ex. commodity exchanges) ○ Enabling policies and conditions not in place in many countries ○ Fear of unknown for long-term investment
<ul style="list-style-type: none"> • VCF is not socially exclusive (in principle, small farmers can benefit): <ul style="list-style-type: none"> ○ Leading NGOs in sector able to facilitate small farmer inclusion ○ New technologies open new frontiers 	<ul style="list-style-type: none"> • Livelihoods are at risk for those excluded: <ul style="list-style-type: none"> ○ Social exclusion of small producers ○ VCF benefits for actors integrated into chains; but many are not in chains

B. Knowledge

1. Knowledge is a key element of agricultural value chain finance in two critical aspects. The in-depth knowledge of a value chain is what gives agribusinesses a competitive edge in reducing financial risk.
2. Knowledge of how value chains really work and on the role of each stakeholder, including government, is lacking. Highlighted knowledge gaps included: improved cultivation techniques, markets, prices, standards, quality and compliance, access to suitable financial services and information.
3. Knowledge must be built on better practices, developed in collaboration with global and local experience and disseminated and applied widely to strengthen public understanding and provide conducive policies.

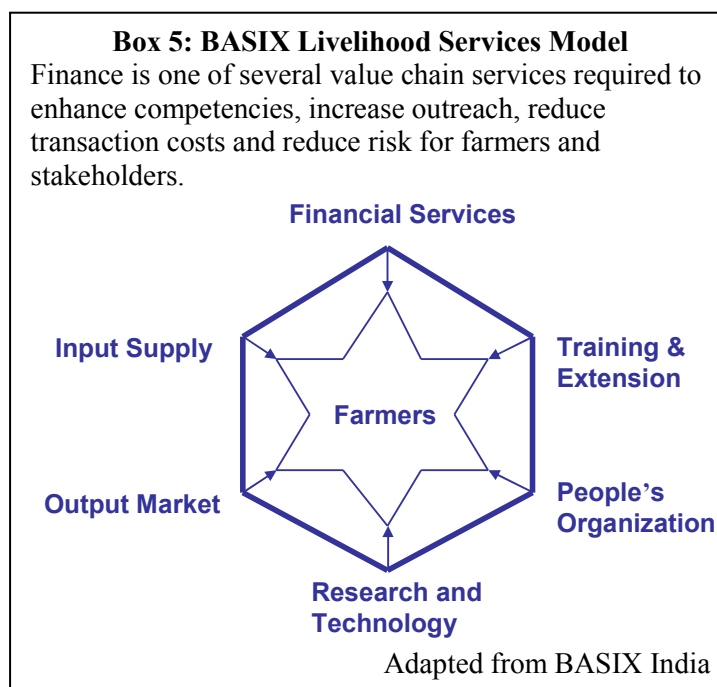
C. Innovation

1. Key areas of innovation are:
 - Information and Communication Technologies (cashless banking; point of sale finance, cell phone trading)
 - Risk management tools (Crop and weather risk insurance, futures and options)
 - Service providers (integration of facilitator companies into value chain)
 - Group aggregation (farmers associations, SelfHelp Group links)
 - Financing models (contractual farming, warehouse receipts, collateral management, leasing, equity finance, supply and structured commodity finance)

- National spot and futures exchanges
- 2. Innovation is both an equalizer and a threat to smallholders. The focus should be on practical options and modalities of mitigating risk and improving capacity.

Building Scope and Equity: The BASIX approach

India enjoys rapid overall growth of its GDP of 9% per annum while growth in the agriculture sector is stagnant at less than 2%. To maintain the overall growth it is critical for India to invest in the agriculture sector which is the livelihood of 60% of the population. Such investments, which are critical for making growth inclusive, go well beyond finance as shown in Box 5. Using a livelihood approach with a value chain business model, BASIX provides a comprehensive bundle of non-financial services with finance to build farmer competitiveness and address their livelihood needs. This includes organizing and linking small farmers with markets, technology development for futures trading, training and financing.



VII. The Future of Value Chain Finance

Two principle points can be concluded for agricultural value chain finance. First, the growth of financial services embedded into or linked with the value chain can be expected to continue to grow as production and marketing system integration intensifies. Secondly, and perhaps most importantly, the concept and use of value chain systems is and should become even more important toward informing financial service providers in their lending decisions and product development for agriculture. Using the knowledge of a value chain, assessing its strengths, risks and trends and assessing a loan client's position and competency within that chain will inform lending decision making at both the client level and that of their overall portfolio.

Additionally, value chain knowledge allows for the structuring of finance to reduce repayment risk and lower transaction costs of service. As has been demonstrated by BASIX, DrumNet and others, such structuring will require new product development and innovation and will incorporate the advances of communication technology, MIS systems and commodity exchanges in developing countries and will require work with policy makers to understand and adapt the regulatory frameworks to the changing environment. Policy and product development also include addressing the livelihood and financial service needs of those households whose production systems are not or soon will not be competitive within this changing environment.

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2 Value Chain Financing Models: Building Collateral and Improving Credit Worthiness

Calvin Miller
Food and Agriculture Organization

Agricultural finance has always involved higher levels of risk and high costs associated with lending. For this reason, many are unable to obtain access to suitable financial services from financial organizations and have instead relied upon supplier and trader finance and other forms of financing. As agricultural value chains are becoming more integrated, complex and competitive these forms of financing are becoming more important. Knowledge and efficiency become critical elements. When finance is linked with the chain, financial decisions can be made on the basis of a better understanding of the business competitiveness and risk, but also with the improvements in information and communication technology and the innovations in new financial and business models and approaches, financial costs can be reduced and risks can be mitigated.

This paper presents a contextual understanding of value chain financing and explores promising approaches for financing at all levels of the chain. It presents basic concepts and provides a framework for thinking about various strategies, instruments and institutions for improving access by farmers and agribusinesses to financial resources by making use of the agricultural value chain to reduce the risks and improve transaction efficiencies. It discusses issues and reviews recent developments and technological improvements in this area and presents some successful models for securing additional financial resources for the funding of agriculture and agribusiness investments.

I. Using Value Chain Finance to Increase Efficiency and Credit Worthiness

A. Introduction

Value chain finance is not new; however its application has now expanded significantly in new ways. This document, drawing on the experience of the author and studies and regional conferences on Agricultural Value Chain Finance in Asia, Africa and Latin America respectively, presents basic concepts and provides a framework for thinking about various strategies, instruments and institutions for improving access by farmers and agribusinesses to financial resources by making use of the agricultural value chain to reduce the risks and improve transaction efficiencies. It discusses issues and reviews recent developments in this area and presents some new approaches and models for securing additional financial resources for the funding of agriculture and agribusiness investments.

The growing interest in agricultural value chain finance takes into account two important issues. First it recognizes the change in agriculture and agribusiness and the growing integration and concentration of supply chains. Globalization is changing agriculture and many producers are being pushed out as they can no longer compete due to costs of production, process and/or compliance to the many new rules and regulations governing agriculture in a global world. Financial organizations and their clients alike must now look beyond the past performance and balance sheets of clients for assessing loans and provision of financial services. They must now give emphasis toward the future and both the competitiveness of the client and his/her ability to produce and add value efficiently and to the overall health of the whole supply chain in their region and country.

For agribusiness finance, corporate finance teams must now consider their role of agents of structural change among chain linked partners in order to assure that all of the parts of the

chain are working together to create maximum value. The efficient mobilization of working capital within chain linked commercial structures in particular has become an increasingly important competitiveness enhancing tool. Before an organization can hope to rationalize its financial supply chain it needs first to identify all factors which effect working capital and investment uncertainty.

The second important issue is that agricultural finance has always involved higher levels of risk and high costs associated with lending. For this reason, many farmers and agribusinesses are unable to obtain access to suitable financial services from financial organizations and have instead relied upon supplier and trader finance and other forms of indirect or non-bank financing. As agricultural value chains are becoming more integrated, complex and competitive these forms of financing are becoming more important since knowledge and efficiency become ever more critical elements. When finance is linked with the chain, financial decisions can be made on the basis of a better understanding of the business competitiveness and risk. New improvements in information and communication technology and the innovations in new financial and business models and approaches make this type of finance more easily adapted with often significant reduction in costs of finance and in risk to financial institutions as well as those directly within the supply chain.

B. Understanding the challenges of risk and cost in agricultural finance

Knowledge is a key to success in any business. Value chain finance means more than just making loans but to invest in: a) market trend knowledge, b) understanding of key risks and 3) being aware of alliance and linkage opportunities. It also means using that knowledge and employing improved methodologies to reduce each others exposure to market price risk, production risk and collateral risk. On the user side from farmers and agribusinesses there is interest to increase economic opportunities, grow the business and assets and importantly mitigate risk. From the lender or supply side of financial services, there is a desire to cost-effectively introduce flexible and longer term loan products with manageable risk and build a long-term relationship of trust, effective management and profitability for the institution and its clients.

An understanding the risks and opportunities of finance begins with an analysis of the actual sources, uses and flows of finance that are currently with a value chain, including the types of financial products needed at each level and by the many individuals, companies and institutions within the chain. For example, in Figure 1 below one note that farmers and small entrepreneurs tend to obtain their working capital primarily from three sources, namely small microfinance type organizations, traders and/or from their producer organizations. Most of course also use their own funds and that of family members. Banks on the other hand tend to fund processors, and trade companies who in turn often advance funds to the local traders. Banks also fund private investors who together with their own funds use bank finance to invest in or own these companies. In most countries banks and similar formal financial institutions have the most access to sources of funding and their constraint on lending to agriculture has more to do with the costs and risks than with the lack of capital, especially in the case of financing small producers. By improving the flows of capital within the chain, bank funds can reach to all actors in the agricultural value chain, thus reducing the shortage of capital often experienced by producers and entrepreneurs. Also by working closer with those involved with those who are influential in leading and knowing the operations and trends of the value chains, the financial analysts can better calculate the business risks within

them and the credit risks associated with them and then work together to structure its financial products to best address the needs and risks.

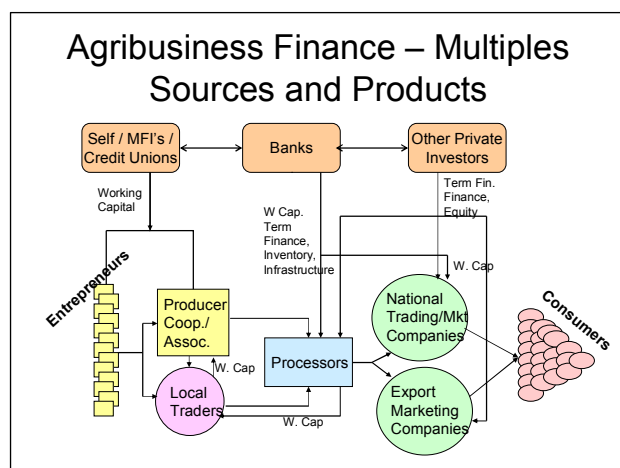


Figure 1: Understanding the Uses and Sources

II. Models and Approaches for Increasing Access to Finance Using the Value Chain

Risk, return and repayment carry the same importance for value chain finance as with any conventional finance. The big difference is that for finance within the chain, credit risk is actually seen as a subset of the overall value chain business risk. Cash flow analysis remains critical as is sensitivity analysis to risk variables, but they also are a subset of the business flow and “bottleneck” sensitivity. The return, or profitability, is similar in that respect and often is embedded into the process in such a way as to not even be explicit. Repayment risk is also often not simply a function of a client going to the bank and repaying his/her loan but is payment through delivery of the product or payment when the processor or exporter delivers. If there is a “seamless” integration in the value chain system, this risk is minimized and the costs are reduced.

In risk management it is important to understand: a) risk event(s), b) risk exposure and c) the cause(s) of the risk. Then the risk mitigation strategies that can be taken are: a) accept the risk, b) avoid or eliminate the risk, c) transfer the risk to another party or d) control the risk. The models below all take into consideration these factors. These are broken down into three main types of categories as described below:

A. Value chain product linked financial products

Product linked finance normally has a buyer-seller relationship and often uses the commodity as a collateral. As shown in Figure 1, much of the financial flow of funds in a value chain is directly linked to the product. This is because finance is often either used as an incentive for selling a good or product (input suppliers) or buying a product (traders, processors and marketing companies). In other words, finance is an integral part imbedded into the overall “package” of services and the costs of the financing many not be explicitly stated or even calculated. In this way, finance helps most by reducing the costs and effectiveness of doing business by attracting a business market.

To reduce risks of both non-payment of loans and to ensure a supply of product needs, an agribusiness may also contractually link finance and delivery compliance. A third form of

product related finance is when the product itself is used as a guarantee for financing. Brief descriptions of some of these models are presented below:

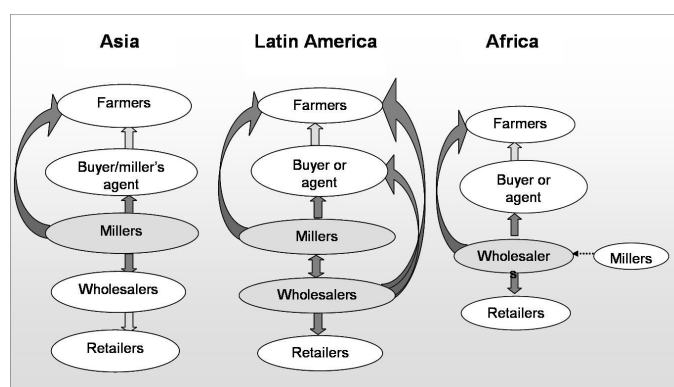
1. Trader finance

With **Trader Finance**, the trader is able to advance funds with the guarantee of crop to be harvested, or in some cases crop or product to be grown or produced. The price is normally fixed at the time of financing but in the many countries without functioning commodity exchanges, this price-setting is often set by the trader on speculation without knowing what the market price or the quality will be at the time of delivery. In order to reduce trader risk, the prices offered tend to be low and therefore a disadvantage to the farmer.

2. Marketing or Processing Company Finance

Marketing company finance works in a similar way but whereas traders tend to be smaller and normally operate as intermediaries between producers and processors and marketing companies, the marketing financing is normally driven by the interest of the company to secure products to meet their marketing goals and commitments. They may or may not directly manage the funding since they may choose to involve a bank or other financial institution to directly manage disbursements and collections are managed through receipt of the product. There often is an established relationship between the company and the producers or producer groups. Marketing companies may have more options to secure advance prices for their commodities and therefore have a more secure basis for setting prices of the products they procure through advancing funds to traders and producers. Marketing finance is often the primary source of funding for commodities even though the relative roles of each varies by region and by commodity. As shown in Figure 2 below for rice, millers and wholesalers often are the pivotal actors in financing, advancing money “down the stream” to local buyers and traders and providing product on consignment or delayed payment to wholesalers or retailers.

Figure 2: Understanding the Flows of Funds in the Chain



3. Input Supplier Finance

The goal of **input supplier finance** is to facilitate and increase sales, not finance. Finance may be given directly by advancing products on consignment or commission. For proven clients this can work well but for others can be problematic. Supply finance can also be done indirectly through a triangular relationship in which the supplier facilitates finance through a financial

organization so the buyers can pay the input suppliers. This has the advantage of letting financial entities handle the financing using their expertise and systems in place to do so.

4. Contract Agriculture and Outgrower Schemes

Contract farming financing has some of the characteristics of marketing company finance but has strict contractual relationships that specify the type of production, quality, quantity and timing of the production to be delivered. Finance and technical assistance provision, if needed, is written in to the binding contract. Contract farming can be defined as an agreement between farmers and processing and/or marketing firms for products under forward agreements and frequently at pre-determined prices. The contractual commitments provide bankers with a signal of security and seriousness as well as a potential for ensuring repayment through discounting from sales income.

Contracts can be formal or informal, even verbal when there is a sufficient level of trust and mutual interest. Less formal and less rigid forms of commitment between producers and buyers are called **outgrower schemes** which can function similarly to that described above. Out grower or contract farming schemes generally involve the development of mutually beneficial relationships between parties who need and depend on each other such as with export crops and dairy.

5. Warehouse Receipt or Inventory Finance

A **warehouse receipt** is an asset backed security (normally a commodity) which serves as a guarantee. Warehouse receipts are negotiable and can be redeemed, at any time, for inventories of the same grade and value as those for which they were originally written. They facilitate the conversion of illiquid farm product inventories into cash and they improve the tradability and liquidity of underlying commodity markets. Warehouse receipt systems allow farmers to create bankable collaterals through the deposit of non perishable commodities in warehouses which third party asset (warehouse) managers control and safeguard the quantity and quality of the product in the interest of holders of the negotiable warehouse receipts. While simple in concept, they require that commodity grades and standards be generally accepted within the trading community and often require regulatory policies which are often not present in many developing countries. However, FAO has found that relatively simple community level systems for warehouse receipts can work well where there is sufficient local or regional organizations and community interest to ensure transparency.

B. Producer and production chain risk mitigation products

Value chain management concerns itself in large part with the management of risks incurred within chains and the sale or transfer of some risks which cannot be effectively managed within chains outside chains to third party risk arbitrageurs. Typically, leveraging the strongest balance sheets available within chains assures that the cost of capital for the entire chain as a whole remains as low as possible.

Three primary areas of risk in agricultural finance are: 1) production risk, 2) market risk and credit risk. Each of these risks includes factors which may be assessed and those which are unpredictable.

1. Weather and Catastrophe Insurance

In production risk, management capacity, production practices and diversification of income, natural resource quality and production efficiency can be measured but droughts, floods and other catastrophes occur without warning, often shifting incomes of producers, buyers and financiers from profit to despair. For these, insurance can be used to mitigate risks. A key issue of insurance is cost and even though insurance cost reduction is improving significantly for **crop and livestock insurance** with indexed based insurances which do not require on-site inspection and control, they never-the-less are not widely used except when subsidized by governments or donors. Partial insurance coverage for those sectors where costs are not prohibitive and production risks impede access to finance or income security is important to consider. **Catastrophe insurance** for assets and inventories and **health insurance** are widely used and are important for almost all persons and businesses.

2. Forward Contracts

The situation for market and supply chain risks has significantly changed during recent time. For price risks there both cyclical and seasonal price fluctuations of agricultural products throughout the value chain, not only due to local production variation but also affected by “outside forces.” These forces include prices fixed for political reasons, import or export restrictions, exchange controls, subsidies and globalization. With globalization, the risk of the effects of such outside influences has become more pronounced but fortunately the tools and alternatives for dealing with such risks have also become more readily available throughout the world. These risk mitigation tools can help stabilize income and hence improve borrowing access and conditions.

Forward contracts provide an avenue to sell a product for future delivery at a specified price. This price risk tool used widely in developed countries is growing rapidly in lesser developed ones as well, even with smallholders. By “locking in” sales or purchase prices for delivery at a future date forward contracts serve not only to reduce the risks of price changes, but also the futures contract can be used as collateral upon which one can borrow money. This is being used by small farmers in India and a few other countries but widespread use directly by smaller farmers will be difficult in many developing countries for some time to come. However, if millers and wholesalers use forward contracts, they can pass on this stability from the pre-agreed prices and offer farmers prices with less risk and ostensibly with a higher price due to the reduction in uncertainty. Furthermore, they can access funding more easily due to the security of such contracts, thus providing more capital and potentially more competition and higher prices to producers.

3. Hedging

A hedge applies a counter force to balance the potential effects of one force with another. Various **hedging** products are being used in developed economies to allow farmers, millers, traders and others the option of reducing risk by purchasing options and derivatives which can limit future price drops. The concept of a **hedge** is to reduce or cancel an unwanted business risk such as a product’s market price fluctuation, while still allowing the agribusiness to profit

from the investment activity. These require commodity exchanges which are becoming more available at least for certain commodities and require careful understanding before using. Even more so than with a forward contract, hedging requires a careful understanding of how the market works. For this reason, hedging is best handled by trade or marketing companies or persons who understand its use. There are various derivatives, options and other ways to hedge that can be quite complicated as well as specific issues related to each value chain or sector. These include: 1) **futures** – agreements to exchange or sell a commodity (also a currency) at an agreed price in the future such as at harvest time, 2) **swaps** – agreements to simultaneously exchange or sell an amount of commodity or currency now and resell or repurchase that it in the future and 3) **options** – instruments that provide the option but not the obligation to buy or sell the commodity or currency in the future once the value of that product reaches a previously agreed price. It must also be noted that since the mechanisms used to hedge incur a cost to cover the transaction and the hedge cost for mitigating the risk, their use and expected benefit must be carefully considered. In any case, since value chain finance works within the chain and hence has a deeper understanding of the market risks, it is easier to apply hedge mechanisms correctly.

4. Credit Risk Management

Credit risk is well known in the financial industry. Yet many institutions remain wary of agricultural and agribusiness credit risk as they do not know how to assess it and price it correctly for their loans. This “risk of the unknown” coupled together with the lack of the traditional mortgage or other forms of commonly used collateral simply cause them to severely restrict agricultural and rural financing.

As stated by the leaders in Rabobank, the largest agricultural lender in the world which is the only commercial bank with a Triple A rating, “Agriculture is no more risky than that of any other sector.” Three things must be noted – first the usual credit risk analysis such as the **five “C’s”** of: 1) Character, 2) Capacity, 3) Capital base, 4) Collateral and 5) Conditions are as important as ever. Secondly, the credit risk assessment must go beyond the client and look at the whole chain. The health of the value chain and competency within the chain must be assessed for its trends, the short and long-term position of clients and countries within the competitive agribusiness chain, and the expected levels of risk of the chain and the segments within it. The success of Rabobank mentioned above depends to a large extent on their careful analysis of both each value chain and industry as well as each client. Furthermore, it is able to use that knowledge to know at what levels finance is most needed and effective and to work with the farmers, agribusinesses and/or national and export marketing companies to structure their financial products and services to meet the risk profiles and cash flows of those clients.

Thirdly, value chain financing often combines the provision of business support services with the provision of credit. It is inherently multi-dimensional with multi-stakeholders all interested in each others’ success in order to have efficient and profitable agribusiness chains. Moreover, it is well tailored to the multiple development requirements of specific farmer groups than, for example, credit only services provided singularly through financial institutions.

C. Other Financing Options and Factors

Structured finance covers a wide range of often complex loan transactions which entail arranging for loan repayment and acceptable collateral under conditions which are tailored to the client needs yet build safeguards minimize business and default risk.

These products, such as secured transactions, factoring and joint venture equity finance can provide additional sources of finance that take advantage of the relative security of the value chain system in order to provide additional alternatives for capital.

1. Secured transactions

Structured finance instruments provide ways for greatly reducing the importance of borrower credit-worthiness, for example, by securitizing payment streams before they are claimed by creditors. For example, international trade finance makes use of **secured transaction financing** such as Letters of Credit which provide security of payment to the buyer upon delivery. These Letters are recognized collateral by financial institutions for advancing financing.

2. Factoring

The use of **factoring** or accounts receivable financing is growing in use in agribusiness finance as in other sectors. In factoring, the business, such as input supplier, processor or marketing company with an sells its accounts receivable at a discount in order to obtain additional working capital. This form of financing will likely continue to grow as the financial world becomes more knowledgeable about the value chains and can calculate their risks. where the business sells its accounts receivable at a discount in order to obtain additional working capital.

3. Equity Finance and Joint Ventures

Joint venture finance in which parties jointly provide the financing and share the risks is an age-old form of finance that remains important to the agricultural sector. The traditional “farming on share” is common for the poor and modern farmer alike. In Islamic finance, the financing organization takes a stake in the returns in lieu of interest. Agribusiness value chains and the growing integration within them depend upon the health and mutual interests of its stakeholders. This integration and strategic linkages and alliances serve not only for the flow of product and funds, but also for building the interest and confidence in contributing equity finance and having joint ventures.

D. Technology and Innovation

Little mention has been made of the introduction and adaptation of new technologies. However, these have immense significance since many of the products would not work nearly as efficiently without these changes. The most dramatic technology innovations have been in information and communications technology such as cell phone banking, internet kiosks for market information and transactions, and the proliferation of information making access easier.

One must also note the less obvious, such as the advancements in commodity exchanges, commodity management, money transfers and the improvements and roles of credit bureaus. Yet there are many areas lagging behind, such as widespread use of models and

information for value chain analysis, for agricultural loan analysis and for learning from each other, in spite of the technologies available.

E. Typology of Options and Approaches

The typology presented in Box 1 provides a summary overview of the use and value of various approaches used in agribusiness value chain finance. It is not all inclusive but rather provides a concept of what is available and how and to whom is each applied in practice.

Box 1. Typology of Value Chain Finance Approaches						
Value Chain Financing Approaches	Financing Purpose	Complexity to Implement	Advantage for Producer/ borrower	Advantage for Company/ lender	Disadvantage for Producer/ borrower	Disadvantage for Company/ lender
Product Linked Finance						
Trader Finance	<ul style="list-style-type: none"> Commodity procurement Farmer finance for harvest/post-harvest 	<ul style="list-style-type: none"> Low 	<ul style="list-style-type: none"> Ease of transaction Well known May be competitive offers 	<ul style="list-style-type: none"> Secures commodities and prices 	<ul style="list-style-type: none"> Often high discounts on market price 	<ul style="list-style-type: none"> Potential for side-selling Unsecured quality and quantity
Marketing / Processing Company Credit	<ul style="list-style-type: none"> Reduce transaction risk 	<ul style="list-style-type: none"> Low 	<ul style="list-style-type: none"> More secure product market Technical assistance Bulk input cost reduction 	<ul style="list-style-type: none"> Secures procurement Contracts for finance, sales terms, and product specs 	<ul style="list-style-type: none"> May not be directly accessible to small farmers 	<ul style="list-style-type: none"> Increases financial outlay
Input Supplier Credit	<ul style="list-style-type: none"> Sell/purchase inputs 	<ul style="list-style-type: none"> Low 	<ul style="list-style-type: none"> Obtain inputs on credit 	<ul style="list-style-type: none"> Secures sales 	<ul style="list-style-type: none"> Input costs may be excessive 	<ul style="list-style-type: none"> Lack of security in repayment
Contract Agriculture	<ul style="list-style-type: none"> Overcome lack of access to credit 	<ul style="list-style-type: none"> Medium 	<ul style="list-style-type: none"> Secure market and price Technical guidance for higher yields and quality 	<ul style="list-style-type: none"> Less options due to closer monitoring Enforceable contracts 	<ul style="list-style-type: none"> Less access for small farmers Restricts price rise gains 	<ul style="list-style-type: none"> Side-selling Cost of management and enforcement of contracts
Warehouse Receipts	<ul style="list-style-type: none"> Overcome lack of collateral Secure repayment 	<ul style="list-style-type: none"> Medium to high (depending on regulation) 	<ul style="list-style-type: none"> Cash advance and/or credit guarantee upon deposit of commodity 	<ul style="list-style-type: none"> Security of standards and inspection Secured, deposited product 	<ul style="list-style-type: none"> Lack of available providers Fees charged 	<ul style="list-style-type: none"> Often lack of regulatory structure Costs Uneven product flow
Producer Risk Mitigation Products						
Crop / Weather Insurance	<ul style="list-style-type: none"> Mitigate production income risk 	<ul style="list-style-type: none"> High 	<ul style="list-style-type: none"> Reduces production risk Evens income 	<ul style="list-style-type: none"> Lowers procurement loss risk 	<ul style="list-style-type: none"> High perceived cost 	<ul style="list-style-type: none"> Added cost and added management
Forward Contracts	<ul style="list-style-type: none"> Secure price risk Provide loan collateral 	<ul style="list-style-type: none"> High 	<ul style="list-style-type: none"> Reduces income risk Can use contracts as loan collateral 	<ul style="list-style-type: none"> Lowers sale and purchase price risk Secures procurement 	<ul style="list-style-type: none"> Not widely available nor understood 	<ul style="list-style-type: none"> Not widely available
Hedging	<ul style="list-style-type: none"> Reduce price risk 	<ul style="list-style-type: none"> High 	<ul style="list-style-type: none"> Reduces production and income risk 	<ul style="list-style-type: none"> Lowers purchase risk Evens farm income 	<ul style="list-style-type: none"> Not widely available nor understood 	<ul style="list-style-type: none"> Requires commodity exchanges
Other Financing Options For Value Chain Agribusinesses						
Secured Transactions	<ul style="list-style-type: none"> Reduce transaction fraud risk 	<ul style="list-style-type: none"> High 	<ul style="list-style-type: none"> Opens market opportunities 	<ul style="list-style-type: none"> Improves security 	<ul style="list-style-type: none"> High cost 	<ul style="list-style-type: none"> Time and paperwork Cost
Factoring	<ul style="list-style-type: none"> Obtain working capital 	<ul style="list-style-type: none"> High 	<ul style="list-style-type: none"> Buyers have more cash 	<ul style="list-style-type: none"> Source of capital for operations 	<ul style="list-style-type: none"> Not widely available 	<ul style="list-style-type: none"> Lack of knowledge and interest by financial markets

Equity Finance and Joint Ventures	<ul style="list-style-type: none"> • Increase investment • Share company risk • Increase borrowing capacity 	<ul style="list-style-type: none"> • High 	<ul style="list-style-type: none"> • Provides additional capital to value chain 	<ul style="list-style-type: none"> • Increases capital and borrowing capacity • Reduces risk to each investor • Adds expertise and/or markets 	<ul style="list-style-type: none"> • Hard for small producers to participate 	<ul style="list-style-type: none"> • Often a lack of investors • Dilutes investor returns
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Observations and Issues for Discussion

A new agribusiness model is emerging around the world with significant implications on: 1) how agriculture will look, 2) how producers will be integrated into value chain, often different from those where they currently operate and 3) how finance will fit into this new model. This Agri-Revolution as it is called in India, it will favor those who are linked and will likely deal harshly with those who are not. Many questions and challenges remain:

- What will the new model mean for small farmers and rural communities?
- What will it mean for large and for small financial service providers?
- What needs to be done to prepare?

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3 Increasing Competitiveness Through Value Chain Financing *Case Examples of VCF Support in Latin America*

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Inter-American Development Bank

This paper provides an overview of the role of the Inter-American Development Bank (IDB) in the Latin American and Caribbean region in promoting and supporting value chain development and finance. Key programs of IDB on this regard are highlighted including lessons learned from financing agricultural value chains that promote poverty alleviation and reach underserved markets.

I. The IDB Group and its role in the Latin American Region

The Inter-American Development Bank is the oldest and largest regional bank in the world, and is the main source of multilateral financing for economic, social and institutional development in Latin America and the Caribbean. Its loans and grants help finance development projects and support strategies to reduce poverty, expand growth, increase trade and investment, promote regional integration, and foster private sector development and modernization of the State.

The IDB Group is composed of the IDB, the Inter-American Investment Corporation (IIC) and the Multilateral Investment Fund (MIF). The IIC focuses on support for small and medium-sized businesses, while the MIF promotes private sector growth through grants and investments.

The Bank seeks to finance the developmental objectives of its member nations, specially those which contribute to poverty alleviation, equality of access to services and inclusion, and those which have positive environmental impact. In many cases, the Bank finances operations, projects and programs which may not meet the financial requirements or the Return on Investment expected by the more traditional capital markets.

Recent restructuring has positioned the Bank to better attend the needs and requirements of private sector initiatives. Result of this restructuring has been the creation of the Vice Presidency for Private Sector and Non Sovereign Guarantee Operations, under which we find the Office of the Multilateral Fund (MIF).

II. IDB Instruments to Promote and Support Value Chain Formation and Value Chain Finance

The Bank has various financial and non financial instruments to support value chain development. Among them are the regular sector loans, which are made to governments, with the intension of assisting the overall framework for economic development. Such an example is the recent US\$27 Million loan approved with the government of Honduras, which is geared towards the support of rural businesses in areas with high levels of poverty. The program funded, will provide resources to develop rural value chains and microenterprises in areas with high potential for production of crops. The program will be carried out by the Ministry of Agriculture's National Office for Sustainable Rural Development (DINADERS).

Another member of the Bank's Group, is the **Inter American Investment Corporation** (IIC), which makes loans and equity investments directly with private sector companies and funds. Such is the case of a recent loan made to Ecofair, a Colombian banana exporter, for US\$2 Million. The IIC also collaborates and often participates in specialized investment funds, such as the Latin American Agribusiness Development Corporation (LAAD), which in turn makes loans and investments in Small and Medium Sized Enterprises (SMEs) in the agribusiness sector.

In the late 1970s, the Bank created the **Small Projects Program**, a special vehicle to make loans and grants to rural microfinance organizations and farmer cooperatives. This program evolved into what today is called the **Social Entrepreneurship Program (SEP)**, and continues to work with the same target groups. The SEP finances a combination of loans and technical assistance packages, to support value chain financing initiatives and rural microfinance organizations. Many of the projects financed by the SEP are executed by farmer associations, cooperatives, agribusinesses, and non profit organizations working with small farmers. The philosophy of these projects, which are run as “pilot” initiatives of around US\$1 Million, is to assist in their early stage of development, so that later they can become fully bankable operations.

Another Bank instrument to fund private sector development and value chain initiatives, is the **Multilateral Investment Fund**, which is the leading source of technical assistance grants for micro and small business development in Latin America and the Caribbean. MIF has approved more than 1000 projects, primarily grants, with over 800 civil society, private sector, and government partners. Many of its projects are aimed at strengthening the capacity of small and microenterprises, to link with global value chains. In some cases the MIF has supported value chains directly, with grants that enhance worker skills, market access, or certification of products. In other cases, the MIF has worked with local governments to simplify business procedures and regulations. Through a window of financial investments, the MIF has also supported various venture funds and investment funds that have in turn financed value chain finance mechanisms and SMEs.

III. Lessons learned and experiences from Two Cases of Support to the Agricultural Value Chain.

The following is a discussion of two different models of support to agricultural value chains from the perspective of Bank operations. Its important to mention, that in both cases, the Bank’s objective has been to alleviate poverty and reach underserved markets, through business development. Years of experience in Bank projects, has lead to the conclusion that an important way to reach the poor and provide economic opportunities for them, is to support the markets of which they are a part of, or the value chains, to which they have become major suppliers. These interventions are also bourn out of experience that shows that value chains have become increasingly complex, and that their financing mechanisms have followed this complexity, incorporating nonetheless, small producers and microenterprises in these schemes. Therefore, financing the value chains, has often become a way to indirectly finance the small producers who are an intricate part of them.

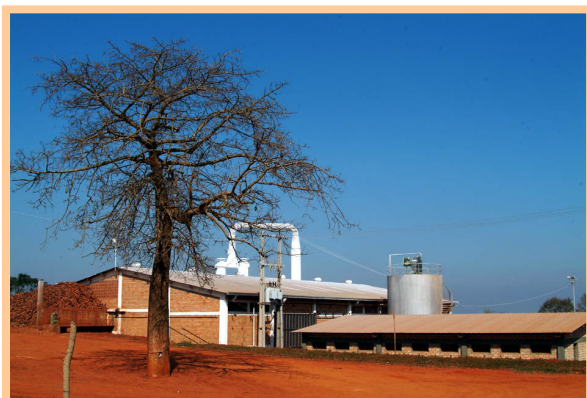
A. Working with Lead Firms in Paraguay

Paraguay has a population of 6 Million and a GDP of \$12 Billion, the smallest of the Southern Cone region. Ninety percent of its export earnings are derived from agriculture and 35% of the employment depends on this sector. Cotton, corn, sugar cane, and soybeans, are the major crops of this small land locked country, which presents weak ties to the global economy, outside its immediate region. Small farmers often plant one or more of these crops with the assistance of one of the government programs, through the provision of seeds or other inputs and subsidized credit. Needless to say, farmers have sought to diversify their crop production numerous times, often with government assistance and in other cases with a direct linkage to lead firms. This last mechanism of crop diversification, has been supported

by the Bank, as a means to provide alternative income opportunities for the rural population, which is where 50% of the families of Paraguay live, and where 50% of the poverty lies.

Traditional Crops, New Markets

The Case of CODIPSA and Manioc Production. In an effort to create opportunities and a viable livelihood for rural families, large farmers from the Central part of the country gathered to form a foundation called MEDA, that would provide social programs and assistance. With an intentional focus of seeking business and commercial led solutions, the foundation and its members found a market opportunity and niche, in starch, and starch production. While in decades past, the government had established two large starch factories to supply local markets, these industries failed to take into account geographical, production, and market aspects. Manioc, the main raw material for starch production in Paraguay, was grown through out the country, but was primarily supplying regional and artisan type starch manufacturers, which in turn used the starch for local baking needs. The large factories never operated at full capacity, because of their distance from production regions, their archaic procurement standards, and lack of market knowledge for the types of starch needed. In the



meanwhile, manioc continued to be produced, as the crop always functioned as an “economic savings instrument” for poor rural families. The crop could be sold at any time for a decent cash price. The root could be harvested between 6 to 12 months after planting.

Having seen close hand the failings of the industries of years past, and having the advantage of the business and commercial networks, the foundation set up a starch factory right in the middle of one of the main production regions of the country. Although initially seen as a wild bet on a very rural setting, the relatively small factory soon became operationally sustainable, buying manioc from over 1000 farmers in the region, and providing critical financing to them, for production and harvest. The starch was sold locally and later exported for its quality to Argentina and Brazil. Through ups and downs in the starch market and prices, the factory continued to provide a key market for manioc producers and expansion plans came in a few years later. At this stage, Bank financing was sought for a second plant in a near by region.

The factories have been a key instrument for pre harvest and harvest financing, for small farmers, linking them to regional markets. The Bank has provided long term financing to the second plant, in order to initiate the process in the new region, and allow for more adequate financing terms for the farmers. Technical aspects for quality and

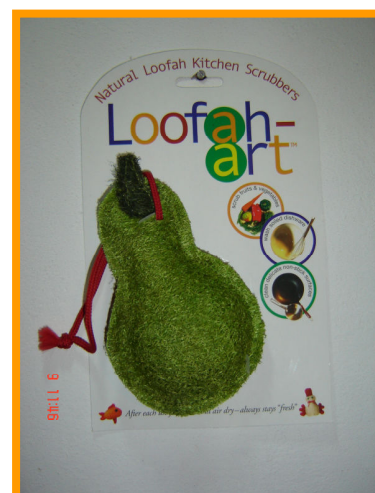


production issues have also allowed small farmers to enhance their capacity and increase yields. With a permanent and well priced outlet for their traditional crop, farmers have invested in improved seed varieties which produce a greater amount of starch, and have also expanded their growing capacity. Farmer groups were formed as part of the project to receive the technical assistance and as a means to safeguard credit transactions and repayment.



The Case of Loofah. Following a similar path of the MEDA foundation mentioned above, another non profit organization working with indigenous communities in Paraguay, sought to experiment various products made out of the traditional loofah plant, as a way to create opportunities for employment. Known locally as the “natural scrub”, the loofah plant grows as a vine in small plots, and requires little in terms of maintenance and care, although appropriate water irrigation systems can have a positive impact on the size of the fruit. The organization which started working with small numbers of families and communities, promptly became an important buyer of locally grown loofah, as it slowly opened markets for the end products. Some of the products initially were sophisticated kitchen scrubs, but the company diversified into specialty pet products and toys.

Access to financing along this particular value chain presented an obstacle to growth. Farmers could only grow so much loofah without adequate seed and technical guidance. The company could not expand its manufacturing facilities as financing for start ups and SMEs is limited in Paraguay. Finally, the end buyers in Europe and the US who were very interested in the products, had no interest in engaging in downstream financing for such a small company and a limited product line. Loofah products were sold into the kitchen accessories segment as part of more complex and numerous line of products. The Bank, through a loan from the SEP Program, provided key financing to the company in its early stages in order to grow its production line, extend financing to its suppliers, and ease cash flow pressures from its export mechanisms, which often required up to 90 days of waiting time before final payments on shipments.



Hierbapar. The third case in Paraguay follows a similar scheme in financing although a different mechanism to establish its linkage to the small farmer sector. Taking advantage of its local commercial networks, a Paraguayan company that sought to diversify its production, entered into the marketing of herbal teas and condiments. Establishing contact and supplier relationships with a number of small tea farmers in the region of Lima, Hierbapar worked hard to gain market share in a sector dominated by foreign brands, specially from Argentina and the large tea corporations. Through its network with the main super market chains in the country, it was able to establish its brand of products within a few months. Quality and price were key determinants of acceptance, but sudden growth also became an issue to deal with, specially as it pertained to its relation to suppliers.

Hierbapar established purchasing centers in various rural areas close to Lima, and was able to work closely with farmers in growing varieties needed for market and financing for the seed and harvest. Medium term financing provided by the Bank's SEP program, allowed the company to expand its operations and strengthen its relation with suppliers.

Some of the key learning from the three experiences for the Bank, can be summarized as follows:

Key Lessons from Paraguay Lead Firm Financing of Agricultural Value Chains
<ul style="list-style-type: none"> ⇒ In some cases, lead firms may be the only suppliers of financing to small producers and may themselves be in a position of financial requirements. ⇒ Lead firms in the agricultural value chain have a better understanding than financial agents, of the finance needs of their suppliers. ⇒ Lead firms are in a position to better manage risk of providing financial solutions and services to their small producer suppliers. ⇒ In order to provide much needed financial services to small producers, donor agencies may work in facilitating access to finance to lead firms.

B. Rural Microfinance and Value Chain Finance in Honduras

Honduras, like Paraguay, is also a small country, with a population of 7 Million and a GDP of \$10 Billion. In recent years, the influx of manufacturing jobs through the establishment of maquilas, has allowed the country to diversify away from agriculture. Still, the country is a major coffee and banana producer, its two main crops. Within the agricultural sector, a free trade agreement with the United States, has encouraged diversification into new crops, such as green peppers, chili peppers, tomatoes and various fruits such as melon. In addition to these high value products and perishables, Honduras has seen a growing market for “nostalgia” type food products. Many small agribusiness enterprises are seeing opportunities to export to this growing market in the United States: immigrants from Central America who purchase typical food products from their origin country. However, many constraints still exist, especially regarding food quality, proper labeling and sanitary standards.

At the same time, within this context of agricultural diversification, Honduras has received in the past few years, important support from donors to test and market new crops. Important programs from public and private foundations have financed technical assistance, extension services and rural microfinance expansion, in order to enable rural economies to adapt to the changing markets and opportunities. One such program, funded by the United States Agency for International Development (USAID), has had a focus on market led technical assistance, working with farmers, producers and exporters, to assist crops with high value added. In this regard, significant progress has been made, in bringing together buyers from the United States and exporters and producers from Honduras, so that lasting commercial relationships

can be established. Buyers have had a chance to transfer quality and packaging requirements and the program has assisted the Honduran companies in complying with these standards.

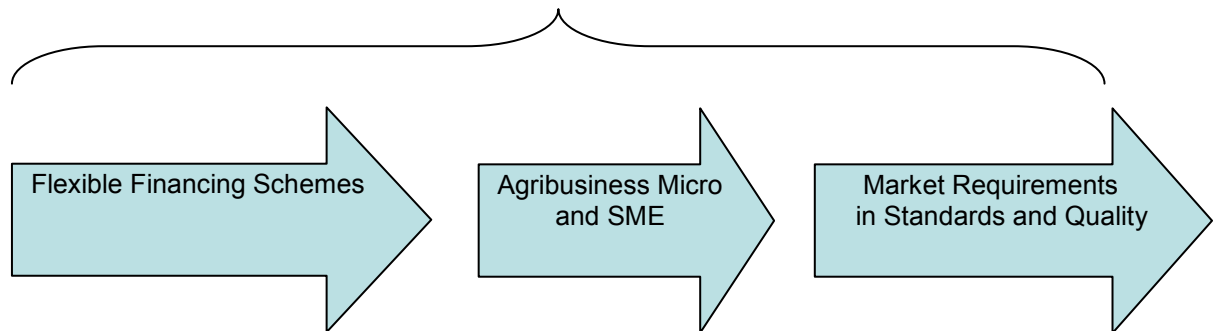
In an effort to further support these initiatives, the Bank has implemented a project, in partnership with *Escuela Zamorano*, the leading Central American school for agriculture and agribusiness development. The project consists of creating a network of laboratories and testing facilities, that will enable agribusiness enterprises, to measure and quantify their quality and sanitary gaps, identify their sanitary and quality compliance issues and prepare a plan of action to implement changes. Understanding that a transition to more rigorous sanitary and quality standards is costly, the project will partly subsidize this cost to the enterprises who can afford at least a minimum percentage of the total investment.

In spite of the support provided, micro, small and medium sized enterprises in the agribusiness sector find it difficult to access finance for their needs, and for adequately meeting the growing demand. Traditional finance mechanisms in Honduras, which include, the state agricultural bank, microfinance organizations, and other financial intermediaries, have not really stepped up to the challenge and have not been dynamic enough to adapt their lending technologies. In this regard, the Bank has supported three microfinance organizations, through the Multilateral Investment Fund (MIF), in adapting some of their technologies for rural household needs and agricultural lending. However, these efforts have recently started and their methodologies still need to be validated to prove that in fact they are effective at delivering agricultural finance.

Trade Agreements and Finance

The implementation of various trade agreements in Latin America, specially with the United States, are forcing micro and SMEs which are linked to export value chains, to become more competitive. Especially in the food and agriculture sector, trade agreements and new markets, translate into higher quality and sanitary standards. Often enterprises along the value chain, have no access to finance to implement enhancements and improvements to meet these new standards. Established financial links within the value chain, are rigid and often very short term, to allow for further improvements in the individual units and businesses. In these circumstances, only financial intermediaries, which have an adequate knowledge of the various players along the chain, and who understand the specific industry trends within the supply chain, will be able to provide adequate finance to the parties involved.

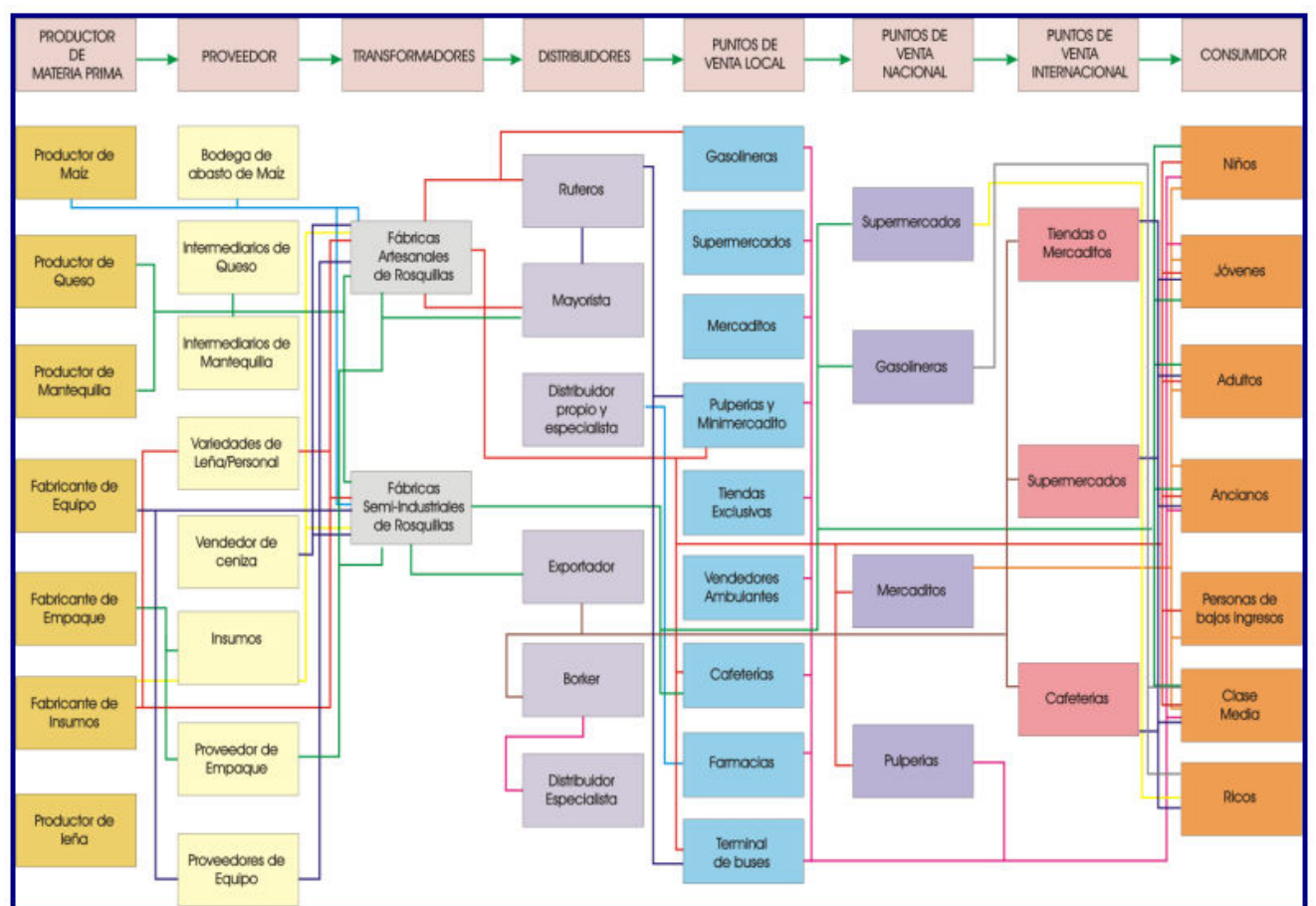
Free Trade Agreements



One final intervention of the Bank, has been through the financing of an integrated value chain project, with a local food product called “rosquilla”, which is widely popular and considered a cultural tradition. The rosquilla value chain consists of corn producers, dairy producers, the rosquilla manufacturers, and the final distribution outlets. The Bank, through the Social Entrepreneurship Program (SEP), has financed technical assistance as well as finance to the value chain, through a local financial intermediary with experience in the sector. This will be a first experience of its kind, and it is expected to bring to light relevant issues around value chain finance so that other financial institutions can implement similar programs.

From the graph, it can be seen that the rosquilla value chain is quite complex. Financial transactions take place in just about every single link. However, some links present greater challenges than others, and may be less flexible than others, to allow for growth or expansion of the market.

Rosquilla Value Chain



In this regard, the Bank project aims to work closely with a local financial institution, so that more flexible terms and conditions can be established for the financing of the different players in the value chain. The loan of the Bank to the intermediary itself, has longer terms, and a grace period for the payment of principal. Interest rates are set to market levels.

While the three Bank projects do not have a specific mandate to coordinate all of its activities in a given region, they are part of a Bank strategy to support value chains in the agribusiness sector, and involvement in each of these projects is allowing the Bank to understand how to better approach financing needs.

From these interventions, the following lessons have been learned and it is expected that the Bank can replicate this experience in other countries and regions.

**Key Lessons from Honduras Agribusiness Value Chains
And their Financing**

- ⇒ A value chain finance approach, will be better adopted by a financial institution, if there is a strong market that can demonstrate long term growth.
- ⇒ Participants and key players in agribusiness and agriculture value chains will have better chances of being financed, if there are technical assistance and support programs that can accompany the growth of the market and that can strengthen the standards within the industry.
- ⇒ These programs must be market driven and preferably sanctioned or coordinated with the participation of the private sector players who are part of the “buying end” of the value chain.
- ⇒ Value chain finance must be adopted by financial institutions, if it is to have any significance or scale within a region.

4 Philippine Government Financial Institution Programs

A. The Role of Financial Institutions in Value Chain

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The paper describes the strategic role of financing institutions in the value chain with special reference to the agriculture sector where efforts are increasingly geared towards the agribusiness approach. It describes the sources and types of financing provided and the requirements by the key players in the agricultural value chain. Experiences in the Philippine setting are highlighted in the course of the discussion.

I. A Schematic View of Financing in the Value Chain

The role of financing finds its way in the concept of value chain espoused by Porter (c1985). Value chain analysis serves as a tool in identifying gaps in agricultural finance and the appropriate interventions. As shown in Figure 1, capital resources and financing are part of the factor conditions at each stage of the value chain, in addition to technology and R&D, natural endowments, physical infrastructure, human resources and business policy environment. The capital resources required maybe self-financed or borrowed or a combination of both. In support to the value chain are the related and allied industrial industries and services which include credit, R&D, technology development, HRD, machinery and repair, transport and communication services, among others.

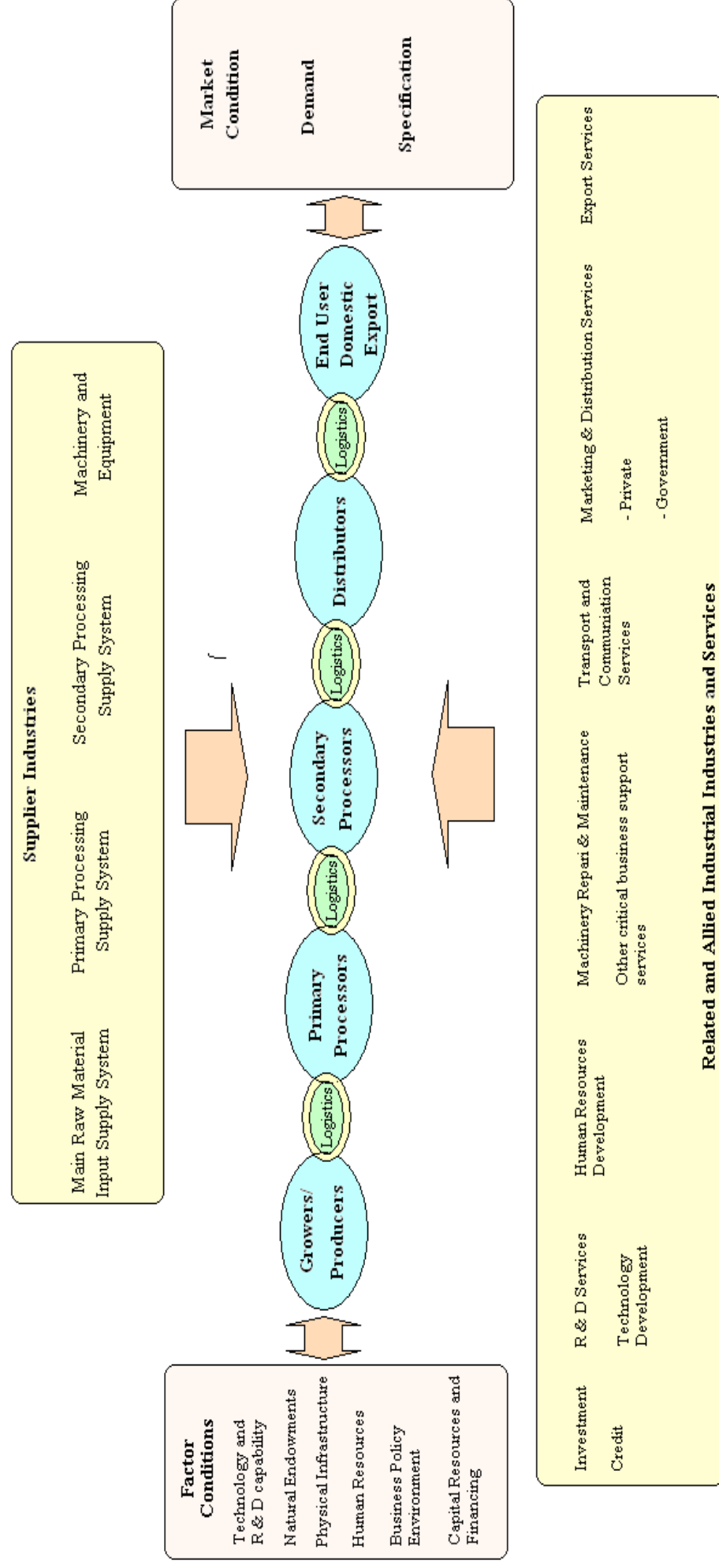
One of the basic factors for growers or producers are capital resources and financing to acquire their desired inputs in their normal course of production or in following a package of improved technology. The wide range of production inputs cover material inputs (seeds, fertilizer, chemicals), capital inputs² (tools and equipment, machinery, infrastructure), labor, and postharvest expenditures. Input suppliers, primary and secondary processors³, traders and other players in the distribution system (wholesalers, retailers, exporters) of the finished product to the end consumers have also their own specific financing requirements in their operations.

¹ Chief, Crops Statistics Division, Bureau of Agricultural Statistics, Philippine Department of Agriculture.

² Small tools and equipment are usually purchased while machinery maybe rented as in harvesters and threshers. Due to the prevalence of small farm holdings in the Philippines, customized machinery for rent are common. It is reported in the literature that the decreasing supply and increasing cost of farm labor due to opportunities for contract workers abroad has also spurred investment in farm machinery for rent

³ Some agricultural commodities such as livestock have primary and secondary processors in the value chain. Primary processors are the dressing plants, slaughterhouses and the secondary processors are the processors of pork and chicken meat.

Figure 1. Schematic diagram of value chain



Sources: World Bank, MADECOR Model in Dy (2005) and Villegas (2005).

II. Sources and Types of Finance in the Value Chain

The financial institutions which are the formal lending institutions such as banks, microfinance institutions, financing companies, cooperatives as well as some of the key players in the value chain themselves provide agricultural finance. The former group is the major source of financing in the urban areas, whereas, the latter group prevail in the rural areas especially agribusiness enterprises which maintain direct linkage and vested interests in agricultural producers (Fries and Akin, 2005). This situation can be attributed to the high transaction costs and risk associated with agricultural production because of its vulnerability to weather, pest and diseases that creates repayment problems.

Direct value chain finance builds on established relationship between value chain players. They are known also as the informal sources of credit. Warehouse receipts, contract growing or out-grower schemes financing system are two examples of this scheme. These facilitate the link between the financing or formal lending institutions as key players in the value chain such as traders and assemblers can vouch even for the small producers as prospective clients of financing institutions. Fries and Akin (2005) have cited the advantages of contract growing and trader credit in terms of the quicker provision of credit needed, technical supervision provided, and most of the time no collateral required. It is however, biased towards the needs of small farmers and the loan maturity is short. Indirect financing, on the other hand, has a higher ceiling with long maturity period because of the amount being loaned, although loan processing involves paper work. Countries, however, are promoting the enhancement of financial institutions as source of capital.

III. The Philippine Rural Finance Setting⁴

Financial Reform. A description of financing in the rural sector is worth noting since it is in this sector where credit access needs improvement. In parallel to the trade reforms, the liberalization and deregulation of financing was initiated in the early 1980s and continued on to the following decades. A market-based interest rate replaced the highly subsidized rate especially granted to agricultural production programs.⁵ Subsidized rediscounting programs at the central bank were also terminated and the country's Central Bank veered away from development financing and left this to government financial institutions, the (LBP). In mid 1980s, 20 agricultural credit programs were abolished and was replaced by and established a credit guarantee fund for small farmer loans which did not have the collaterals. But the agricultural credit schemes were found to be ineffective in providing formal credit to small farmers. Except for agriculture, other government agencies continued to implement subsidized credit programs. Towards the 1990s, subsidized credit again resurfaced, now the directed credit programs which remained the major source of financing for small farmers and fisherfolks. These directed credit programs were, however, contrary to market-oriented policies and failed to provide greater financial access to small farmers.

Microfinance. Most micro-enterprises are in need of timely, small sized loans whose repayments coincide with their cash flow and they also have demand for savings services. Their requirements are constrained by financial services that would cater to their specific needs. They do not also have track records with conventional banks nor collaterals to

⁴ This section relies heavily on Llanto, 2005

⁵ Two of the most highly subsidized production programs were the Masagana 99 for rice and a similar production program for corn.

offer. Given these conditions, they are high risk creditors. In the Philippines, microfinance institutions include rural banks, non-government offices, and credit unions or cooperatives.

It was reported that as of 2003, there were 27 agriculture-lending programs designed to improve farm and farm-related activities which also provide microfinance services. Some of these are listed below.

A. Development Assistance Program for Cooperatives and People's Organization.

Its main objective is to provide assistance to agriculture-based activities not services by banks through cooperative federations. This had a high loan repayment rate but low utilization level.

B. Grameen Bank Replication Program.

It extends loan to the poorest of the poor, eliminate exploitation by moneylenders and create employment opportunities. This had a significant impact on the standard of living of beneficiaries, and reduced dependence of informal sources.

C. Integrated Rural Financing.

This is sponsored by the LBNP, Department of Agriculture and the Agricultural Credit Policy Council (ACPC). It provides financing through rural financial institutions to improve producer income and repayment have greatly influence program performance, and led to the enhancement of cooperative loans.

D. Fisheries Sector Program

This is funded by the Asian Development Bank, it is designed to alleviate poverty among fishermen through livelihood diversification, with bay areas as priority targets.

Foreign-donor supported programs such as the EU's Aurora Integrated Development Project Phase and Central Cordillera Agricultural Program II ⁶are not sustainable in them long-run.

There are also other financing-related program by the government such as the National Food Authority's (NFA) Corn Storage Program and Palay Negotiable Warehouse Receipt. The former issues NFA Masters Passbook to individual corn farmers who have corn stock at NFA with free storage. This passbook can be used as loan collateral with financing institutions like the LBP and Quedancor. Similarly, in the latter program, the warehouse receipt issued to palay farmer organizations can also be used as collateral for commodity loan from LBP and Quedancor.

⁶ It was reported the program implemented a direct lending program in its first phase and a parallel financial market but were not successful (Llanto, 2005).

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B. Agricultural Value Chain Financing in the Philippines

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Development Bank of the Philippines

This paper gives a cursory look at the agricultural financing programs in the Philippines. Value chain financing programs by government financial institutions are discussed including examples of financial products and projects funded.

I. Overview of Agricultural Financing in the Philippines

A. The Philippine Economy in 2006

Since being ranked as the 24th largest economy in the world in 2004 by the World Bank, the Philippine economy continued to grow, albeit at a relatively modest rate compared to some of its ASEAN neighbors⁷. GDP grew from 4.9% in 2005 to a still respectable 5.4% in 2006⁸. Main growth drivers include sound and stable macro-economic fundamentals, a vibrant business process outsourcing (BPO) industry, and remittances from overseas Filipino workers (OFWs).

Numerous call centers and BPO firms, including Fortune 500 companies, have penetrated the Philippine market, generating at least 100,000 jobs. OFW remittances continue to be a significant source of government revenue and dollar inflow, as some 11 million OFWs have remitted around US\$12.8 billion (or more than US\$ 1 billion per month) in 2006. Buoyed by growth in remittances, among others, the Philippine peso appreciated steadily against the US dollar and is considered Asia's best performing currency since 2005.

In line with President Gloria Macapagal-Arroyo's pledge to turn the country into a First World state by 2020⁹, the government has predicted a 7% increase in the country's GDP by 2007, building up to a growth of 9% by 2009. Some of the measures initiated by the government which had a positive impact in the economy and helped lay the groundwork for the president's vision include improvements in infrastructure, more efficient tax systems to bolster government revenues, furthering deregulation and privatization of the economy, and increasing trade integration within the region and across the world.

It should also be noted that despite the series of typhoons¹⁰ that ravaged the country in the last four months of the year, the agriculture sector – which normally accounts for around one-fifth of the country's GDP – posted a 3.9% growth in 2006 compared to 2.3% last year. Nevertheless, this growth is weaker than expected as the Department of Agriculture (DA) had earlier forecasted a growth of 4% to 4.5% for 2006. The agriculture sector registered PhP887.6 billion gross output at current prices, which is 8.6% higher than last year's level¹¹. All sub-sectors, except for poultry, registered output gains, with fishery as the top gainer at 6.3%. The crops sub-sector – which made up 47% of total agricultural production – grew by 4.4%, with corn recovering significantly from a negative growth last year. Meanwhile, the

⁷ Asian Development Outlook 2006 (Updated) – Developing Asia and the World. Asian Development Bank

⁸ Gross Domestic Product at 1985 constant prices. Source: National Economic Development Authority (NEDA)

⁹ The Philippines has consistently placed 24th in the updated World Bank's List of GDP for 2005 (PPP). The country was also ranked as the 25th largest economy by the IMF and the CIA World Factbook for year 2005 and 2006, respectively.

¹⁰ Typhoons *Milenyo*, *Paeng*, *Queenie*, *Reming* and *Seniang*

¹¹ Philippine Agriculture Performance in 2006. www.bas.gov.ph

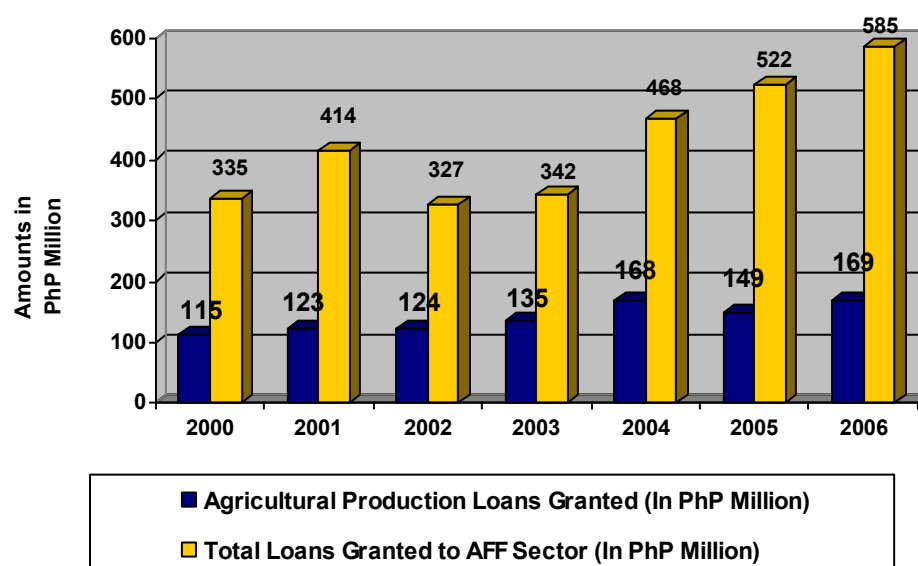
livestock sub-sector, in general, increased its production this year by 2.6% despite a 0.4% contraction in the volume of production of the poultry sector.

B. Banks' Loans to Agriculture

As a developing nation, the economy of the country has been moving towards the industry-based sectors such as manufacturing, telecommunications and services. This may be one of the reasons why the agriculture sector continues to receive a relatively small amount of financing from banks. According to reports of the *Bangko Sentral ng Pilipinas* (BSP), the combined loans granted to the agri-fishery and forestry sectors (AFF) in 2006 only amounted to PhP584.6 billion (about US\$14 billion), a mere 3.3% of the total credit disbursements of PhP17.9 trillion (roughly US\$426 billion) by the banking system¹². Nonetheless, total agricultural loans granted increased by as much as 12%, which is a half percentage point higher than the growth rate in the previous year.

The amount of loans granted for agricultural production has steadily increased over the years but declined in 2005. Coming off an 11% slump in 2005, the banking sector released more funds the following year as an indirect effect of the improved financial standing of the country (lower interest rate and more investments pouring in) and the appreciation of the peso. Although the volume of total agricultural loans increased by 13% at PhP168.7 billion (US\$4 billion) by the end of the year (Figure 1), the amount lent for production was still proportionately small (0.9%) relative to the total loans released by the banking sector.

Figure 1. Agricultural Production Loans Granted vis-à-vis Total Loans Granted to Agriculture, Fishery & Forestry Sector, 2000-2006

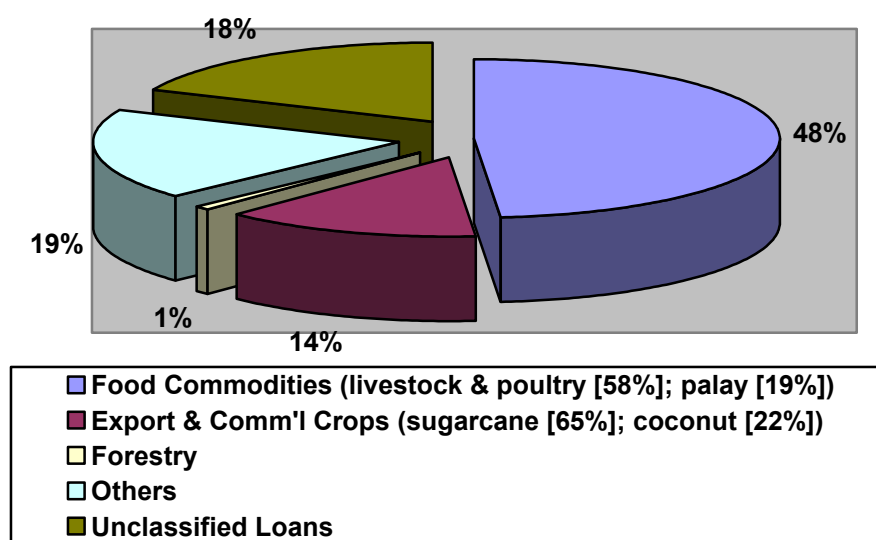


Food commodities remained the leading recipients of bank loans (48%), with livestock and poultry taking more than half (58%) of the loans, amounting to PhP47.3 billion (US\$1.13 million). Cereals (*palay*, corn, sorghum, soybeans and feed grains) and fruits and vegetables accounted for PhP17.8 billion (US\$424 million) and PhP6.9 billion (US\$164 million) loans, respectively. Loans granted for fisheries decreased by almost 30% from the previous PhP14.15 billion (US\$337 million) credit allocation. This could have been the result of the

¹² Source: Preliminary report of the BSP-DER/SRSO. Statistical bulletin, RB System Annual reports, LBP and DBP

decline in the commercial fishing production¹³ as costs for maintenance and fuel went up. As in the past year, loans granted for export and commercial crops increased, except for tobacco, which plunged by 27%. Like most exportable crops, which include sugarcane, abaca fiber, coconut, coffee, cotton and rubber, the tobacco industry has received fluctuating financial assistance since 2000. This may be attributed to the decline in the production of tobacco as tobacco farmers shifted to corn and legumes production particularly in Mindanao.

**Figure 2. Agricultural Production Loans Granted by Commodity
% Share, 2006**



Among financial institutions, private commercial banks (PKBs) remained the major source of loans for the AFF sector because of their sheer size and huge capitalization. For 2006, PKBs accounted for nearly 84% of all loans granted to the sector, or 2.7% of the loans channeled by these institutions to all the sectors of the economy. Meanwhile, loans granted by the Land Bank of the Philippines (PhP18.5 billion or US\$440 million) increased by 18% while that of the Development Bank of the Philippines (PhP 2.4 billion or US\$57 million) declined by 82% as a result of the realignment of its development thrusts into more loans for infrastructures, logistics and micro, small and medium enterprises (MSMEs). On the other hand, loans granted by rural banks have consistently increased every year since 2000, with the highest increase registered in 2006 at PhP 44.25 billion (US\$1.05 million). Among thrift banks, private development banks registered the smallest share of loans granted at 0.5% (Table 1).

¹³ Based on the ACPC 2006 Agricultural Credit Performance Report.

Table 1. Agricultural Loans Granted, By type of Bank
Amounts in Million Pesos (PhP)

Financial Institution	2005		2006		% Increase (Decrease)
	Amount	% Share	Amount	% Share	
Government Banks	29,124.6	5.6	20,969.2	3.6	(28.0)
DBP	13,437.3	2.6	2,436.6	0.4	(81.9)
LBP	15,687.3	3.0	18,532.5	3.2	18.1
Private Banks	492,573.7	94.4	563,661.6	96.4	14.4
PKBs	428,968.1	82.2	488,266.9	83.5	13.8
TBs	25,197.8	4.8	31,143.7	5.3	23.6
PDBs	2,994.6	0.6	3,080.5	0.5	(2.9)
SMBs	17,879.7	3.4	22,859.0	3.9	27.8
SSLAs	4,323.6	0.8	5,204.2	0.9	20.4
RBs	38,407.7	7.4	44,251.0	7.6	15.2
TOTAL	521,698.3	100.0	584,630.7	100.0	

C. Agricultural Modernization and Credit Policy

The World Trade Organization (WTO), Asia Pacific Economic Cooperation (APEC) and the Association of South East Asian Nations (ASEAN) Free Trade Area (AFTA), while raising the challenges of stiffer competition, also provided greater opportunities in more open global and regional markets. The *Agriculture and Fisheries Modernization Act* (RA 8435), enacted into law in late 1997, reflects the government's resolve to help transform agriculture into a highly productive and competitive sector to enable farmers and fisherfolk to meet the challenges of globalization.

The AFMA provides for, among others, the accelerated implementation of the Comprehensive Agrarian Reform Program (CARP) as a key strategy towards poverty alleviation. It also mandates increased public investments in research and development as well as in rural infrastructure, the promotion of small-scale irrigation systems, and a rural credit program that seeks to provide timely and easier access to credit for small farmers and fisherfolk. Explicit in the law is the recognition that all these elements needed to make farming and fisheries viable must be made available in simultaneous and holistic fashion. Credit alone will not work.

With regard to credit, the government, through this Act, has adopted an agricultural credit policy framework that provides for 1) greater participation of the private financial institutions including rural banks, cooperatives and non-governmental organizations, as well as government financial institutions in small farmer credit delivery; 2) the adoption of market-determined interest rates; and 3) emphasis on the proper management and utilization of credit funds.

The *Agro-Industry Modernization Credit and Financing Program (AMCFP)* created by (AFMA) is the main channel of government financing for the agriculture and fisheries sector. It replaced around 40 different government – assisted/funded directed credit programs. AMCFP aims to establish an efficient, responsive and sustainable credit or financial system for small farmers and fisherfolk. Under the program guidelines, government financial institutions such as the Land Bank of the Philippines (LBP), QUEDANCOR and the Development Bank of the Philippines (DBP) serve as fund wholesalers while private banks, qualified non-government organizations and cooperatives act as loan retailers to end-borrowers. Since its launching in 2003, has already infused a total of PhP602 million (US\$14 million) for small farmer lending. This has benefited at least 22,000 small farmers.

The ***Agricultural Credit Policy Council (ACPC)*** as the AMCFP Oversight Body, oversees the administration of the AMCFP Fund and ensures the adequate flow of funds to the Department of Agriculture's (DA's) priority sectors and clients. Aside from overseeing the implementation of AMCFP, ACPC's two other most important roles are: facilitating the collection and consolidation of the directed credit program (DCP) funds into the AMCFP as well as the development and pilot-testing of innovative financing schemes (IFS). These credit facilitation activities mainly seek to improve the flow of credit to the countryside and thus help the government spur growth and development in the agriculture and fisheries sector.

II. Value Chain Financing by QUEDANCOR and the Development Bank of the Philippines

A. QUEDANCOR Financing Program for Working Capital for Buyers and Processors

1. Brief Agency Profile

The Quedan and Rural Credit Guarantee Corporation (QUEDANCOR) is a government corporation attached to the Department of Agriculture, established in 1978 to support the production and marketing of the country's major staples—rice and corn. Over the years, quedan financing became available for fruits, vegetables, meat, poultry, sugar and aqua products. In 1992, its powers and resources were expanded as a government financial corporation by virtue of RA No. 7393. Under the new Charter, *QUEDANCOR is mandated to accelerate the flow of investments and credit resources into the countryside so as to trigger the vigorous growth and development of rural productivity, employment and enterprises to generate more livelihood and income opportunities.*

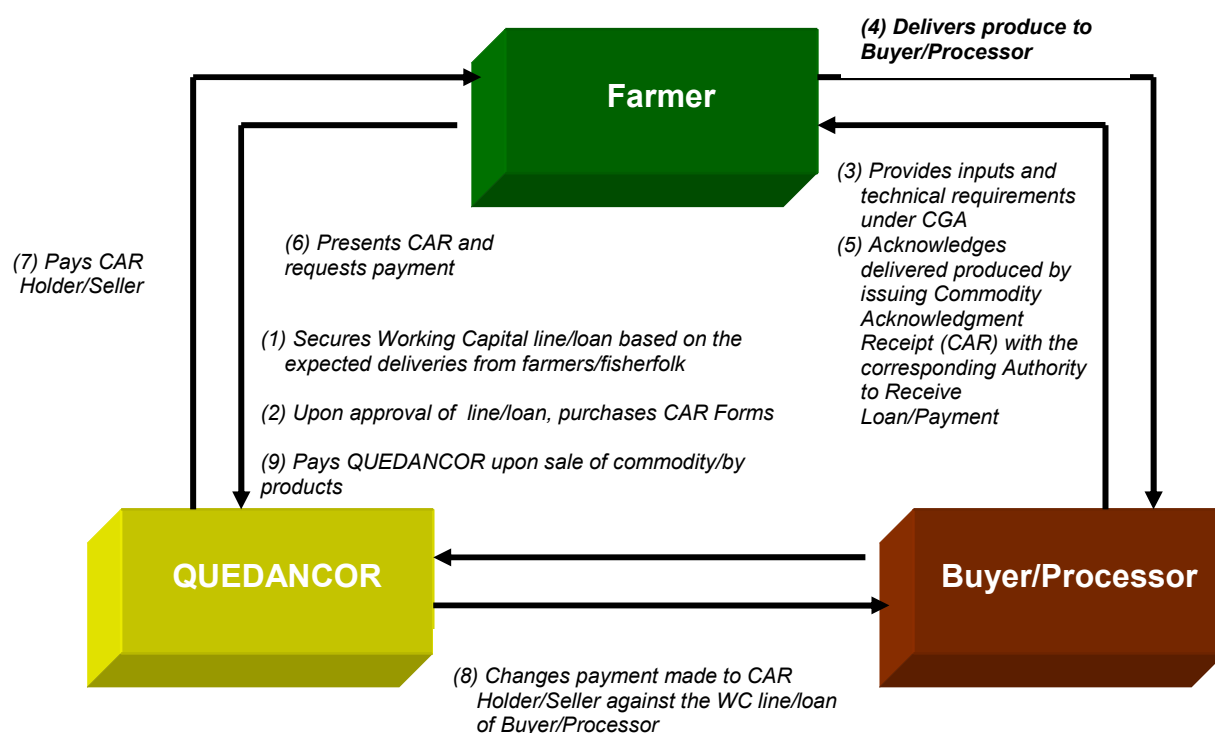
For more than twenty years, the corporation remained committed to provide guarantee and credit assistance in the countryside. The Corporation implements three lending modes to service the financial requirements of the agri-fishery sector, namely 1) Sole Guarantee Mode wherein the Corporation provides 85% guarantee cover on the loans solely funded by banks; 2) Guaranteed Co-Financing Mode, wherein the loan is equally shared between the lending bank and QUEDANCOR, with the former's exposure guaranteed 85% by the latter; and 3) Special Window Mode, wherein credit requirements of clients are served through a special loan fund being managed by QUEDANCOR.

2. Program Features

The *QUEDANCOR Financing Program for Working Capital of Buyers and Processors of Agri-Fishery Commodities (QFPWCL)* was designed to help farmers obtain immediate cash, and at the same time provide additional working capital for the buyers and/or processors of the farmers' produce. In effect, it provides credit assistance to the key players in the agricultural value chain. Specifically, it adopts an inventory financing scheme wherein the buyers/processors of agri-fishery commodities can avail of loan based on Commodity Acknowledgement Receipts (CAR). The CAR is a document issued by the buyer/processor to farmers for commodities delivered for processing.

Objectives. The Program aims to i) Augment working capital of agri-fishery buyers and/or processors especially during harvest season; and ii) Provide farmers with assured income and ready market for their produce.

Figure 3
Process Flow of the
QUEDANCOR Financing Program for Working Capital of Buyers and Processors of Agri-Fishery Commodities (QFPWCL)



The buyer/processor of the agri-fishery commodities shall apply for a WCL with QUEDANCOR based on their expected delivery from farmers/fisherfolk with whom they have an existing contract or agreement, whether formal or informal. Upon approval of the WCL, the buyer/processor shall purchase CAR Forms from QUEDANCOR in accordance with the expected deliveries.

After the delivery of produce by the farmers, the buyer/processor shall issue CAR as evidence/proof of the delivered commodity, as well as corresponding Authority to Receive WCL. The CARs shall then be submitted to QUEDANCOR by the farmer for actual payment for the delivery of produce. The buyer/processor, on the other hand, forwards to QUEDANCOR their loan payment after sales of processed goods to institutional buyers.

Overall, the QPWCL Program maximizes the potential of the stakeholders within the value chain by ensuring that each function is inter-dependent to each individual player. Hence, growth is encouraged as processes/mechanics assure a successful program implementation.

3. Tomato Paste Processing Project of Northern Foods Corporation (NFC) – Pilot Client under the QFPWCL

The tomato paste processing project of Northern Foods Corporation (NFC), an agri-based firm which produces tomato paste and other agri-based products from other indigenous crops, is the pilot client of Quedancor under QFPWCL. It is supported by funds provided by the Agricultural Credit Policy Council (ACPC) to QUEDANCOR which in turn lent to NFC to finance its working capital requirement. NFC serves as an industrial link for small farmers who are contracted to produce tomato raw materials to be processed into tomato paste. To secure the loan exposure of QUEDANCOR, NFC mortgaged its processing facility in favor of QUEDANCOR in addition to the assignment of receivables by NFC to QUEDANCOR.

Primarily, NFC's supply chain involves a Production Supply and Marketing Agreement between the NFC and tomato farmers, which guarantees NFC of a continuous and adequate supply of fresh tomato for processing. To ensure quality of produce, the company provides input supply requirements and gives technical support to the farmers in accordance with Contract Growing Agreement. The raw tomato produced is then processed in compliance with Good Marketing Practices (GMP) and eventually distributed to various end users such as fish canners, processed sauce and ketchup manufacturers and major burger chains (Figure 4). The program benefited about 569 tomato farmers who are otherwise very dependent on tobacco planting as their main source of livelihood.

Program Benefits. The implementation of the QFPWCL brought out several benefits among the stakeholders within the value chain. These benefits are as follows: i) Eliminated layers in the value chain since farmers are directly linked to the buyer/processors; ii) Farmers are provided with updated technical assistance and protected floor price; iii) Reduced post-harvest spoilage since products are immediately forwarded to the buyers/processors; iv) Assured supply of raw materials for processing; and v) Minimized dependency to imported tomato paste.

4. Other Programs

In support of the provisions of AFMA, specifically the establishment of a modernized and technology-based agriculture that is globally competitive and sustainable, QUEDANCOR has established various financing programs designed to provide funding to support agricultural and fishery production projects. Correspondingly, the Corporation has improved its financing schemes to accommodate not only small farmers and fisherfolk but also organized group of agri-entrepreneurs such as cooperatives, corporations and associations who are engaged in various agri-fishery activities. The following are the flagship programs of the Corporation.

Figure 4
NFC's Supply Chain

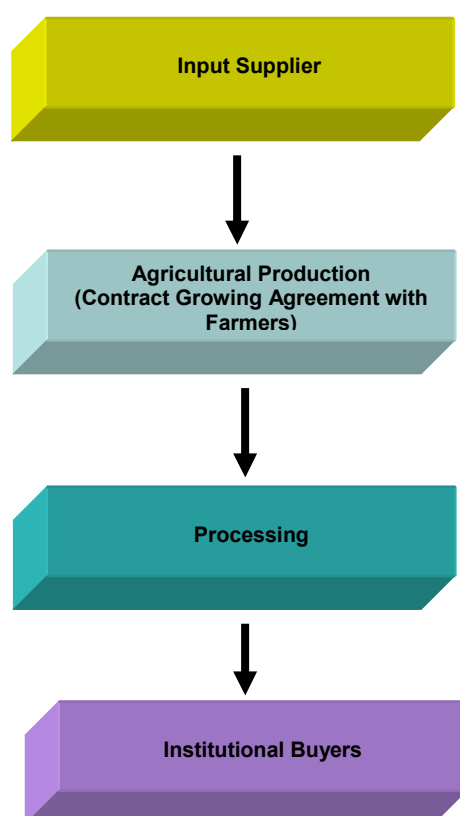


Table 2. Brief Description of QUEDANCOR (Other) Programs

Program	Description
a. QUEDANCOR Program for Micro Entrepreneurs (QPME)	A lending facility for micro-retailers engaged in retailing, distributing, processing, packaging or repackaging raw, semi-processed or fully processed agricultural, aquatic, poultry, livestock and other agri-related commodities and supplies (e.g. rice, corn, vegetables, fish, fruits, chicken, meat, fertilizers, feeds, pesticides, etc).
b. QUEDANCOR Wholesale Program for Countryside Lending Conduits	A wholesale lending facility for cooperatives and rural cooperative banks to provide target beneficiaries access to credit and other services for their agri-fishery and forestry-based projects.
c. QUEDANCOR Program for Agri-Fishery Small and Medium Enterprises	A retail lending window facility which provides production and non production loans such as processing, acquisition of machinery and equipment to agri-entrepreneurs, corporations /cooperatives/ federations/people's organizations/ non-government organizations and local government units.
d. QUEDANCOR Program for Agri-Aqua Inventory Management	A guarantee program designed to provide credit access for farmers, fisherfolk, cooperatives, processors and wholesalers of agri-aqua commodities thru inventory financing using quedan receipts.
e. QUEDANCOR Retail Guarantee Program	A guarantee program designed to provide guarantee cover on the loan exposure of LE to farmers, fisherfolk, sole proprietors, cooperatives, POs/NGOs and SMEs for any agri-business projects.
f. QUEDANCOR Wholesale Guarantee Program	Guarantees the portfolio loans of LEs and other accredited lending entities to provide small farmers, fisherfolk, their organizations, cooperatives and SMEs better access to credit.

B. DBP's Sustainable Logistics Development Program

1. Background

As a developmental financing institution, the Development Bank of the Philippines has taken upon itself the strategic task of influencing and accelerating sustainable economic growth in the Philippines. Its primary mandate is to provide for the medium and long-term financing needs of agricultural and industrial enterprises with focus on small and medium-scale industries, particularly in the countryside. The DBP also supports the growth of domestic capital markets and is the country's major conduit of international funds from multilateral and bilateral institutions for official development assistance (ODA) programs and grants.

After 60 years in existence, the Bank continues its developmental thrusts on economic pump-priming through its policy-based or program-type lending to strategic sectors like infrastructure, transportation, telecommunications, power and energy, SMEs, agriculture and food security, education, health care, housing, micro-finance, and environment. DBP is also recognized as the first Philippine bank to be ISO 14001 Certified by SGS Switzerland SA for its successful establishment and implementation of an Environmental Management System (EMS). The recognition covers its banking, lending, and investment activities.

Considered as DBP's flagship program is the Sustainable Logistics Development Program (SLDP) which addresses the needs of logistics or distribution of goods and services within the context of the government's goals of global competitiveness, poverty alleviation and attainment of food sufficiency at the local, regional, and national levels.

The programmed financial assistance of SLDP is focused on the physical asset requirements of a sustainable distribution system inherent to maritime transport and related transport by land. It is geared towards the development of progressive long-haul shipping to constitute the country's national backbone in the transport of bulk agricultural products and the development of short-haul RORO ferry system to link the islands to the growth centers of the country.

2. Program Overview

An integrated logistics system that provides efficient transport of goods from the production areas to the consumption sites is vital to achieving the Philippines' development goal of alleviating poverty and attaining sustainable economic growth.

DBP's developmental mandate impels the bank to aim for poverty alleviation to sustain economic growth. Years of experience in managing DBP's previous shipping programs have brought its managers to the many islands of the archipelago only to see the bounty of food resources in these areas unable to reach ready markets for lack of access roads, ports, vessels as well as handling and cold storage systems. An estimated 40 % spoilage of the country's harvested produce translates to PhP 30 billion or US\$ 714,286,000.00 a year, while the spillage of corn is about 20 % of the national production amounting to PhP 4.5 billion or US\$ 107 million annually through inefficient and inadequate use of technology.

The strategic developmental response of the Development Bank of the Philippines (DBP) to this challenge is embodied in the ***Sustainable Logistics Development Program*** (SLDP).

Innovative in its focus and scope, the SLDP was crafted towards providing financing for the efficient movement of basic goods and services.

3. **Objectives**

The urgent need for an efficient distribution of goods and services to spur economic activity in the countryside is the goal of the ***Sustainable Logistics Development Program*** through the provision of medium and long-term credits. The project heightens close collaboration between the private and government sectors to bring about cost-effective ways of moving goods, services and people by providing financial and technical assistance for an integrated transport infrastructure and support system. As one of the major parameters of economic development given the archipelagic configuration of the Philippines having 7,100 islands, distribution is critical to the country's food security. It determines market diversity and consumer choice, thus driving the engines of competitiveness, economic activity and job creation. More specifically, the SLDP aims for the following:

- To improve transport, warehousing and distribution infrastructure which will have a direct impact on prices of basic commodities, as an anti-poverty strategy;
- To stimulate economic activity by providing sea links between islands and regions, thereby reducing transport costs and travel time;
- To improve efficiency, profitability and overall competitiveness of Philippine agriculture.
- To provide greater mobility for commuters and open up new markets for agricultural products and tourism-oriented SME's.
- To raise the standards of the shipping sector and its cargo handling and distribution system to make the Philippines competitive in the global arena.

4. **Scope**

The SLDP has three major components:

i. **Roll On/Roll Off Terminal System (RRTS)**

RORO terminals and ferry operations will be established especially in areas where RORO services are absent or being serviced by small wooden boats. The RRTS will form part of the national highways providing the necessary linkage and efficiency to inter-island travel and transport.

The RORO concept is effective in archipelagos like the Philippines as it uses the 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 will 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 centers.

ii. Bulk Chain/Grains Highway

The component consists of investments in:

- post-harvest rice and corn processing centers, activities of which include: mechanical shelling, bulk drying and storing, bulk handling and trucking;
- terminals with silos with mechanical loading and unloading equipment;
- bulk carriers (dry/liquid/gas)

The development of the bulk chain/grains highway aims to achieve economic scales in the distribution of rice, corn, soya, and other basic commodities from production areas to markets/consumers.

iii. Cold Chain Highway

This component focuses on the reduction of wastage and spoilage of fish, fruits, and vegetables and maintaining their shelf life and quality through a connected refrigerated chain from producers to consumers through investments in:

- Aggregating and processing centers/plants
- Temperature controlled storage facilities
- Reefer transport (vans)
- Distribution stores

5. Post Harvest Interventions

Post production activities are an integral part of the food production system involving a series of operations from the producer through a distribution system to the consumer. These activities are multidisciplinary in nature, involving harvesting, handling, storage and processing, and warehousing and distribution infrastructures.

Agriculture contributes as much as 22% of the country's Gross National Product. As such, agricultural production deserves much focus and attention. But the production side is only half of the picture. Getting the food commodities to the market and end-consumers in fresh condition, without least spoilage and losses and at reasonable cost is just as important.

From the farms, the food commodities normally have to go through the stages of processing, storage, packaging, handling and transport. It is here where there is much room for improvements. It is at these stages where large amounts of quality and quantity losses have to be managed and minimized to benefit farmers, fisherfolks, traders, and the consuming public.

SLDP's involvement in the post harvest sector is focused on ensuring enhanced value of food and agricultural products through the application of cost-efficient and environmentally-sound post-harvest techniques, particularly those which contribute to reducing losses and to increasing the efficiency of the post-production system. In the agricultural supply chain, products must get to the right places, at the proper quantities, at

the right time, in the right condition, in the desired form, in the most efficient manner and at the lowest possible costs.

6. **DBP Financing for SLDP Projects**

DBP's lending thrust under the SLDP covers a broad range of projects engaged in the distribution and supply chain – from the farmers, traders, consolidators, warehousing and transport operators, up to the wholesale and retail distributors.

Working capital needs of small farmers, traders and entrepreneurs are assisted through DBP's micro SME lending programs. Larger investments in capital equipment and fixed assets such as RORO vessels and bulk carriers, reefers, silos and other cargo handling and storage equipment are supported by DBP's project financing programs such as the SLDP.

As of today, DBP has already extended financial assistance amounting to PhP13.0 billion or US\$310million covering 212 projects in various types. And for 2008, we have in the pipeline of 79 projects with financing requirements amounting to PhP7.0 billion or US\$167 million.

Table 3. Sustainable Logistics Development Program Matrix

SUSTAINABLE LOGISTICS DEVELOPMENT PROGRAM MATRIX			
<i>COMMODITY</i>	<i>AT PRODUCTION</i>	<i>AT PORT/SHIPPING</i>	<i>AT RECEIVING</i>
<i>GRAINS IN BULK</i>	Post harvest facilities	Silos	Bagging & palletizing facilities Silos/storage facilities
	Bulk trucks	Loading and discharging equipment Bulk carriers	Bulk Trucks
ROAD RORO TERMINAL SYSTEM/REGULAR SHIPPING		Municipal/private ports	Municipal/private ports
		Ferry routes	
		RORO ferry vessels	
<i>PERISHABLE GOODS</i>	Cold storage processing and packaging facilities	Cold storage facilities for various types of fruits & vegetables, meat & fish	Cold storage facilities
<i>PERISHABLE GOODS</i>	Reefer trucks and containers	Reefer containers	Reefer trucks

5 Effective Way to Integrate Small Farmers in the Value Chain *Experience of BRAC*

Md. A. Saleque
BRAC

Value Chain Management approach can integrate small and marginal farmers with agricultural enterprises through market linkages for high value commodities (fruits, vegetables, flowers, spices, fisheries, poultry) based on market demands, comparative advantage and farmer preference in a given area. But unfortunately value chain in agribusiness is nearly absent in Bangladesh and market linkages between farmer and retailer or processors are extensive and complex. Moreover, the actors of this sector are not well linked. Value chain financing is also inadequate and unavailable to different value chain actors for the purpose of product marketing. So, adequate support is needed for farmers and other actors for accessing in appropriate market outlet to maximize their return.

The small farmers are a diverse group with diverse livelihoods, needs and potentials, which changed over time due to lifecycle, new opportunities and external hazards. Through program experiences this paper will focus on practical and conceptual innovativeness, which is required in program design, & operation that is linked with value chain in agricultural sector. BRAC's extensive outreach, knowledge and network through its microfinance and other poverty eradication programs have led BRAC to a certain level where it can confidently fight against poverty.

I. Introduction

A. Poverty in Bangladesh

Bangladesh has a total area of 147570 square kilometers (BBS 2005). The total population of this country is 141 million. It is well known that poverty acute in Bangladesh. Based on Calorie Intake Method 44.3% population of the country is below the absolute poverty line (less than 2122 K.Calorie per person per day) and 20% population of the country is below the hard-core poverty line (less than 1805 K.Calorie per person per day) (BBS 2005). Women are particularly disadvantaged which is evident in their higher mortality rates, lower literacy rate, severe health conditions and limited access to employment (TA formulation mission 20 August, 1997). The literacy rate is still low. Land, which is the single most important resource in rural areas, is distributed very unequally with 48 percent of the household owning less than 0.50 acres of land (functionally landless). 40% less than 1 hectare (small farmers) and 12% more than 1 hectare (medium & large farmers) (IDE-2002).

Access to credit has been identified as a major mechanism with which a household can improve its economic condition. The rural households in general and especially landless and the marginal farmers in particular have very little access to institutional credit. It is not surprising that women in rural areas had virtually no access to institutional credit until the 1980s. Since the beginning of 1980s some specialized programs were designed by the NGOs and also some Government project to provide financial support on credit basis to women who in their turn have proved themselves to be “bankable”. Non Government Organizations (NGOs) feels that poverty is not only characterized by a poverty of income and resources but also aggravated by limited access to services, justice and rights. So the essential elements in the design of any agricultural development program thus require target orientation, gender specificity and sustainability of the activities.

B. Major Constraints of Agricultural Sector

The major constraints of Bangladesh Agriculture are the lack of essential linkages amongst production, processing and marketing of agricultural products. In Bangladesh, the seed industry is evolving with in the context of traditional agrarian society where more than 90% of the seeds used for crops produced, processed and preserved by the farmers at their household level. Many of such seed stocks are below seed standards and reduce the yield of the crops. BADC (Bangladesh Agricultural Development Corporation), private companies and NGOs together, till now it is not in a position to supply more than 8.38 % of the total seed requirement (Rahman, 2003). Average crop production is still low due to lack of quality seeds, inadequate quality input and technical know-how. Agricultural land reducing 80000 ha/year where as population increasing 20 lakh/year. Another major constraints is due to higher cost of production and lower returns in cereal cultivation, shift has started from cereal to non-cereal (fruits, vegetables, tubers, and pulses etc.) and non-crop (livestock, fisheries, poultry, dairy etc.) production and processing (Munshi F.I, 2003). It is observed that nearly 20% of field crops, 37% of the fruits and vegetables are spoiled every year due to improper handling, transportation, storing and processing (Munshi F.I, 2003). BRAC plays a very important role in production of seeds (specially maize, hybrid rice, potato, vegetables etc.) in Bangladesh and contribute major market share. Trends of aquaculture increasing but fisheries production decreasing due to reduction of fisheries resources and over fishing. The average production of fish per hectare is very low in compare to other countries. In the poultry and livestock sector, high mortality and low productivity of the scavenging bird and local cattle in the rural areas, health and veterinary care is inaccessible for the village women, unavailability of feed ingredients and fodder, limited access to institutional credit and extension services etc. are the main constraints to develop the sector. It is also observed that the fast expanding poultry, dairy, and fish industry is largely depending upon imported feeds or raw materials.

The media can play a very useful role in highlighting the areas where effective public policies are regained to create a synergy - the synergy of actions that can create an enable environment. There is no denying that reform of the rules governing the trade in food and agriculture is essential to promote actively sustainable development and ensures food security. So the rules, which benefit small-scale farmers, can foster the strength of agro enterprises in Bangladesh.

C. Agriculture Value Chain

Agricultural value chain covers all aspects of services and trades associated with the production and processing of agricultural commodities from input supply through primary production to processing and finally marketing. In a simplest term, enterprises and individuals, who add value to a commodity or service, link together and manifest themselves, as a chain of operations is a value chain. We have numerous producers, traders, processors, stockiest, distributors and retailers. The interdependent linkages of the chain and the security of the market drivers demand for the final product, provide the producers and processors with an assured market for their products. In theory: agro business follows the same basic principles as other industrial sectors with two attributes that makes it different and increased its complexity. Firstly, primary production is often seasonal, whilst demand is much more constant for some agricultural product. This gives seasonal fluctuation in price and need to store the product. Secondly, in developed countries government often provide considerable agricultural subsidies and intervene in both the marketing and input supplies, which often lead to considerable market distortions.

Value Chain Management approach can integrate small and marginal farmers with agricultural enterprises through market linkages for high value commodities (fruits, vegetables, flowers, spices, fisheries, egg, milk, meat and poultry) based on market demands, comparative advantage and farmer preference in a given area. Production of HVCs offers greater opportunities to diversify incomes of small & marginal farmers. However, the marketing system of agro products is complex and the actors throughout the supply chain are not linked. So, Support is needed to provide farmers with appropriate profitable market outlets and up to date market information to maximize their return & increase output with better quality standard. For a particular product, travel from the farm gate to consumers it usually has to pass through many different hands. On the way it is packed, unpacked, graded, sorted, handled and transported many times. This has significant consequences not only for the quality of the product when it reaches the consumer but also for the efficient organization of the agricultural marketing system. Study conducted in Bangladesh concludes that: Value chain in horticultural, fisheries and poultry sub-sectors is weak and virtually non-existent (Ahmed, S 2005). At present conditions, agricultural value chain finance is very important for the small and marginal farmers to involve them in agriculture value chain system i.e. production, processing and marketing system to sustain in the competitive market.

II. About BRAC

BRAC, a national, private organization, started as an almost entirely donor funded, small scale relief and rehabilitation project initiated by Fazle Hasan Abed to help Bangladesh overcome the devastation and trauma resulting from the Liberation War and focused on resettling refugees returning from India. Today, BRAC has emerged as an independent, virtually self-financed paradigm in sustainable human development. Currently the largest NGO in the world, BRAC employees number more than 100,000 who work with the twin objectives of poverty alleviation and empowerment of the poor.

A. BRAC programmes

BRAC's Economic Development Program provides the foundation for all of BRAC's development work and has so far organized 6.87 million poor, landless and disadvantaged people, mostly women, into 170,277 village Organizations (VOs). The VOs serve as forums where people can collectively address the principal structural impediments to their development path, receive awareness training, credit support, savings facilities and get the opportunity to mobilize economic and social power.

BRAC's microfinance program strives to ensure economic and social sustainability of the poor by offering credit and assisting and encouraging them to save. So far BRAC's microfinance program has disbursed Tk. 208,409 million (3042.46 million USD) with a 99.52% recovery rate and requires no collateral. Member's savings equals a total of Tk. 10,595 million (154.67 million USD) with BRAC (BRAC microfinance report 2006). BRAC finds it essential that its microfinance members are informed and aware enough to use their loans in an optimum way; that they are cognizant of their rights, maintain good health and hygiene and have the confidence to establish a means of income generation.

BRAC's Non-Formal Primary Education program, set up in 1985, also serves as a prime example of the organizations' innovation and extensive coverage and has been replicated in about a dozen countries. It fulfills BRAC's goal of poverty reduction through access to

education for those traditionally outside formal schooling. BRAC develops its own education materials in line with the government curriculum with customized materials that target indigenous groups and other marginalized groups. The adolescent Development Program (ADP) trains adolescent BRAC school graduates, both girls and boys, in vocational skills, health awareness including reproductive health and leadership.

Only 36% of the population in Bangladesh has access to primary health-care services beyond childhood immunization and family planning.

BRAC' Health, Nutrition and Population Program takes a broad approach to the health needs of the poor by providing basic curative and preventive services to more than 97 million people. Trained health workers and volunteer's work to raise awareness among the rural poor of health issues and aim to reduce maternal and child mortality and vulnerability to common diseases. Services are offered to control infectious diseases like tuberculosis, acute respiratory infections, diarrhea etc. BRAC has collaborated with the government to immunize children and pregnant women, leading to 80% immunization coverage of the population. The program also provides services to pregnant women for improving their health and nutrition status.

Various support programs provide the necessary physical and technical support for other programs to run smoothly and effectively. Such program include the Training Division, Research and Evaluation Division, Advocacy the Human Rights Unit, Finance and Accounting, Internal Audit and Monitoring, Human Resources, Administration and Special projects, Public affairs and Communications and Publications.

BRAC's coverage extends to 110 million of the 141 million inhabitants of Bangladesh and 69,421 villages in the country's 64 districts (BRAC micrifinance report). BRAC continues to maintain a strong commitment to development at the grassroots level and stands by its belief that community partnerships and institution building go a long way in sustainable development and the spreading and transferring of knowledge to future generations.

The organization has been a symbol of innovation and dynamism, ever ready to experiment with innovative ideas and has been called upon to assist a number of countries in crisis including Afghanistan, Srilanka, Tanzania, Uganda, Southern Sudan and Pakistan. Its using models and approaches that are developed from a deep understanding of contextual realities within which people live and struggle to change through a wide range of development interventions in microfinance, education, health, agriculture, livestock, infrastructure and social development.

B. BRAC in Agriculture

BRAC started its agricultural activities in early eighties and is now working in all sectors of agricultural development, and playing an important role in the countries attaining self-sufficiency in food production. These activities include poultry & livestock, agriculture, fisheries and horticulture. BRAC provides essential inputs to its group members/programme participants as well as commercial small-scale entrepreneur in an effort to further strengthen and ensure the maximum return to expand their enterprises. Since supply of inputs for different enterprises by the local industries and/or government are not of sufficient quantity/good quality, BRAC has established a number of support enterprises to supply these inputs. Timely supply of good quality inputs is a major factor that affects enterprise returns

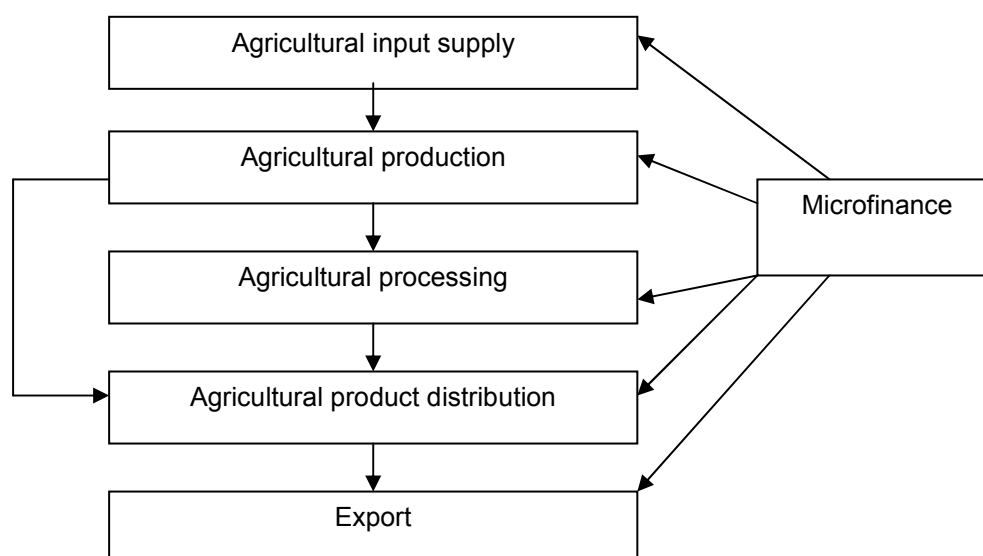
and their contribution towards poverty alleviation. BRAC's support enterprises link rural producers with growing urban markets by providing needed goods and services. Each of the programme has three wings-extension, production of input & processing and distribution/marketing. This offers range of package support to different categories of farmer in agriculture sector in Bangladesh. BRAC Agriculture provides support (training, input supply, small & medium credit, technical assistance etc) to four categories-

1. Traditional farming system
2. Improved traditional farming system
3. Semi-commercial farming system
4. Commercial farming system

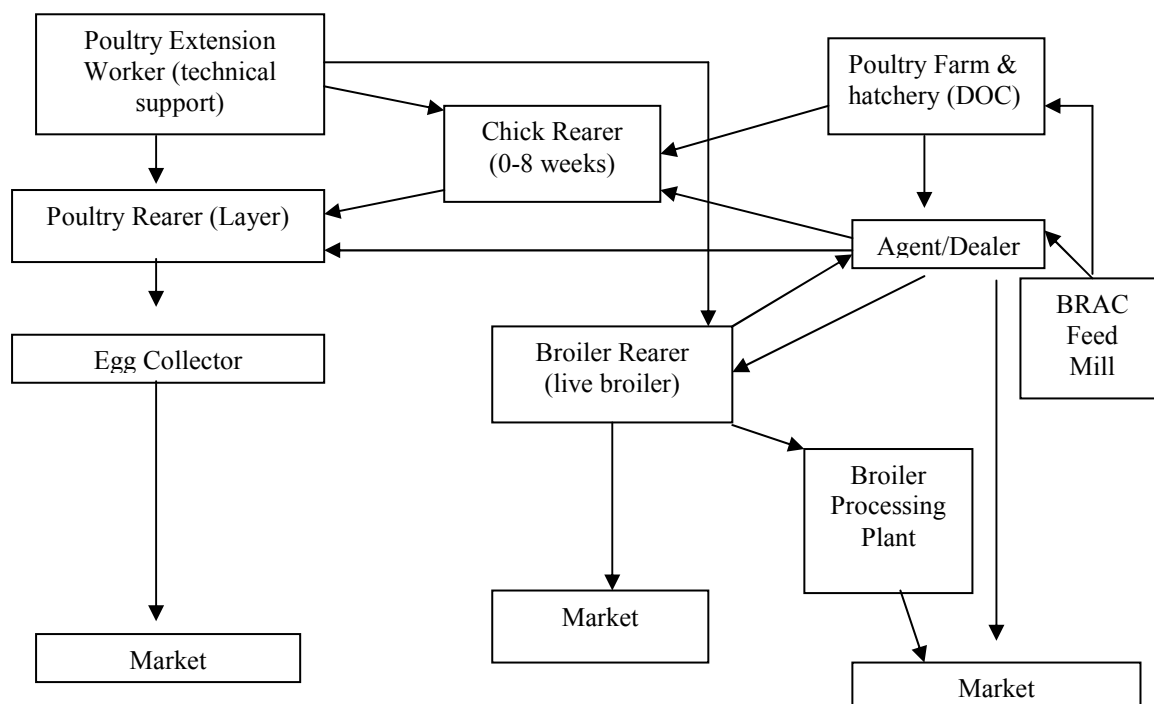
At a glance, BRAC's present activities on agriculture development are being highlighted below.

III. Integration of small farmers in the value chain

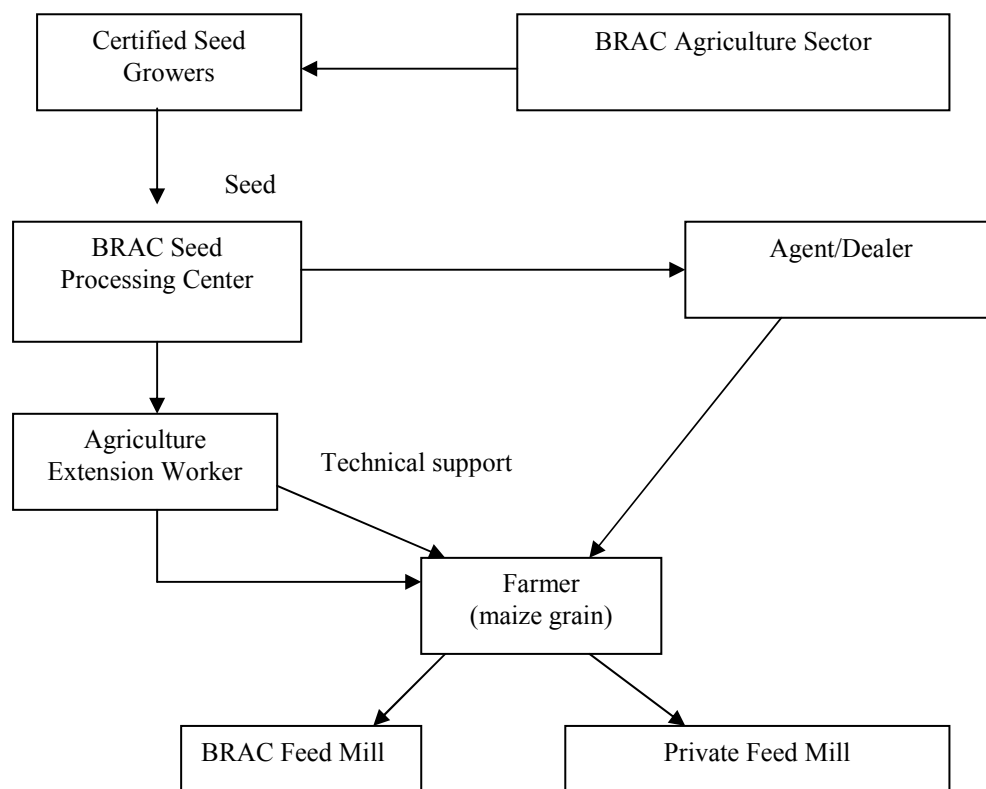
Integration into dynamic and efficient value chain is an important strategy for financing agriculture entrepreneurs.



Integration of poultry farmers in value chain-



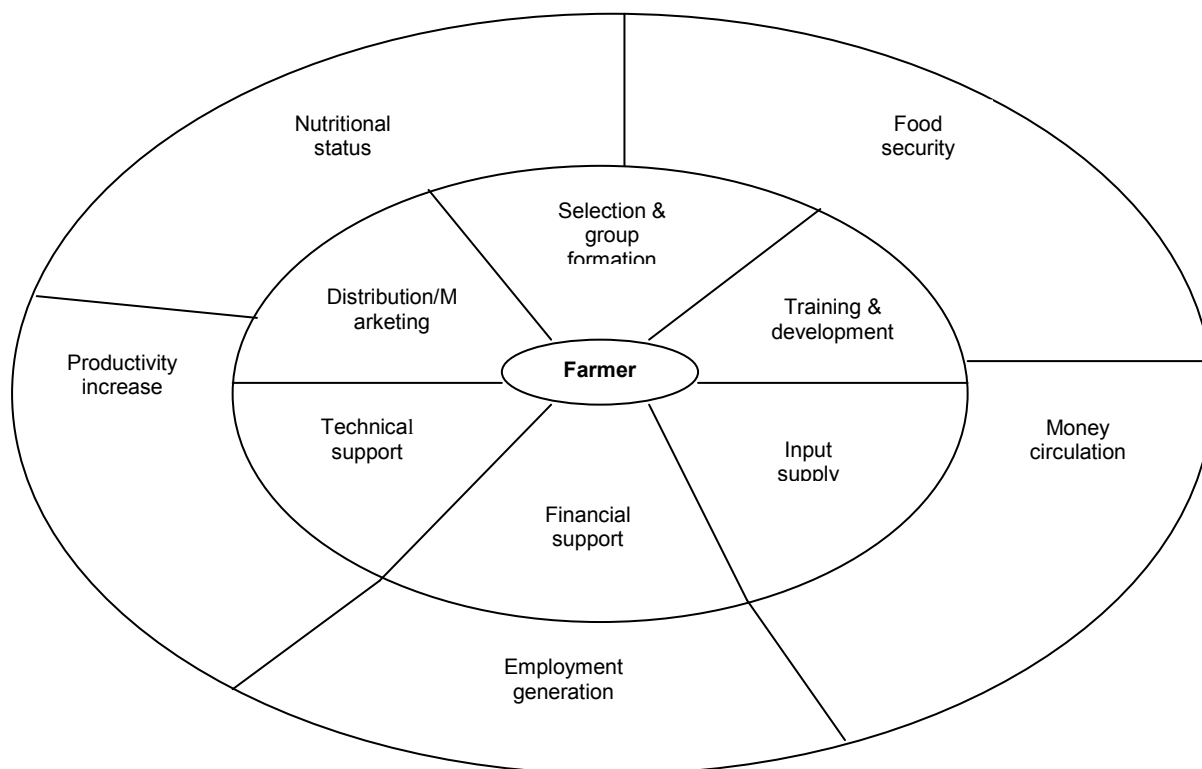
Integration of maize farmers in value chain-



IV. Implementation strategy

Over the last 25 years BRAC designed specific model/framework in agricultural sector to support small and marginal farmers in Bangladesh.

This is a comprehensive package to address the need of different categories of farmers.



Framework of BRAC Agriculture activities

A. Selection and Group Formation

BRAC organizes the landless women into groups. There are 25-45 group members in each group, out of which about 10-20 group members are selected for agricultural activities and provided with different types of training on related programme.

B. Training & development

1. Extension Workers

Since the extension services provided by govt. and other agent were limited and inadequate to meet the present demand of the farmers, BRAC initiated several programmes to develop extension worker and to provide services to the doorstep of farmers. Most of the workers are small and marginal farmers. As a measure of extension services, BRAC provides the following training to their group members.

a. Poultry Workers

One-woman from the group is selected and given one week training on poultry rearing, management, vaccination and treatment. The poultry workers are engaged in vaccination and treatment of birds in 2 to 3 villages. Once a month they attend a one-

day refresher course and receive poultry vaccine and medicine twice a month. The workers charge Tk.0.50 -1.00 per bird as token fee.

b. Artificial Insemination (AI) Worker

Provides 4 weeks training to develop AI worker and one day refreshers in every month. BRAC also provides necessary inputs and technical assistance to its AI workers. The AI workers are responsible for AI services to farmers at their doorstep (home to home service).

c. Agriculture Extension Worker

They receive one week training and assign to provide technical services to farmers.

d. Aquaculture Extension Worker

Aquaculture Extension Workers receive one week training. They also act as nursurer and supply the fingerling.

Table-4 Extension Worker developed by the programme

<i>Name of the Programme</i>	No of Extension worker developed (2006)
Agriculture Extension Worker	10,778
Poultry & Livestock Extension Worker	19,200
Aquaculture Extension Worker	8,326
Artificial Insemination (AI) Extension Worker	1,050

Source: BRAC agriculture report

2. Participants related to agricultural activities

BRAC also provides necessary training to farmers on different agricultural activities.

Table 5 is showing the programme participants of BRAC Agricultural activities:

Table-5 Participants of the programme

Particulars/farmers	Activities	No of participants (2006)
Poultry	Rearing of broiler and layer for meat & egg production	1,708,145
Livestock	Rearing of cow and goat, fodder cultivation	570,266
Agriculture	Cultivation of rice, maize, vegetable, potato etc.	853,390
Sericulture & Horticulture	Horticulture nursurer to produce seedling	288642
Fisheries	Pond aquaculture	2,77,230
Small Traders	Involved in supply and marketing of product.	1,36,159
Total		3,833,832

Source: BRAC report (2006)

C. Agricultural Input Supply

The Agricultural inputs which are commonly required by the producers and farmers in their production process are seed and seedlings, fertilizers, pesticide, day old chicks, vaccine, medicine, semen etc. Presently farming practices of farmers have evolved from subsistence farming to commercial farming. Thus require quality inputs for increase production. Crop failures are usually the result of poor quality of the seed used (Delouche J.C, 2004). About 50% of the production depends on the quality inputs. As a result BRAC try to ensure the supply of quality inputs to its farmers, after completion of their training through the extension worker/agent (inputs like seed, seedlings, day old chicks, feed, bull & buck semen, fingerlings, medicine and vaccines, accessories and other necessary inputs).

Table 6 is showing the volume of input supply by different programmes-

Name of Programme	Components	Input supply in 2006
Poultry & Livestock	6 Poultry Farms	Day-old Chicks – 12.47 million
	3 Feed Mills	Poultry feed – 39,239 MT
	1 Bull Station	AI Straws – 305,197 doses
Agriculture	2 Seed Processing Centers	Rice – 1,444 MT, Maize –707 MT Vegetable- 112 MT, Potato – 3,500MT
	15 BRAC Nurseries	Seedlings – 1.91 million
	1 Tissue Culture Lab	Plantlets- 0.5 million
Fisheries	8 Freshwater Prawn Hatcheries	Post larvae – 19.36 million
	4 Fish Hatcheries	Spawn – 5,168 kg
Sericulture	10 Grainage Centers	DFL – 893,300
Vegetable export	1 Potato seed production center	300 MT
	1 Veg. seed production center	450 Kg.

D. BRAC Microfinance for value chain

1. Agriculture farming and microfinance for farmer

To ensure proper utilization of skill, BRAC provides credit to different categories of farmers. Agricultural finance is dedicated in financing agriculture related activities such as input supply, production, distribution, wholesale, processing and marketing expansion. BRAC offers different microfinance loan products or package for different categories of farmers to match their financial needs.

2. Why BRAC started microfinance?

Fazle Hasan Abed the founder and chairperson of BRAC started rehabilitation work in a village called Sulla to resettle war refugees immediately after the devastating liberation war of Bangladesh. In doing so he discovered that the poor needed microcredit in order to break free of the traps of the dalals or mohajons who lent money against collateral at high interest rates. Thus, with its first loan of Tk 10,000 (USD 150) given to a group of poor fishermen at no interest, BRAC pioneered in Microcredit in Bangladesh.

Group credit was given for different purposes such as agriculture, small business and housing. The process was on till 1975 when it was funded that it led to conflicts within the group since no one wanted to take responsibility. This led to some changes in the lending areas. The individual would take the loan and bear full responsibility of repaying the loan whether or not he made a profit. This method worked better than group credit.

After Sulla, BRAC stepped into Manikgonj. Inspired by the success of its microfinance program, BRAC started thinking about what to do next to reach out to more people. microfinance program started to expand.

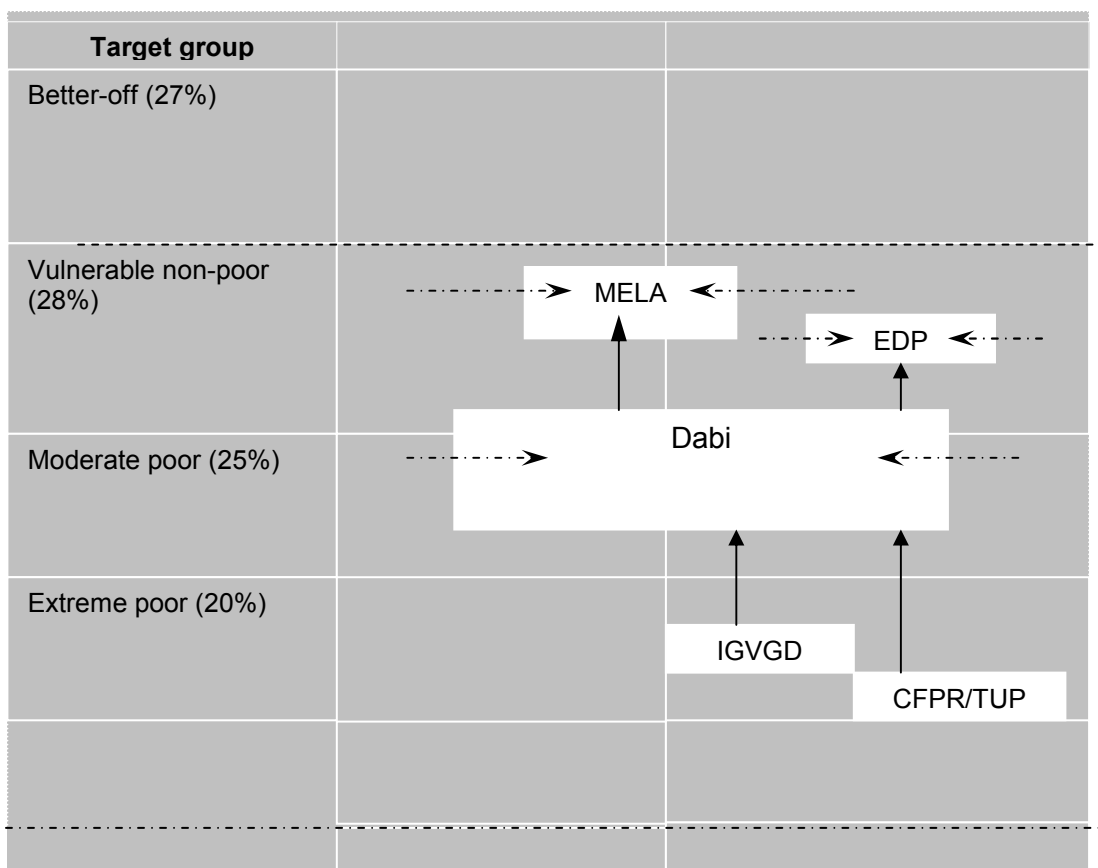
BRAC identified six sectors in which large numbers of low-income women could be productively engaged near their homes-poultry, livestock, fishery, agriculture, agro-forestry and sericulture. For each of these sectors, BRAC development an integrated set of services including training in improved techniques, provision of improved breeds and technologies, on-going supply of technical assistance and inputs, monitoring and guidance as needed and marketing of finished goods.

As the program evolved with experiential learning, BRAC recognized that the poor do not constitute a homogenous group and therefore one size of microfinance was not suitable for the categories of the poor. BRAC addressed this by offering differentiated financial services designed according to the needs of different people living at different levels of poverty.

3. How microfinance respond to the needs of farmers?

The poor are a diverse group with diverse livelihoods, needs and potentials, which change over time due to lifecycle, new opportunities and external shocks. This diverse and dynamic reality of poor people's lives forms the canvass within which BRAC conceptualizes and designs its repertoire of development programmes, in which microfinance is a core element.

If we map the various poverty categories we obtain from BRAC's different microfinance programmes, we get a picture like the following-



Note: IGVGD=Income Generation for Vulnerable Group Development; CFPR/TUP=Challenging the Frontiers of Poverty Reduction/ Targeting the Ultra Poor;MELA=Microenterprise Lending and Assistance; EDP=Enterprise Development Programme; → signifies vertical & ----> horizontal entry.

Considering the poverty category BRAC designs its microfinance program into five principal products, each targeting a different market segment-CFPR/TUP (Challenging the Frontiers of Poverty Reduction/Targeting the Ultra Poor), IGVGD (Income Generation for Vulnerable Group Development), DABI, UNNOTI, PROGOTI/MELA/WEDP).

Table 7 is describing the loan products of BRAC.

Population	BRAC Prog.	Definition of Target Group	Terms & Conditions/Mandatory Prerequisites	Product Details
Ultra Poor	CFPR/TUP	<ul style="list-style-type: none"> Dependence upon female domestic work and begging Having less than 10 decimals of land No adult active male member in the household No productive asset in the household 	<ul style="list-style-type: none"> There should be at least one adult, active woman member in the household capable of getting involved in an income generating activity Households must not be associated with any other MFIs. 	<ul style="list-style-type: none"> Asset transfer & subsistence allowance Enterprise development training Social development training Essential health care support <p>After completion of 2 years under CFPR, group members can attain IGVGD loan products.</p>
	IGVGD	<ul style="list-style-type: none"> IGVGD members are: Household owning no more than 15 decimals of land Women who are divorced, separated, or have disabled husband, aged between 18-49 years. 	<ul style="list-style-type: none"> To be eligible for a loan: One must become a BRAC VO member after joining the programme Members must save with BRAC in order to be eligible for a loan 	<ul style="list-style-type: none"> Food aid (WFP/GOB) Livelihood training Input support Social development training Starting loan size US\$20 for members Interest 12.5% flat Loans are repayable over one year through 46 equal weekly installments.
Moderate poor	Dabi	Members are those who won up to one acre of land (including homestead)/ sell their manual labor to earn their living.	<p>To be eligible for a loan:</p> <ul style="list-style-type: none"> One must be a BRAC VO member Members must save with BRAC regularly 	<ul style="list-style-type: none"> Loan range between Tk 3,000-15,000 (US\$42-215) Interest rate 12.5% flat Loans are repayable over one year through 46 equal weekly installments.
	Unnoti	Those who have more than one acre of land and are involved in farm and non-farm enterprises.	<p>Unnoti borrowers:</p> <ul style="list-style-type: none"> Save regularly Attend regularly in weekly meetings. 	<ul style="list-style-type: none"> Loan range between Tk 15,000-50,000 (US\$214-714) Interest rate 12.5% flat Loans are repayable over one year through 46 equal weekly installments.
Vulnerable non poor	Progoti	Progoti programme aims to provide larger loans to the BRAC and non-BRAC micro entrepreneurs to develop and finance their own business.	<p>Progoti borrowers:</p> <ul style="list-style-type: none"> Must have good entrepreneurial skills Must open a bank account in order to receive their loan. 	<ul style="list-style-type: none"> Loan size ranges between Tk 50,000-300,000 (US\$715-4,285) Interest rate 12.5% flat 12, 18 and 24 monthly loan products that must be repaid in equal monthly installments.

Source: BRAC Microfinance Report, 2006

BRAC aims not only to change the conditions of the poor in the villages through microeconomic growth-oriented programs but also to educate the poor about the mechanisms of development and the basic causes of poverty through an easy and simple process. In all its efforts, BRAC encourages and ensures participation and involvement of the program participants. About 70% of total borrowers of CFPR/TUP and IGVGD took loan for Agricultural activities, 20% in case of Dabi, 45%, in case of Unnoti and 10% in case of Mela and 100% in case of special loan respectively.

a. CFPR/TUP Programme

BRAC's recent experimental programme 'Challenging the Frontiers of Poverty Reduction-Targeting the Ultra Poor (CFPR/TUP)' is specially designed to meet the demands of the ultra poor who tend to be left out by mainstream development programmes and approaches. The CFPR programme thus seeks to "push down" by specific targeting of the very poor households and also "push out" by addressing neglected dimensions of human capital and by seeking to strengthen the voice of the poor in the structures and processes that determine livelihood outcomes. Thus the ultimate goal of CFPR programme is to strengthen livelihood conditions of the ultra poor so that they can "graduate" to a formal microfinance programme after two years of intensive support. By the end of 2006, 50,000 TUP members joined the regular microcredit programme (Dabi). Among them 16,134 members were provided with a total of Tk.54.86 million (US\$0.81million) in loans with an average loan size of Tk.3400 (US\$50).

b. IGVGD

In 1985, BRAC approached the World Food Programme (WFP), which was already providing time-bound food assistance to the extreme poor under its Vulnerable Group Feeding (VGF) programme, to implement a new linkage and sustainable model for the vulnerable group. The IGVGD programme was thus designed to link extremely vulnerable women to mainstream development activities. Under this initiative, extreme poor women were organized into groups and provided with skill development training in sectors, such as poultry, where large-scale self-employment can be created. During the programme period, these extremely poor women received food transfers, a savings scheme was developed, and later, small amounts of programme credit were also provided so that the training they received could be more meaningfully used for a more secure livelihood. From 1998-2006, a total of 2.26million VGD cardholders were provided basic skill training on agricultural activities and within the same period a total of US\$87.11 million loan was disbursed among 1,530,687 borrowers.

c. Dabi

The goal of Dabi (short to *daridro bimochon*, which means poverty alleviation) is to cater to the moderate poor in the rural areas and urban slums. This program organizes landless groups and provides them with financial services and self-employment opportunities. Dabi provides different schemes of financial services including collateral-free loans and savings facilities to low income earners so that they can begin their own income generating businesses.

Under this programme, loan of Tk. 26,240 million (US\$385.89 million) was disbursed in 2006 among 4.055 million borrowers of which 20% for Agricultural activities.

d. UNNOTI

Considering the existing situation of the farmers, mainly where lack of capital results in unsatisfactory outcome level, BRAC has taken initiatives for mainly agro-based production enterprises which in turn benefit small and marginal farmers. This initiative is known as Unnoti (meaning development). The goal of Unnoti is to provide financial services to meet specific needs of small and marginal farmers. Through the Unnoti program, BRAC provides support to the marginal farmers who own more than one acre of land; a group not being targeted by the mainstream microfinance programs. The marginal farmers do not need a huge amount of money to support their project; loan size ranges from Tk. 15,000 to Tk. 50,000 (US\$ 214-714). 45% loan used for agricultural value chain activities.

e. Progoti

The Progoti/MELA program (meaning progress) was launched in 1966 in order to generate income and create new employment opportunities through enterprise development in the rural and semi-urban areas of Bangladesh. The target of the program is to provide credit facilities and technical assistance to new and existing small businesses and BRAC microfinance graduates whose access to formal financial institutions is limited in rural and semi-urban areas of Bangladesh.

BRAC also introduced the Women Entrepreneur Development Program (WEDP) in 2000 solely for women entrepreneurs. Through this program BRAC has addressed the financial needs of those entrepreneurs who neither belongs to the target group of micro finance institutions nor have much access to commercial banks.

f. Special Projects of BRAC

i. Monga Programme

BRAC has been providing special microfinance support to serve ‘monga’ affected households in 21 upazilas of three districts (Kurigram, Lalmonirhat, and Nilphamari) since 2005. Under the programme 262,689 beneficiaries of the monga-affected areas were given support of Tk.5 million (US\$ 70,000) till 2006.

ii. Northwest Crop Diversification Project (NCDP)

Northwest Crop Diversification Project (NCDP) is being implemented in 16 Districts and 61 Upzilas of Rajshahi Division since January 2001 under the financial assistance of the Asian Development Bank (ADB) and the Govt. of Bangladesh (GOB) aiming to increase production, improve livelihood and alleviate poverty of 200,000 small farmers having land area of 0.5-3.00 acres.

Objectives of NCDP

To promote and more efficient marketing of HVCs and to build up sustainable partnerships and capacities of NGOs and the public sector agencies in order to provide extension, training and credit support to the small scale farmers. In addition the following may be noted:

- To form small farmer groups for expansion of horticultural crop, training, extension and technology transfer.
- To increase per acre yield of high value horticultural crops through adoption of modern technology

- To provide credit support of HVCs production and agribusiness promotion (US\$ 50 to US\$ 500)
- To conduct adaptive research on high value horticultural crops
- To promote marketing and management support on high value horticultural crops
- To create employment opportunities
- To promote production and more efficient marketing of HVCs and to build up sustainable partnerships and capacities of NGOs and the public sector agencies in order to provide extension, training and credit support to the small-scale farmers.
- To build up sustainable partnership between the public sector and NGOs

The Project is being implemented through active participation of 5 Government organizations and 4 Non-Government organizations including BRAC. BRAC is responsible for group mobilization and credit management through awareness building, gender balancing and ensuring health, sanitation, child education and making easy access to socio-economic activities of both male and female beneficiaries. The Project has passed 6 (six) years with satisfactory achievements in Technology transfer, Credit disbursement, High value Crop (HVC) production, Women empowerment, Crop diversification, Income generation and Poverty alleviation.

Status of the Programme implementation in 2005-2006 is also admirable. This year the overall achievement has been 111% and disbursement has been 104%. Achievement in credit disbursement has been 87% and credit recovery has been 99%. Agribusiness credit has been disbursed to 11 entrepreneurs who have successfully started their activities like Maize production, Processing and Marketing, Mini cold storage setting, Seed production processing and marketing and has established Poultry feed and Automatic Rice husking mills. Besides Summer Onion, Production of Tissue Culture Banana, Jujube (Apple Kul), Potato+Maize, Bitter gourd have been highly remarkable and admirable. Preliminary analysis of BME survey for 2005-2006 reveals that the project has been able to create a great achievement in all its objectives and components. Women empowerment, Awareness building and High Value Crop Production through credit disbursement are some of the remarkable achievement though many other activities of the project have earned a lot of appreciation from many different corner.

iii. Agribusiness

The objective of the project is to promote agribusiness activities to generate employment and help alleviate poverty. Specially, it (i) promotes small scale agribusiness activities by channeling credit through three NGOs including BRAC and by providing technical and marketing support to small scale agribusiness throughout the rural areas of the country; (ii) strengthen participating NGOs and wholesale banks to ensure efficiency of the credit implementation and management; (iii) strengthen agribusiness associations for policy dialogue on the enabling environment, agribusiness promotion and information dissemination and the project will gradually be expanded its activities of rural enterprises engaged in commercial agriculture production, input supply, marketing, processing and transportation. It generates employment in rural and peri-urban areas raise the value added of nontraditional crops and commodities, and increase rural incomes. The average loan size is US\$ 450 to 7000.

E. Key issues in agricultural activities

- 1) Create basic awareness and provide training to farmers
- 2) Development of village based technical service provider
- 3) Adequate supply of quality inputs through extension workers/agents
- 4) Ensure market access of farmers
- 5) Ensure appropriate loan package for farmers to meet their specific demands
- 6) Develop linkage among different value chain.

F. Impact of BRAC Microfinance on agricultural activities

From different studies and evaluation of BRAC RED (Research and Evaluation Division) we can summarize the impact of BRAC microfinance programme are as follows-

- Eighty percent of BRAC loan are used for productive investment, asset purchase and for housing. Only 3% of loans are used for household consumption.
- About 45% of BRAC members are now themselves directly involved in any income generating activities. Before joining BRAC the percentage was 28%.
- BRAC member households owned 50% higher net worth than non-BRAC members.
- Average per capita calorie consumption and total food and nonfood expenditures were significantly higher for BRAC member households. Ratio of non-food to total expenditure was also higher for BRAC, which mainly increased with increase in the household income.
- Level of education, adult literacy and primary school enrollment of the group members significantly improved after joining BRAC.

Source: Matin, E, 2002

The impact of the programme is assessed at three levels –

- (i) Individual level – Increase Income, food security and nutritional status.
- (ii) Sub-sector level – yield/production increase, disease/pest decrease farm size increase.
- (iii) Government activities & policy – more support from govt. & encourage the private sector to involved in these sectors.

Source: Saleque, M.A 1999, NCDP Report

BRAC Micro-finance Program at a glance (September 2007)

Districts Covered	64
Total no. of Branch Offices	3,000
Total no. of Area Offices	314
Total Number of Members	6,870,550
Outstanding Borrowers	6,046,388
Outstanding Loan Amount (million)	Tk. 34,054 (USD 497)
Members Savings Outstanding (million)	Tk. 12,924 (USD 188)
Loan Recovery Rate	99%
Total number of Staff	34,112

G. Major Achievements of BRAC Micro-finance during the last five years

Program Expansion:

- During the period of last five years BRAC micro-finance expanded its branch offices from 1,383 to 3,000.
- The average yearly membership growth rate in last five years is around 14% with 29% increase in year 2007
- The loan size is increasing by 25-30% per year on a average

H. Technical support

Besides providing training, input and other support BRAC also provides technical supports to small & marginal entrepreneurs, such as agriculture related to technical advice, conducting refresher course, collection of feedback and regular monitoring the activities in the field. BRAC has its own well-trained technical professionals for providing training and technical support to farmers of different categories.

I. Marketing

Marketing of product involves a number of functions. These are-

1. Exchange function- buying-selling
2. Physical function-storage, transportation, processing
3. Facility functions-standardization, financing, risk bearing, market intelligence

Since proper outlet is the ultimate goal of any production or processing. BRAC is providing marketing services in two ways - a) by developing entrepreneurs among farmers - BRAC develop some potential entrepreneurs from the farmers to buy the product and sale to the large cities.

In remotest areas or where there is no supporting infrastructure for marketing, BRAC itself providing marketing services. Programmes like, BRAC Broiler Marketing assist contract growers of different corners of the country to sale their live broilers, Vegetable Export Programme buy vegetables from contract growers and exports. BRAC established about 57 Chilling centers to collect milk from different districts all of the country. By this programme, poor farmers related to agricultural activities can ensure the sale of their products.

V. Conclusion

Bangladesh is a land of tremendous opportunities in the field of traditional and specialized agriculture. However to attain a fast and sustainable economic growth it is imperative to substantially add value to our agri based raw materials. We can create a platform of networking between the growers, entrepreneurs, technology providers and consumers, which will provide necessary cooperation for accelerated investment in the sector. Although Bangladesh in an agro based country still the subsistence level of production is prevailing mainly due to old technology and low quality input. Taking the advantage of growing market opportunities that will stimulate agriculture growth, increase income and employment of farmers most of whom are poor and through value addition in agriculture contribute importantly to an increase in the country's overall growth.

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6 DrumNet: Agricultural Outgrower Financing Using a Transaction Manager and Information and Communication Technology Innovation

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Food and Agriculture Organization

This case highlights the importance of information and technology in reducing transaction costs in the chain including the costs of delivering services to various actors in the chain. This is illustrated in DrumNet, a third party supply chain management company in Eastern Africa that employs a commercial information and communication technology based information exchange platform to promote efficient delivery of financial and non-financial services in linking the market, small scale enterprises and the formal sector.

I. Case Overview

PRIDE AFRICA (PA) was an early pioneer in introducing the group solidarity microfinance model in East and Southern Africa which now serve over 180,000 plus clients. Yet this program did not address the needs of small farmers and the risks and costs which they face. It then began a new program called DrumNet to address these needs development of commercial Information and Communications Technology (ICT) based information exchange platform to promote financial and non-financial transactions linking markets, micro entrepreneurs, smallholder farmers and the formal sector. DrumNet is essentially an outgrowers programme - an ICT-driven supply chain management system that assists farmers to obtain secure produce markets and through cooperating to meet the quality standards and volume requirements of purchasers and having the necessary funds, inputs and technical assistance. DrumNet is a third party supply chain management company which facilitates the extension of credit to and the management of transactions for small scale farm producers in Eastern Africa. DrumNet applies modern information technology to the challenge of creating commercial networks among rural smallholder farmers, commercial banks, large-scale buyers of farm products, produce transporters, field agents, and suppliers of farm inputs. Its efforts began with a focus on market linkages with export companies for French beans, passion fruit and baby corn and expanded to work with Sunflowers.

The transaction management platform which Drum Net supports provides secure structured finance, documents credit histories, creates self financed credit insurance, formalizes commercial relationships and enforces exchange rules including ones relevant for food quality control. The DrumNet platform allows network participants to transact with each other and to focus on their core business without being distracted by the need to search for markets or supplies, to negotiate sales prices, to secure trade credits from stockists or to assure that the inputs applied and the means and modes of their application are fully consistent with food security requirements, like those of EUREPGAP.

Farmers who are clients of Drum Net organize them self into groups which co-guarantee credit and which prepay for credit insurance. In this way, Drum Net is prepared to co-guarantee repayment of credits to financial institutions. With these credits farmers are able to access farm inputs (seeds, fertilizers, pesticides, etc) through local stockists who also participate in the Drum Net program. Drum Net guarantees payment to stockists when they claim payments against Drum Net issues transaction cards and the credit worthiness of card holders are validated for each transaction via cell phone. Payment time to participating stockists is two weeks. At harvest time, DrumNet deducts principal and interest payments from farmer net returns and enforces group guarantees, if required. Participating banks are shielded from the complexity of many small transactions. They simply open a single line of credit in DrumNet's Master Account and monitor it. Participating banks receive regular principal and interest payments from DrumNet into this revolving account.

Importantly, DrumNet also acts as a commercial intermediary between producers and buyers. It links large-scale buyers, farmers, transporters, and field agents through an integrated

marketing and payment system. Before farmers plant crops, DrumNet negotiates contractual arrangements between buyers and farmers, and at harvest time coordinates produce aggregation, grading, and transportation through agreements with local field agents and transporters. Immediately following a successful transaction, data is entered into DrumNet systems, and a set of bank account transfers are triggered to pay the participating farmers, agents, and transactions. Though its field agents DrumNet further ensures that farmers cultivate in accordance with the requirements of the buyers. All payments from buyers pass through DrumNet accounts at the bank, thus enabling buyers to focus on their core business.

Through Drum Net, commercial banks are able to tap into a currently inaccessible market for savings and credit while avoiding high transaction costs. For all participants, payments take place in a convenient timeframe, mostly in a cashless manner, increasing security and accuracy. By acting as the hub in this complex network of relations and transactions, DrumNet allows all members to focus on core businesses and to use the network to intermediate the flow of information funds.

The DrumNet model alleviates the challenges faced by commercial financial institutions servicing small amounts of savings and credit to myriad dispersed rural smallholder farmers. Providing credit to farmers in the context of negotiated contracts for specific crops with large-scale buyers, participating banks are more confident that loans will not default due to poor crop selection or inability to source appropriate markets on the part of the farmer. By controlling the flow of funds related to produce sale and farmer repayment, DrumNet can ensure that farm revenues go immediately to loan repayment. Additionally, a credit enhancement facility, managed by DrumNet systems, provides an additional level of security in the case of member dropout or crop failure. For banks, transaction costs are low, as the entire credit process occurs with nearly no involvement of their front-line staff.

DrumNet is a transaction broker. It does not handle cash, directly provide capital, or generate interest income. Rather, it provides a set of procedures and information systems for accurately tracking and triggering transactions, which occur between participants, thus saving each participant from unnecessary details. To complete the actual financial transactions, DrumNet produces a set of simple intra-branch account transfers for the bank's back office staff to key in and execute between DrumNet controlled accounts and accounts opened by farmers, stockists, transporters, and buyers. In the future, this link between DrumNet systems and bank systems could be electronic, but even in this paper-based interface, the time-savings and risk-control are significantly increased.

The central focus of DrumNet's financial service is the pooling of farmers savings in a Transaction Insurance Fund (TIF) with emphasis on linking savings performance with access to credit facilities in much the same way as debit cards are used in developing countries. Farmers' groups whose financial requirements have passed the DrumNet loan limits are assisted in opening accounts with and they are connected to commercial banks using their credit history and the guarantee fund as leverage for their entry to the formal financial sector.

DrumNet works on the basis of a series of contracts between DrumNet and the four stakeholders along the supply chain, namely producers, buyers, input suppliers/stockists and banks. The contracts involving buyers and producers are at the centre of the proposition. DrumNet acts as the intermediary between all parties and facilitates the full range of relationships and communications flows between the parties that are necessary for each to achieve its commercial objectives.

DrumNet generates revenue from transaction fees and commissions, as does any other financial intermediation platform. Because DrumNet maintains a physical presence in the

community it serves, these commissions are higher than truly virtual electronic networks. DrumNet systems typically deduct a 10% service charge from the gross proceeds of every marketing transaction facilitated by the system prior to the disbursement of net funds back to the farmer. In addition, a fee for managing the credit program on behalf of the participating bank is collected.

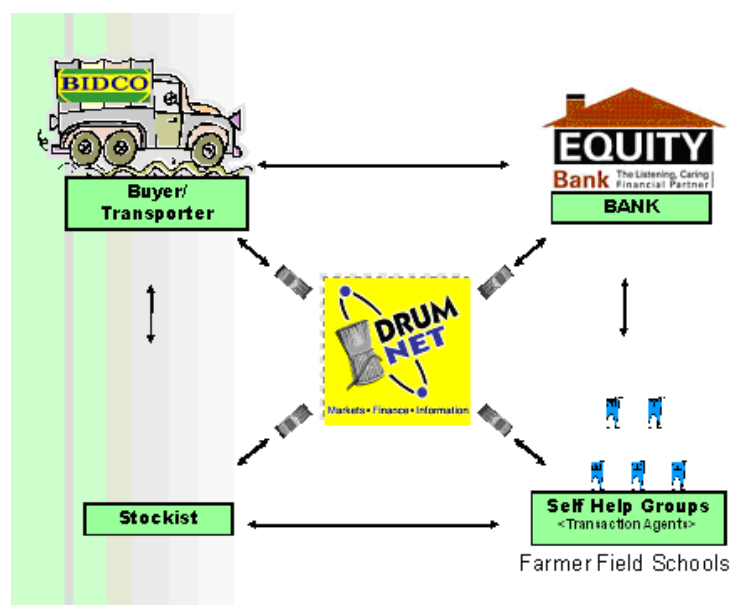
II. DrumNet and FAO – Expanding the Model to Farmer Field Schools

The DrumNet Supply Chain Management platform is currently working with the sunflower sector on a pilot level in Western Kenya using Farmer Field Schools (FFS) as the farmer organizations. It operates through a 4-way partnership with BIDCO, a large edible oil manufacturer in East Africa, Equity Bank, a major microfinance bank in Kenya, AGMark an input supplier, and farmer groups to demonstrate the commercial and developmental impact of agribusiness linkages on smallholder farmer livelihoods. Through this program, participating farmers are offered a guaranteed market and price for their produce. In addition, they receive a line of credit through an Equity/DrumNet platform agreement to purchase the required inputs without the usual constraints of providing collateral. BIDCO, the buyer, will contract to buy any quantity of sunflowers with the repayment of the credit tied to payments due to the farmers for sunflower delivered to BIDCO.

The Farmer Field School (FFS) ‘school without walls’ approach was pioneered in Kenya by The Food and Agriculture Organization of the United Nations (FAO) in collaboration with the Ministry of Agriculture. What began in 1996 as four small pilot schools has since grown to more than 3000 farmer field school groups throughout Kenya, with an average of 20-30 farmers per group. The overall objective is to enhance food security in Kenya by raising the income of small scale farmers through enhanced marketed volume of their produce. It works to implement the

DrumNet as a sustainable model to facilitate agri-business relationships along the value chain, by establishing linkages in input supply, marketing, finance, information and technical assistance opportunities as shown in Figure 1.

Figure 1: DrumNet Sunflower Model



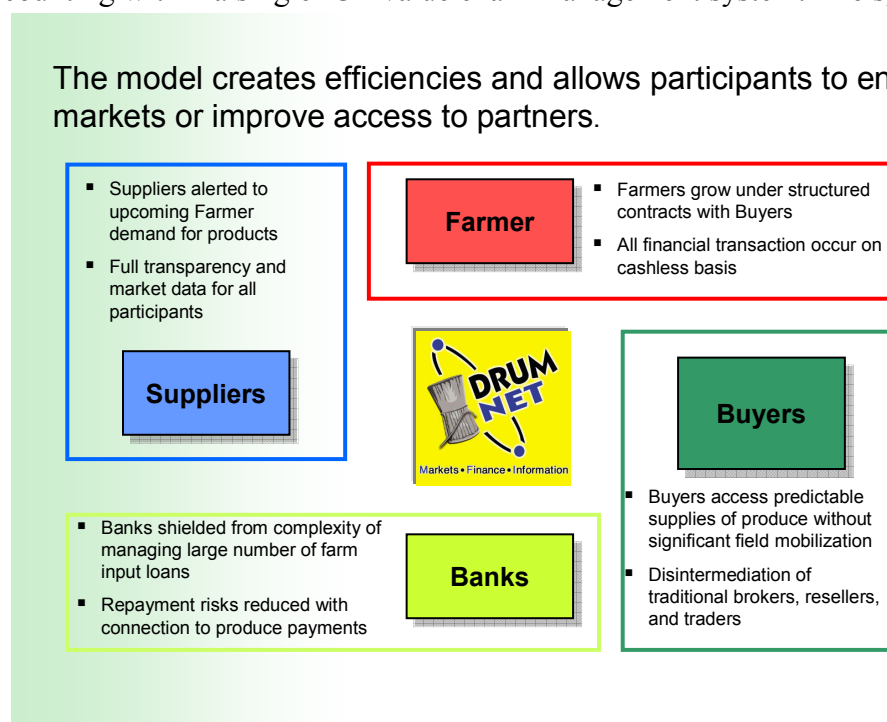
Capacity building is critical in the model and training of the FFS is critical to build a common operational and communication strategy. Stakeholder meetings with buyers, stockists, the bank and both current and potential farmers and their organizations are also essential. DrumNet provides the technical experts and trainers to design and oversee the installation of the DrumNet supply chain management system. The specific services under the DrumNet are designed to be managed and operated by certified local personnel who serve as “agents” of DrumNet within each farmer association or FFS which requires management and technical

training to understand how to deliver the services required, including communications, organizing purchase and sales requests, banking transaction communication as also promotion of the program.

III. DrumNet Model Financing

Under the DrumNet model marketing data from the buyers is linked with credit flows, transactions and accounting within a single ICT value chain management system. The system is cashless.

Farmers' sales of produce to buyers results in the immediate transfer of proceeds to a single-purpose cash management account managed by DrumNet. From these flows the farmers' obligations on interest and loan principal are subtracted, along with service fees to DrumNet, payments to suppliers and stockists, and any other obligations specified in the contract between DrumNet and the farmer groups. The balance is transferred to the farmers own accounts.



The communications and transaction technology used by DrumNet combines mobile phones and a dedicated management information system (MIS). The MIS, developed and managed by DrumNet, captures and processes data on financing and transactions between players: farmer groups and banks, farmers and buyers, farmers and suppliers, DrumNet and farmers. Its role is to reconcile, analyze and report the chain of input delivery events, credit drawdowns, product delivery events, invoices, payments, fees, commissions and other financial flows and transactions. It is important to note also that the cellular phone company, M-Pesa and the Equity Bank are both cutting edge institutions with a vision for innovating with technology to improve and expand their services and access to services and consequently have been important in helping to make the DrumNet model work. Overall, the ICT aspect of the DrumNet model provides farmers with increased liquidity upon request, enabling rapid and efficient transactions and minimising the opportunity for cash to be diverted to other purposes. The speed of these transactions is a key feature of the project, and would not be possible without the ICT platform.

7 Linking Small Scale Rural Producers to High Value Markets: the role of technical assistance and credit

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Small scale rural producers face the challenge of supplying to high value markets such as processors, supermarkets and fastfood chains. While these markets usually offer higher income compared to traditional markets, they also set stricter requirements in terms of quality, volume, frequency and packaging. For farmers to meet these standards and get better income, they need to improve production practices and achieve higher level of efficiency not in only production but also in marketing. However, these changes require higher technology and capital investments. This paper examines the role of technical assistance and credit in developing value chains that involve participation of small scale producers. Two cases were used to illustrate the importance of both credit and technical assistance in linking small scale producers to modern value chains such as supermarkets. Technical assistance and credit are important but may not necessarily be directed to the production node of the chain to be effective. Marketing intermediaries that involve participation of small scale producers can be financed to develop linkage and market access. It is clear, however, that credit and technical assistance can be more effective if geared towards meeting the requirements of the market. It is therefore critical that assistance in credit, production or marketing is treated as investments to meet market demand.

I. Introduction

Financing small scale producers particularly those in the agricultural sector is a challenge as risks are high and most rural and small scale producers struggle to be bankable. While their demand for credit is high, supply is low compounding poverty in the rural sector.

Meanwhile, the agribusiness sector is changing rapidly as markets are liberalized and more foreign investments are infused. Multinational companies come in and are expanding particularly in the horticultural sector. At the end of the downstream sector, supermarkets, hypermarkets and fastfood chains are expanding as they respond to increasing purchasing power and changing lifestyles of consumers. More quality products are consumed as demand for safe and convenient food products increases.

These changes impact on the rural sector as these mean changing requirements in terms of quality, traceability, and food safety standards among others. These require small scale producers to change some practices in the way they produce and deliver their products. In most cases, these require significant changes in technology and capital requirements. Given, limited financial and non-financial assets of small farmers, they tend to miss these opportunities and be excluded in the market. (Please refer to Figure 1).

This paper examines the role of credit and technical assistance in a value chain framework. The model in section 2.0 outlines the role of credit and technical assistance as well as the issues and implications arising from this model. An overview of the restructuring in agrifood markets is discussed in section 3.0. Two cases are used to illustrate the role of credit and technical assistance and their impact on linking small scale producers in high value markets. The first case on vegetables is discussed in section 4.0 which illustrates the effectiveness of credit for small scale producers organized into clusters. The second case on organic rice is presented in section 5.0 which illustrates that credit may not necessarily be given directly to small scale producers to effectively link to high value markets but to an effective marketing facilitator in the chain. Finally, concluding comments are presented in section 6.0

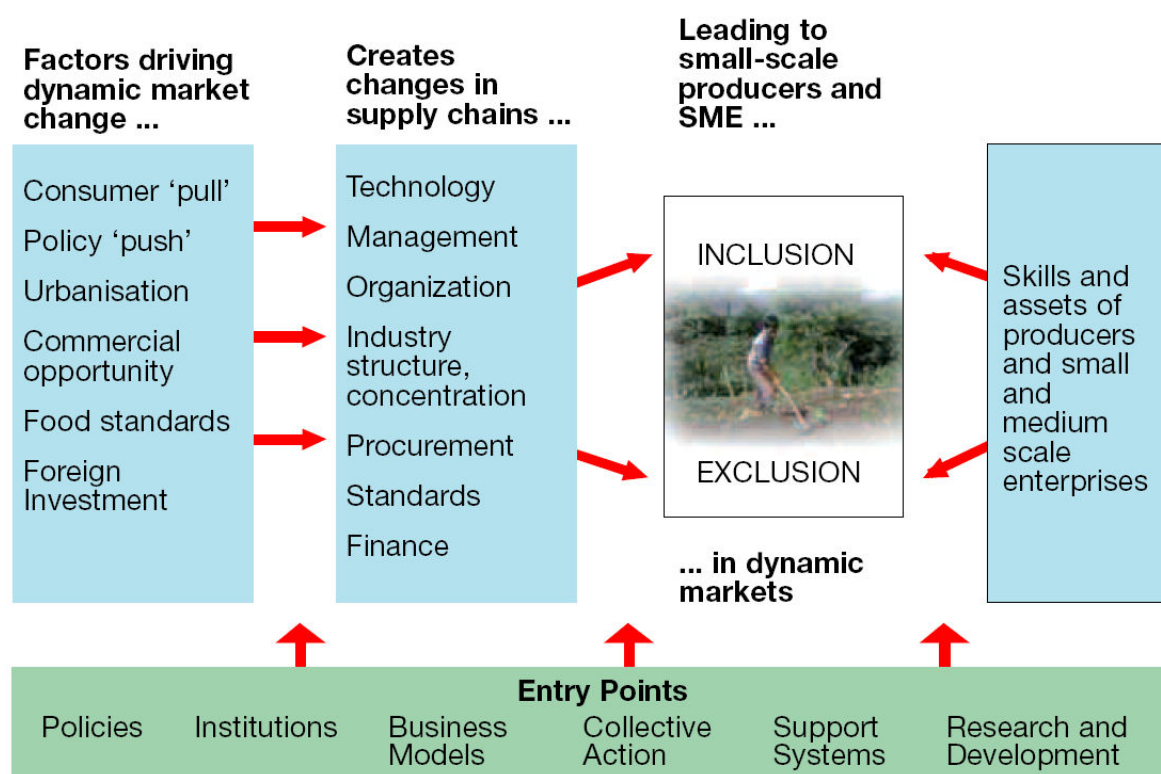


Figure 1. Regoverning Markets Program Framework: Inclusion and exclusion of small scale producers in dynamic markets

II. The Model

This section examines the role of credit and technical assistance in value chain. Credit is treated here as an input to production or services and as such, is not limited to credit extended to farmers but also to traders, wholesalers, consolidators or retailers. On the other hand, technical assistance referred to here can be market facilitation or information provided by the buyer or market facilitator such as wholesalers, traders or consolidators. It can also be technical assistance given to farmers by either private, public or development agencies. These include capacity building such as training on appropriate production technologies or in marketing.

A. Farmer linkage to high value markets (eg supermarkets)

Assume for simplicity that there are three levels in the value chain. Farmer (F) selling to an intermediary (M) which can be a trader, wholesaler or consolidator which in turn sell to high value markets such as processors, fastfood chains and supermarkets (H).¹⁴ In the model that follows, supermarket was used as an example of a high value market. It is assumed as well that all players in the three levels of the chain are price takers. Their profit maximizing conditions are:

$$(1) \quad \text{Farmer: } p_F = \frac{\partial C^F(Q^F, I^F)}{\partial Q^F}$$

¹⁴ This is similar to the model of Azzam (1992)

where p_F is the farm price, farm's technology is represented by the dual cost function $C^F(Q^F, I^F)$, I^F is the vector of input prices including credit and technical assistance given or employed to produce Q^F .

$$(2) \quad \text{Intermediary: } p_M = c^M p_F + \frac{\partial C^M(Q^F, I^M)}{\partial Q^F}$$

where p_M is the intermediary price, c^M is the amount of farm produce (Q^F) used to produce a unit of intermediary's product Q^M . The intermediary combines farm produce with its product in fixed proportion but not between its inputs as follows: $Q^M = \min[Q^F / c^M, m(I^M)]$. I^M is the vector of input prices to include credit and technical assistance and its indirect cost function is $C^M(Q^F, p^F, M) = p^F c^M Q^F + C^M(Q^F, M)$.

$$(3) \quad \text{Supermarket: } p_H = c^H p_M + \frac{\partial C^H(Q^F, I^H)}{\partial Q^F}$$

where p_H is the supermarket price, c^H is the amount of raw material or farm produce used to produce a unit of retail output Q^H . The supermarket has a production technology similar to that of an intermediary which requires a fixed proportion of raw material sourced from the intermediary but not between its retailing inputs H . The indirect cost function is specified as: $C^H(Q^F, p^M, I^H) = p^M c^H Q^F + C^H(Q^F, I^H)$.

The profit maximizing conditions in equations (1) to (3) assume that all the three players in the value chain are price takers in both input and output markets. If one or both markets are not competitive, then there is inefficiency in the food chain and benefits are not distributed equitably among the players. Several cases or examples are discussed here to clarify the issue. For example, if the intermediary exercises market power (buying power), then price received by the small scale producers would be lower than the competitive price. On the other hand, if intermediary sources credit from competitive credit market, and it operates in a competitive industry, then price received by small scale producers would be competitive and the price paid by the supermarket would also be competitive. In other words, both vertical and horizontal competition in the input market affects players in the food chain. Similarly, improvement in the access of inputs (credit or technical assistance or technology inputs) in any level or node in the chain leads to improvement in the performance of the entire food chain.

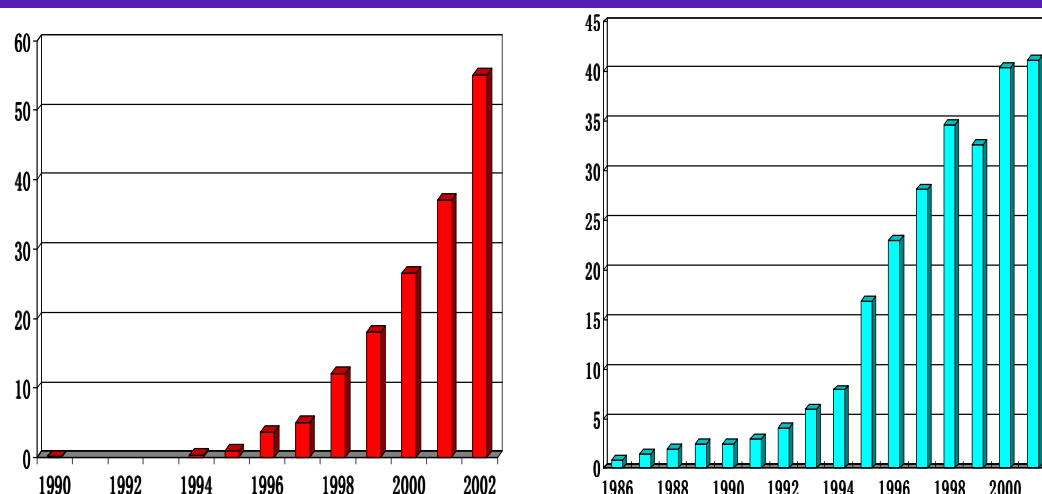
III. RESTRUCTURING FOOD MARKETS

Restructuring in the agrifood markets is driven by factors such as changing lifestyles, increasing income and government's liberalization policies. The growth of fastfood outlets and supermarkets is a response to an increasing demand for convenience. These modern food outlets affect changes in the food chain (eg. Berdegue, et al 2005; Henson and Reardon, 2005; Reardon et al 2005). As they continue to grow, there are opportunities open to producers to supply as long as they meet the volume, frequency and quality requirements. Many small producers, however, are unable to tap these opportunities as they lack the resources to compete. Meeting frequency and volume requirements of high value markets becomes difficult because transaction and consolidation costs are high. Moreover, small scale

producers have inadequate financial resources to invest in technology to meet the quality standards of high value markets.

One of the significant features of this restructuring in the food markets is the proliferation of modern retail outlets. In China, for the example, the growth of supermarkets surpassed the wholesale food markets (Figure 2).

Figure 2. The rapid rise of both supermarkets and wholesale markets in China (sales, \$ bn)



Source: CCAP (2005).

In Southeast Asia, the modern retail sector is also expanding quite rapidly as economies improve and as population increases. Total retail sales increased by 6.1% per year (Table 1). Of this, grocery retail sales grew by 5.2% with food retail service even increasing faster at 7.9%. In fact, this growth is faster than the growth in total food spending of 5.4%. This implies that consumption of food away from home has also increased. In most, Asian countries, the number of dual income households has increased. Thus, as income and working women increased, demand for convenience offered by modern retail and foodservice is expected to expand.

Table 1. Retail sector indicators

Indicators	Average (1994-2006)					
	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
Retail sales, net (USD mn)	94908.85	24299.15	38220.15	15741.38	50070.15	16677.77
Growth rate (%)	8.84	5.14	4.16	6.20	3.59	8.77
Retail sales, net / capita (USD)	421.92	1113.15	479.92	3927.08	811.85	209.77
Grocery retail sales, net (USD mn)	64975.31	13605.85	24859.15	6687.54	30133.77	11877.77
Growth rate (%)	7.29	4.39	3.26	5.70	2.94	7.57
Grocery retail sales, net /capita (USD)	290.15	624.46	312.92	1668.77	489.00	149.54
Foodservice sales, net (USD mn)	7771.38	1962.31	3139.69	1492.46	4152.08	1026.62
Growth rate (%)	12.29	6.80	6.18	5.86	5.02	11.45
Foodservice sales, net / capita (USD)	34.46	89.62	39.23	369.08	67.15	12.77
Total food spending, net (USD mn)	72746.85	15568.23	27998.92	8180.08	34286.00	12904.31
Growth rate (%)	7.80	4.69	3.58	5.67	3.19	7.86
Total food spending, net / capita (USD)	324.31	714.08	352.23	2037.77	556.15	162.31

Source of Data: Planet Retail 2007

As demographic and lifestyles change in these economies, the way food are produced, processed and distributed also change. Moreover, these changes in the agri-food system are also affected as governments continue to liberalize their economies, bringing in more investments and trading more goods and services. In the retail trade sector, foreign multinational companies have invested in Southeast Asia, changing the landscape of retail trade distribution including food distribution.

Table 2 shows that modern grocery sales increased annually by an average of 9.1% for the six countries covered. Grocery sales include food, beverages, tobacco products, drugstore items and small everyday non-foods household goods. The fastest growing is Indonesia, followed by Singapore and Malaysia.

Table 2. Role of Modern Grocery Distribution (MGD) indicators.

Indicators	Average (1994-2006)					
	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
MGD, Total sales (USD mn)	16353.85	8269.00	7239.38	7592.00	16560.00	2300.77
Growth rate (%)	11.90	8.27	7.83	9.82	7.88	8.65
MGD, Total sales / capita (USD)	72.08	375.92	89.62	1869.23	266.85	28.92
MGD, Grocery sales (USD mn)	13192.38	6754.85	6339.00	5839.08	13492.08	2063.69
Growth rate (%)	12.71	9.23	7.53	9.50	7.71	8.06
MGD, Grocery sales / capita (USD)	58.15	306.15	78.69	1438.85	217.46	26.00

Source of Data: Planet Retail 2007

As modern retail continues to respond to the demand of consumers and as government opens to foreign investment in this sector, various modern retail formats and outlets emerge such as hypermarkets, superstores, supermarkets and convenience stores. Popularity of these outlets varies across countries. In Singapore for example, supermarkets and neighborhood stores account for 61% of modern retail sales while in Thailand, hypermarkets and supermarkets appear to be more dominant, accounting for more than half (52%) of the total modern retail sales from 1999 to 2007 (Table 3). However, other countries are catching up. Sales of supermarkets and neighborhood stores in Vietnam have been increasing by an average of 40% per year (Table 4). On the hand, hypermarkets and supermarkets in Indonesia and the Philippines have been growing annually by 54% and 28% respectively.

Table 3. Modern retail sales by type of outlet.

Modern Retail	Average Sales (US million dollars) 1999-2007											
	Indonesia		Malaysia		Philippines		Singapore		Thailand		Vietnam	
	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%
Hypermarkets and superstores	755	29	1293	56	653	29	253	13	3563	52	179	19
Cash and carries and wholesale clubs	502	20	199	9	367	16			1134	17	231	25
Convenience and forecourt stores	569	22	357	16	133	6	251	13	1427	21	502	54
Discount stores	7	0					29	2	28			
Drugstores and pharmacies	29	1	288	13	926	40	199	11	216	3		
Supermarkets & neighbourhood stores	705	27	155	7	211	9	1148	61	491	7	20	2
Total	2566	100	2291	100	2289	100	1879	100	6859	100	931	100

Source of Data: Planet Retail 2007

Table 4. Sales of Modern Retail, Average Growth rates, 1999-2007

Modern Retail	Sales Average Growth Rate 1999-2007					
	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
Hypermarkets and superstores	54.3	26.9	28.2	30.9	17.8	38.2
Cash and carries and wholesale clubs	114.6		20.5			
Convenience and forecourt stores	47.4	15.4	12.2	23.39	22.9	
Drugstores & pharmacies	27.0	24.2	284.5	16.7	21.1	
Supermarkets & neighbourhood stores	6.2	12.9	11.9	9.3	34.1	40.1

Clearly, there are changes in the way food are distributed with increasing role of modern food retail outlets such as supermarkets and hypermarkets. As procurement strategies of these outlets change, requirements from suppliers in terms of volume, quality, frequency, variety, form and packaging also change. Thus, strategies of suppliers including farmers must also change. Otherwise, if these requirements are not met, access to these markets is denied and opportunities missed.

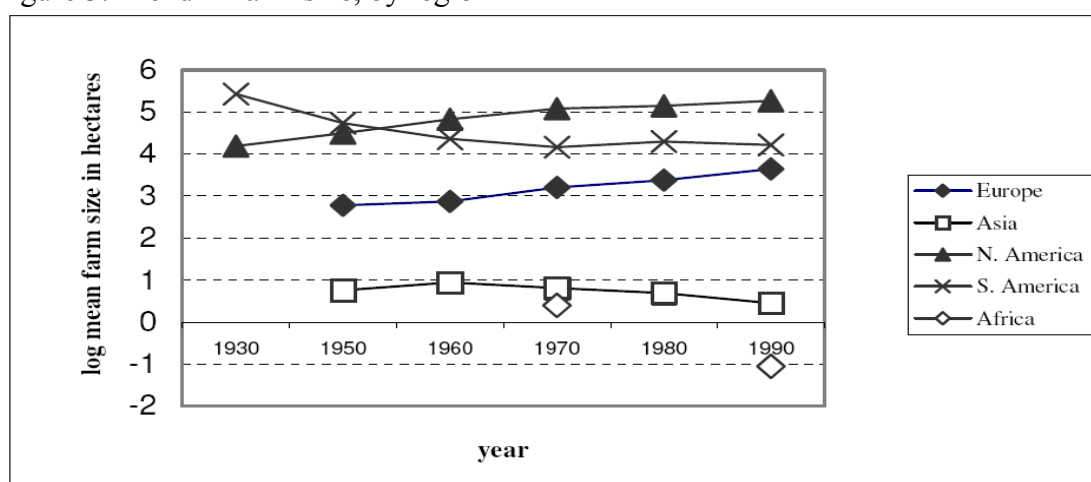
It is however, difficult for most small scale producers to respond to these opportunities. For one, many of them are small and fragmented. In Asia and Africa for example, the average farm size is 1.6 hectares compared to North America and 121 hectares and Latin America at 67 hectares (Table 5). It is not only small, it is also getting smaller over time (Figure 3) compared to North America and Europe.

Table 5. Average farm size, hectares by region.

World Region	Average farm size, hectares
Africa	1.6
Asia	1.6
Latin America and Caribbean	67.0
Europe	27.0
North America	121.0

Source: von Braun 2005; For Europe—data includes Western Europe only

Figure 3. Trend in farm size, by region



Source: FAO Statistics division at http://www.fao.org/es/ess/index_en.asp in Eastwood, Lipton and Newell 2004.

Farmers in many developing countries are not only small and fragmented, they also lack technology and financial resources to meet requirements of modern markets. In what follows, two cases are reviewed to illustrate the role of credit and technical assistance in increasing the chance of small scale producers to participate in modern markets.

IV. COLLECTIVE ACTION AND CLUSTER DEVELOPMENT: THE CASE OF NORMINVEGGIES

This case shows that the cost of technical assistance and credit used in linking small scale producers in modern markets can be recovered. To meet the requirements of the modern market, farmers are organized into production clusters for a common market where technical assistance in production and marketing can be done efficiently.

A. Benefits of small farmers in clusters

A cluster is an informal group of 5 to 10 small scale farmers who commit to undertake a common marketing plan for a particular product (or set of products) for identified markets. Each product cluster has a designated lead farmer who acts as the coordinator of the production of all the farms involved in the cluster. The lead is the farmer who is the best farmer for that type of vegetable. S/He is also responsible for teaching the other farmers in the cluster of applicable production techniques in order to maintain the quality specified by the market (*Concepcion, Digal and Uy, 2006*).

A marketing cluster can be formed to take advantage of an opportunity at a certain period of time. For the high demand of tomato from Manila during July to December, a tomato cluster is formed just for the period. The next year, it can be formed again but not necessarily with the same members/farmers. Similarly, servicing the Manila supermarket distributors with a set of vegetables will require the formation of a Manila cluster just for the season of supply. It has been observed though that cluster members tended to be the same in the succeeding years.

The cluster may appear loose but what holds it together is the commitment of supply and the cluster agreements. Important cluster agreements are the volume of supply per farmer, delivery schedule, and compliance to a common quality standard which necessitates agreement on practices in plant/farm management, harvest and postharvest management. The cluster, therefore, is not just an ordinary grouping. It is one with a marketing objective and a management system, requiring discipline from each farmer to protect the reputation of the group in the market. Being a small group, it is capable of quick response to buyer feedback and requirements.

Clustering is the strategy for farmers to become a valued supplier in the higher value and growth markets, particularly the fast foods with the processors, and the supermarket distributors with the consolidators. In the cluster, farmers get to talk about the market and the value addition in the supply chain, and farmers in the cluster decide together on the markets to be served. This empowers farmers and enables them to become a dynamic player in the market, share collective know-how (particularly: the best practices in the farm), resources, technologies, and market contacts, otherwise inaccessible or costly to them as individual farmers.

Indeed, the benefits of clustering include: (a) higher economies of scale and ability to handle large product volumes at lower transaction costs, (b) access to good markets, (c) business deals with service providers, (d) effective linkage with government and private resource organizations.

The key benefit of farmers who are members of marketing clusters selling to a marketing consolidator (Normincorp) is increased profit. This increase in profit is due to more stable markets, higher value for quality vegetables, and a premium for reliability in supply. For these reasons, Normincorp can get a price premium of 10% to 20% compared to that offered in the spot wet market dominated by traders in the traditional supply chain.

B. Sustainability of Benefits for Small Scale Farmers

A key question to ask in assisting small scale producers is whether the cost development assistance can be recovered. That is, whether the cost of assisting these small scale producers can be covered by the benefits or increased in their income due to development assistance. It is recognized that small scale producers need assistance in terms of access to credit and market facilitation through cluster development. But can this sustain the benefits generated?

To answer this question, a survey of forty three vegetable farmers who received technical assistance in cluster development and credit was conducted in October 2007. Vegetables covered include squash, cabbage and carrots (See Table 6). About 79% of the total farmers interviewed were males and the balance is females. Farmers receive a loan of P8,000 with interest rate per annum of 18% and 2% service fee to the cooperative. The loan covers expenses for seeds, fertilizer, pesticides, and hired labor.

Table 6. Farmers surveyed by crop, October 2007.

Vegetables	Number of Farmers	% to total
Squash	14	33
Cabbage	8	19
Carrots	21	49
Total	43	100

Results show that there are various factors that affect profitability of clusters. These include productivity or yield level, price, production and post-production expenses. Of the three crops, only squash registered a negative profit (Table 7). However, if one does not consider family labor or the amount of time, the owner or family members spent in producing the crops, all three vegetables yielded positive net income (Table 9). Squash production was affected by too much rain and most farmers produced way below the expected yield. Moreover, costs for squash are relatively compared to other crops particularly shipping and transportation costs (Table 7). When the cost of assisting these farmers is included, squash apparently yielded negative profits (Table 8). However, when family labor is accounted for or paid for, squash farmers earned positive profit (Table 10).

Table 7. Percentage of profit to sales per cluster in USD @ P45 per 1 USD

Commodity	Cabbage Cluster		Carrots		Squash	
	Amount	% to Sales	Amount	% to Sales	Amount	% to Sales
Yield	34.28		21.54		71.84	
Price	0.21		0.43		0.11	
Sales	323.08	100.00	364.79	100.00	336.52	100.00
Production Cost	254.69	78.83	224.67	61.59	225.78	67.09
Shipping Fee			33.50	9.18	73.96	21.98
Facilitation Fee	14.36	4.44	18.24	5.00	23.01	6.84
Transpo (Imp-CDO)	25.42	7.87	15.77	4.32	33.53	9.96
Miscellaneous	4.07	1.26	2.52	0.69	17.32	5.15
Profit	33.52	10.38	82.86	22.71	(15.20)	(4.52)

Table 8. Percentage of profit to sales per cluster net of assistance cost in USD @ P45 per 1 USD

Commodity	Cabbage		Carrots		Squash	
	Amount	% to Sales	Amount	% to Sales	Amount	% to Sales
Yield	34.28		21.54		71.84	
Price	0.21		0.43		0.11	
Sales	323.08	100.00	364.79	100.00	336.52	100.00
Production Cost	254.69	78.83	224.67	61.59	225.78	67.09
Shipping			33.50	9.18		
Facilitation Fee	14.36	4.44	18.24	5.00	73.96	21.98
Transpo	25.42	7.87	15.77	4.32	23.01	6.84
Miscellaneous	4.07	1.26	2.52	0.69	17.32	5.15
Cost of Assistance	11.11	3.44	11.11	3.05	11.11	3.30
Profit	22.41	6.94	71.75	19.67	(26.31)	(7.82)

It is interesting to note, however, that despite the cost of assistance, squash farmers earned positive profit when they supplied to supermarkets (Metro Gaisano). Table 11 shows profitability per type of market outlet. Squash was sold to three different market outlets. Two were wholesale markets in Agora (Suping) in Cagayan de Oro City located in the island of Mindanao which is the nearest outlet to the farmers. The other one was in Cebu (Ondong) located in Visayas in the central part of the Philippines. The third outlet was the supermarkets (Metro Gaisano) located in Cebu. Of the three outlets, squash farmers earned positive profit only by selling to the supermarkets (Metro Gaisano). For carrots, farmers sold to two types of markets. One outlet was a wholesale market (Agora) and the other one was a consolidator for institutional markets including supermarkets in Cebu. While carrot farmers earned positive profits for both outlets, they earned better profits by selling to consolidators. Cabbage farmers on the other hand sold to two buyers: a wholesaler and a mixed of buyers both located in Agora wholesale markets. In both outlets, farmers gained positive profits.

Table 9. Percentage of Profit to sales per cluster using “cash cost” (production cost less family labor) in USD @ P45 per 1 USD

Commodity	Cabbage		Carrots		Squash	
	Amount	% to Sales	Amount	% to Sales	Amount	% to Sales
Yield	34.28		21.54		71.84	
Price	0.21		0.43		0.11	
Sales	323.08	100.00	364.79	100.00	336.52	100.00
Cash cost	210.03	65.01	174.44	47.82	168.89	50.19
Shipping Fee			33.50	9.18	73.96	21.98
Facilitation Fee	14.36	4.44	18.24	5.00	23.01	6.84
Transpo (Imp-CDO)	25.42	7.87	15.77	4.32	33.53	9.96
Miscellaneous	4.07	1.26	2.52	0.69	17.32	5.15
Profit	78.19	24.20	133.08	36.48	41.69	12.39

Table 10. Percentage of profit to sales per cluster using cash cost net of assistance cost in USD @ P45 per 1 USD

Commodity	Cabbage		Carrots		Squash	
	Amount	% to Sales	Amount	% to Sales	Amount	% to Sales
Yield	34.28		21.54		71.84	
Price	0.21		0.43		0.11	
Sales	323.08	100.00	364.79	100.00	336.52	100.00
Cash cost	210.03	65.01	174.44	47.82	168.89	50.19
Shipping Fee			33.50	9.18	73.96	21.98
Facilitation Fee	14.36	4.44	18.24	5.00	23.01	6.84
Transpo (Imp-CDO)	25.42	7.87	15.77	4.32	33.53	9.96
Miscellaneous	4.07	1.26	2.52	0.69	17.32	5.15
Assistance cost	11.11	3.44	11.11	3.05	11.11	3.30
Profit	67.08	20.76	121.97	33.43	30.58	9.09

Based on the above results, the following conclusions can be derived. Firstly, the cost of assisting the farmers can be recovered. Secondly, the profitability and hence the ability of farmers to pay for any development assistance depends on a number of factors. Productivity or yield is an important factor especially that small scale farmers do not have rain shelter or greenhouse to control temperature or avoid negative effects of weather (eg too much rain). Finally, the type of market also affects capacity of farmers to recover development assistance. It was observed in the two cases covered (squash and carrots) that farmers selling to high value markets such as supermarkets have higher chance of earning more profits.

Table 11. Percentage of profit to sales per market by cluster (net of assistance cost) in USD @ P45 per 1 USD

	Squash Cluster				Cabbage Cluster				Carrots Cluster					
	Agora Suping	% to Sales	Cebu Metro Gaisano	% to Sales	Cebu Ondong	% to Sales	Agora Different buyers	% to Sales	Agora Wholesaler	% to Sales	Agora	% to Sales	Cebu Conso- lidators	% to Sales
Yield	64.07		60.74		78.92		34.73		31.11		30.95		16.84	
Price	0.07		0.21		0.08		0.21		0.24		0.25		0.52	
Sales	192.22	100.00	577.04	100.00	300.44	100.00	320.35	100.00	342.22	100.00	376.06	100.00	376.06	100.00
Production Cost	225.78	117.46	225.78	39.13	225.78	75.15	254.70	79.51	254.67	74.42	224.67	65.64	224.67	59.74
Shipping Fee			60.74	10.53	78.92	26.27							31.11	8.27
Facilitation Fee	9.61	5.00	57.70	10.00	15.02	5.00	12.98	4.05	17.11	5.00	17.11	5.00	18.80	5.00
Transpo (Imp-CDO)	25.63	13.33	24.30	4.21	31.57	10.51	25.87	8.08	22.22	6.49	22.22	6.45	1.11	0.30
Miscellaneous	15.33	7.98	0.40	0.07	18.30	6.09	4.14	1.29	3.56	1.04	3.56	1.03	2.02	0.54
Assistance cost	11.11	5.78	11.11	1.93	11.11	3.70	11.11	3.47	11.11	3.25	11.11	3.25	11.11	2.95
Profit	(95.24)	(49.55)	(186.47)	32.32	(80.25)	(26.71)	20.80	10.82	33.56	9.81	63.77	18.63	75.73	20.14

V. FINANCING A MARKETING FACILITATOR IN THE CHAIN: THE CASE OF UMFI

Just like the case of Norminveggies, a marketing facilitator is essential to link small scale organic farmers to supermarkets. The difference, however, is that the marketing facilitator, the Upland Marketing Foundation Inc. (UMFI) gets credit support in order to facilitate access of small scale producers to supermarkets. This is critical since supermarkets paid UMFI from 30 to 120 days after delivery while UMFI pays the farmers anywhere from cash on delivery to 45 days. The gap of the receivables period meant that UMFI had to have the reserve cash to support the orders of the supermarkets. In 2004, sales dipped because of cash-flow problems as the trade volume increased. Partner-producers found it hard to maintain the flow of supply if UMFI does not pay cash. The delay in the infusion of capital, made partner-producers stop deliveries until payments has been made. The arrival of loans saved the business operations from collapsing (Concepcion, Digal, Guarin and Hualda, 2007).

All of the loans of UMFI were obtained from development organizations engaged in the business (Oikocredit, Federation of People's Sustainable Development Cooperative) of financing social enterprises. The interest rates are market rates and while some are collateralized, others get guarantee support from donor organizations like Interchurch Organization for Development Co-operation (ICCO). The grants and subsidies UMFI currently receives are not used for the business operations but for the development work that UMFI also conducts like developing new products and providing technical assistance to communities to establish their enterprises.

The Upland Marketing Foundation, Incorporated (UMFI) acts as marketing consolidator for supermarkets buying from organized groups of organic rice farmers such as the Pecuaría Development Cooperative, Incorporated (PDCI). A distinct innovation is that a development or non-profit institution (UMFI) acts as a marketing arm to enhance access of small scale producers to mainstream supermarkets. This was made possible by doing their marketing role as effectively as possible, at least at par with private marketing corporations. The main difference is that the mission of this organization is to promote development particularly for small scale producers and enterprises. In addition, being a development entity, trust with small scale producers is in place enhancing supply chain collaboration. Funds from development agencies help cover the high costs of dealing with small scale producers particularly in linking them to high value markets. Key strategies that worked include establishing a house brand to allow as many suppliers as possible to supply the product if the market picks up. They also adopted a niche consolidator strategy which combines a champion and rider products. They achieve economies of scale for champion products and provide opportunities for rider products to pick up and at the same time meeting requirements of supermarkets for variety. They continue to strategically position their product by assessing trends in the markets and deciding which product features to highlight. These strategies are augmented by providing market requirement information to producers, who in turn deliver commodities that meet market demands. By providing opportunities to small scale producers to access supermarkets, farmers have improved their income. A survey of 18 farmers showed that while yield declined under organic rice farming compared to the conventional/inorganic farming and production costs has not changed significantly, net income of farmers increased by 119%. This is mainly due to better prices with a difference of 46%. The price premium can be attributed both to the quality attributes of the brand and the product as well as to the type of market outlet. Supermarkets generally provide higher prices compared to traditional markets due to convenience provided to consumers. Moreover, based on sales records of 36

farmers before (2000) and after (2006) products were sold to supermarkets, volume sold per farmer and price paid per kilo of rice increased by 64% and 16% respectively. These translate to an 89% increase on the average gross sale from PHP 27,069.75 or USD 563.95 to PHP 51,202.85 or USD 1066.72.¹⁵

In the case of the UMFI partner communities, the farmers and people's organizations were either given assistance on organic farming or value addition-technologies that utilized locally available resources. These interventions lead to increase in farm productivity but the income objectives of the communities were still not addressed. The farmers and people's organizations were having a hard time selling their organic rice and processed food products as a premium product.

In the case of the PDCI, the organic rice was sold at the local market that did not have a trade channel for organic rice and the product was classified as regular rice. Since the organic rice did not come from certified seeds its maximum retail price was only PHP 20.00 (USD 0.42) per kilogram. While PDCI was able to sell organic rice at PHP 25.00 (USD 0.52), this was mostly through trade fairs in Metro Manila and to direct buyers also based in Manila and the volume was minimal. Most of the rice was sold between PHP 18-20/ per kilogram.

UMFI decided that instead of just providing information and training and trying to link these communities to the market, the foundation will engage in the actual trading of community products to the mainstream supermarkets.

As a marketing arm-distributor, UMFI is tasked to open and maintain outlets/ distribution channels like supermarkets. In return for these services, UMFI gets a discount ranging from 15% to 20% to cover its costs of operations. For the other costs like the conduct of promotional activities, payment of special discounts, reproduction and distribution of marketing materials, UMFI charge the suppliers at cost plus cost of time spent by UMFI personnel. Since UMFI is also located at Manila, the supply requirements of its partner suppliers (like sacks, glass bottles, labels, boxes) are bought and sold by UMFI to its partner suppliers. These items carry a markup ranging from 10%-15%.

The niche consolidator strategy was to market a combination of champion and rider products. By marketing several CBE products, the combined volume of these groups was to contribute to the volume needed to sustain distribution operations in Metro Manila. However, UMFI saw that even with the combined volume of many CBEs, the amount of business generated was still small to make operations viable. This was then supported by the "champion vs. rider product" strategy employed by UMFI. Champion products are products that by their big volume of trade allow UMFI to generate the income to cover its costs.. Products such as rice and *Muscovado* sugar are considered champion products. The champion products are thus the major source of UMFI income from marketing. The rider products are specialty products that have smaller market demand – low turn over product. These are products with niche or specialty markets that is produced or supplied in small volume or quantities by a CBE. The innovation will move on to a stable position if the number of champion products are increased and would have a maximum sales contribution of not more than 20% of total sales.

UMFI was keen in determining how it would position its product in the market. With organic rice, marketing the "Health" dimension of the product than the "organic" features seemed to have worked as other new products have copied this brandname (new competing products also call their rice Healthy Rice). "Healthy Rice" is registered as a brand name and not as a claim.

¹⁵ 1 USD = 48 PHP

In 2001 when UMFI started its commercial operations as a product distributor-marketing arm of the farmers, supermarket outlets did not reach 100 stores all located in Metro Manila. The total sales for the year reached only PHP 1.8 million (USD 38,944). As of December 2006, UMFI serves 223 supermarket outlets in all over the country (not counting the convenience stores). The total sales for the year was PHP 25.7 million (USD 535,416.67) or an average of PHP 2.14 million (USD 44,583.33) per month. The sales performance for the first quarter of 2007 is PHP 9.2 million (USD 191,666.67) or a monthly average of PHP 3.06 million per month (USD 63,750). For the 1st champion product, organic rice sales reached almost PHP 13 million (USD 270,833.33) in 2006 or 469 metric tons.

Inclusion in the organic rice supply chain has brought significant increase in the income of the farmers. On the average, there was an increase from 3,065.18 to 5,014.18 kilograms (64%) in the volume sold per farmer and an average increase from PHP 8.83 (USD 0.18) to PHP 10.21 (USD 0.21) (16%) for the price paid per kilo of rice. The percentages translate to an average gross sale from PHP 27,069.75 (USD 563.95) to PHP 51,202.85 (USD 1,066.73) or an 89% increase.

A survey of 18 farmers showed while yield declined under organic rice farming compared to the conventional/inorganic farming and production costs have not changed significantly, net income of farmers increased by 119%. This is mainly due to better prices with a price difference of 46%.

How are the benefits distributed across players in the chain? One way to answer this question is to look at the share of each player in the chain to total margins (ie retail less farm price). PDCI accounts for more than 50% of margins followed by UMFI with 33% and about 14% for supermarkets. This does not mean however that PDCI gets most of the benefits since this indicator does not include costs incurred. PDCI does the milling, hauling and trucking of rice to Manila. UMFI provides the storage, packing and transporting of rice from warehouse (Manila) to supermarket outlets (See Figure 4).

VI. CONCLUDING COMMENTS

Technical assistance and credit have been recognized as important ingredients in improving productivity of small scale producers. Technical assistance is also seen as necessary ingredient in improving repayment of credit. While these two complement in the area of credit repayment, they can also complement in the area of chain development for inclusion of small scale producers.

Small scale producers face opportunities to supply to expanding modern markets such as fastfood chains and supermarkets. It is a challenge, however, to supply in these modern markets as they have stricter standards in terms of quality, volume, frequency and packaging. More often than not, these require higher capital investments. It can be seen, however, in the two examples that small scale producers can take advantage of the opportunities offered in modern markets.

Credit and technical assistance are indeed important to help small scale producers meet the requirements of these markets. As shown in the theoretical model, credit or technical assistance are integral elements of production for all actors in the value chain. They are not only important for small scale producers to improve production capacity, as shown in the cases reviewed but they can also be effective if used to support a marketing intermediary that provides access to small scale producers to modern markets. Credit may be not be necessarily infused in the upstream portion of the chain to improve market access of small scale

producers. Channeling credit to the downstream portion can have the same effect as long as the downstream actor or intermediary behave competitively or has the genuine desire to help the small scale producers as long as it is sustainable. Normincorp as an intermediary for vegetables has the economic incentive to procure from small scale producers because the market (supermarket) requires a variety of vegetables, some of which can be adequately supplied by small scale producers. However, like the intermediary in the organic rice sector, UMFI, Normincorp has a strong sense of helping small scale producers as they chose not to take on the role of the small scale producers which they easily assume if they want to. UMFI, albeit, mandated to help small scale producers behave competitively, borrowing money at competitive rates and pricing inputs and outputs at competitive rates.

Credit and technical assistance can be more effective if geared towards meeting the requirements of the market. It is therefore critical that assistance in credit, production or marketing is treated as investments to meet market demand. This is an important lesson learned from the cases examined.

Figure 4: Price, Margins and Costs, Brown vs. Organic Rice

		Brown	Red			
Organic Rice	SRP	38.5	45.35			
Supermarket Margins	Discount	3.85	4.54			
Supermarket	Margins %	10.00%	10.00%			
	UMFI Selling	34.65	40.82			
UMFI Packaging/Return	Packaging	2.55	2.55			
Costs	5% Returns	1.3	1.5			
	UMFI Net	30.8	36.77			
FOB Manila	Buying	26	31			
UMFI	Margins	4.8	5.77			
UMFI	Margins	15.58%	15.68%			
PDCI	Selling	26	31			
PDCI	Margins %	15.46%	29.09%			
PDCI	Margins	4.02	9.02			
Total	Cost Rice	21.98	21.98			
Estimate	Trucking	1.25	1.25			
Direct Costs	Palay-Rice	1.5	1.5			
Estimate	Cost Rice	19.23	19.23			
Buying	Palay	12.5	12.5			

Naga to	Manila	Transport
Drying	Milling	Hauling
65%		
recovery	14% MC	

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8 Southeast Asian Country Cases on Agricultural Value Chain Finance

A. Establishment of Small Farmers Income Generation (P4K) Through a Sustainable Participatory Systems Approach :RIGP's Experience in Alleviating Poverty

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P4K stands for “Pembinaan Peningkatan Pendapatan Petani Kecil”, literally means The Establishment of Small Farmers Income Generation. It is a project managed by Ministry of Agriculture, Republic of Indonesia in co-operation with Bank Rakyat Indonesia/BRI (Indonesia People Bank). The project is directed at poverty reduction within rural areas through the development of human resources and provision of micro finance services for micro enterprises development, utilising the existing agricultural and banking institutions. Therefore, it is also called Rural Income Generation Project (RIGP). P4K was implemented from 1979 up to 2006 at 14 provinces and 133 districts. Even though this project is already closed, the community development activities for empowering the rural communities are still continued by the local government.

I. Background

Since the initiation in 1979, the Rural Income Generation Project had passed through 3 phases. The first phase was implemented in 1979-1985, the second phase was carried out in 1989-1995 and the third phase was executed from 1998 and was just terminated by the end of 2006.

The first phase of the project, known as P4K, started in 1979 in six provinces. The lesson learned from the first phase formed the basis of the methodology for the second phase of P4K, namely:

- Credit given to groups of poor people could increase their income through the promotion of income generating activities;
- The existing Agricultural Field Extension Workers (FEW), of the Ministry of Agriculture could undertake the formation and facilitation of farmers groups and provide them with technical assistance, instead of the recruited volunteers in the first phase;
- The poor people, in groups, are credit worthy, with repayment rates much higher than most other groups in the country.

The second phase was successful in meeting its targets, with 48,000 SHGs formed, and with an impressive repayment rate of around 95%. The third phase of the project has been known as Rural Income Generation Project, jointly financed by ADB, IFAD, and Government of Indonesia (GoI).

The target group of the Project in each of the selected provinces is the large number of people living below the poverty line who need considerable skills development, training, and support (including micro-finance services). The beneficiaries of the project are the rural community who live below poverty line; they might be small scale farmers, share croppers, farm labourers, small scale fishermen, small home industry operators etc.

The project is part of the GoI's national strategy to combat poverty to assist about 80,000 families to raise themselves above the poverty level. The RIGP was implemented on a full-

scale basis in 12 provinces, namely: West, Central and East Java; Bali; Bengkulu, Lampung, South Sumatra, Riau, South Kalimantan, South Sulawesi and West Nusa Tenggara. In 2005, as a response to the earthquake and Tsunami tidal waves disaster in North Sumatera and Nangroe Aceh Darussalam (NAD) Provinces, P4K has taken part in helping the victims.

II. Implementation of Agricultural Value Chain Finance on RIGP Project

RIGP project had implemented the agricultural value chain, by providing fund in the types of credit or other financial services through 3 components of activities as previously mentioned, namely (i) self-help group development, (ii) micro finance services, and (iii) institutionalisation and building management capacity.

A value chain involves a series of actors and activities needed to bring a product from production to the final consumer. Actors engaged in these series of activities are bound together by their specific roles in contributing value to the product in the chain. Their roles and participation are varied and subjective to different terms and condition. When credit or other financial services flows through actors along the chain, it is referred to as value chain finance.

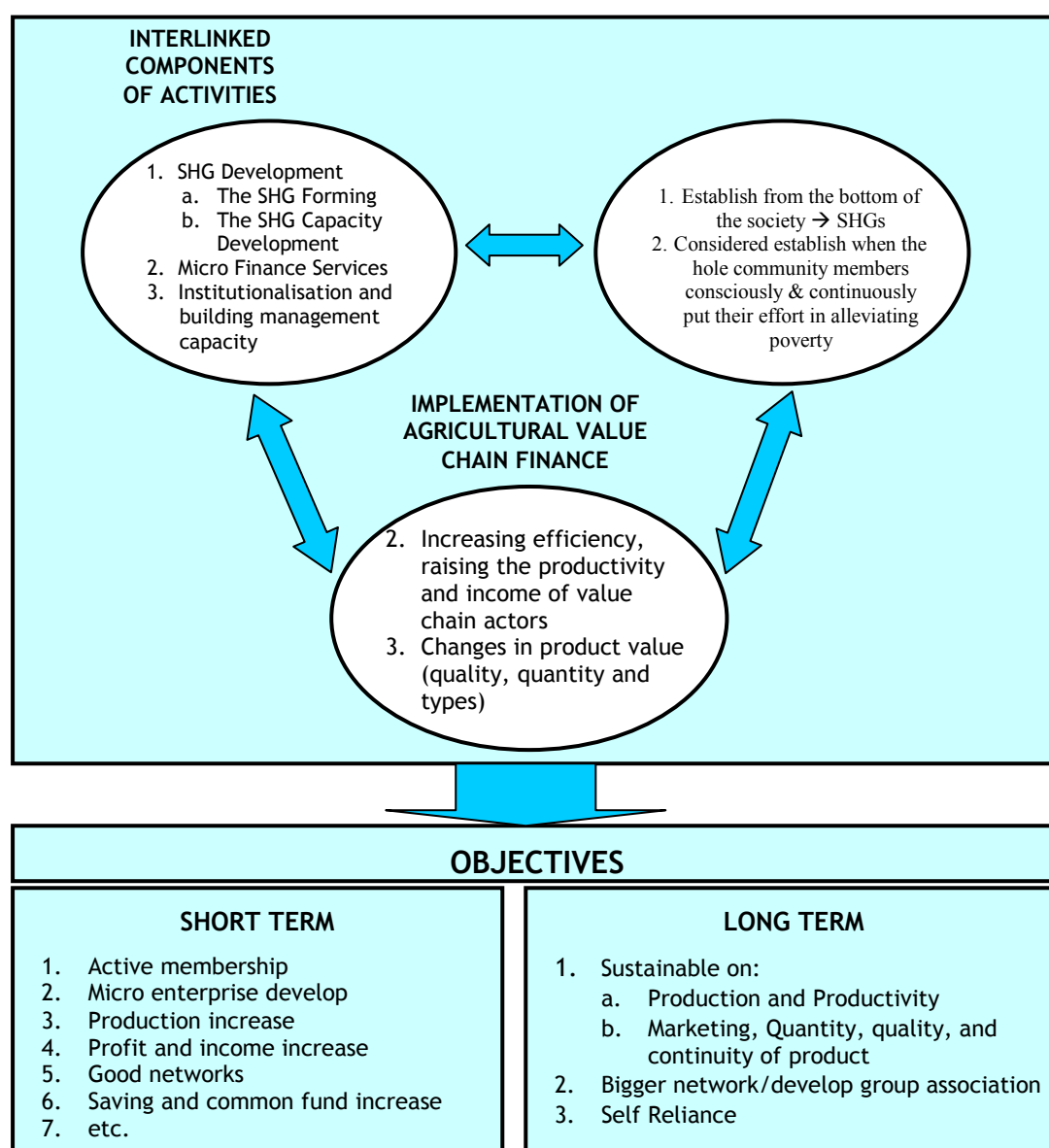
The finance is critical in the various stages of value chain in order to increasing efficiency, improving product quality, and raising the productivity and income of value chain actors. Without access to finance, small farmers will continue to make little investment, have low-return production systems, and be unable to use their farm resources optimally. Similarly, financial constraints may prevent small and medium-scale traders and processors from expanding their capacities, thus limiting the amount of produce they can buy from small farmers and other local raw material suppliers.

In the effort to facilitate the SHG activities and institutionalisation and building management capacity, some funding are needed. In order to form group and increase its capacity, some resources are required, includes infrastructure (office and supporting devices, vehicle, operational cost, salary, and other cost); FEWs as facilitator of SHG; and Management Staff (Central, Province and District level). All services expenses will be useful to increase the capacity of Staff, Facilitator and other stakeholder that involved in the project activities. The activities that relevant for the process refinement and the increment of amount, capacity and quality of project officer and other related parties (NGOs, other government institution), are conducted through seminar workshop, study tour, national and international training, etc. In the end, the whole project activities process aimed in the increment of small farmer welfare as the target group.

Other required funding includes micro credit for micro enterprise. There are 2 types of micro enterprises that are managed by group members, which are individual enterprise and/or corporate enterprise. The enterprise products/commodities are from the field of agriculture, animal husbandry, fishery, snacks, stall, street vendor etc. Some group members are involved in the commodity production until its marketing, while others only producing or buying certain product and then selling them. Therefore, the usefulness of credit in increasing profit is very much related with the types of enterprise.

As previously explained, FEWs act as facilitator to help group members for increasing group's institutional capacity and enterprise-technical skills. Specifically to the entrepreneurship-skills implementation, the credit received from BRI had been utilized properly according to the types of enterprise. For example, if the enterprise is conducted in selling cookies or snacks, the products has undergone increment in several aspects such as

types, amount, quality, taste and hygiene. Some of the fund/capital has been also use to increase product quality and packaging, thus the product will stay fresh and healthy in longer storage duration. Such product with good hygiene, various taste and interesting packages will definitely increase the amount of consumers, selling rate and micro-enterprise profit. If the enterprise involved the field of agriculture, animal husbandry, fishery and, or as trader that collect and re-sell a commodity, thus credit has been able to increase the production, quality of product, productivity, amount and types of the traded-product, in which result in the increment of profit. Similar significant difference will also occur in other micro-enterprises such as in the field of handicrafts industry, stall/small restaurant, patty shop, and other commodity trading. The explanation of phenomenon above can be described in figure 1:



III. Conclusions

A. The project's implementation of the agricultural value chain, by providing fund in the types of credit or other financial services, has proven to be efficiently changing the value of traded products in term of quantity, quality and types. Beside that, through micro finance services most of the SHG members as value chain actors have achieve a lot of improvement in product amount, product quality, increasing efficiency, and rising the productivity and income.

B. The poor joining the SHGs have capability in credit management and are feasible to have access for banking services (bankable). Exercises being done by the SHGs have proved this lesson. Their capability in credit management for profitable micro-businesses makes them possible to repay the credit in good performance. Many groups have applied saving-lending mechanism upon the group common fund, which is most developed from their own savings.

P4K and BRI have been implementing two kinds of services, i.e. participatory capacity building and micro-business development. These are fully-tested models of participatory and sustainable system and mechanism to help the poor to improve their living and family welfare through self-reliance and to lead them out of the poverty by themselves. Therefore, P4K experiences can be called as “a model for rural poverty reduction system”.

C. Another important lesson revealed through the P4K experience in working with rural poor is that capital support is most effective as credit rather than a revolving fund or grant. This mode of empowerment has aroused more responsibility among the rural poor. In some cases, culturally, people even feel shame when they have debt and will work hard to overcome or payback their loan. Furthermore, the implementation of agricultural value chain through micro finance services, especially providing credit or other financial services has lead to an efficient change in the value of traded products in term of efficiency, productivity, quantity, quality and types. These series of activities have result in continuously improving community welfare and well being.

An exceptional to the above finding is the grant for the disaster victims. The matching grant, however, has encouraged the recipient to regain the confident of the possibility to rebuild new life after the disaster. Some groups do succeed in developing micro business as the way to recover their livelihood.

D. The astonishing fact is that female-only-members SHGs are particularly tend to be more successful in managing money and creating income-generating activities compared to those male-only-members SHGs.

B. The Case of Value Chain Financing in Shrimp Industry in Thailand

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This paper highlights the case of “Ta Chin Shrimp Farmers Cooperatives” in Samutsongkhram and Samutsakorn provinces” which are two main areas producing shrimps. The project aims to support and enable shrimp farmers who left their idle shrimp culture ponds to revive and secure their marine shrimp farming with sustainable development on the basis of shrimp culture technology that conform to Good Aquaculture Practices (GAP) or to the Code of Conduct (COC) that is environment friendly and the organic farming standards aiming for a production of “safe food”.

I. Background

Thailand has started to raise shrimps in early 1980s and began to expand rapidly 1987 due to an increasing demand in the world market. Shrimp industry is important to the Thai economy because Thailand earns more than 2,000 million US dollars a year from exporting shrimp (frozen and prepared shrimp) which ranks number four of agriculture exports from rice, para-rubber and cassava products. Thailand has become the world’s largest shrimp exporter. The largest export markets for Thai shrimps are the U.S.A and Japan. The strong competition in the world market together with strong defense from domestic shrimp farmers in the importing countries and improper farming method used by the Thai shrimp farmers causes the difficulty of exporting shrimps and bring the domestic price falls onward.

In 2003, prices for shrimps (black tiger shrimp) has fallen drastically and continuingly that affect those engaging in the trade of tiger shrimp with great losses. The causes relating to the losses are as follows

- **On the production.** The aquaculture operators have been in short supply of improved parent stock and the shrimp fries thereof are of low quality. With low survival rates, the higher cost of production result. Also, inappropriate and over-uses both the agro-chemicals and anti-biotic often cause resistance and residuals to accumulate in the shrimps, followed by epidemics. Moreover, improper methods of water drainages from the culture ponds, etc. generate the coastal pollution.
- **On the processing.** Ex - factory, the raw shrimps often contain toxic residuals as a result of improper uses of the anti-biotic, the prohibited veterinary drugs and, even more, wrong uses of the permitted agro-chemicals. There is also contamination of the micro-organisms which are agents of human health hazards.
- **On the marketing.** The GSP cut by the EU makes importers to pay more tax, as high as 14.4 – 20 percent and the anti-biotic residuals have been often detected. On the other side, a high anti-dumping duty is collected by the U.S. and Australia enforced prevention measures on the shrimp import that might cause the epidemics of White Spot Syndrome Virus (WSSV) and Yellow Head Virus (YHV).

As a result, majority of the small shrimp farmers were forced out of their businesses, and left their shrimp ponds idle, which as many as 104,000 acre in 2005 were as such. The successive impact has been such that many of those shrimp farmers have become the Bank for Agriculture and Agricultural Cooperative (BAAC)'s NPL.. The damages are spread among the shrimp farmers themselves, the bank, the concerned public and private sectors and the nation as well.

However, the shrimp situation in the whole world is determined to have a world demand greater than the shrimp production and the market purchase prices are over the cost of production. While the food safety standards add to the shrimp industry now and the rules and regulations etc. the anti-dumping and GSP of the importing countries are changed which turn to the favor of the Thai shrimp industry with positive effects. It is likely to be the opportunities for the shrimp farmers with potentials of reviving their farming careers which can lead them to free their NPL status. Thus, the project on shrimp farm restoration and development of the idle ponds attempts to secure and sustain their aquaculture career.

II. The Shrimp Industry Value Chain

Agencies involve in the chain and their roles are below:

A. The Ta Chin Shrimp Farmers Cooperatives.

1. Select participating farmers according to the cooperatives principles and the project requirements.
2. Managing the contract farming on the farm products to be forwarded by the cooperative members so that the assemblers can sufficiently absorb the farm products. And prepare shrimp farm plans for all.
3. Prepare a shrimp culture handbook and train the participating farmers on the shrimp culture technology regarding GAP, CoC, organic farming.
4. Coordinate the financial sources for the farmers to have access to sufficient and timely borrowed capital.
5. Provide services for the farmers' catching and forwarding.
6. Arrange for a shrimp production system that provides traceability.

B. The BAAC Samutsakorn.

Provide credit service for the shrimp culture according to the BAAC criteria and the project requirements.

C. The provincial fisheries offices.

1. Promote the GAP/COC shrimp culture businesses and careers that stick to the food safety standards and provide technology on GAP and COC.
2. Certification of the GAP shrimp farms under the project.

D. The Coastal Fisheries Research and Development Samutsakon .

1. Support the examination of the conformity of the production process to the food safety standards.
2. Certify the sanitary conditions of the marine products aimed for export.
3. Promote the use of commercial marine shrimp culture technology

E. Samutsongkram Coastal Aquaculture Station .

1. Transfer technology about the commercial marine shrimp culture
2. Diagnosis disease for the marine shrimps.

F. Samutsongkram and Samutsakorn Cooperatives Provincial Offices, MOAC.

1. Provide the knowledge for extension of the cooperative philosophy, principle and methods.
2. Build the capacity of the business management and technology of the cooperatives through the training.

G. Samutsongkram and Samutsakorn Provincial Commerce Offices .

Support the marketing of the project's shrimps along the price offers that are higher than the production cost

H. Samutsongkram and Samutsakorn Agricultural Marketing Cooperatives

Provide services on the marine shrimps feed and other inputs at reasonable prices for the project participants.

I. Pac Food Co.Ltd. and Union Frozen Products Co.,Ltd.

Purchase shrimps produced under the project according to the contract farming agreement made with the Cooperative.

J. Participating Shrimp farmers.

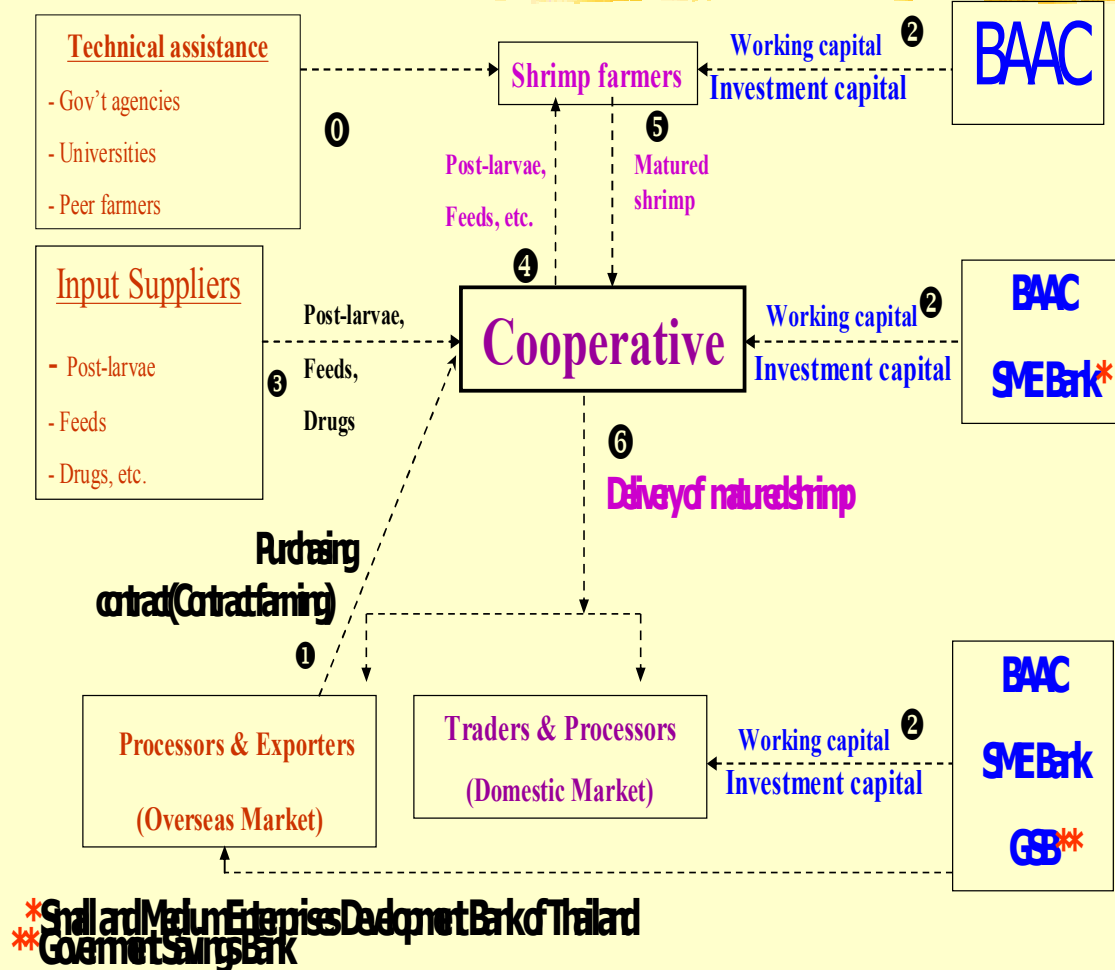
Always comply to the project regulations and requirements in order to produce shrimp with good quality.

The BAAC provides loans to project participants use as the shrimp culture investment funds not over 3,600 U.S dollars/ acre. The loan interest rate for the project participants will be collected according the general BAAC loan rate which is currently not over 10.50 per annum. The loan repayment term is completed written one year since the beginning day of the borrowing.

There is the administration and management of the project committee which comprise of the and involving agencies, representatives of private and public sectors who join the project, where by appointed by the governor of Samut sakorn province.

The implementation on the project continue well. The farmers who participate in the project return to their career, the idle land be reused and they can repay debt. At present exports of shrimp tends to increase due to high demand in world market especially for good quality of the products. In this connection, domestic price of shrimp tends to increase too.

Value Chain Financing: Shrimp Industry Model



C. Making a Difference: The Normin Veggies Experience

*Tito Alex Besinga
Orobay Agritech*

Organizational innovation is key to the success enjoyed by NorminVeggies or Northern Mindanao Vegetable Producers' Association, Inc. It is an association of vegetable farmers and stakeholders in Northern Mindanao, Philippines who organized and bonded together to undertake and implement strategies in response to upgrading and finding new market opportunities within the vegetable industry, by innovating and increasing its value adding activities.

I. Introduction

With the aim and view of sustaining economic opportunities, NorminVeggies has created its marketing arm, the Northern Mindanao Vegetable Corporation or Normincorp. NorminVeggies and Normincorp improved the farmers' ability to access dynamic markets in the Philippines, particularly vegetable processors, fastfoods and supermarkets. It established strategic alliance and partnership to input suppliers, traders, buyers and processors, in order to secure its viability and competitiveness.

The expanded market created by Normincorp has led to the establishment of Normin Veggies Consolidation Center (NVCC). NVCC provides whatever services, packaging, volume and quality specifications the buyers wanted. And at the same time, it offers the farmer members' services in the form of storage, order taking, sorting, washing, packing, shipping facilitation, billing & collection from buyers, and payment remittance to growers.

Clustering of products and produce has enabled NorvinVeggies to serve well its members and customers. Its clustering program gave birth to specialized production centers to cater its specialized markets, that earned a national recognition of being one of the five model industry clusters in the country. It received a Plaque of Recognition from President Gloria Macapagal Arroyo, a Model Regional Cluster Award and Special One-Town-One-Product Citation last October 2007.

The strategy is the answer to the challenge to transform the vegetable farms from fragmented, smallholder farm production units to market-focused and competitive business operation, along with converting products from "low value" to "high value", and be able to contribute to better income for vegetable growers and the rural communities. Not just farming, but farming profitably, and working with markets by consolidating produce and resources to compete. It is characterized by mutual exchange of resources and synergy to resolve problems and meet market demand. It implies a shift from product to customer-driven orientation.

II. Supporting Functional Upgrading

In 2006, NorminVeggies has entered into partnership agreement with the Department of Agriculture and Growth with Equity in Mindano (GEM-USAID) in putting up the NorminVeggies Consolidation Center (NVCC) in Agora Wholesale Market. The demand from Visayas Areas and neighboring provinces started to build up and necessitates the establishment of a bulk consolidation center to handle the storage, warehousing and other related value chain activities for a very reasonable fee.

Table 2: NVCC storage fees

Value/Kg (Php)	Squash/ Ginger	Cabbages (flat, round, wongbok)	Other Vegetables & fruits	Table Tomato
Up to 2.00	0.20	0.20	0.20	
2.05 to 5.00	0.25	0.20	0.20	
5.05 to 10.00	0.50	0.50	0.75	
10.05 to 20.00		0.75	1.00	
20.05 to 50.00			2.00	
>50.05			3.00	
Up to 300/crate				5.00
>300/crate				10.00

Note: same rates apply for Normincorp facilitation fee

The Agora Wholesale Market is near the Cagayan de Oro Port and the integrated bus terminal. It is the largest consolidation area and wholesale marketplace of vegetable products in Northern Mindanao with close to one hundred (100) stalls/outlets. The daily volume handled is an average of 150 metric tons. It is the main supply source for other areas in Mindanao (Zamboanga, Lanao, Surigao and Agusan), and the neighboring islands of the Visayas up to the main market of Luzon (Manila).

Transactions at the Agora Market are on spot market, and the farmers have no say on the vegetable handling and storage conditions resulting to post harvest losses and wastage from 30% to 70%. The NVCC will institute change in the postharvest handling, transport, packaging and storage to avert the situation. It will store and consolidate weekly delivery of the members before shipping to them to their respective destinations.

Normincorp is the link of NorminVeggies to the final destinations of its products and produce. It enhances the position of the product to receive a higher per unit price per transaction. Normincorp is 20% owned by NorminVeggies. The marketing premium is Normincorp's contribution to NorminVeggies. It charges 10% facilitation fee at the NVCC.

Normincorp caters to both members and non-members of the association even without any pre-arrangements. All the produce received at the NVCC are either supplied to the spot market or the institutional markets. Since the Agora consolidation stall was opened, more farmers have joined the marketing clusters. And based on the financial reports of NVCC, the difference in the costs and benefits between cluster members and non-cluster members would be significant because they do not have access to a better market. For example, sweet pea in the local market in Bukidnon where the small farmers in the cluster are located or proximate, is selling at P80/kg only when Normincorp was already selling at P120/kg. Even if packaging, transport, storage and marketing fee are deducted, the net price would still be much higher than the Bukidnon price. Table 3 shows the financial report of NVCC for the first four (4) of operations.

Table 3. Normincorp Income Statement in Pesos (1 US \$: 53 pesos) (From NVCC Marketing Operations), May to July 2006

Item	May	June	July	Total
Income				
Market Facilitation Fees	25,610	30,072	36,614	92,296
Expenses				
Salaries & Wages	12,500	16,000	18,500	47,000
Employee Benefits	1,066	1,066	1,066	3,198
Employees' Meals	1,145	1,335	2,455	4,935
Communication	248	448	477	1,172
Travel & Transportation	516	520	682	1,718
Light & Water	469	351	561	1,381
Accounting Services	1,000	1,000	1,000	3,000
Office Supplies	1,492	2,223	1,735	5,449
Miscellaneous	100	100		200
Total Expenses	18,535	23,042	26,475	68,053
Net Income Before Tax	7,075	7,030	10,138	24,243
Less : NorminVeggies' Contribution/Donation	2,559	2,988	3,618	9,166
Net Income	4,515	4,042	6,520	15,078

CRITICAL SUCCESS FACTORS

A. Marketing Clusters strategy enhanced the core value of sharing among all the producers including the small farmers. When a farmer is taken into a cluster, s/he is under strong obligation to work with the group including to protect its name as a producer and a marketer, and failure to meet this expectation from a cluster member can be a reason of removal from the cluster. Group unity is severely tested when growers are tempted to sell to other buyers in the spot market for short term benefits of pricing, causing inability to deliver contracted buyers. An enabling structure under clustering is the assigning of products to small farmer-member that they can best produce. Products that are labor intensive, low risk and have lower costs of production. The more financially independent growers on the other hand, provide back-up system for the small farmers in case there is a crop failure, which is about 25% of the required volume of the market from the small farmers. This channel upgrading became one of the competitive strength of NorminVeggies.

B. NorminVeggies is a learning organization, flexible and adaptive to any change in the industry. It can quickly respond to new emerging markets and products. It has an inventory of product protocols that are readily available for product development and production. And it continues to seek high value markets and constantly analyzes the changes in the market which then is shared to all its members. Open communication helps the members articulate their concerns, and feedback mechanism is quick and decisions are swift, a manifestation of a professionally run organization.

III. Conclusions

The organizational innovation of NorminVeggies has several elements: product consolidation through cluster strategy; a new business model through Normincorp; supply chain mechanism via bulk consolidation center; networking and linkages to all the players in the value chains; and the development intervention for greater inclusion of small farmers. Its willingness to constantly upgrade the vegetable value chains in Northern Mindanao, speaks

well of its boldness to transform the association as a social enterprise into a business organization capable of realizing the goals that benefit a wide base of growers including the small farmers.

The clustering strategy enables small farmers to be active players in the supply chain, meet the basic demands for volume and quality consistency in supply, and join the dynamic markets like the fastfood chains, processors and supermarkets. Through time, a functioning cluster will become evident. When growers understand and experience the benefits of cooperation: sharing best practices, commitment to quality and consistency, willingness to pay the costs of management, only then can there be a strong and cohesive cluster. And those who cannot, will leave as willingly as they came in.

It took time for NorminVeggies to harness the productive potentials of its member, and the capability of the association to make a difference in the history of the vegetable industry in Northern Mindanao. There were infrastructure gaps, low productivity, attitudinal problems, and other constraints that need development intervention from private development resource organizations and the government to address its limitation and even expansion.

Its present experience revealed that working capital demands in production is not much felt by its members due to interventions extended by its institutional partners in the locality especially to the small farmer-producers. However, financial intervention is seen to be a critical component in adding premium to the value of the produce of the small farmers. There is a corresponding amount needed to raise the unit price income of the small farmers per unit value added.

Initial gains may not be sustained over time due to competition among producers and changes in end markets. And preparing itself to stay powerfully in the market, aware of the growth potential of the vegetable value chain, NorminVeggies is looking for investment capital to improve its agri infrastructures like greenhouses and rain shelters.

As it put its direction in the global market, NorminVeggies needs to constantly invest in technology development, market research, communication, to fuel its production, processing and marketing integration.

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D. Value Chain Financing for Agriculture Sector in Myanmar

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Being a developing country, the economy of Myanmar heavily relies on the agriculture sector. Financing is a critical part of agricultural development process without which development will not be possible. Since the period of socialist economy, the government subsidized loans to the farmers and encouraged them to grow the staple foods. After introducing the market oriented economic system, the government has set up the Agriculture Development Bank to extend more loans to the farmers. This paper highlights two successful examples of financing in beans and pulses and palm oil industries.

I. Introduction

Myanmar is situated in the mainland Southeast Asia with the total land area of 676,500 sq kilometers. Myanmar is a strategically important country located between the two economic powerhouses, China and India. In Myanmar over 50% of the total land area is covered with natural forests and Myanmar owns over 22 million cultivable lands for agriculture. For the development of the country the government of the Union of Myanmar is paying special attention to and laying greater emphasis on agriculture mechanization and modernization in its main economic objectives.

The development of a sector calls for a special attention from the government not only formulating laws and regulations but also financing and infrastructure developments. Only then can a sector grow in a sustainable way.

Due to the rapid urbanization and changes in lifestyle by transforming their peasantry life into industrial workers life as tempted by lucrative wages, the people's interest in the agriculture sector is decreasing dramatically. The financing schemes to attract the people to engage in agriculture sector have become imperative.

A. Increasing the net sown acreage and yield per acre

The population of Myanmar is increasing at the rate of 2.2% p.a and also the export of agriculture produces increase very rapidly. In order to meet the growing demands, there is a need to increase the productivity and sown acreage.

The net sown acreage in the year 1992 was 21 million and it increased to 25 in year 2005. Apart from increasing in the sown acreage, per harvested acre yield of strategic crop such as Paddy increased gradually. The harvested acre of Paddy in the year 1992 is 2618 lbs and it increased to 3238 lbs in 2005.

B. Introducing financial schemes

Financing is a critical part of agricultural development process without which development will not be possible. Since the period of socialist economy, the government made subsidizing loans to the farmers and encouraged them to grow the staple foods. After introducing the market oriented economic system, the government has set up the Agriculture Development Bank to extend more loans to the farmers.

The government has been extending long term and short term loans to the farmers. Statistical figures can be seen as follows:

<u>1. Agriculture loans by crop</u>	(Kyat Millions)
1994-95	2781.08
1995-96	9013.79
1996-97	9919.54
1997-98	10245.01
1998-99	10395.05
1999-00	11185.83
2000-01	12124.19
2001-02	12740.81
2002-03	12015.32
2003-04	20416.25
2004-05	27382.18

2. Short term and Long term loans

Apart from the above crop loans, the government has provided loans to the local farmers to buy the cattle, bullock carts, Pump sets, Power tillers and farm implements.

II. Analyzing Agriculture Value Chain in Myanmar

It is necessary to analyze the current value chain system in Myanmar so that we can make necessary recommendations to set up effective and efficient Value Chain financing scheme.

By using Michael Porter's Generic Value Chain analysis, we can break down the current agriculture value chain system in Myanmar into Primary value chain activities such as. Inbound Logistics, Operations, Outbound Logistics, Marketing and Sales, Services and supporting activities such as. Firm infrastructure, HR development, Technology development and Procurements.

Regarding the primary value chain activities we can analyze as follows:

A. Inbound Logistics

This sector requires the receiving and warehousing facilities of goods, raw materials, inputs for agriculture before the cultivation and also storing agriculture produces after cultivation.

Generally, the farmers are undertaking these activities at their own expenses .The farmers are still using traditional way of storing and transporting the goods.

To reduce wastages and spoilages during harvesting, transporting and milling of the crops we need to introduce modern logistic systems.

Outbound Logistics

The requirement for the outbound logistics is quite similar to the above one. The farmers need to use refrigerated wagons to transport their grains and agriculture produces without being wasted and spoilt.

B. Operations

In future, the farmers are to grow the crops, vegetables and other industrial raw materials as guided by the GAP and/or prospective buyers.

C. Marketing and Sales

Concrete financing scheme is needed to set up E-commerce facilities which involve initial investment and to facilitate the marketing and sale for agriculture produces.

D. Services

In the rapidly changing world, trading only is not sufficient to meet the growing customers' requirements. After sales services become an integral part of marketing and sales promotion strategy.

It is necessary to provide timely information, traceability and mode of handling to reduce losses.

Regarding the supporting facilities, the government has already poured in a bundle of development packages and we can now enjoy the benefits of those infrastructures. But, we still a need to enhance and strengthen the existing.

Being an agro-based country, we need to develop R&D facilities for the pre and post harvest technologies, seed farms, tissue culture farms and pilot testing farms to produce quality species for the local growers.

In Myanmar, the government is the main source of funding for the local growers. The other type of funding can be available from the major exporting firms. Some firms also provide the seeds, fertilizers, pesticides and disseminate knowledge and experiences in farming to the local farmers.

III. Sample Success stories

There are some success stories in the agriculture value chain financing in Myanmar. The followings are two outstanding examples:

Financing for Beans and Pulses Production

In Myanmar the export and sales of beans and pulses was centrally controlled by the government before 1989. After adopting the market oriented system in year 1989, the

government allowed local businesses to freely export and import except restricted items. At the time the export of beans and pulses were undertaken by the local entrepreneurs.

Due to the high demand for beans and pulses overseas and rapid surge in local consumption, the farmers have to grow beans and pulses by expending cultivable land and productivity. For the farmers, the finance is a major constraint to expend the cultivable land to meet the growing demand.

In order to streamline the financial difficulties of the farmers, the local exporters are providing loans to the farmers so that they can meet the export demands. This program benefits both the farmers and the exporters. Accordingly, the annual production of beans and pulses increase dramatically.

Now, Myanmar ranks the worlds' second largest beans and pulses exporter after Canada and the largest in the region.

This is the first success story of financing offered by the local entrepreneurs.

Palm Oil Cultivation

In Myanmar, the annual import of the palm oil costs more than 300 million USD and the demand is growing sharply. There are a lot of fellow lands which are suitable for growing the palm oil trees in the southern part of the country. In order to reduce the palm oil import and also to produce the Bio-fuel, the government encourages the local entrepreneurs to grow palm oil trees.

The government provides the long term loans to those companies which want to grow palm oil trees and provide facilities for the smooth transportation and communication.

There are over 500,000 acre of palm oil trees cultivation has been established and the growers are now building refineries to process the raw and refined oil.

Truly, the land reclamation and cultivation is not that much attractive for the local entrepreneurs. But the effective financing package could be able to attract businessmen to engage in the farming.

IV. Challenges and Conclusions

The government of Myanmar has initiated some of the Value Chain Financing schemes but there is a need for more effective and efficient value chain financing schemes for the local farmers.

By analyzing the current system, we can find out the following requirements in the value chain financing in Myanmar:

1. Financing has been carried out mainly by the government. Active participation of other financing institutions is advisable.
2. The accessibility of funding is quite limited so far and the funding or loan is mostly based on collateral basic. There is a need to create a system to lend the farmers without collateral basic.

3. The contract farming of the competitive crops should be encouraged and promoted by the government.
4. The necessary funding and easy access to loans for the supporting institutions and supporting businesses should be encouraged.
5. There is a need to help promote the IFCs (Institutions for Collaboration) to gain access to the technology and technical advice, market information and institutional linkages. Funds should also be provided for those organizations as well.

The following benefits can be enjoyed by all parties concerned in the value chain financing scheme.

1. Easily accessible to the required funding by the farmers
2. Increase operating efficiencies of the local farmers
3. Increase in quality and quantity of agri products
4. Increasing the productivity and high ROI
5. Better bargaining power to buy resources
6. Better operating cash flow
7. Investment in the R&D sector and e-commerce
8. Expansion of businesses
9. Create more supply chain linkages between the players

From the above presentation, it is recommended to form effective value chain financing scheme in Myanmar and to set up regional value chain financing scheme to help promote the regional agriculture sector development. On the other hand, there is a need to educate and create awareness for the local farmers access to the financing facilities and let them know the requirements by the financing institutions.

It is required to gain support from the respective government bodies to draw necessary laws, regulations and directives to strengthen the effective value chain financing schemes. There is also a need to set up and create institutions to help, promote and monitor the value chain financing system. Finally, the necessary HR development programs, conferences, workshops and seminars should be undertaken to have better understanding of the value chain financing system.

In conclusion, effective value chain financing will enhance the living standard of the local farmers and create sound business environment.

Value chain is also strongly related to supply chain activities. The effective value chain system will enhance the shareholders value and create fruitful benefits both for the local growers and funding institutions. This will again enhance the effective flow of supply chain activities.

For the agro-based country like Myanmar, it is advisable to set up effective and efficient value chain financing schemes to produce highly competitive commodities for the local consumption and for export.

E. Agricultural Value Chain Financing in Nepal (General Perspective)

Prem Kumar Shrestha
Agricultural Development Bank Ltd.

Value chain financing is underdeveloped in Nepal. There are various cooperatives for input supply and production but there seems to be no clear value chain among producer, distributors and consumers. As a result, financial institutions are not being able to finance or develop products for the chain. In recent years, a simple case of agricultural value chain can be observed in Nepal such as in dairy and poultry industries.

I. Background

Nepal, located between two fastest growing countries in the world—India and China, is rich in natural resources with its diverse ecological regions ranging from the highest altitudes (Mt. Everest) in the world to the low tropical plains. The country's development potential is promising. Nepal's advantages include proximity to the large and fast growing markets of India and China, comparative advantages in some agricultural and manufacturing products, rich hydropower resources, strong tourism potential and rising pool of educated labor force.

Despite development potential, reasonable rates of economic growth rates achieved in the 1990s and significant reduction in poverty, the incidence of poverty is still high in the country and the per capita income is below 300 USD. Agriculture accounts for about 40 percent of GDP and close to 80 percent of the people live on agriculture. The country's export competitive strength has remained weak.

The overriding objective of the development efforts in Nepal is poverty alleviation. The low productivity of agriculture and its fluctuating growth rates, rising inequality, difficult topography, regional disparity, conflict and weak institutional capacity have adversely affected poverty alleviation programs.

II. Challenges in Agriculture Value Chain

A Survey conducted by the World Bank regarding to financial delivery of Nepal confirm that use of banks is limited, financial NGOs and cooperatives play a large role in providing both deposit accounts and loans, and informal borrowing far exceeds formal borrowing. Only 26 percent of Nepalese households have a bank account, and banks' procedures are perceived as being the most cumbersome among financial institutions. Accordingly, clients prefer not to save in them. Banks dominated in urban areas and among the wealthiest. Financial NGOs and cooperatives run a close second as largest provider of deposit accounts, serving 18 percent of households. These institutions are the preferred provider for low-income households, but are close to banks even for wealthier households. Microfinance and regional rural development banks are a distant third provider of deposit accounts, serving only 4 percent of households—mainly poor, rural ones. About 38 percent of Nepalese households have an outstanding loan exclusively from the informal sector, 16 percent from both the informal and formal sector, and 15 percent from only the formal sector (that is, a bank, finance company, financial NGO

or cooperative, or microfinance or rural regional development bank). Family and friends are by far the largest informal providers of loans to households—and, contrary to common belief, family and friends often charge interest. Most households who borrow from informal providers do not bother trying to borrow from financial institutions, mainly because formal institutions cannot meet their financial needs on time. Informal providers also require less physical collateral. Even among the wealthiest households, half of those with a bank account prefer informal lenders because of their rapid delivery.

An estimated 69 percent of foreign remittances come through informal channels -usually family and friends - even among households with a bank account. Just 6 percent of remittances are saved in financial institutions. The bulk of foreign remittances are used for consumption and to repay loans—loans most likely incurred by workers to migrate to other countries. In sum, both supply and demand indicators show that, despite government efforts, formal financial institutions do not serve the needs of most of the Nepalese population. And while access to and use of formal financial services are limited in general, the problem is more acute for small businesses and low-income households. Indeed, both access and use are closely correlated with business loan size and household income.

With the main objective of providing institutional credit for enhancing the production and productivity of the agricultural sector in the country, the Agricultural Development Bank, Nepal was established in 1968 under the ADBN Act 1967, as successor to the cooperative Bank. The Land Reform Savings Corporation was merged with ADBN in 1973. Subsequent amendments to the Act empowered the bank to extend credit to small farmers under group liability and expand the scope of financing to promote cottage industries. The amendments also permitted the bank to engage in commercial banking activities for the mobilization of domestic resources.

Agricultural Development Bank Limited (ADBL) is an autonomous organization largely owned by Government of Nepal. The bank has been working as a premier rural credit institution since the last three decades, contributing a more than 67 percent of institutional credit supply in the country. Hence, rural finance is the principal operational area of ADBL. Besides, it had successfully executed Small Farmer Development Program (SFDP), the major poverty alleviation program launched in the country. Furthermore, the bank has also been involved in commercial banking operations since 1984.

The enactment of Bank and Financial Institution Ordinance (BAFIO) in February 2004, (now Bank and Financial Institution Act (BAFIA), 2006) abolished all Acts related to financial institutions including the ADBN Act, 1967. In line with the act, ADBL has been incorporated as a public limited company on July 14, 2005. Thus, ADBL operates as a "A" category financial Institution under the legal framework of BAFIA and the Company Act.

The concept of value chain financing is a new concept in Nepal. Although value chain financing has been adopted in different agribusiness for few years, its importance and its mutual benefits are still to be discussed. As a matter of fact Nepal has not developed any policies, institutions and services yet for the development of value chain. The majority of agricultural sector has been using the traditional system of financing i.e. financing on their own risk and has also been using their own channel of supply. In the today's world of global market and competition this would not be enough. Because of its rich natural resources with diverse ecological regions ranging from the highest altitudes in the world to the low tropical

plains, it can produce all kind of agricultural products and supply around the world. But individual based agribusiness would not pay in the days to come. There should be the proper chain of step with value added in each step. The financing companies can also play vital role for the development of agricultural value chain.

Rice, maize, wheat, millet and barley are the major cereal crop in Nepal and most of the people use these in their lunch and dinner. Most of the Nepalese people are involved in these products. Few people are also involved in cash crops such as potato, sugarcane and tobacco. In the recent years, the concept of contract has also been emerging in this area. The fruits and vegetables farming are the fastest growing agricultural products in Nepal. Still we have to depend on India and China for fruits for couple of months.

From Agro enterprises about 26.16 billion rupees of value added to Nepal's economy which is about 5 percent of Nepal's overall GDP. Major agro enterprises are - processing of cereal crops like rice and wheat, animal products like milk cheese, ghee, meat and meat products, the production of poultry feed and carpet and wool processing. These agro enterprises are providing direct employment to over 60000 workers.

III. Conclusion

Nepal is rich in natural resources with its diverse ecological regions ranging from the highest altitudes in the world to the low tropical plains. So, it can have almost all kind of agricultural products for its need as well as for foreign market. The only thing needed in the collective effort. Nepal should implement agricultural value chain with appropriate policies, procedures and support. The traditional system of agriculture and marketing should be replaced with modern and advanced technology. At the same time full information on market and marketing opportunities should be provided to the concerning people. All the members of the chain should have easy access to the credit from bank and financial institutions. Nepal should grab the new concept and capitalize for the benefit of all.

Appendices

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**SOUTHEAST ASIAN CONFERENCE
ON AGRICULTURAL VALUE CHAIN FINANCING**

**A conference jointly organized by
Asian Productivity Organization
Food and Agriculture Organization
Asia Pacific Rural and Agricultural Credit Association
Center for Training and Research in Agricultural Banking
National Productivity Council of Malaysia**

**Sheraton Subang Hotel & Towers
Selangor, Malaysia
December 12–14, 2007**

DAY ONE

Wednesday, December 12, 2007

08:30- 09:30	Registration and Coffee for all Participants
Session 1 : Opening Ceremony	
09:30- 10:30	Opening and Welcome by Moderator: [APO or NPC] Opening Address by [Mr. Calvin Miller FAO] Keynote Address by [Official from Malaysia MoA or MoI]
10:30-11:00	Networking Break
Session 2 : Value Chain Financing Models ...setting the stage	
11:00-12:30	Resource Paper by Resource Person: [Dr. Carlos Da Silva – FAO Rome] [Mr. Alejandro Escobar- IADB, Washington DC]
12:30-13:45	Lunch
Session 3 : Role of Financial Institutions in Value Chain Financing	
13:45-15:30	Resource Paper by Resource Person: [Dr. Badiola –ACPC/APRACA] [ADB ???]
15:30-16:00	Networking Break
Session 4: Value Chain Financing Model ...building collateral and improving credit worthiness	
16:00-17:30	Resource Paper by Resource Person: [Mr Calvin Miller- FAO, Rome]
Evening	Welcome Dinner hosted by APO

DAY TWO

Thursday, December 13, 2007

Session 5 : Integrating Technical Assistance in the Value Chainengaging the small farmers	
09:00-10:30	Resource Paper by Resource Person: [Dr. Larry Digal- University of the Philippines] [Dr. Md. A. Saleque – BRAC]
10:30-11:00	Networking Break
Session 6: Success Stories on Value Chain Financing ... how to replicate them	
11:00-12:30	Resource Paper by Resource Person: [?] Brief Paper by Participants Thailand Philippines Indonesia
12:30-13:45	Lunch

Session 7 : Case Studies

13:45-15:30

Resource Paper by Resource Person:
[Dr. Carlos da Silva FAO, Rome]

Brief Paper by Participants

Malaysia

Philippines

Cambodia

15:30-16:00

Networking break

Session 8 Break Out Sessions: [Discussions on selected policy issues]

16:00-18:00

Discussions by Group

DAY THREE

Friday, December 14, 2007

08:30-12:30

Field trip

[To be arranged by NPC Malaysia]

12:30-14:00

Lunch

Session 9 Break Out Reporting

14:00-15: 00

Group Report and discussions

Session 10 Closing Session

15:00-16:00

Summary Conclusion

Closing - [Malaysian Official?]