APRACA FinPower Program

Financial Access and Inclusion in the Agricultural Value Chain

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With Special Sponsorship of the
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This book is published during the incumbency of Mr. Pham Thanh Tan (APRACA Chairman), Mr. Abdurakhmat Boymuratov (APRACA Vice-Chairman) and Mr. Benedicto S. Bayaua (Secretary General).

MESSAGE from the APRACA CHAIRMAN

The Regional Study on Agricultural Value Chain Financing in Asia is a product of the collaboration between the Asia-Pacific Rural and Agricultural Credit Association (APRACA) and the International Fund for Agricultural Development (IFAD) on *"Accelerating the Financial Empowerment of Poor Rural Communities in Asia and the Pacific through Rural Finance Innovations"* or the FinPower Program.

APRACA projects and programs have always been consistent with its commitment in uplifting the plight of the rural poor in developing countries in the Asia and the Pacific region, through the promotion of efficient and effective rural finance and their access to rural finance services. Thus a partnership was forged with IFAD granting APRACA a five-year technical and financial assistance grant through the FinPower Program. The FinPower Program aims at empowering the rural poor in Asia-Pacific countries through financial policy dialogues, innovative pilot programs and knowledge-sharing among actors in the rural finance sector. During its first year of implementation in 2007, "Creating a Conducive Rural Finance Policy Environment in Selected Asian Countries," the predecessor of this regional study was published, as a result of a series of fora as well as findings from related studies.

For IFAD's trust and sponsorship in APRACA's endeavor, a most sincere expression of my gratitude; I would like to thank, in particular IFAD Asia Division Director, Dr. Thomas Elhaut, and Regional Economist Dr. Ganesh B. Thapa.

I am also extending my deepest thanks to the Center for Training and Research in Agricultural Banking (CENTRAB), for their support and commitment in the implementation of the FinPower Program.

Finally, I would also like to express my appreciation to the team of researchers/writers from the Agricultural Credit Policy Council, whose combined efforts made possible the completion of this regional study.

MR. PHAM THANH TAN
Chairman
Asia-Pacific Rural and Agricultural Credit Association (APRACA)
and
General Director
Vietnam Bank for Agriculture and Rural Development (VBARD)

MESSAGE from the APRACA-CENTRAB PRESIDENT

Felicitations! It is with great pride that I am sharing with you the Regional Study on Agricultural Value Chain Financing in Asia, an integration and analysis of the state of value chain financing in selected Asian counties.

This study forms part of the APRACA FinPower Program under the five-year technical and financial assistance grant by the International Fund for Agricultural Development (IFAD). The Program seeks to promote the financial empowerment of the rural poor in Asia-Pacific countries through various activities that will further advance knowledge-sharing among APRACA member countries. As such rural finance knowledge and successful approaches gathered through regional and national dialogues, pilot of innovative programs and conduct of regional studies such as this one, shall be consolidated and replicated among beneficiaries in the region.

IFAD is one with APRACA in its cause in creating a conducive policy environment as well as an effective regulatory framework among APRACA-member countries. Lending research expertise to the FinPower Program is the Center for Training and Research in Agricultural Banking (CENTRAB), the research and training arm of APRACA. APRACA-CENTRAB promotes exchange in addressing critical issues and formulating strategies towards sustainable and effective rural financial markets.

As President of APRACA-CENTRAB, I take much pride in being part of the FinPower Program. I sincerely thank IFAD in making this partnership possible, the IFAD Asia Division in particular, Dr. Thomas Elhaut, Director and Dr. Ganesh B. Thapa, Regional Economist. I am also grateful to Mr. Pham Thanh Tan, APRACA Chairman; Mr. Benedicto Bayaua, APRACA Secretary General and FinPower Regional Program Manager. I would also like to extend my appreciation to Atty. Eduardo Garcia, CENTRAB Managing Director and his group for their unwavering support and commitment to the implementation of the FinPower Program. Not to be forgotten are my officers and staff at the Agricultural Credit Policy Council (ACPC) whose talents and expertise in research have contributed to the realization of APRACA's objectives.

MS. JOVITA M. CORPUZ
Executive Director, Agricultural Credit Policy Council (ACPC),
Member of the APRACA Executive Committee and
President, APRACA-CENTRAB

FOREWORD

The APRACA FinPower Program

In 2007, the International Fund for Agricultural Development (IFAD) provided the Asia-Pacific Rural and Agricultural Credit Association (APRACA)[1] a five-year technical assistance grant to implement the Regional Program of Accelerating the Financial Empowerment of Poor Rural Communities in Asia and the Pacific through Rural Finance Innovations otherwise known as the APRACA FinPower Program. The FinPower Program includes the conduct of studies on rural and microfinance policy environment and regulatory framework, strengthening of key stakeholder participation, technical support to national level policy makers, pilot-testing of innovations, dissemination of best practices, packaging of training materials, and conduct of regional and national fora.

Currently, FinPower prioritizes the need to improve the linkage between grassroots structures (self-help groups <SHGs> and community-driven rural finance models) and the formal financial sector through the discussion, analysis and replication of successful innovative approaches.

Background and Rationale

Rural financial inclusion, which has also been referred to as financial deepening, pertains to the provision of a wide range of financial services (e.g. loans, savings, deposits, insurance) to the poor who normally do not have access to such services. The United States Agency for International Development (USAID) classifies rural financial markets into three groups: (i) rural finance, which covers financial services in rural areas for people at all income levels; (ii) agricultural finance, or financing activities directly related to agricultural production, from the field to the market; and (iii) microfinance, or financial services for poor and low-income people[2].

Because of the perceived risks in agriculture and the high costs of providing financial services for the marginalized farmers, many banks prefer to avoid agricultural financing, except in the case of medium-sized and large agribusinesses. While microfinance has had some measure of success in expanding outreach of financial services to the rural poor, many microfinance institutions still concentrate on underserved urban areas and clients who are already engaged in some form of microenterprise. In fact, the microfinance portfolio currently has little agricultural content to show. Marginalized farmers and other smallholders in agriculture continue to lack access to formal financial services.

In lieu of still underdeveloped microfinance products for agriculture, the value chain approach has recently been gaining ground as the preferred method for mitigating risks, reducing the costs of lending to agriculture, and eventually getting formal finance to flow to the sector. It is also a means of empowering the farmers and small producers by making credit available to them, reducing price risks and ensuring that they get their fair share of value added along the chain.

For these reasons, the Asia-Pacific Rural and Agricultural Credit Association (APRACA), with technical and grant assistance from the International Fund for Agricultural Development (IFAD), commissioned the APRACA Center for Training and Research in Agricultural Banking (CENTRAB), its research and training arm, to conduct a regional study on value chain financing in selected Asian countries as part of the series of activities being implemented under the APRACA-IFAD Regional Program of Accelerating the Financial

[1] The Asia-Pacific Rural and Agricultural Credit Association (APRACA) APRACA is a regional association that promotes cooperation and facilitates mutual exchange of information and expertise in the field of rural finance and agricultural credit among member countries. It consists of 58 member rural financial and finance-related institutions and agencies in 23 Asian countries and is based in Bangkok, Thailand.

[2] Geoffrey Chalmers, "Dialogue with donors and international organizations," paper presented during the Agricultural Value Chain Finance conference, 16-18 May 2006, Costa Rica.

Empowerment of Poor Rural Communities in Asia and the Pacific through Rural Finance Innovations (FinPower Program).

This regional study on value chain financing, which includes six (6) component case studies of selected countries, namely: India, Indonesia, Lao PDR, the Philippines, Thailand and Vietnam, is part of a series of regional and national studies started by the APRACA FinPower Program.

Objectives

This regional study generally intends to assess the status of value chain financing in Asia through six country case studies. More specifically the study seeks to:

a. provide a general discussion of the value chain for agriculture and its importance to the sector;

b. assess the general state of value chain financing in Asia and present various financing models currently being adopted;

c. present individual case studies of Asian countries detailing their experience on value chain financing; and

d. analyze findings of the country case studies with particular emphasis on the following elements: success factors, lessons learned, issues and constraints, emerging developments and innovations.

Methodology

This study on the state of value chain financing in the Asian Region applies the case-study approach and draws from the experience of India, Indonesia, Lao PDR, the Philippines, Thailand and Vietnam. Regional and specific country data on value chain financing were obtained from studies and reports available in various websites of international development organizations and national government agencies, including APRACA member-institutions and its partners. The case studies which are presented as Chapters 2-7 discuss financing the value chain of selected commodities such as tuber crop, cut flowers and seaweeds in India, cocoa in Indonesia, rice and coffee in Lao PDR, rice and vegetables in the Philippines, and rice in Thailand and Vietnam. Each country case study identifies key players in the value chain, the linkages between the chain participants and how activities in the chain are being financed. Innovations, best practices, lessons learned, issues and constraints and emerging developments in value chain financing are highlighted.

It is hoped that this publication would further contribute to the wealth of knowledge on value chain financing. Readers are therefore requested to send in their valuable comments to APRACA.

Benedicto S. Bayaua
Secretary General, APRACA

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By Gregoria M. Guce

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LIST OF ACRONYMS

ACIAR	Australian Centre for International Agricultural Research
ACPC	Agricultural Credit Policy Council
ADB	Asian Development Bank
ADBs	Agricultural Development Branches
AIKI	Asosiasi Industri Kakao Indonesia
AMAP	Accelerated Microenterprise Advancement Project
APB	Agricultural Promotion Bank
APKAI	Asosiasi Petani Kakao Indonesia (Association of Cocoa Farmers)
APMC	Agriculture Produce Marketing Committee
APO	Asian Productivity Organization
APRACA	Asia-Pacific Rural and Agricultural Credit Association
ASKINDO	Asosiasi Kakao Indonesia
ATO	Alternative Trade Organization
BAAC	Bank for Agriculture and Agricultural Cooperatives
BCI	Bank for Commerce and Industry
BFT	Bank for Foreign Trade
BI	Bank Indonesia
BID	Bank for Investment and Development
BPRE	Bureau of Post-Harvest Research and Extension
BRI	Bank Rakyat Indonesia
BSU	Benguet State University
CALABARZON	CAvite, LAguna, BAtangas, RiZal, QuezON (Philippine provinces)
CENTRAB	Center for Training and Research in Agricultural Banking
CPB	Coca pod borer [moth]
CSFI	Corporative System's Foundation, Inc.
CSIR	Council for Scientific and Industrial Research
CSMCRI	Central Salt and Marine Chemical Research Institute
DA-AMAS	Department of Agriculture – Agribusiness and Marketing Assistance Services
DASURAICOR	Davao del Sur Agro-Industrial Corporation, Inc.
DBD	Development Banking Department
DISBUN	Kepala Dinas Perkebunan (Chief of Plantation Administration)
DOST	Department of Science and Technology
EFTA	European Free Trade Association
FAO-UN	Food and Agriculture Organization of the United Nations
FAOSTAT	Food and Agriculture Organization Statistical Database
FLO	Fairtrade Labelling Organizations International
FOB	Freight-on-Board
GDP	Gross Domestic Product
GEPA	"Gesellschaft zur Förderung der Partnerschaft mit der Dritten Welt mbH", or "Society for the Promotion of Partnership with the Third World".
HACCP	Hazard Analysis and Critical Control Point
IAARD	Indonesian Agency for Agricultural Research and Development
ICC	Indonesian Cocoa Commission
ICFS	Integrated Cooperative Farming System
ICHORD	Indonesian Center for Horticulture Research and Development
ICICI Bank	Industrial Credit and Investment Corporation of India
IFAD	International Fund for Agricultural Development

IFAT	International Fair Trade Association
JICA	Japan International Cooperation Agency
JSCB	Joint Stock Commercial Bank
KFC	Kentucky Fried Chicken
KKMB	Konsultan Keuangan Mitra Bank (Financial Intermediary Consultant)
KPEN-RP	Kredit Pengembangan Energi Nabati dan Revitalisasi Perkebunan (Credit for Agriculture-based Energy Development and Estate Revitalization)
LAO PDR	Lao People's Democratic Republic
LBP	Land Bank of the Philippines
MAF	Ministry of Agriculture and Forestry
MF	Marginal Farmer
MFIs	Microfinance Institutions
MRP	More Rice Program
NABARD	National Bank for Agriculture and Rural Development
NAIS	National Agricultural Insurance Scheme
NEM	New Economic Mechanism
NESDB	National Economic and Social Development Board
NESDP	National Economic and Social Development Plans
NFA	National Food Authority
NFC	National Food Corporation
NGO	Non-Government Organizations
NORMIN VEGGIES	Northern Mindanao Vegetable Producers' Association
NVCC	Normin Veggies Consolidation Center
ONB	One Network Bank
ORP	One Rice Program
PCF	People's Credit Funds
PFA	Progressive Farmers Association
PHILRICE	Philippine Rice Research Institute
QUEDANCOR	Quedan and Rural Credit Guarantee Corporation
RMB	Reis Mühle Brunnen
RSB	Rural Shareholding Bank
SBI	State Bank of India
SEEP	Small Enterprise Education and Promotion Network
SEF CP	State Enterprise and Food Corporation Promotion
SF	Small Farmer
SFS	Surin Farmer Support
SHGs	Self-Help Groups
SHPI	Self-Help Group Promoting Institution
SOE	State-Owned Enterprise
UNCTAD	United Nations Conference on Trade and Development
UNCTAD	United Nations Conference on Trade and Development
UNESCAP-CAPSA	United Nations, Economic and Social Commission for Asia and the Pacific – Centre for Alleviation of Poverty through Secondary Crops' Development in the Asia ad the Pacific
USAID	United States Agency for International Development
USDA	United States Department of Agriculture
VBARD	Vietnam Bank for Agriculture and Rural Development
VBSP	Vietnam Bank for Social Policy
WRF	Warehouse Receipt Financing
WTO	World Trade Organization
WFTO	World Fair Trade Organization

Chapter 1

Agricultural Value Chain Financing in Asia

Ferdinand L. Paguia and Magdalena S. Casuga

1. THE AGRICULTURAL VALUE CHAIN

1.1 Definition

The series of actors and activities needed to bring an agricultural product from production to the final consumer is often called a value chain. Value chain is defined as a series of activities that add value to a final product, beginning with the production, continuing with the processing or elaborating of the final product, and ending with the marketing and sale to the consumer or end user.[3] Each step or activity in the chain is composed of processes undertaken by consecutive enterprises, adding value to the product.[4]

When credit or other financial services flows through actors along these chains, it is called value chain finance, and may or may not include support from formal financial institutions.[5] The value chain reduces commercial risk by providing an assured market for the produce, thus making it easier for chain actors to obtain financing from banks and other formal sources. Efficient value chain financing is critical in agriculture since it enables small- to medium-scale farmers, traders, and processors along the chain to optimize financial investment, resource allocation, and capacity expansion.

1.2 Actors and Transactions in the Agricultural Value Chain

The actors and transactions in the agricultural value chain, as well as the sequence of activities or processes, vary depending on the type of commodity being produced and the financing arrangement being adopted. Nonetheless, there are basic processes and actors that make up an entire value chain. Figure 1.1 illustrates a generic value chain for an agricultural product.

In general, the agricultural value chain encompasses three main activities, namely: i) supply/production; ii) processing or manufacturing; and iii) marketing/distribution and consumption. The production phase concentrates on how, where and when raw materials are procured and produced. It involves two activities: input supply and production. During this phase, input suppliers such as seed suppliers, livestock breeders, researchers and propagators provide production inputs, directly or indirectly through traders or other intermediaries, to producers composed of farmers, growers or livestock raisers.

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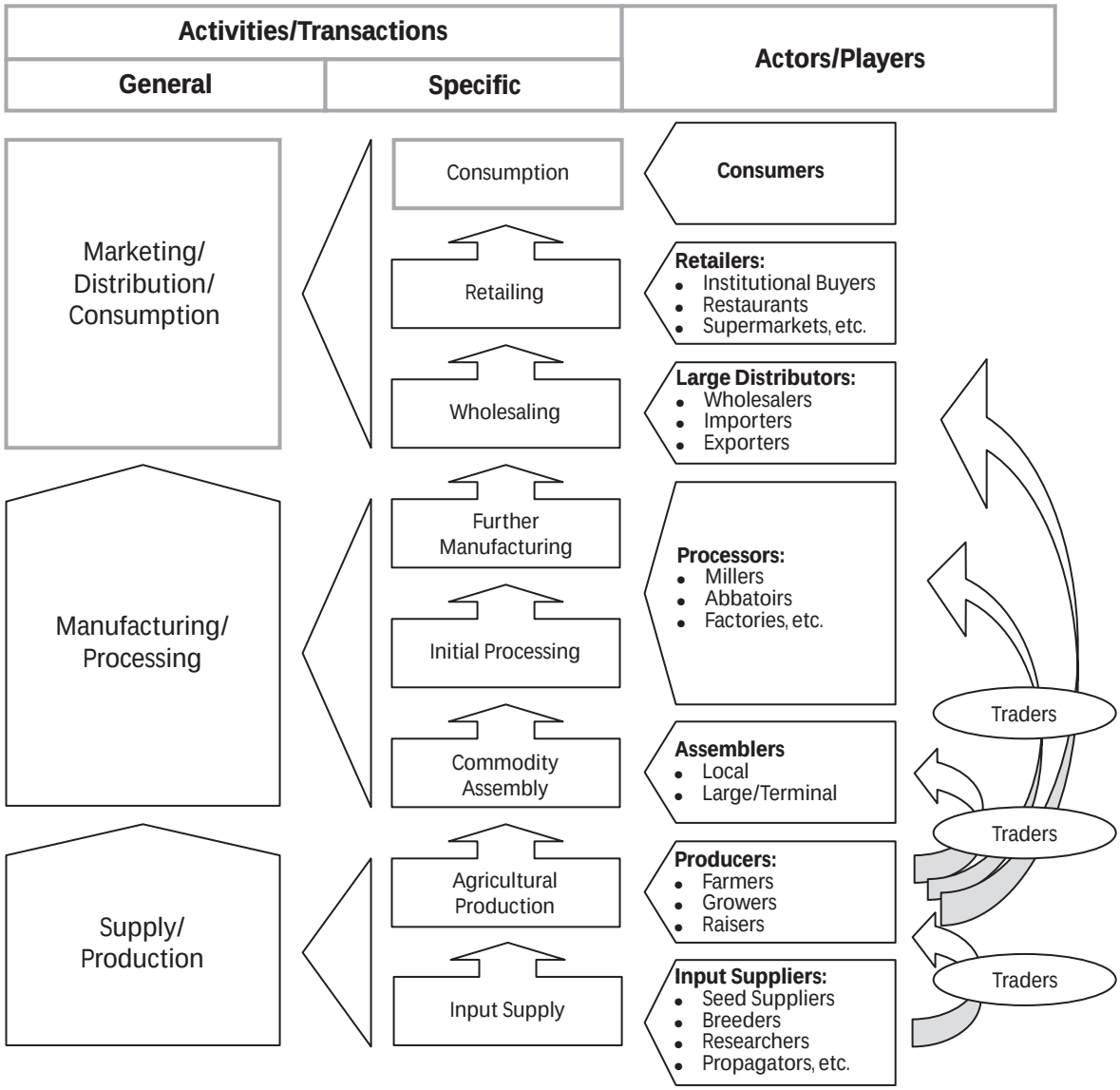
[3] Food and Agriculture Organization of the United Nations (FAO-UN): Rural Finance: Value Chain Finance. www.fao.org.

[4] Asian Productivity Organization (APO) definition.

[5] Rural and Agricultural Finance Initiative (RAFI) Notes, Issue #2, June 2005, RAFI is a joint effort of USAID's Office of Agriculture and Microenterprise Development Office and the RAFI Team (Chemonics, ACDI/VOCA, Ohio State University and DAI). www.microlinks.org.

Figure 1.1 A Generic Value Chain for Agriculture



Based on M. Mangabat [2006], Training Manual on Credit in the Supply and Value Chain of Selected Agricultural Commodities, Agricultural Credit Policy Council (ACPC).

Processing or manufacturing constitutes the second phase and involves the conversion of raw materials to finished products. Activities usually include assembly and processing of produce. During this phase, assemblers (local or small-scale and/or terminal or large-scale) collect agricultural products from producers and redistribute them to other firms in the marketing channel. On the other hand, traders usually take on either of the following roles as: i) intermediaries between producers and assemblers, ii) assemblers themselves, and iii) intermediaries between producers and processors. It should be noted that assembly does not usually change the physical form of the product but may add value to it through sorting and grading activities.[6]

Actual processing of the produce by millers or factories, may involve two stages of value-adding activities composed of initial processing, where the physical form of the product is first changed, and further manufacturing, where the initially processed product undergoes another round of physical and higher value transformation to eventually become the end-product purchased by consumers.

[6] Mangabat, M. [2006], Training Manual on "Credit in the Supply and Value Chain of Selected Agricultural Commodities", undertaken for the Agricultural Credit Policy Council (ACPC).

The third and last phase in the chain is the marketing and distribution of the product by wholesalers and retailers. During this phase, wholesalers, exporters or importers purchase products (either raw or processed) from producers, initial processors or food manufacturers for distribution to retailers such as restaurants and supermarkets, which are the ones directly involved in the sale of end-products to consumers. In many instances, traders again serve as intermediaries between producers/assemblers/processors and large distributors such as wholesalers/exporters/importers.

1.3 The Value Chain, a Necessary Tool for Agriculture in the Age of Globalization

In the age of globalization where competition has become fierce – small, isolated and unorganized players are left with no other option but to shape up or ship out. This is particularly true in the case of poor, marginalized farmers in developing countries who are often left unprepared for the onslaught of foreign competition. But it is not only the small producers who are affected. Agri-businesses are likewise threatened by global competition. The value chain approach offers a practical recourse to this matter by getting independent producers, agri-businesses and other actors involved in agricultural production to work together in a concerted and organized effort to raise the value of their produce, lower costs, and enable them to compete globally.

Table 1.1 provides a comparison between the traditional approach and the value chain approach to agricultural production.

Table 1.1 Traditional Versus Value Chain Approach to Agricultural Production

Traditional Approach	Value Chain Approach
1. Production-based or supply-led	Market-driven, demand-based
2. Fragmented, isolated links	Integrated, organized chains
3. Independent farmers/producers	Inter-dependent farmers/producers
4. Bulk production	Differentiated production
5. Price risks	Risk management
6. Lack of information	Information made available (e.g. market, price, etc.)

One of the major stumbling blocks in the traditional approach is the production-based mentality of farmers and the supply-led policy adopted by many countries. As a matter of tradition, most farmers insist on bulk-producing commodities that were passed on to them by their forebears without much regard to the demands of the market. This inefficient system produced a gap between supply and demand, with farmers wasting their time and effort in producing something they are not sure consumers will buy. In addition, this system makes small farmers more vulnerable to price risks and prone to abuse by other actors who are taking advantage of the farmers' lack of information regarding the market.

Through the value chain approach, producers have now become aware of and much more responsive to market demand. It is the consumer who now dictates what will be produced and how many. Consumers, particularly those from industrialized countries, have also become more demanding in terms of quality, availability, differentiation among similar products, product safety, environmental safety and, last but not least, affordability.

Farmers will definitely not be able to produce such standards if they are operating independently and most probably lack financing, technical assistance, risk management, access to low cost equipment and facilities (e.g. processing, storage), market information, among others. Only when they become part of an organized value chain will they be granted access to such services. Ultimately, the value chain makes it possible for the farmer to get his fair share of the final price of the product as it adds value along the different links of the chain.

Just being part of the chain, however, is not reason enough for farmers and other actors to be complacent. With competition elevated to a global scale, different chains will continuously strive to outdo each other

and get a dominant share of the market. A static chain with passive actors will find itself driven out of the game before long, possibly causing the links to break in time. To survive, every actor in the chain needs to build up its individual competitiveness and, at the same time, strengthen its linkages with other actors. Farmers, in particular, must always strive to be pro-active in acquiring and learning new skills, knowledge (e.g. on new technologies) and information.

To sum it all up, meeting the current high standard of consumer demands requires value chains to operate as integrated systems with differentiated production in which every actor in the chain – farmers, processors, marketers and others – work interdependently. The efficient relationship among inter-dependent linkages of the chain and the security provided by a market-driven demand, assures producers and processors with a ready market for their products. This, in turn, reduces risk, making it easier to obtain financing at possibly lower cost from banks and other financial institutions. Hence, small producers can become and remain competitive if they are part of dynamic and well-organized chains with access to sustained financial services.

2 FINANCING THE VALUE CHAIN

In most developing or third-world countries in Asia, poor farmers still have very limited access to formal financial services. This is because many banks purposely stay clear of agricultural financing, especially for small, individual producers, due to the risks involved, both commercial and systemic (or covariant, due to natural calamities, pests, diseases), that could possibly result in large-scale losses. In some cases, the products or services offered by financial institutions do not seem to match or address the financial demands of the poor rural populace. Demand-side constraints (e.g. repayment capacity, poor credit track record, inability to present viable project proposals, etc.) and supply-side constraints (e.g. lack of information on the borrower, high transaction costs, etc.) serve to further widen agricultural financing gap.

Left with no other option, farmers have resorted to borrowing from informal sources (e.g. private moneylenders, friends and relatives) to finance production inputs (e.g. seeds, fertilizers, pesticide). Unfortunately, informal lenders have been known to charge exorbitant interest rates in order to cover the risks that many banks dare not take. The real problem, however, lies in the fact that informal lenders such as private moneylenders are not part of the chain and whose only motivation is to make a profit out of lending. They do not concern themselves, for instance, if there is a guaranteed market for the farmers' produce. If the farmer happens to default on his loan, whether due to valid or invalid reasons, private moneylenders will continue to collect, no matter how long it takes, until the farmer is able to repay the entire loan (principal plus accumulated interest). In some cases, the farmer may be granted another loan, even with the previous loan as yet to be fully paid, resulting in bigger loans to be repaid (past-due and outstanding). This leaves the farmer mired in a virtually endless cycle of debt, with little or no room at all for financial improvement.

Hence, a much better option for the farmer to have access to sustained financial services is to become part of an organized agricultural value chain, where he can get financing directly from other actors in the chain or indirectly from external sources such as banks and other formal financial institutions.

2.1 Financing from *within* the chain

Once a farmer is permitted entry into the chain, he is almost certainly guaranteed financing by other actors in the chain. These actors have a stake in the output or in the produce and therefore provide financing to producers for required expenses such as production inputs. Essentially, these actors, which may be traders, large processors or institutional buyers, depending on the financing model (as will be discussed later), play dual roles as they also become financiers in the chain. Unlike informal lenders, however, they are less interested in what they will earn as credit providers, *per se*, than what they will earn from producing quality output that will satisfy the high standards of consumer demands.

Many experts are also of the opinion that these chain actors *cum* financiers would just as soon leave the financing responsibility to banks or other financial institutions as this would free up some of their capital which could be spent on potential investments. Financing occurs from within the chain due to the absence

of banks or microfinance organizations offering appropriate products to meet farmer needs.[7] Given the lack of external financing for the chain, participating links find creative and interesting forms of finance from within.

The downside to financing from within the chain is limited potential for growth and expansion of the value chain and all its participants due to constrained access to larger pool of financial resources from outside the chain. Once the chain "leaders" (actors cum financiers) are able to access financing from formal intermediaries outside the chain, the capital that they use to finance production inputs may now be used instead to expand their investments. In turn, the additional benefits generated by an expanded chain are shared by farmers and every other actor in the chain. Once capital is freed up, farmers may start investing in irrigation or greenhouses – with the expectation of a guaranteed market – while institutional buyers, on the other hand, may invest in storage facilities located near the producers – with the expectation of a guaranteed supply (see Figures 1.2a and 1.2b).[8]

Figure 1.2a Relationship Between Small Producers and Actors/Financiers in the Value Chain (w/o external financing)

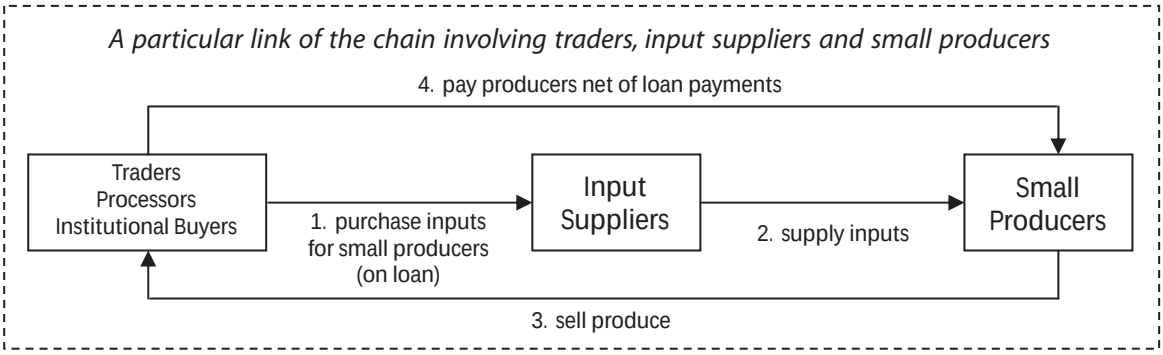
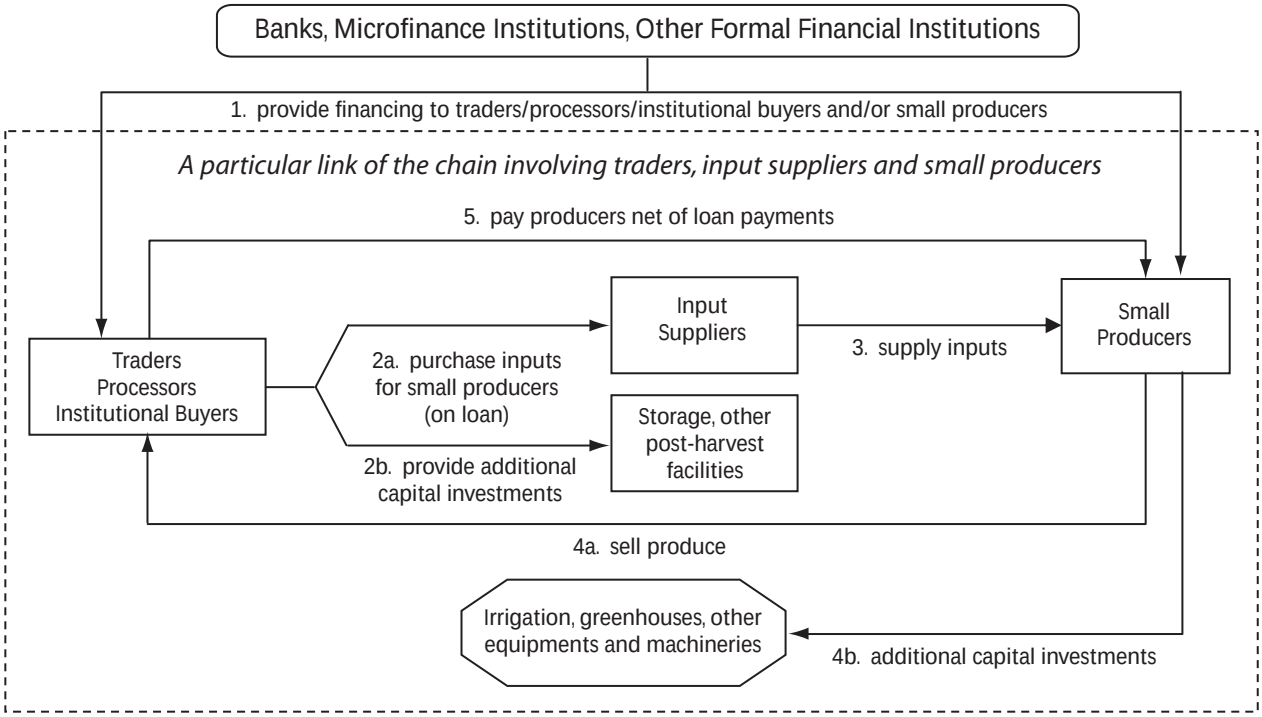


Figure 1.2b Relationship Between Small Producers and Actors/Financiers in the Value Chain (with external financing)



[7] Chalmers, op cit.

[8] Gonzalez-Vega, C. [2006] "Modern Value Chains: Towards the Creation and Strengthening of Creditworthiness", papers/ presentations included in Agricultural Value Chain Finance, a summary of the conference "Agricultural Value Chain Finance" in Costa Rica on May 16-18, 2006.

2.2 Financing from *outside* the chain

The central question is why banks would want to finance value chains. What's in it for them as profit-motivated institutions? Are they going to make money if they finance this venture? Are the end-borrowers, composed of small producers and processors, creditworthy? What about the issues of high risk and high cost associated with agriculture, how are they going to be addressed? These are the issues foremost in the minds of bankers and other financial intermediaries when presented with a proposition to finance agricultural endeavors.

From a profit perspective, banks know that financing value chains have great earning potential. For one thing, the set-up of the chain itself guarantees a ready market for the produce. Second, stringent requirements by consumers with respect to quality and quantity (availability) force every actor in the chain to improve individually and collectively, especially since globalization opened the doors to rival competitors. Third, the value chain model lessens risk and reduces the costs on the part of both lender and borrower, adding greater value to the final product.

Unfortunately, banks do not base their decision solely on a project's earning potential or profitability. Equally important issues are the risks and costs inherent in the agriculture sector. Lending to small producers in agriculture is often perceived to be a high risk proposition. Unlike in microfinance, where risk of non-repayment is somehow mitigated by small, frequent payments, agricultural financing requires longer payment periods because of the seasonal nature of agriculture.

Long-gestating crops such as rubber, for instance, may have high market value but returns will only start to come in after some years. Now, will banks finance these types of enterprises? They might, if they have a thorough understanding of the business, including the risks involved; otherwise, they probably won't.

Now what the value chain does is to provide banks with an in-depth knowledge of the business, allowing them to understand the risks involved. Since they have a better understanding of the risk, they might be more willing to take it. When banks decide to finance with a chain perspective, they begin to see and understand the business in its entirety.[9] While some banks still opt not to directly finance small producers and be exposed directly to risk, they are now more willing to finance buyers of the produce because they have a better understanding of the risk and a ready market to sell the produce. In the long run, as the value chain gains strength (e.g. through technical assistance for farmers) and becomes more profitable, small producers improve their "creditworthiness" and increase their chances of accessing loans from banks.

Creditworthiness is perhaps the single biggest factor considered by banks in assessing risk posed by lending to small borrowers. Banks usually conduct a credit investigation by doing background checks and/or accessing credit bureaus (if they are in place) for the credit track record of the borrower. This, of course, entails additional cost to the bank. In contrast, by financing actors in the value chain who are directly financing producers, banks rely on the screening process of these actors cum financiers. Termed as "delegated screening," banks, in effect, are delegating part of the screening of borrowers to other actors in the chain, lessening their risks and costs in the process.[10] Banks have good reason to trust the financing decision of these actors because, like banks, they are also profit-making entities. It is therefore in their interest to see to it that producer-borrowers are creditworthy.

There are two aspects of creditworthiness, namely: i) ability to repay, and ii) willingness to repay.[11]

Ability to repay is determined by the following: i) opportunities, diligence and behavior of each producer, all of which have an impact on profitability and the idiosyncratic risk of the producer's actions; ii) vagaries of nature which, in turn, determine the farmer's exposure to systemic risk; iii) tangible and intangible wealth of the producer, and the resulting ability to use such assets for paying debts; and iv) access of the household to other sources of liquidity, such as remittances.

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[9] *Shwedel, K. [2006]* "Value Chain Financing: A Strategy for an Orderly, Competitive, Integrated Market", papers/presentations included in *Agricultural Value Chain Finance*, a summary of the conference "Agricultural Value Chain Finance" in Costa Rica on May 16-18, 2006.

[10] Gonzalez-Vega, op cit.

[11] Ibid.

Willingness to repay, on the other hand, depends on the following: i) basic honesty of the borrower; ii) desire to protect their reputation (or credit history); and iii) incentives to nurture and preserve a long-term relationship with the lender. Producers want to make a good impression on buyers because they value the relationship. In turn, potential lenders recognize the existence of this incentive and feel safer about offering credit to a producer who is linked to a chain in this fashion.

Between these two aspects of creditworthiness, ability to repay is more quantifiable and can thus be plugged as reliable indicators in a credit scoring formula. Although, as mentioned earlier, getting these data still requires additional cost to the bank. In contrast, willingness to repay is much harder to capture and quantify, unless banks would be willing to do field surveys and interviews.

Value chain financing offers banks a less costly, less risky and more efficient alternative: one that does not require costly and exhaustive credit investigations, access to credit bureaus, field surveys, and interviews. In fact, through this set-up, the only thing banks would probably require is a contract between buyers (traders, large processors, agri-businesses) and sellers (small producers) within the chain. Every transaction in the chain is defined in terms of a contract, whether explicit or implicit, stating the terms and conditions governing the loans provided by actors in the chain to producers, sale of the produce, and how much of the proceeds will go to each party.

Why would banks lend on the strength of nothing more than a contract? First, the contract *explicitly* guarantees sale of the produce. Second, the contract *implicitly* defines a stable, profitable relationship between the buyer and the seller. The very existence of contractual relationships improves producer creditworthiness; in some cases, no written contract is actually required.[10] This implies that banks may not actually be interested in the contract *per se* but rather at the nature of the relationship between buyers and producers that may be derived from the contract. Besides, the validity of a contract depends on the existing legal environment and may not be easily enforced. Hence, institutional buyers instead spend time and money building a stable relationship with its producers that will last over the long term in order to develop a reliable set of producers who will guarantee a steady flow of products that are expected to meet stringent consumer demands.

Once banks are convinced of the stable and profitable relationship between institutional buyers and producers, they would be more willing to provide financing to institutional buyers, for re-lending to their producers. In fact, if farmers constantly receive technical assistance as well, they become even more creditworthy such that banks may even decide to finance them directly. This frees up resources on the part of the buyer which could be used to shore up investment in the form of machineries, equipment, storage facilities, etc. for increased and sustainable production in the long term.

As a bonus, the value chain approach produces positive externalities to other farmer-producers outside of the chain because as banks begin to take an interest in a market segment they had never served before, the perception of agriculture as a risky undertaking will eventually be erased. It just takes the right approach. Banks would be more willing to expand financial services to more farmers.

3 SOME MODELS OF AGRICULTURAL VALUE CHAIN FINANCING

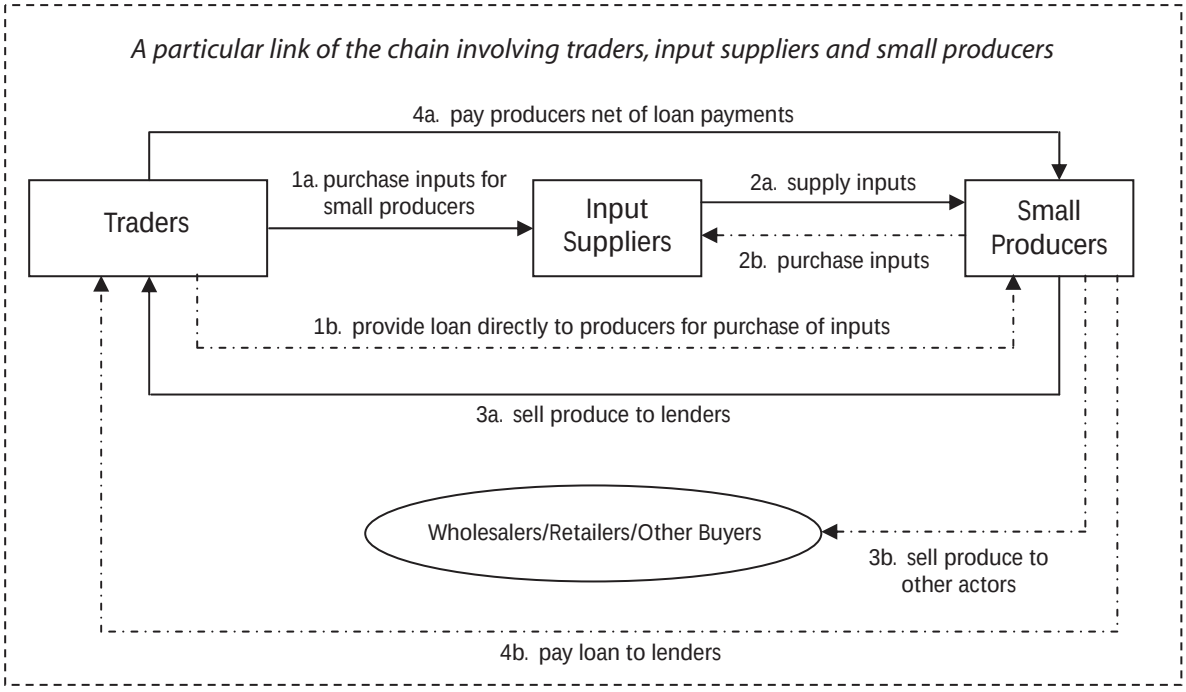
This section highlights some of the basic financing models that are usually practiced by actors cum financiers within the value chain and by banks and other sources of external financing for the chain. This section discusses three (3) basic financing models within the chain, namely: i) trader credit, ii) contract farming or out-grower schemes, and iii) warehouse receipts. These models have come to be known as “inter-linked transactions” because one transaction (e.g. loans for the purchase of inputs) is usually linked with another (sale of inputs), as a condition for the loan. A number of variations of these models have been developed to suit the financing needs and environment of a particular sector and clientele. They will be explained and illustrated more specifically in the section on case studies of selected countries.

3.1 Models of financing within the chain

3.1.1 Trader Credit

How it Works. Among the three models mentioned above, trader credit is perhaps the more commonly practiced, especially among small crop farmers. Traders either purchase farm inputs for small producers or provide cash to farmers for the purchase of inputs, although the former is preferred by traders to avoid loan diversion. Producers may or may not be bound by a purchase agreement, in which case, they could either sell their produce to traders upon harvest – with payments for the loan deducted from the sales proceeds – or sell it to other buyers such as wholesalers or retailers (see Figure 1.3). Payments, whether in cash or in kind, are usually due upon harvest. This type of set-up typifies a relationship between traders and producers that is largely price-driven.

Figure 1.3 Actors and Transactions in the Trader Credit Model



Note: Broken arrows represent alternative transactions among actors in the chain.

Risk Mitigation and Cost Recovery. Because of the risk inherent in the agriculture sector, traders (who may themselves be borrowing from other large actors such as processors or wholesalers) have to come up with ways of mitigating risks that many banks will not ordinarily take and covering the costs of lending to small producers. Since the model is based on an informal and unsupervised lending scheme, interest rates and prices are, to a large extent, flexible, making it possible for trader-lenders to impose either of the following: i) raise interest rates on loans, ii) raise selling price of inputs, and iii) reduce buying price for produce. Nonetheless, traders may have enough reason not to deviate too much from market-based rates and prices because of the following: i) familiarity with the borrowers; ii) small and limited areas of operation make it easier and less costly to do background checks, monitoring of loans, and collection of payments; iii) greater understanding of the risks involved and therefore better risk management; and iv) awareness of business environment and market conditions.

Pros and Cons. This model provides producer-borrowers easy and timely access to credit; minimal and simple loan requirements; and fast processing and release of loans. Trader-lenders, on the other hand, have several means at their disposal for recovering costs, screening borrowers, and enforcing contracts. While this certainly benefits traders, it can become a disadvantage to producer-borrowers when traders use their superior negotiating position to exploit the relationship by charging exorbitant interest rates and selling price of inputs or drastically reducing buying price for the produce. This can be aggravated further by the very limited financing sources available to the borrower, making it hard for them to

choose other lenders. Fortunately, this likelihood is tempered by the fact that traders have very limited scope of operations and clients as well. Therefore, it is in their interest to take care of their relationship with their clients especially since they also invest time and effort in building a stable and productive relationship with them.

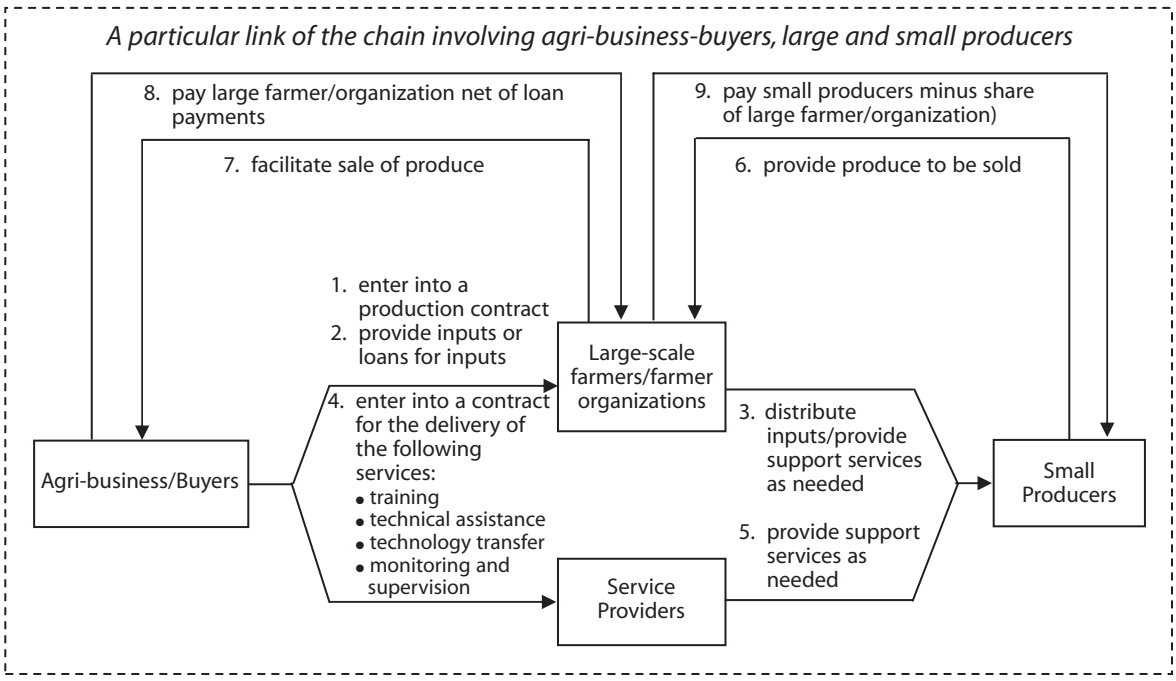
At the same time, the short-term or seasonal nature of this model limits its potential for investments. Market segmentation is also evident as traders' reliance on personal knowledge in the screening process constrains them from taking on new customers and expanding to new locations.[12]

3.1.2 Contract Farming or Outgrower Schemes

How it Works. In the previous model, the relationship between traders and producers is almost strictly price-driven. In contract farming or out-grower schemes, producers are in a "captive relationship[13]" with large agri-businesses (e.g. exporters, processors and wholesalers) who tend to play a central role as ultimate buyers of the produce. The term "captive" might have a negative connotation *per se*, but in this model, it actually denotes a positive and mutually beneficial relationship between producers and the ultimate buyers.

Under this model, a large agri-business (from hereon referred to as the "buyer") enters into a contract with producers for the large-scale production of a certain commodity with specified standards of quality and quantity that producers must meet. The buyer itself facilitates the financing and distribution of inputs to farmers on the condition that the produce will be sold to them upon harvest (i.e. loans are tied to a purchase agreement). Unlike trader credit, however, financing for input supply is not the only service provided by the buyer. Producers also receive technical assistance, training, technology transfer, and monitoring and supervision. Despite incurring additional costs, the buyer must provide such services to keep up with the high standards of quality and quantity demanded by consumers. The buyer also prefers to deal with large scale farmers or farmer organizations which, in turn, are responsible for organizing smaller farmer groups (see Figure 1.4).

Figure 1.4 Actors and Transactions in the Contract Farming Model



[12] Fries, R. and B. Akin [2004] "Value Chains and their Significance for Addressing the Rural Finance Challenge", MicroREPORT #20, Agricultural Cooperative Development International/Volunteers in Overseas Cooperative Assistance (ACDI/VOCA), funded by the United States Agency for International Development (USAID) Accelerated Microenterprise Advancement Project (AMAP). www.microlinks.org.

[13] A term used by Fries and Akin [2004] wherein production loans are tied to purchase agreements and services beyond input supply are provided (e.g. training, technical assistance, monitoring and supervision).

Risk Mitigation and Cost Recovery. Provision by the buyer of other services in addition to financing significantly reduces commercial or production risk. These services help ensure that producers will deliver the required quantity and quality of produce. Also, since the loan is tied to a purchase agreement, the risk of loan default is greatly reduced since buyers have a ready market for the produce. In terms of costs, buyers would not have dared venture in such a risky business to begin with – and endure additional costs the business requires – had they not known the great potential for returns the business brings. Besides, what they spend on technical assistance, training, technology transfer and monitoring could be thought of as investment costs on human capital. Such costs will eventually be reduced once buyers start to develop an efficient and reliable pool of producers.

Pros and Cons. Like trader credit, producers get ready access to financing for inputs and a guaranteed market for their produce. As value added, they get cheaper inputs because purchase is made in bulk and better prices for their produce. Producers also get the benefit of receiving training and technical assistance, particularly on the latest production technologies, resulting in the sustainable and efficient production of high quality products. Buyers, on the other hand, can have access to a steady supply of products demanded by consumers as well as a reliable, efficient pool of producers that can sustain required production levels.

Unfortunately, like trader credit, loans are generally limited for production purposes only, leaving little room for investment and potential growth of the business. Unfair pricing of inputs, outputs and interest on loans is also possible. Lastly, since the required production is much larger in scale compared to trader credit, buyers are more likely to contract a few large producers rather than numerous small, individual producers. It would be less costly and more organized to do so. Nevertheless, small farmers still get to benefit from this model since large producers often have small producers in their employ. Small, individual farmers not working for any large producers have a better chance of getting access to the value chain if they are organized into well organized groups or cooperatives. This way, they can be easily tapped should consumer demand reach quantities beyond the capacity of even large producers to supply.

Because of the higher costs entailed by contract farming, it is more suited for the production of higher value commercial or export crops, especially those with a huge demand in the global market. This is because high value crops have much higher returns than other commodities (e.g. basic grains) which more than covers the costs incurred and still leaves a wide margin of profit.

3.1.3 Warehouse Receipts

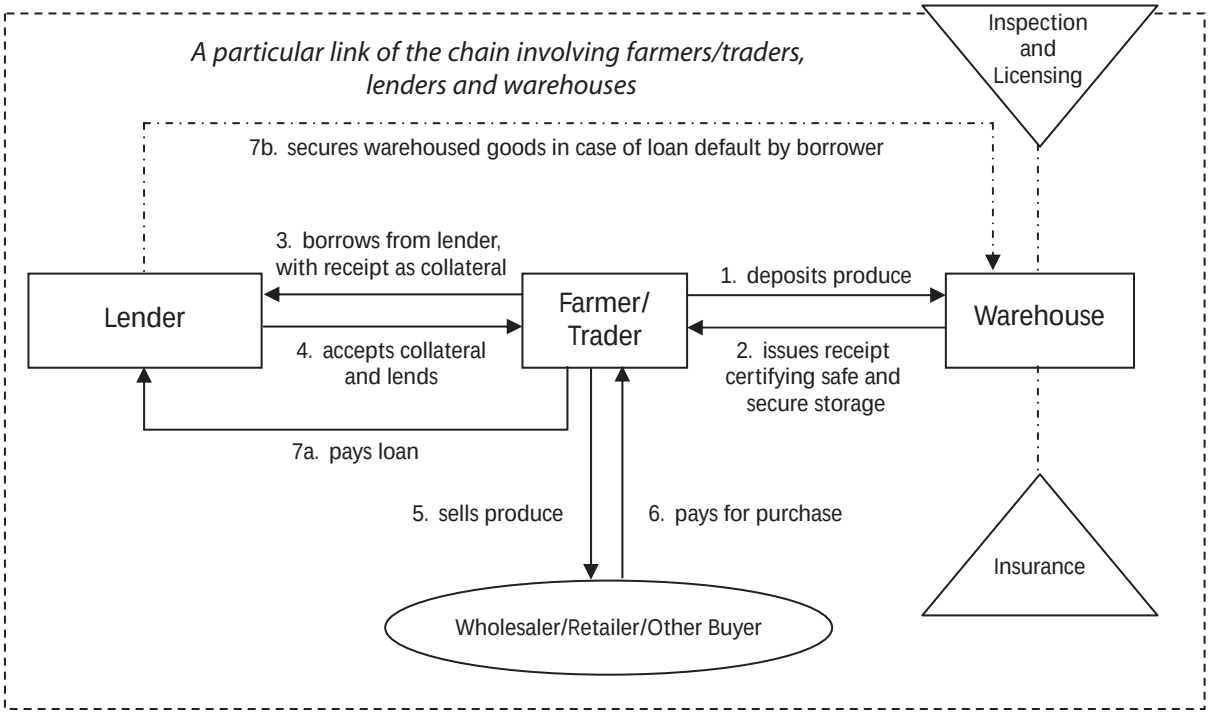
How it Works. Under this model, another major actor in the chain is introduced: the warehouse. Producers and/or traders deposit their produce at the warehouse which, in turn, issues a receipt certifying secure and safe storage of the goods for a specified period of time. Ideally, the receipts should serve as collateral or pledge for securing loans from banks or other lenders with the condition that proceeds from the sale of the produce should first be used to repay the loan[14] (see Figure 1.5).

Unlike trader credit and contract farming, financing under the warehouse receipts model is intended for post-production purposes (i.e. to finance processing or marketing activities). As such, financing may or may not be necessarily "inter-linked" with other transactions in the chain. The loan is not tied to any purchase agreement and hence, the relationship is not strictly captive. It only becomes captive if the borrower defaults on his or her loan. In this case, the lender reserves the right to secure and dispose of the stored goods which have been offered as collateral.

Apart from the warehouse, this model also introduces other players that are not directly involved in the production and disposal of goods but otherwise play equally important roles, namely: i) inspection and licensing services; and ii) insurance services. These services help mitigate risk by providing both depositors and lenders alike with the assurance that certified warehouses meet the necessary standards

[14] Onumah, G. [2003] "Improving Access to Rural Finance through Regulated Warehouse receipt System in Africa", paper presented during the conference Paving the Way Forward for Rural Finance: An International Conference on Best Practices.
Fries and Akin, op cit.

Figure 1.5 Actors and Transactions in the Warehouse Receipt Model



for safe and secure storage. Insurance services, on the other hand, protect depositors and lenders against losses due to disaster and/or criminal activity.[15]

Risk Mitigation and Cost Recovery. The presence and imposition of "standards" are key to the effectiveness of this model in terms of risk mitigation and cost recovery. Standards are, in fact, imposed on two levels. First, depositors are required to meet warehouse standards for products to be deposited. Hence, not anyone – even those who can afford to pay – may avail of services offered by warehouses without first passing such standards. Second, warehouses are also required to meet operating standards set by licensure and inspection services. The additional security provided by insurance serves to further lower risks to both depositors and lenders. Banks, in particular, may also choose to forego screening and credit investigations by accessing the records maintained by warehouses on their depositors. Warehouses, in effect, also function as a sort of credit bureau to a limited extent by building a third-party history of the performance of its depositors.

Pros and Cons. A number of potential benefits of this model are identified, two of which include the ability to increase both yields and average prices for the produce. Access to reliable, quality storage allows producers or traders to: i) reduce post harvest losses (e.g. due to spoilage and pest infestation), thereby increasing yield; and ii) sell their produce some time after the harvesting season (during which prices are lower due to abundant supply) and get a higher price.[16]

Perhaps the single most important limitation of this model has to do with the fact that it can only be as effective as the legal and regulatory environment it is operating in allows it to be. Some legal and regulatory issues are identified that could hamper the success of this model such as issues on ownership of warehoused goods, acceptability of receipts as valid collateral, and transferability of such receipts.

Table 1.2 provides a summary of the distinctive features of the three models discussed.

[15] Ibid.
[16] Onumah, op cit.

Table 1.2 Summary of Features of Financing Models Within the Value Chain

Features	Trader Credit	Contract Farming	Warehouse Receipt
1. Key Actors	• Traders • Input Suppliers • Small Farmer Producers	• Large Agri-business Buyers • Large-Scale Farmers/ Farmer Organizations • Service Providers • Small Farmer Producers	• Warehouses • Banks, Other Lenders • Small Farmer Producers/ Traders
2. Financing Scheme	Loan between buyer and seller	Loan tied to purchase agreement	Loan secured by collateral (warehouse receipt)
3. Commodities Involved	Basic Grains (e.g. rice, corn)	High Value Commercial Crops	Non-Perishable Commodities
4. Relationship	Price-driven, buy-and-sell	Captive	Balanced to Captive
5. Risk-Mitigation/ Cost-Recovery Mechanisms	• Familiarity w/borrowers • Small areas of operation • Greater understanding of risk • Awareness of business environment • Other mechanisms: higher interest on loans, higher price of inputs, lower price for produce	• Guaranteed market • Purchase agreement removes risk of loan default • Provision of the following services assure delivery of output: – training – technical assistance – technology transfer – monitoring	• Warehouse standards on produce • Licensing and inspection of warehouse • Insurance of warehouse • Records on producers maintained by warehouses may lessen banks' cost on screening and selection of borrowers
6. Pros: Benefits/ Advantages	• Easy and timely access to credit • Minimal and simple loan requirements • Fast processing and release of loans.	• Borrowers receive other services apart from credit • Cheaper inputs due to bulk purchase • Easy and timely access to credit • Minimal and simple loan requirements • Fast processing and release of loans.	• Increased yield (due to reduced post-harvest losses) • Increased price for produce (due to prolonged storage and sale after – not during – harvest season)
7. Cons: Limitations/ Disadvantages	• Limited to production loans, hence, limited potential for investment • Limited areas of operation and clients	• More suitable for high value crops • Buyers may contract large producers instead of several small farmers • Limited to production loans, hence, limited potential for investment	• Dependent on existing legal and regulatory environment which may impact on the following: – ownership of warehoused goods – acceptability of receipts as collateral – transferability of receipts.

3.2 Models of financing from sources outside the chain

A common limitation among the three models of financing within the value chain is the limited opportunity for investments that will allow the chain to grow and expand. This is particularly true for trader credit and contract farming where financing is generally confined to short term loans (e.g. for production or working capital) rather than long term loans (e.g. for fixed assets acquisition). Access to external financing, whether from banks or some other non-bank entities, will expand and strengthen the chain by freeing up resources that may be used for investments in irrigation, greenhouses or storage facilities, among others. Among the more popular financing practices or strategies adopted by formal intermediaries include the following: i) financing chain leaders; ii) financing farmer organizations or cooperatives; iii) financing informal or

semi-formal intermediaries; iv) financing microfinance institutions (MFIs), non-government organizations (NGOs) and other non-bank financial intermediaries; and v) structured financing.

Banks, which are always looking to minimize risk and cost, are only encouraged to provide financing for agriculture through the value chain approach. Even then, they are not often inclined to directly lend to small producers in the chain. Instead, banks are more willing to finance chain leaders which they think have a better understanding of the risks involved. Such leaders include large processors or large agri-business buyers (such as in the contract farming model) who may opt to borrow from banks in order to finance production needs of their producers.

Some agri-businesses, however, are not always willing to provide credit even if they enter into a sales contract with farmer organizations. In this case, these organizations or cooperatives have a better chance of obtaining loans from banks because they can offer their sales contract as a sort of collateral. The same is true for the warehouse receipts model where farmer organizations can offer their receipts as collateral or pledge. As discussed earlier, though, much depends on the legal and regulatory environment.

Some banks have also been known to finance informal or semi-formal intermediaries (e.g. traders, input suppliers, private moneylenders), MFIs and NGOs for re-lending to small farmer producers and agri-entrepreneurs.

Structured financing is a more extensive form of financing as it may cover every aspect of production, i.e. from seed to shelf, including financing requirements for processing and marketing. However, only financing institutions, whose knowledge of a particular agri-business is at par with every other actor in that chain, will venture into such a financing scheme.

4 VALUE CHAIN FINANCING IN SELECTED ASIAN COUNTRIES

This section presents the state of value chain financing in six (6) countries in Asia, namely: India, Indonesia, Lao PDR, the Philippines, Thailand and Vietnam. In particular agriculture financing models for the value chain of selected commodities such as tubers, cut flowers and seaweeds in India, cocoa for Indonesia, rice and coffee for Lao PDR, rice and vegetables for the Philippines and rice for both Thailand and Vietnam, are discussed by the respective authors of the case studies. A more detailed presentation of the value chain financing models for each country is shown in separate chapters of this study.

4.1 Value Chain Financing of Tubers, Cut flowers and Seaweeds in India

India is one of the largest agricultural producers in the world. Its integration to the global economy has opened up new opportunities for the small producers and marginal farmers to increase their incomes and improve their lives. The value chain financing approach as practiced in India has benefited the small holders. It has led to access to better technology, better prices for their produce, better access to loans from formal institutions like banks and lower transaction costs. It has paved the way for smallholders' active participation in the community projects through organization of self-help groups. Meanwhile, risk sharing arrangements of value chain financing has reduced the burden on small growers in mitigating losses due to the vagaries of weather or other damages to their crops.

The State Bank of India (SBI), considered the agricultural finance leader in the country, caters to the needs of agriculturists and landless agricultural laborers and covers a whole gamut of agricultural activities. As one of the formal financial institutions actively supporting the value chain approach, the SBI believes this approach creates better marketing channels and therefore better incomes and profits for the small producers, processors, agents, lending institutions and other actors along the chain.

The financing models developed and implemented by the SBI have common features. One such feature is the provision of credit to a self-help group (SHG) in order to reduce lending costs rather than administering numerous small loans to individual borrowers. In most commodities that SBI finances, it partners with a private company in implementing contract growing arrangement with small growers. Loans extended to growers are based on the cultivation requirements of the crop while operational expenses as regards activities along the chain may also be financed by the bank through provision of working capital.

There are three value chain financing models presented in this case study for commodities namely, coleus tubers, cut flowers and seaweeds. The financing scheme implemented by SBI for coleus tubers starts at the farmer level where loans extended are based on the input costs. SBI can also extend credit to aggregators or collecting agents and primary processors of the tubers in the form of term loans and working capital loans. Final processors and exporters may also borrow money (in the form of export credit) from SBI for its operational costs. The importer may also obtain credit from SBI branches abroad to purchase the processed commodity. Likewise, growers of cut flowers for export obtain loans from SBI under contract growing arrangements. The SBI has also organized a marketing tie-up for seaweed growers organized into SHGs that will facilitate the sale of their produce to a processor on a pre-agreed price. Farmers are paid by the SBI, through their savings account in the bank, after deducting the monthly percentage of the loan amount. Loans are extended for planting materials, making of bamboo rafts where the seaweeds are grown and other working capital requirements.

4.2 Cocoa Value Chain Financing in Indonesia

Currently, Indonesia is the world's third largest producer and exporter of unfermented cocoa beans.[17] In 2007, the Indonesian foreign income derived from cocoa export was valued at nearly US$1 billion, which makes cocoa the third main source of foreign income among plantation crops. Among the factors that make Indonesian cocoa beans competitive in the world market are low production costs, high production capacity, efficient infrastructure, open trading/marketing system, and limited government intervention.

Cocoa is the primary cash crop for approximately 400,000 smallholder farmers in Sulawesi who cultivate an average of less than 1.5 hectares and produce the bulk of unfermented cocoa beans for export. Farmers sell their produce to local collectors or directly to traders, since there are few cooperatives and marketing groups among smallholder farmers. Local collectors then sell the produce to larger traders or directly to exporters and processors. Many local exporters have difficulty competing with large-scale international exporters, prompting them to sell the beans to the latter instead of exporting the beans themselves. Once the cocoa beans are exported from Indonesia, they become part of the global trade in cocoa which includes multinational traders, processors and manufacturers.

Cocoa farmers rely mostly on advances from their regular collectors/traders for their farm production needs (especially fertilizer) and even expenses for daily home consumption and emergency medical expenses. However, advances or pre-financing arrangements often result in lower returns on cocoa production because farmers are paid at a price lower than the prevailing market price. It also limits farmers' opportunity to sell to a broader range of buyers in the market place where they can bargain for a better selling price. On the other hand, traders rely on advances from exporters to purchase the produce while exporters and processors rely mainly on their own resources to finance their working capital needs. Traders and other intermediaries who likewise depend on this financing arrangement often become captive suppliers and have few marketing options.

Difficulty in accessing loans from formal financial institutions remains a major concern, particularly for smallholder farmers. Many banks such as *Bank Rakyat Indonesia (BRI)*, *Bank Niaga and Bank Mandiri* have innovative programs for production and working capital loans. However, collateral is required. While land certificate is accepted as collateral, farmers often find it difficult to secure land certification due to high costs associated with land registration and long period of processing. Since most banks require land certificate as a collateral substitute, the government should address issues on securing land certificate. The formation and empowerment of farmers' organizations through training and extension is another means of improving market linkage and access to formal finance.

For exporters, traders, and processors, access to bank financing may be improved by exploring and developing alternative forms of collateral like the Warehouse Receipt System being piloted by *Bank Niaga* and *Bank Mandiri*, wherein farmers, traders and exporters could deposit their produce and be issued a receipt certifying secure storage for a specified period of time. The receipts can be used as collateral or pledge for securing loans from banks.

[17] The processing of cocoa beans entails the transformation of dried cocoa beans into a variety of processed products including cocoa paste or liquor, cake, powder and butter. Only 10% of Sulawesi cocoa beans are processed locally, the rest is exported as raw beans.

4.3 Value Chain Financing of Rice and Coffee in Lao PDR

In a series of events during the last century, the participation and acceptance of the Lao People's Democratic Republic to mainstream markets not only in the region but also worldwide, resulted in increased income of otherwise poor farmers and export earnings. Foremost of these events was the enactment of the New Economic Mechanism (NEM), which paved the way for the crafting of a new program aimed towards increased production and exports. The NEM is an economic system anchored on market principles – wherein prices are determined by market forces – and policy reforms geared towards increased reliance in international trade and foreign investment. The NEM has had a significant impact on agriculture, particularly in the production of glutinous rice and coffee.

Prior to NEM, there was really no functional value chain for rice since the prevailing condition was subsistence farming. The farmer merely brings the produce to mills after which the rice is either consumed by the family or a portion is sold through a trader. The advent of NEM gave birth to contract growing arrangements for rice which involves the provision of in-kind credit, particularly seeds and organic fertilizers, by a private corporation to participating rice farmers. The corporation buys the produce – to be processed and/or exported later on – and pays a premium price after deducting the loans. It is perceived that this commercialization strategy increases income of farmers and contributes to export earnings by Lao PDR. The Agricultural Promotion Bank (APB), a state-owned bank, provides credit especially to smallholder farmers. However, some believe that the dual function of the APB as a development agency and as a bank is a hindrance to its overall effectiveness. The provision of agricultural credit has been supply-driven rather than demand-driven since these services directly support government projects and hence are characterized by heavy subsidies and fixed interest rates.

The value chain financing of coffee has apparently been more effective than that of rice. In the 1980's, the government opened new areas for coffee production which encouraged the entry of private investors. Two large companies, in particular, involved themselves in the management and supervision of all areas of operation, e.g. from production to processing to marketing. This set-up minimizes the need for intermediation by traders, brokers and other middlemen and thus translates into a potential increase in income for the coffee farmer.

If the coffee is for export to Europe, the exporter deals with the wholesaler who does the paper work for the export. There are three main export flows for Lao coffee with distinct financial transactions/schemes, namely: i) direct contact with foreign buyers with Letter of Credit as the main payment scheme; ii) through a Thai trader where payment is made within 2-3 days; and iii) through a Lao broker who acts as an agent of the exporter and receives a commission of 2-3%. In the second scheme, transport providers are necessary in order to deliver the coffee from Lao PDR to Thailand.

More export firms were established as an offshoot of the opening of new areas intended for coffee production and hence, more export earnings for the country. Trading quotas and customs access to the European market also heightened the competitive advantage of Lao coffee. Nonetheless, direct export from Lao PDR, that is, without the involvement of the middleman or exporter from Thailand, is a possibility that the Laotian government can look into in order to further minimize transaction costs and increase income of small coffee farmers.

4.4 Value Chain Financing of Rice and Vegetables in the Philippines

The agricultural value chain in the Philippines follows the traditional supply chain, though it focuses more on how value is being added to the product as well as product innovation, development and marketing. In order to have a competitive advantage, the chain actors developed vertical and horizontal linkages such that the final product will be delivered to the market efficiently with a higher quality and at a lower cost to penetrate not only the local market but the global market as well. Hence, financing is important in every aspect of the value chain. Without agricultural financing, producers would not have access to better farm inputs and technology, resulting in low quantity and quality of produce.

The rice and vegetable value chain in the country showed that the vertical and horizontal linkages of chain participants improved their competitiveness in the market and access to finance. The linkages also helped the farmers eliminate a layer of intermediaries, giving them an opportunity to reduce transaction costs, and hence, increase their chance to earn higher income. In addition, the linkages enabled the farmers to develop a financial arrangement that includes, among others, the consignment of goods and provision of inputs through credit in kind or in cash. Since lending to agricultural and agri-related activities is perceived to be of high risk, most of the formal lenders are reluctant to provide credit to these sectors. As such, majority of the small-scale farmers still borrow from informal sources to finance their farm expenses. However, due to the limited fund base of informal lenders, majority of the small-scale rice and vegetable farmers remained credit-constrained. In order to adjust, these farmers usually resort to sub-optimal production techniques, resulting in low productivity and quality, making them less competitive in the market.

The greatest challenge now in agricultural finance is to link the formal financial institutions in the value chain. The new paradigm is that credit should be based on the performance of the farmer's position in the value chain rather than the borrower's risk on credit. In addition, integrating credit with other services such as technical and marketing within the value chain is perceived to be an effective way of financing the value chain. Linking the farmers to the market is just part of the process of establishing an effective value chain, continuous process and product innovation is also important in a dynamic market. For this reason, farmers need financing and other support services in order to respond to consumers' demand.

The innovative approach of One Network Bank (ONB) in financing rice farmers under the One Rice Program (ORP) illustrates how a functional and efficient value chain can attract formal lenders to provide credit to non-bankable and collateral-deficient small farmers as long as other services in the value chain are in place. Meanwhile, the cluster farming strategy of the Northern Mindanao Vegetable Producers' Association (or Normin Veggies) improved the vegetable growers' productivity and profitability, thereby, strengthening their position in the value chain and increasing their ability to respond to the changes in market requirements. On the other hand, the tomato paste financing project of Quedancor with the National Food Corporation (NFC) shows how inter-dependency among chain participants leads to a dynamic and efficient value chain. The strong and stable relationship between tomato farmers and the NFC (processor) makes financing in the value chain easier and more accessible.

Farmers' relationship with other chain participants is essential in attaining an effective and efficient value chain. Linkages can facilitate collective learning that can drive product innovation and upgrading. However, lack of capital can be a hindrance in process upgrading and the farmer's ability to respond to a dynamic market. Hence, financial intervention is critical in a successful value chain but it should be complemented with other services such as technical and marketing assistance. A good business enabling environment is also essential in a successful value chain.

4.5 Rice Value Chain Financing in Thailand

The Thai government has been actively supporting the concept of value chain financing through programs being implemented by both government and private financing institutions. In particular, the government's paddy mortgage scheme and packing credit are two programs that benefit farm producers and exporters and millers, respectively. The Bank for Agriculture and Agricultural Cooperatives (BAAC) implements the paddy mortgage scheme while the Export-Import Bank of Thailand (EXIM Thailand) implements an enhanced packing credit program that also includes an insurance package to protect its clients from non-payment of foreign customers. Meanwhile, the commercial banks likewise provide loans to target beneficiaries at reasonable rates. In addition to loans obtained from formal institutions, farmers have also availed themselves of fast and timely credit and other services from traders/millers (traders' credit) such as loans to buy fertilizers, seeds, other farm inputs and transport services.

The Fair Trade Rice Value Chain is a successful project implemented more than a decade ago by multinational organizations, whose goal is to contribute more value from trade in rice by Thai small-scale farmers. It is a collaborative undertaking among local farmer organizations; Green Net – a local Fair Trade NGO which exports Thai rice to foreign Fair Trade organizations; Claro of Switzerland, the official importer of Fair Trade rice; and Fair Trade organizations in Europe which place their orders for Thai rice from Green Net through

Claro. Green Net thus enters into a contractual arrangement with local organizations for the production of either organic or conventional rice. The Progressive Farmers Association (PFA), one of the participating farmer organizations, could access low-interest loans from a local bank for the bulk purchase of fertilizers for its members, which may also avail of the buffalo banks lending scheme (since most farmer prepare their farms for planting with buffaloes).

The following are some of the lessons that can be learned from the Fair Trade rice value chain in Thailand, covering issues both financial and non-financial in nature such as environment, social, and health among others:

- Most of the value-adding activities in the rice value chain are done by millers, fair trade organizations (FTOs) and traders, thereby receiving the larger financial benefits. Farmer producers get meager income from the sale of their crops;
- Privately owned rice mills set the price of paddy rice. They manipulate the price using weight and quality as an excuse to purchase the farmers' produce at a lower price;
- The Fair Trade rice value chain scheme implemented by multinational organizations in Thailand has been profitable. Small farmers benefited from the higher market price of Fair Trade rice but it is not sufficient to elevate them from poverty;
- Production of organic rice is more profitable than conventional rice since it demands a higher price both locally and internationally;
- Organic rice farming is more environment friendly than conventional farming. Health of the farmers will not be put at risk due to the effects of exposure to various pesticides; and
- Cooperatives can increase the farmers' income by setting up rice and buffalo banks or other similar income generating activities.

Income from rice farming alone is not sufficient to support household needs of the farmers. Farmers should be provided more training/information on small farm or non-farm projects such as vegetable production, fish production, vending or simple rice value adding project for them to start activities that would generate additional income. Sufficient and affordable credit support must be provided to the farmers who are qualified to undertake a new project.

Rice mills are an essential factor in controlling the chain in favor of the farmers. Support should be provided to farmer organizations with capability of putting up there own mills. The success of the mill means more benefits to its members.

4.6 Rice Value Chain Financing in Vietnam

Rice as a basic agricultural commodity in Vietnam contributes to almost a quarter of the economy's output in 2006 and continues to be one of the leading export champion commodities in the world. Rice production is prevalent throughout Vietnam, with the largest proportion of harvested palay/rice coming from the Mekong River Delta and Red River Delta regions.[18] The positive growth of rice production is in response to the country's objective of production for surplus and food security within Vietnam.

Agricultural value chain financing is considered an integral part of the chain because participants in the chain need money to carry out their activities to move products to its final consumers. Credit for rice in Vietnam comes from two sources: formal and informal. Formal credit for rice is sourced from state agricultural banks and private commercial banks. Major actors of the rice value chain such as assemblers, wholesalers, and millers obtain credit from agricultural banks/state commercial banks.[19] State-owned enterprises (SOEs), considered as big traders in the rice market, also source credit from these banks to finance trading of palay/rice and provide working capital loans to procurement stores.

[18] Rice Value Chain Vietnam-Agrifood Consulting-WB.
[19] Luu Thanh Duc Hai, 2003.

Rice value chain financing in Vietnam has utilized the contract farming model to finance production and marketing of rice. Under this scheme, an enterprise or a company provides inputs on credit which is tied to a product purchase agreement. Other non-credit services like technical and marketing assistance for the product are also assured. Farmers, upon signing contracts with enterprises, have the option to apply for credit from banks.

Rice farmers, with limited access to formal sources like banks, borrow from informal sources such as input suppliers, private money lenders, friends and relatives. Assemblers usually borrow from friends/relatives, money lenders, and traders. Rice retailers, on the other hand, borrow from friends/relatives and from rice wholesalers while rice millers borrow from agricultural banks.

In spite of the availability of credit from both sources, however, several studies revealed that there have been credit constraints in the rice value chain which limited the expansion of markets due to limited access to working capital among assemblers, wholesalers and millers of rice.[20]

Contract farming, a linkage between farmers and enterprises, emerged in Vietnam since the enactment of Decision 80 which supported production of agricultural commodities tied up to ready markets. This contractual arrangement scheme has benefited farmer-members of farmer organizations or cooperatives. However, sustainability of this arrangement poses a constraint because of failure of contract enforcement, either on one or both parties (e.g. weak culture on enforcement and farmers' failure to pay their input credit). Some experiences show that contract enforcement failure was attributed to coordination failures among parties due to limited organization of producers and imbalances in market relationships. Cooperatives must therefore be organized and coordinated to become an effective linkage channel between farmers and enterprise.

In Vietnam, credit delivery from informal sources like input suppliers, traders, private moneylenders and friends/relatives has been a lifeline among small farmers who have limited or have no access to formal sources like banks or to those without verbal or signed engagements with an enterprise. Lack of capital among the major players like assemblers, wholesalers and millers also limit their capabilities to expand their markets.

The present trend of linking production to markets through contract farming schemes should be further developed. In this set-up, financial institutions will play a critical role in strengthening the linkage between enterprises and farms. Financial institutions can look into the experiences learned by enterprises with farmers with contractual ties as inputs to development of financial innovations that will involve smallholders. This is necessary because the demand for financial services will continue to increase in response to the country's agricultural commercialization efforts.

5 INTEGRATIVE SUMMARY AND ANALYSES OF CASE STUDIES: LESSONS LEARNED AND EMERGING TRENDS

Countries included in this study have one thing in common: agriculture commands a significant percentage of their economic activity and employs majority of their workforce, coming mostly from the poor farming community. To elevate production to a global scale and lift their farmers out of poverty, the respective governments of these countries facilitated the transition from subsistence to market-oriented economy through the value chain approach, with contract farming emerging as the preferred scheme.

Lao PDR. In Lao PDR, the enactment of the New Economic Mechanism (NEM) opened the country to international markets and facilitated the entry of private sector investors. The study cites the case of the Lao Arrowny Corporation, a Lao-Japanese joint venture, which entered into a contractual arrangement with local farmers for the production of Japanese rice for export. Unfortunately, the company was not able to meet the market demand in 2004, producing only 540 tons out of a potential demand of 10,000 tons. Insufficient working capital prevented the company from procuring and processing farmers' produce. Lack of capital of the contractor thus poses a major constraint to the further development of rice contract growing in the country. According to the Asian Development Bank (ADB), the Agricultural Promotion Bank (APB) is the only formal institution providing financial services of any significance to rural households, with the most

[20] Rice Value Chain in Vietnam, 2002; Luu Thanh Duc Hai, 2003; Arupalgasam, 2003.

significant sources of rural credit coming from the informal sector (e.g. family, relatives, friends and household-to-household loans). The study cites that with government being the prime mover of agricultural development, the provision of agricultural credit has been supply-driven rather than demand-driven. Furthermore, these services directly support government projects and hence are characterized by heavy subsidies and fixed interest rates.

On the other hand, the country has had relatively greater success promoting Lao coffee in the world market due mostly to government initiatives in developing new and larger farms and the subsequent interest of the private sector to invest in coffee production. The operation and/or ownership of a large farm by a single firm improved efficiency in production, reduced transaction costs and higher value-added due to elimination of some players in the value chain like agents, collectors and wholesalers. Apparently, financing has not been much of a problem for coffee as it has been for rice. The potential of the coffee industry seems to have better elicited the attention and support of both the government and private investors.

Vietnam. Like Lao PDR, the government of Vietnam started promoting contract farming as the primary delivery mechanism in the country's agricultural production system in 2002. The contractual arrangement for rice involves the sale of produce by small farming households to large firms/enterprises and state-owned enterprises (SOEs) which includes procurement stores, millers/polishers, wholesalers/exporters and retailers. Credit and financial services are facilitated mostly by the Vietnam Bank for Agriculture and Rural Development (VBARD) and Vietnam Bank for Social Policy (VBSP), while public infrastructure, technical assistance and technology transfers are provided by government agencies.

State-owned enterprises play a significant role in this set-up by significantly lowering transaction costs, maintaining a transparent pricing scheme, and assuring farmers of a market for their produce. Although the number of contracts between farmers and SOEs/private enterprises increased, the sustainability of this arrangement poses a constraint due to cases of weak contract enforcement. Common problems encountered include: i) breach of contract by rice farmers due to limited advances by the companies/enterprises to cooperatives; ii) loan default by farmers (for loans not tied to purchase agreements); iii) lack of capital among cooperatives, limiting their capability to expand their markets; and iv) lack of capital among assemblers, millers, wholesalers and exporters.

Similar to the experience of Lao PDR, lack of working capital limited the ability of assemblers and millers to purchase paddy from farmers. Exporters, on the other hand, have had access disadvantages relative to SOEs because they are limited to receiving 70% of required capital while SOEs are able to receive 100%, placing them in a stronger purchasing position. Hence, many small producers – those who have limited or have no access to formal sources or those not part of any contractual arrangements – as well as small agri-enterprises continue to rely on informal sources like input suppliers, traders, private moneylenders and friends/relatives for their credit and financing needs.

Indonesia. In stark contrast to the pro-active role of the Lao PDR and Vietnam governments in agricultural and value chain finance, the Indonesian government is exercising a free market or 'hands-off' policy. The Indonesian cocoa value chain can be characterized as having a market-based governance structure with a low degree of open coordination. There are no players or entities exerting dominant control over the cocoa value chain. Since product specifications are relatively simple, most transactions between buyers and sellers take place at "arm's length", based on supply and demand. Without incentives for exporters, intermediaries, or farmers to differentiate their beans and invest in quality improvements, they continue to be driven by volume-based transactions (e.g. high volume, quick turnover).

The highly competitive nature of the marketing system, good transportation and infrastructure, and the relative lack of government interference in the cocoa value chain have helped cement its status as the third largest producer and exporter of unfermented cocoa beans in the world. Of late, however, there has been a growing concern regarding the decreasing productivity and quality of Indonesia's cocoa industry. Limited financing along certain links in the value chain has been regarded as one of the major reasons for this. The main issue among small cocoa farmers is limited access to loans from financial institutions due to lack of acceptable collateral such as a certificate of land ownership. However, farmers find it difficult to secure land certification because it is both expensive and time-consuming.

For their production needs, cocoa farmers rely mostly on advances from their regular collectors/traders. Advances or pre-financing arrangements, however, result in lower returns on cocoa production because most often they will be paid a price lower than the prevailing market price. Also, it limits their opportunity to sell to a broader range of buyers in the market place to bargain for good price since many of these farmers are already beholden or indebted to these traders/collectors. Similar with the financing set-up between farmers and traders/collectors, many local collectors and traders also lack access to formal credit and have had to rely on advances from exporters or larger-scale buyers to finance cash purchases of cocoa beans from farmers. In the process, they become captive suppliers and thus have few marketing options. Likewise, majority of processors and exporters also lack access to formal credit, relying mainly on their own resources to finance working capital needs.

Bank Niaga and Bank Mandiri had recently been piloting a warehouse receipt program wherein farmers/traders and exporters can deliver cocoa to a warehouse, have the quality checked, and obtain receipts which can be used as collateral against loans. This system offers benefits such as increased liquidity and greater transparency in price differentials depending on quality. The warehouse system is considered an objective source of grading cocoa, whereas the current system allows the exporter to gain extra profits by sorting cocoa by grade and selling sorted good quality cocoa at a premium. However, some large and established exporters have been known to resist this system because it purportedly takes away their advantages in providing financing to middlemen and collectors, not to mention their control of determining what is considered 'quality' cocoa.

Thailand. The value chain structure of Thailand for rice is similar to Indonesia's in that most transactions and relationships between buyers and sellers are based on supply and demand. Perhaps a distinctive feature of the rice value chain in the country is the presence of numerous middlemen or intermediaries composed of traders and brokers in various links or transactions along the chain, resulting in a higher price for rice in the market. Furthermore, the price at which rice brokers and paddy traders buy rice is not always fair nor clearly determined. Price concerns is further aggravated by the fact that most millers control the price of paddy rice because they have easy access to information that rice exporters are willing to pay. Hence, there have been speculations that the higher price of rice does not really benefit small producers but rather traders and millers.

Small producers are also disadvantaged by their inability to put up appropriate storage facilities, forcing them to sell their rice quickly in order to repay loans from millers and middlemen, therefore missing the opportunity to sell at a higher price during the lean months. Ironically, these same farmers who sell their rice to intermediaries at low prices must later buy it for their own consumption at much higher prices.

These developments prompted the government to adopt program and policies aimed at stabilizing domestic prices (through a price support program) and promoting private sector-led rice exports. Interventions at various links of the chain include a paddy mortgage scheme, paddy and milled rice purchases, and packing credit for exporters which are being implemented through state-owned banks, namely: Bank for Agriculture and Agricultural Cooperatives (BAAC) and Export-Import Bank of Thailand (EXIM Thailand). Commercial banks also extend loans to exporters and millers to liquidate paddy stocks for export.

A private sector-led initiative, known as the Fair Trade Value Chain Project was implemented in Thailand by multinational organizations several years ago. The project basically resembles a contract farming scheme between local farmer organizations and fair trade organizations in Europe for the production of organic and conventional rice. The project has been successful in eliminating the role of middlemen and ensuring that small producers get their fair share of value-adding activities along the chain.

Philippines. Like Indonesia and Thailand, most transactions in the Philippine value chain for rice and vegetables are on a buy-and-sell basis, i.e. governed by supply and demand. Traders and rice millers again play a prominent role in this set-up, providing credit, assembly/collection, transportation, and storage/ warehouse services. Insufficient financing from formal sources is also a central concern for the rice and vegetable value chain. Usual issues such as information asymmetry and high transaction costs prevent many banks from lending to smallholder agriculture. Thus, many farmers still borrow from informal sources for the purchase of farm inputs as well as for personal or household needs.

Both the government and private sector initiated contractual arrangements that directly linked small producers to the market and consequently enabled them to access financing from formal sources. In fact, a bank – One Network Bank (ONB) – even conceptualized and spearheaded a contract farming scheme, the One Rice Program (ORP), between small rice producers and a corporate buyer. Under the scheme, farmers are organized into groups and allowed to borrow from ONB even without collateral, provided they adopt the technology being recommended by ONB to increase yield and ensure that production reaches the required quantity. The ONB is equipped with a technical arm that provides training and technical assistance with the technology, which minimizes production cost because it eliminates the 'stem-borer' problem and hardly uses pesticides.

Quedancor, a non-bank government financing institution for agriculture, also developed a contract farming scheme involving tomato farmers and the National Food Corporation (NFC), a processing firm that produces tomato paste. Quedancor provides working capital and production loans to the NFC and farmer producers, respectively. Farmers also receive technical assistance from NFC. The Normin Veggies, a marketing association formed by vegetable farmers in Mindanao, has already ventured into several contractual arrangements with large supermarkets and retailers.

Overall, these programs have had relatively greater success compared to contract farming schemes for rice in Lao PDR and Vietnam (which suffered from insufficient financing and weak contract enforcement) except for a few reported cases of side-selling and some farmers having difficulty adopting the technology.

India. The banking sector in India has been the main proponent in the development and implementation of value chain financing in recent years. The State Bank of India (SBI), the largest bank in India, is considered the agriculture finance leader in the country and caters to the needs of smallholders and landless agricultural laborers through a vast network of 6,600 branches, 972 of which are specialized branches focusing exclusively on agricultural development.

Operating under the philosophy that inadequate financing in some parts of the chain will have consequences all along the chain, SBI offers end to end solutions covering the whole agricultural supply chain with structured financing products designed to meet new requirements. In this case study, the SBI facilitated contractual arrangements linking private corporations with small producers of coleus tubers, cut flowers and seaweeds, providing financing where needed. Hence, farmers may avail of production loans; collecting agents, aggregators and initial processors may avail of working capital or term loans; final processors/exporters may avail of export credit; and even importers may avail of credit lines in countries with SBI branches (e.g. New York).

In spite of its success, there are still problems in the agricultural value chain that need to be addressed which includes losses due to substandard harvesting and farming techniques, lack of modern storage, transportation, preservation, processing and marketing facilities and infrastructure. These problems are compounded by lack of market information on prices, and inadequate investment for improvement in technology and processes, among others.

6 CONCLUSIONS AND RECOMMENDATIONS

In general, the prevalent mode of financing in the value chain still seems to be that of the trader credit model, where small producers have no direct linkage to the market and apparently lack information regarding market price. The presence of traders and other intermediaries in various stages of the chain jacks up the price of the commodity but does not necessarily benefit the farmers. For this reason, governments and some private enterprises facilitated contractual arrangements that directly linked farmers to large companies or corporations for the sale of their produce, eliminating the need for traders and middlemen, thus bringing down prices. In this model, farmers have access to technology and technical assistance which assures that the required quantity and quality of the produce is attained. Farmers also have access to market information, ensuring that they get their fair share of value-addition along the chain.

Contract farming seems to be the emerging trend in value chain financing although initial experiences have shown varied results. Lao PDR and Vietnam, for instance, have had problems with weak contract enforcement

and lack of financing. At the opposite extreme, the Philippines and India have had a greater amount of success with their contract farming schemes, with India already progressing to a structured type of financing for some commodities. In spite of the success of these programs, however, it is clearly evident that a huge gap between credit demand and supply still exists and needs to be addressed. Lack of financing at some links of the chain poses a major constraint to the growth and expansion of the entire chain as shown in the case of Lao PDR where insufficient financing at the post-production stage prevented a corporate buyer from procuring all of the produce, forcing farmers to sell them elsewhere at possibly lower than market prices.

Government interventions ranged from minimal (as in the case of Indonesia) to the extreme (as in the case of Vietnam and Lao PDR). Nonetheless, each level of intervention has had its share of problems and difficulties. Indonesia's approach is perhaps the closest to a free market policy. While it has no doubt helped elevate the cocoa industry's competitiveness in the global market, relative lack of government interference has also constrained access to financing of small producers, particularly from formal sources (where collateral is required), due largely to difficulties in securing land certification.

At the other end of the spectrum, the credit programs of Vietnam and Lao PDR are heavily subsidized. In addition, Vietnam has a number of state-owned agricultural enterprises that are directly competing with the private sector and are entitled to certain privileges, therefore putting private enterprises and financing institutions at a disadvantage. Intervention by the Philippine government could be thought of as relatively moderate and ideal in the sense that interventions are designed to encourage, rather than compete with, the private sector in providing agricultural finance through market-based lending rates, creation of a policy and regulatory environment conducive for private sector participation, and rural infrastructure to attract investments.

In this context, this study recommends that government – in partnership with the private sector – spearhead and develop the following general measures aimed at making the operation of the value chain efficient, fair, profitable and sustainable:

1. Governments should adopt a free-market policy (e.g. market-based interest rates) and gradually retire subsidized lending and instead work towards encouraging private financing institutions to provide financing services to the small farming sector for growth and expansion of chain industries. Limited government funds also limit potential of chain industries to expand. A long term and sustainable solution would be to encourage more private banks to participate.

   The case of Lao PDR, however, needs further study. According to the case study, the APB seems to be the only major provider of loans for agriculture. The question is whether banks shy away from lending to agriculture due to the risks and costs involved or because they don't want to compete with subsidized lending by APB. Either way, the government of Lao PDR will have to re-assess its policy directions to come up with an appropriate solution. It is also not clear whether the low availment of credit is due to low demand or low supply.

2. Governments should focus on creating an enabling policy and regulatory environment and providing the necessary support services (e.g. infrastructure such as irrigation, farm-to-market roads, storage and other post-harvest facilities; research and development; training and extension; marketing; and finance) in order to attract more investments. These will lower transactions costs, facilitate the smooth flow of finance along the chain, and ultimately increase value-added.

3. Governments should see to it that the benefits produced by value-adding activities in the chain are fairly distributed among chain actors, not the least of which are the small producers, who are often prone to price abuse.

4. Governments may engage in enterprises in support of agriculture (as in the case of Vietnam's SOEs), if it deems that there is a need for such intervention. Nonetheless, it should encourage healthy and fair competition with the private sector. Government-owned enterprises should not be receiving preferential treatment (e.g. in terms of financing, among others) at the expense of private enterprises.

5. Financing intervention should be directed where it is required, not focused solely on production. Financing for processing and marketing is particularly crucial for growth and expansion of chain

products from local to international/export markets. Hence, loans should not be limited to short-term, production loans but should also include bigger loans, with longer maturities, to finance investments in farming equipment and machineries, transportation, storage, mills and other processing/post-harvest facilities.

6. Governments should be more pro-active in organizing farmers into groups and facilitating direct linkages to market through contract farming in order to minimize unnecessary and cost-adding intermediation and thus increase potential income for small producers. The Fair Trade Program of Thailand, One Rice Program and other contract farming schemes of the Philippines serve as ideal examples of direct market linkages.

7. The warehouse receipts system should be adopted and developed as a post-production financing scheme, as it secures a higher price for the produce due to prolonged storage, provides quality standards, and functions as a sort of credit bureau by building a third-party history of the performance of its depositors. The warehouse receipt is also intended to serve as collateral or pledge that will allow traders, exporters and other institutional buyers to access loans that will allow procurement of larger volumes of produce and finance other expenses related to processing and marketing.

8. Policy and regulatory reforms that will allow contracts and warehouse receipts to serve as acceptable substitutes for hard collateral should be instituted, if necessary.

9. Banks and other formal financing institutions which have had extensive experience and information in financing a particular commodity or industry should be encouraged to provide a structured-type of financing – as SBI of India has done – that should take care of financing needs from production to marketing and distribution.

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Chapter 2

Agricultural Value Chain Financing in India

Kennedy A. Garabiag

1 INTRODUCTION

1.1 Background and objectives of the case study

The value chain financing study seeks to underscore the important role of lenders in the delivery of credit to different stages of production, processing and marketing until the commodity reaches its final consumers. It also intends to investigate the financial relationship among the different commercial actors in the value chain and how effective the value chain finance models are.

India, being one of the biggest agricultural producers in the world, is of great interest to practitioners and researchers who want to know how its value chain financing models work and how these schemes benefit the marginalized farmers in the process. This case study of value chain financing in India specifically aims at exploring the issues underlying the finance-credit market systems at the various levels of the chain and analyze financing models adopted by a lending institution.

1.2 India's agriculture situation

1.2.1 Agricultural economy

Agriculture in India is one of the most important sectors of its economy. It is the means of livelihood of almost two thirds of the work force in the country and according to the economic data for the financial year 2006-07, agriculture accounts for 22% of India's GDP. About 43% of India's geographical area is used for agricultural activity. Though the share of Indian agriculture in the GDP has steadily declined, it is still the single largest contributor to the GDP and plays a vital role in the overall socio-economic development of India.

India is the front ranking producer of many perishable commodities (Singh and Dubey, 2007). It is the biggest food grain and oilseed producer, largest producer of milk, tea and second top producer in the world of fruits and vegetable and sugar. It is also the biggest producer of cattle and buffaloes which accounts for around 15% of the world's production. Goat and sheep also make a big contribution to the livestock produce of India. Meanwhile, fisheries sector which contributes 5% to agricultural GDP and 4.7% of the national export turnover produce 6.2 million tons of marine and inland products in 2002-03. In spite of these impressive data, only 2% of horticulture produce in India is processed (vis-à-vis more than 40% in other developing countries like Brazil & Malaysia) and its share in global processed food trade is only 1.5%.

Neeraj Jain (2007) notes that India, despite being the largest producer in almost every agricultural commodity in the world, still has very low yields because of inefficiencies. More fruit and vegetables go to waste because of poor handling and bad infrastructure. The total wastage is more than what United Kingdom consumes, and is estimated at $6.7 billion, the equivalent of 40% of the total

production of fruit and vegetables. Even in milk production where India is the world's leading producer, yields are less than 40% of the world's best. And even though the country has 75% more arable land than China, it produces 30% less.

The Department of Agriculture and Cooperation of India under the supervision of Ministry of Agriculture has many programs and schemes devoted to the improvement of the country's agriculture and fishery sectors and increasing the incomes of the marginal farmers vis-à-vis the globalized economy. It covers commodities and areas such as crops, horticulture, seeds, plant protection, integrated nutrient management, credit, marketing, rain-fed farming system, mechanization technology, among others. For promotion and strengthening of agricultural mechanization program, for example, a scheme is being implemented by the Department of Agriculture and Cooperation through four Farm Machinery Training and Testing Institutes with the objectives of organizing training in the selection and proper operation and maintenance of such equipment and machineries and their suitability to Indian agricultural conditions, among others. In the area of credit and insurance area, the Department implements the National Agricultural Insurance Scheme (NAIS) to enlarge the coverage in terms of farmers (both borrower and non-borrower), and crops.

1.2.2 Agricultural credit

In the agricultural finance front, Madan Mohan of the National Bank for Agriculture and Rural Development (NABARD) reveals that there is still a high degree of financial exclusion in the agriculture sector albeit the efforts of the government to reach the marginalized farmers. Around 51% of farm households have no access to credit (formal and informal sources of credit) and only 27% have access to formal lending institutions. In rural India, 61% of the populace do not have a bank account. Of those who have no access to credit, 88% are marginalized farmers.

Ramesh Golait (2007) points out that the importance of farm credit as a critical input to agriculture is reinforced by the unique role of Indian agriculture in the macroeconomic framework and its role in poverty alleviation that is why the Government and the Reserve Bank of India have played a vital role in creating a broad-based institutional framework for catering to the increasing credit requirements of the sector. The discernible trends in India is its multi-agency approach comprising cooperative banks, commercial banks, and rural banks in the delivery of credit to the agricultural sector. The policy of agricultural credit is guided mainly by the considerations of ensuring adequate and timely availability of credit at reasonable rates through the expansion of institutional framework, its outreach and scale as also by way of directed lending. Over time, spectacular progress has been achieved in terms of the scale and outreach of institutional framework for agricultural credit. Among these are: i) the rapid increase of public sector bank network from 8,262 in 1969 to 68,355 in 2005, ii) widened spread of institutional machinery for credit and decline in the role of non-institutional sources, albeit some reversal in the trend observed particularly in the 1990s, iii) manifold increase of institutional credit from a little over 7% in 1951 to 66% in 1991, iv) cooperative banks have lost its dominant position to commercial banks in recent years (in 2005-06, share of cooperative banks was 22% compared to 68% of commercial banks), v) efforts to increase the flow of credit to agriculture seems to have yielded better results in the recent period as the total institutional credit to agriculture recorded a growth of around 21% during 1995-96 to 2004-05 from a little over 12% during 1986-87 to 1994-95, vi) growth of direct lending to agriculture and allied activities witnessed a decline in the 1990s (12%) as compared to the 1980s (14%) and 1970s (around 16%), and vii) the gross bank lending to agriculture from 1996 to 2006 ranges from 10.98% to 12.14%.

The bandwagon of value chain approach and its integration to the global economy led the Government of India to implement policy changes and programs in the recent past. Deregulation and liberalization in the agriculture sector was implemented and amendments to Market Committee Act was upheld which aimed for better facilitation of contract farming. The Government has also delved into increased investments in agri-export zones, cold chains, warehouses, transport infrastructure, standardization for quality improvement and commodity exchanges.

1.3 Focus and scope of the study

This report focuses on value chain financing models being practiced by the State Bank of India, the biggest agricultural bank in the country. While the analysis presented attempts to be fairly broad and comprehensive, the study is limited to commodities being financially supported by the State Bank of India, particularly Coleus tubers, cut flowers and seaweeds. Therefore, specific observations, examples and lessons are based on the institutional experience of SBI.

1.4 Organization of the report

Section 1 deals with the rationale and objectives of this paper, India's agricultural economy and agricultural credit situation, and an overview of agricultural value chain financing. There will be a brief introduction about the State Bank of India in Section 2. Section 3 discusses the financing scheme of the value chain of each commodity. For each commodity, the financing scheme or model will be analyzed, its sources, delivery mechanisms along the chain. Lessons, emerging trends (including success factors, issues and constraints) will be likewise tackled. A summary of the main findings and conclusion will be presented at the end of the report.

2 FINANCING THE VALUE CHAIN

2.1 Agriculture value chain

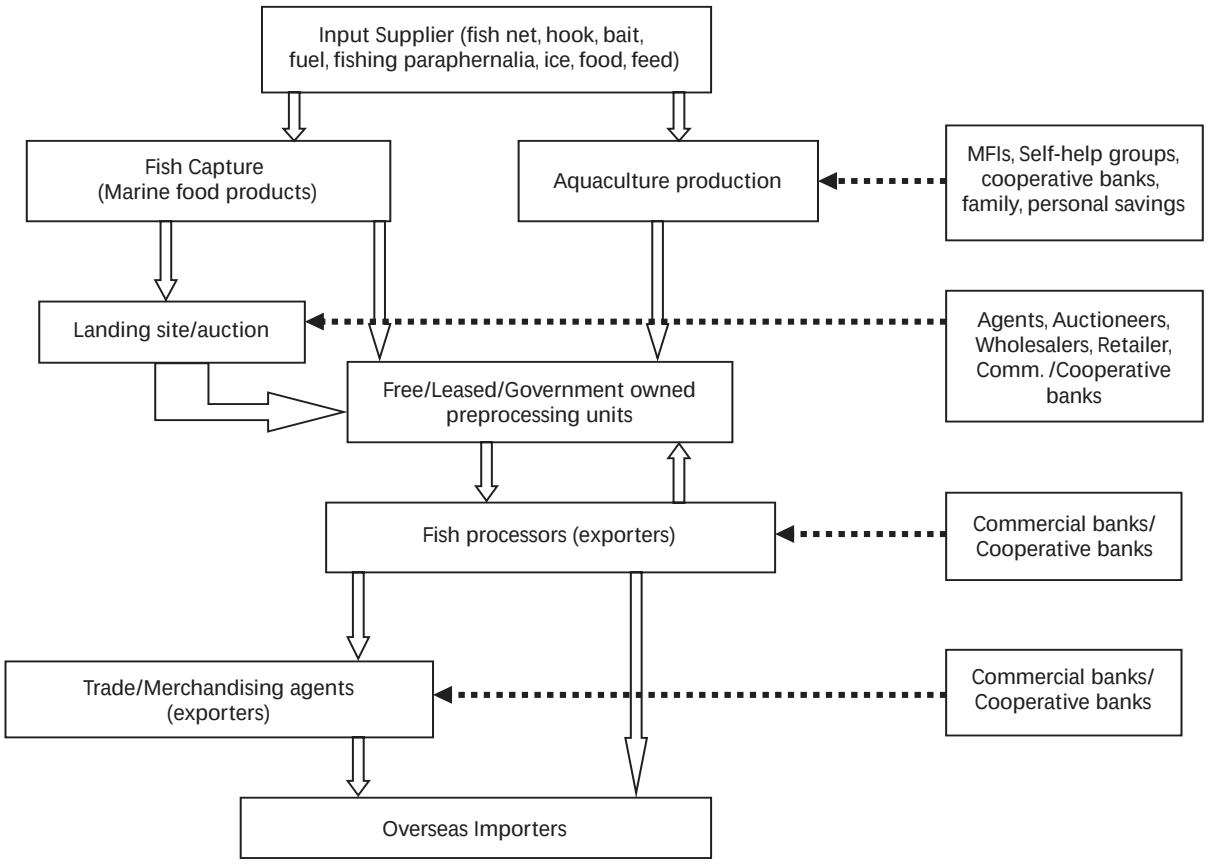
Agricultural value chain financing has been in practice in India, even before the theory about it was written. It has been benefiting small producers or workers especially those activities integrated and participating in the global value chains. Dev Nathan and V. Kalpana (2007) state that value chain activity has transformed a household worker or producer for the local, domestic market into a producer for export markets and enabled attainment of improved labour standards leading to decent work. Common knowledge dictates that these benefits have been achieved because of several factors such as a conducive policy environment, infrastructure, research and development, marketing, finance, among others.

An example of value chain approach in India beneficial to small holders/producers is the export supply chain for fish and fishery products (Singh and Dubey, 2007). A fishing trip usually takes 4 to 8 days and needs 6 to 12 helpers with input requirement of fuel (diesel), ice, food, nets, boat and in the case of aqua-culture, it requires feeds, fish workers, nets, and other paraphernalia. Fishermen classify caught fish as per fish category and store them in ice. They unload it on docks (landing site) after preliminary wash and negotiate price with agents (auctioneer, retailer or wholesaler) and receive money. As soon as fish are received by commission agents from the boat, they are weighed and graded into products classified as either defective or non-defective. Agents negotiate price with fishermen and supplier. Fish products are then stocked in crates (filled with ice), sorted into four grades based on the quality standards of the exporter, transferred to pre-processing units for cleaning. Price of fish is re-negotiated with exporter and agent. Fish processors receive fish as raw materials, wash them with potable water, process them using Hazard Analysis and Critical Control Point (HACCP) procedures, pack processed fish, perform export procedures and finally, dispatch. At this time, price is negotiated with importer and with supplier.

At the producer level, a fisherman may seek financial assistance from various sources, if he has no personal savings or does not have fund access from his relatives (see Figure 2.1). Self-help groups or even cooperative banks can finance a fishing trip to purchase needed inputs (fuel, baits, net, food, etc.). The commission agents themselves, who haggle for the price of the produce, may finance the fishermen. This arrangement falls effectively as "consignment" and therefore the latter have little bargaining power in price negotiation. Commercial banks, cooperative banks and traders are the major players in the provision of financing at the processing and export dispatch level.

Agricultural finance takes the center stage in reaching the goal of reducing poverty and improving the incomes of small farmers and fisherfolk. Recently instituted agricultural policy reforms aim at providing affordable, sufficient and timely supply of institutional credit. Lack or inadequate credit for the sector causes disruption to the value chain at one or many points. As suggested by Dev Nathan and V. Kalpana (2007), a disruption even in an insignificant part of the process would have consequences all along the chain. That

Figure 2.1 Value Chain Financing Fish and Fishery Products in India



is why the Indian government has been encouraging the lenders and investors (from both formal and informal institutions) to provide timely financial assistance to the whole chain or at some various stages of the chain. But apparently there are problems in the agricultural supply chain that need to be addressed. These problems may start at the producer level and may range from crop losses due to substandard harvesting and farming techniques, post harvest losses, storage losses, transportation losses, weight losses and decaying/deterioration to long and fragmented supply chain coupled with lack of modern storage, transportation, preservation, processing and marketing facilities/infrastructure. These problems are compounded by the lack of information on prices (and hence does not discover the best price), quality aspects largely ignored while pricing, lack of assurance for uninterrupted supply, inadequate investment for improvement in technology and processes.

The banking sector in India which plays a major role in the implementation of value chain approach/ financing models in recent years adopted reforms, which had strengthened the performance of banks and widened the financial markets — both debt and equity. However, it failed to provide a new direction to farm finance. The deregulation of interest rates brought a bonanza of benefits to the middle class, and consumer finance. Housing finance have become cheaper. Most commercial banks are redefining their business strategies and increasing their market share in retail finance. Each bank is trying to outdo the other in announcing lower interest rates in retail finance.

The new strategies of channel financing and dealer financing have further improved credit delivery and reduced the interest rate to the ultimate consumer. The benefits of deregulation of interest rate to corporations are also substantial, both in domestic and overseas markets. Corporations have been securing the loans at a rock-bottom level of 6% through the market for commercial paper. But the poor Indian farmer has not gained any benefit from this lower interest rate regime. Most of the commercial banks have not shown any interest in focusing their activities to increase the share of agricultural finance. The Indian Finance Minister has recently pronounced that the issue of franchising agricultural credit is to be re-examined and will target private sector banks. The Government would further encourage private sector banks to open branches in rural areas also.

The numbers of public sector/nationalized banks that have reached the 18% target of agriculture advances were six in 2007 and seven in 2008. In March 2007, about 15.6% (percent to net bank credit) was the total agricultural advances of public sector banks while it is 16% for nationalized banks. In March 2008, the total agricultural advances increased slightly to 17.4% for public sector banks and 16.8% for nationalized banks.[21] The large branch network-supported banks, such as State Bank of India (SBI), Bank of India, Bank of Baroda, and Punjab National Bank, are in the 15% range. Banks have been favouring indirect, rather than direct, finance to agriculture. Finance to dealers, commission agents, and investment in bonds earmarked for the priority sector have gained more priority than basic agricultural finance. The share of banks' advances to allied agricultural industries is also not significant. India is the second largest producer of fruits and vegetables in the world. But the share of commercial banks' advances to this sector has been no more than 4% in the past few years. The Indian commercial banks have potential competitive advantage in financing this sector.

The new generation banks, such as State Bank of India and ICICI bank, have devised innovative supply chain solutions to agricultural finance. This is a timely initiative of banks understanding the entire chain of value creation in farm finance. Agro-based industries, dealers, seed finance and fertilizer finance are major components in the value chain. Innovative financial solutions are essential for an effective loan delivery mechanism to support these operations. Meanwhile, the Government's previous two budgets had focused on 'Kisan Credit Cards', a flexible loan product to help farmers meet short-term financial requirements. Though this innovative product gained popularity, a long-run comprehensive integrated policy is required to meet the credit demand and to push for agricultural production in the economy.

2.2 State Bank of India

As this report focuses on the experience of the State Bank of India or SBI in financing the value chain, let us take a look at its profile. SBI is the largest bank in India and is also measured by the number of branch offices and employees, the second largest bank in the world. The bank was established in 1806 as Bank of Calcutta. It is the oldest commercial bank in the Indian Subcontinent.

The SBI, considered as the agriculture finance leader in the country, caters to the needs of agriculturists and landless agricultural labourers through a network of 6,600 rural and semi-urban branches. There are 972 specialized branches which have been set up in different parts of the country exclusively for the development of agriculture through credit deployment. These branches include 427 Agricultural Development Branches (ADBs) and 547 branches with Development Banking Department (DBDs), which cater to agriculturists, and 2 Agricultural Business Branches at Chennai and Hyderabad, catering to the needs of hi-tech commercial agricultural projects.

Its branches have covered a whole gamut of agricultural activities like crop production, horticulture, plantation crops, farm mechanization, land development and reclamation, digging of wells, tube wells and irrigation projects, forestry, construction of cold storages and go-downs, processing of agricultural products, finance to agricultural input dealers, allied activities like dairy farming, fisheries, poultry raising, sheep-goat raising, piggery and rearing of silk worms. The branches have also farmer's meetings in villages to explain to them about various schemes offered by the bank. To give special focus to agriculture lending, SBI has set up its agri-business unit. The bank has also agricultural specialists in various disciplines to handle projects/ guide farmers in their agricultural ventures. Advances are given for very small activity covering the poorest of the poor to hi-tech activities, involving large fund outlays.

The State Bank of India is changing fast, with more than 9,500 branches, as new rural and agri-business groups have been formed because of globalization. It offers end-to-end solutions covering the whole agricultural supply chain with structured products to meet the new requirements. The SBI forged partnerships with corporations and large entities to increase market reach and tapped alternative channels of credit delivery through business facilitators/correspondents. Moreover, SBI developed schemes for crop loans, warehouse receipt loans, farm machinery tractors, combine power tillers, irrigation, lift irrigation, micro-irrigation, sprinklers, horticulture, fruits, vegetables, plantation, dairy, poultry, piggery, rabbits, water harvesting, vermin-culture. It likewise offered microcredit thru self-help groups (SHGs), microfinance institutions (MFIs) and non-government organizations (NGOs).

[21] Advances of Public Sector Banks to Agriculture and Weaker Sections. Reports as of March 2007 and March 2008 Reserve Bank of India.

Box 2.1 State Bank of India's Finance Innovations and Initiatives

SBI has successfully initiated various measures toward widening its self-help group network. Self-help groups are an organization of 10 to 20 small farmers (mostly women) with a common purpose of working at mutual development toward greater access to credit. To list a few examples:

- Sensitization of staff: SBI's aim is to sensitize the entire staff from Manager to Messenger working in rural and semi-urban branches towards the programme.
- Special training programs in SHGs are being conducted at 54 training centers of the Bank in the country, apart from the State Bank Institute of Rural Development, Hyderabad.
- Close liaison with NGOs: Operating functionaries at branch level and region level are in close contact with NGOs in their areas to take the movement ahead. For the purpose, regular meetings are arranged with the NGOs and their support is solicited.
- SHG cells: Special SHG cells have been opened at major branches.
- Lending to NGOs/Federations of SHGs: Lending to credible NGOs/Federations of SHGs on selective basis for on lending to SHGs is being encouraged.
- ***Sahayog Niwas***: SBI has launched its Housing Loan product 'SAHAYOG NIWAS' meant for SHG members. Under the scheme, formulated keeping the socio-economic conditions of villages in sight, housing loans are given to the SHG members without any mortgage of house/land. Response to this product is very encouraging.
- SBI Life-***Shakti***: SBI Life, its insurance subsidiary, is the first to introduce a life insurance scheme, especially designed for SHG members. Special feature of the scheme is that entire premium amount paid by the member is refunded after maturity, i.e., 10 years.
- Rural training institutes: To help the rural youth to stand on their feet, two RUDSETI type training institutes have been established at Gulbarga and Gadag in Karnataka State, to impart training in self-employment to youth free of cost.
- SBI staff as Self-Help Group Promoting Institutions SHPI: The main role of formation and nurturing of SHGs have been played by NGOs who, apart from their fundamental role of social service, also aim at making the poor economically self-sufficient. But in SBI, our committed work force is not lagging behind and a number of committed staff members have worked hard to form and nurture SHGs on their own.
- Appreciation by Government: A number of SBI's branches/Circles have also received commendation and appreciation from various State Governments for doing an excellent job in the SHG-Bank Credit Linkage programme.
- NABARD felicitated 15 SHGs at a function organized in New Delhi on 13th September 2005. The function was presided over by the Honorable Union Finance Minister. Out of total 15 SHGs felicitated, 4 were financed by our branches, one each from Orissa, Jharkhand, Madhya Pradesh and Uttaranchal.
- ***Samanwita***: The Bank has sponsored and financially supported NGO 'SAMANWITA', in collaboration with Government of Orissa, for supplementing the process of socio-economic upliftment of the tribals and the downtrodden in the poorest and most backward Kandhamal district of Orissa State where 52% of the population is that of tribals. Core activities performed by SAMANWITA are empowerment of people through promotion of SHGs, especially women SHGs and development of human resources.
- SHPI status: State Bank of India is the first commercial bank to which NABARD has recently given SHPI status.

Source: State Bank of India. www.sbi.co.in

Today, value chain financing is an accepted way of agricultural banking in SBI. And this was motivated by the shift of focus from farmer to crop, ease of business acquisition thru aggregation of clients, improvement of asset quality thru involvement of a more robust, larger entity, and provision of much larger volumes thru targeting of multiple stakeholders across the value chain.

3 VALUE CHAIN APPROACH AND FINANCING MODELS OF STATE BANK OF INDIA

The value chain approach models for value chain financing in India follow the same pattern in what theory says and what other countries are practicing, where the chain actors such as input suppliers, small producers, agents (middlemen) and processors are present. The financing schemes implemented by the State Bank of India are an example of how money flows along the chain and what mechanisms or conduits are used to deliver credit, be it in the production, storage, marketing and transportation level until the product reaches its final consumer.

3.1 Value chain of the Coleus tubers crop

Coleus tuber[28] has been discovered to be a medicinal plant and a weight management drug. It is profitable to grow such a plant because of a growing demand, locally and abroad especially among Western countries. The small farmers grow it and when mature enough, harvest the tuberous roots and sell them. Value addition to the farmer's produce becomes apparent when processing starts. The price of tubers increases from its farm gate value as soon as the agents or aggregators sorted and graded the tubers. Negotiation of price goes even higher when it reaches the pre-processing (or primary processing), where raw materials undergo cleaning and drying. The final processor, who turns the tuber into synthetic drug form, package it and dispatch for export will negotiate with the importer what the price per unit will be. The final product can also be distributed at domestic markets thru local distributors.

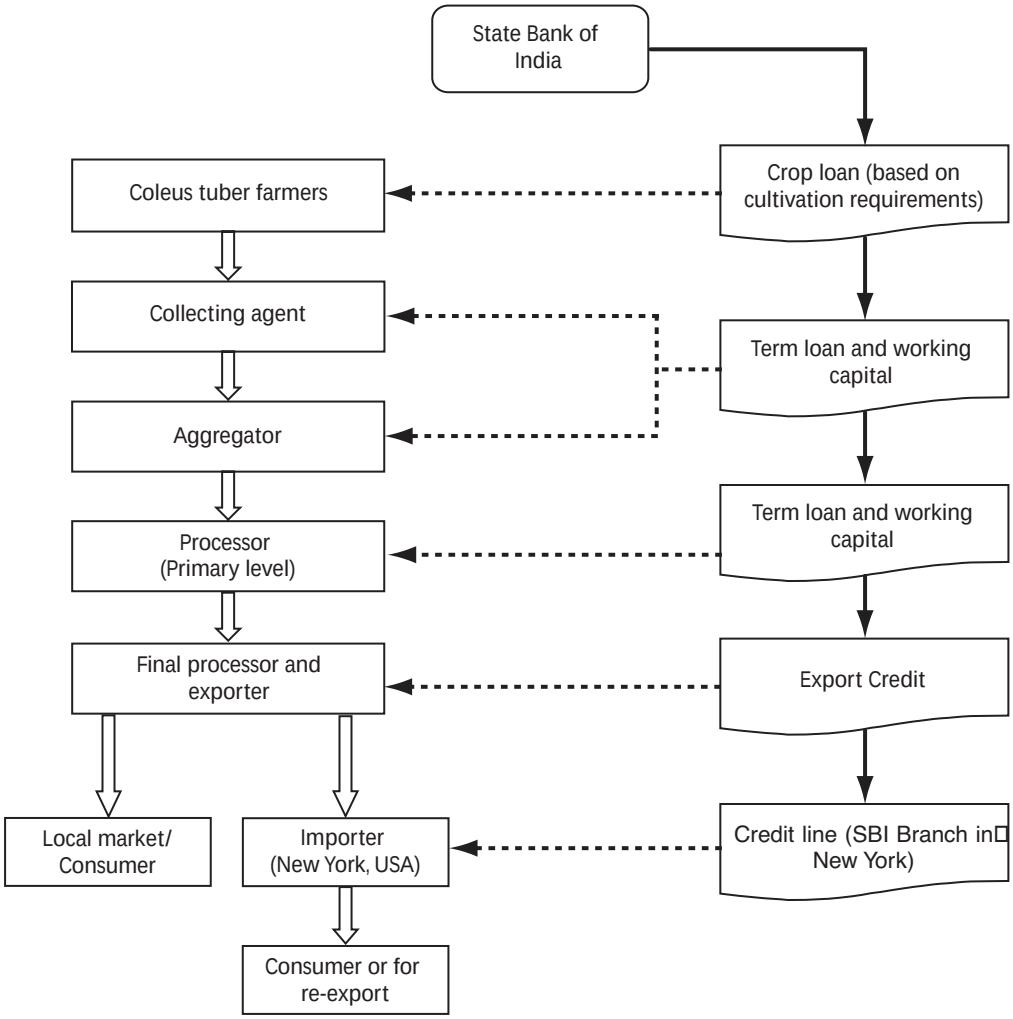
3.2 Financing model for Coleus tuber

For crops such as production of Coleus tubers, the State Bank of India provides financial support to farmers in the form of inputs and payment for farm labour costs. The agriculturists, tenant farmers and share croppers who cultivate the lands are eligible for these loans. All categories of farmers – small/marginal (SF/MF) and others are included. Loan amount is based on the cost of cultivation incurred for each crop per acre of crop cultivated and 90% of the cost of cultivation (scale of finance) is given as loan. The borrower needs to provide documents such as land records to ascertain cultivation rights, acreage under different crops, sources of other borrowings (e.g. cooperative societies and banks). Per the cultivation requirements of the crop, the loan amount is disbursed in cash and kind (for fertilizers, pesticides etc.). Meanwhile, the date of repayment for the crop loan will be fixed by allowing reasonable period for marketing the produce after harvest of the crop. Interest rate depends on the loan amount and maturity (up to 3 years or above) and may vary from 8.5% per annum to 12.75% per annum.

The financing scheme for Coleus tubers by the SBI starts at the farmer level where loans extended are based on the cultivation requirements (see Figure 2.2). SBI can also extend credit to aggregators or collecting agent and primary processors of the tubers from the farmers in the form of term loan and working capital. As the commodity undergoes final processing and readies for export to the United States or elsewhere abroad, the final processor and exporter may borrow money (in the form of export credit) from SBI for its costs. The importer from the United States may also obtain credit from SBI USA branch to purchase the processed commodity.

[22] Coleus is botanically known as *Coleus barbatus* although there are also other species such as *Coleus forskohlii*. Tuberous roots are the economic part. Its tuberous roots are found to be rich source of an alkaloid called Forskolin. Forskolin is an important base for many drugs developed for hypertension, glaucoma, asthma, congestive heart failures, weight management and certain types of cancers.

Figure 2.2 Value Chain Financing Model for Coleus Tuber



3.3 Value chain of the Cut Flowers

Growing of cut flowers[23] is a major industry in India. The rose is the principal cut flower grown all over the country, even though in terms of total area, it may not be so. The larger percentage of the area in many states is used for growing scented rose, usually local varieties to be sold as loose flowers. These are used for offerings at places of worship, for the extraction of essential oils and also used in garlands. For cut flower use, the old rose varieties like Queen Elizabeth, Super Star, Montezuma, Papa Meilland, Christian Dior, Eiffel Tower, Kiss of Fire, Golden Giant, Garde Henkel and First Prize remain popular.[24]

Private companies in the horticulture business like the Tanflora Corporation operate a vast land (50 hectares) called park intended for growing cut flowers. Tanflora specializes in rose cut flowers for export to Europe, Middle and Far East, Australia, Japan and countries in Eastern Europe. The company employs small farmers in the locality and provides them the necessary inputs from planting until the flowers are harvested. Each of the growers own individual projects of 2 hectares each and produce fresh cut roses. Flowers received from

[23] Cut flowers such as roses are usually sold in bunches or as bouquets with cut foliage. The production of cut flowers is specifically known as cut flower industry.

[24] In recent times, with production for export gaining ground in the country, the latest varieties like First Red, Grand Gala, Konfitti, Ravel, Tineke, Sacha, Prophyta, Pareo and Noblesse. Varieties like Virsilia and Vivaldi are also being grown commercially. Gladiolus is the next most important cut flower crop in the country mainly grown in the northern plains of Delhi, Haryana, Punjab, Uttar Pradesh. The other main cut flower item is orchid. Its production is restricted mainly in the north-eastern hill regions, beside parts of the southern states of Kerala and Karnataka.

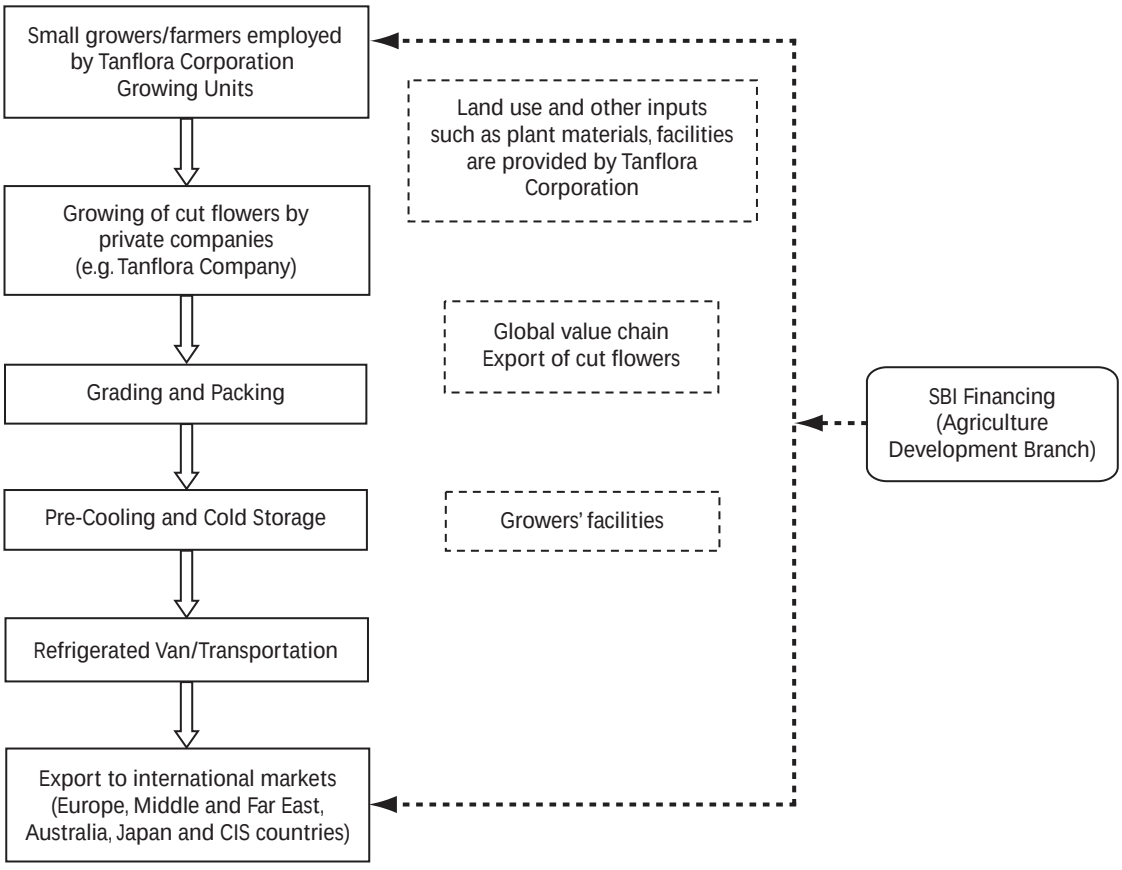
the growers are also provided with post-harvest facilities by Tanflora. Flowers are then pooled as per their individual varieties, quality and cut stages. Packing, logistics and marketing is undertaken by Tanflora under its brand name. Revenue is shared between Tanflora company and the growers in 25:75 ratio on freight on board (FOB) basis.

The company has infrastructure facilities such as central packing house of fully insulated building which handles and processes fresh cut roses. There is also a CFC-free state-of-the-art cold room facility. Uninterrupted cold chain is maintained by Tanflora with the help of dock shelters and packaging in cold rooms. Other infrastructure facilities like roads, drains, water, technical support, one-stop shop, laboratory, and other amenities are also provided. Rainwater harvesting facilities are established with the installed capacity to harvest over 100 million liters.

3.4 Financing model for Cut Flowers

Under contract growing arrangement with Tanflora and the State Bank of India, the latter provides financing for the cultivation requirements of the growers of cut flowers (see Figure 2.3). The crops are hypothecated and the land/growing units are usually mortgaged to the bank. The State Bank of India may also provide assistance to Tanflora to finance its post-harvest operation expenses that may fall under crop loans, agricultural term loans or produce marketing scheme.

Figure 2.3 Value Chain Financing Model for Cut Flowers



While Tanflora Corporation may have sufficient working capital, recovery of expenses thru payment of exported cut flowers may take some time to complete. And this scenario may require the company to borrow additional capital from SBI to finance its other operational expenses which include post-harvest activities. Operational expenses that may need credit assistance are the costs incurred in the grading and packing of cut flowers, pre-cooling and cold storage and the transportation of the product using refrigerated vans. Loans are settled depending on the agreement among the growers, Tanflora and the State Bank of India.

Box 2.2 The Tanflora Infrastructure Park

Tanflora Infrastructure Park was conceived by Tamil Nadu Industrial Development Corporation Ltd. in the year 1998, in association with private promoters MNA Associates. This park is to be one of the largest facilities in the world in cut roses for exports to Europe, Middle and Far East, Australia, Japan and CIS countries, with an annual production capacity of 67.5 million flowers. This park is coming up in an area of 220 acres at Amudagondapally village, Hosur Taluk, Agri-Export Zone of Krishnagiri. About 50 hectares of greenhouse area is coming up and this greenhouse area has been divided into 25 units of 2 hectares each and retained 4 hectares for self-production, making the total production facilities to 54 hectares. The production facilities cost at Rs 3,400 *lakhs*. The State Bank of India is providing term loan facilities to the Park as well as to the growers at a concessional rate of interest.

The marketing of the roses cultivated by the growers would be collectively done by Tanflora. The rose cultivation will be the main source of revenue for the park. While the focus of Tanflora would be on exports, 10-20% of total produce is expected to be sold in the domestic market. This project will have a high development impact as it will help generate foreign exchange earnings and additionally and more importantly, it aims at setting quality standards for exports and developing a strong brand equity for the country in the floriculture sector. With its low capital to labour ratio, the park will also foster development by generating employment in the surrounding areas, particularly for women. It is estimated that the park and the growers will generate employment for about 1,150 persons, mostly drawn from the neighboring villages, where there is extensive unemployment.

Source: Tanflora Infrastructure Park. www.tanflora.com
Note: Lakh also written as lac is a unit in the Indian numbering system equal to one hundred thousand (100,000)
1US$ = Rs 49.025 (January 2008)

3.5 Value chain of seaweeds

The discovery of diversified use of seaweeds[25] in food processing, cosmetics, pharmaceutical, to name a few, has made seaweed production more profitable and encouraged more investments to pour in. In India, PepsiCo[26] India Holdings Private Ltd. has embarked into a first large scale commercial cultivation of seaweeds and set up a carrageenan biopolymer plant in Tamil Nadu coast, principally to supply the overseas market. PepsiCo has sourced the technology for seaweed cultivation as well as carrageenan[27] extraction from the Bhavnagar-based Central Salt and Marine Chemical Research Institute (CSMCRI), a constituent laboratory of the Council for Scientific and Industrial Research (CSIR). CSMCRI supplied PepsiCo with the basic planting material as well as the know-how of seaweed production and PepsiCo sponsored the trials and pilot plant at their field station.

Since 1999, PepsiCo has partnered in a scheme to promote seaweed cultivation in India. The company helps train the growers, who are mainly women's self-help groups, and buys the seaweeds from them. They would get jobs in their local habitat with flexible working hours and may earn Rs 4,000 to Rs 6,000 a month (US$96.42 to US$144.62).

[25] Seaweeds are macrophytic algae, a primitive type of plants lacking true roots, stems and leaves. There are about 900 species of green seaweed, 4,000 red species and 1,500 brown species found in nature. In India, seaweeds grow abundantly along the Tamil Nadu and Gujarat coasts and around Lakshadweep and Andaman and Nicobar islands. There are also rich seaweed beds around Mumbai, Ratnagiri, Goa, Karwar, Varkala, Vizhinjam and Pulicat in Tamil Nadu and Chilka in Orissa.

[26] PepsiCo, Incorporated (short for Pepsi Company) is a large conglomerate with interests in manufacturing, marketing and selling a wide variety of carbonated and non-carbonated beverages, as well as salty, sweet and grain-based snacks, and other foods. PepsiCo gained entry to India in 1988.

[27] Carrageenan is a biopolymer extracted from red seaweed, used as a gelling/thickening agent in the food processing and pharmaceutical industries. It's also used in beer as a clarifier, in toothpaste as a stabilizer, and in shampoo as a thickener.

Seaweed growers use rafts for cultivation near a dependable source of water. They are grown in individual plots of 0.25 ha (40 m x 60 m). Each harvest cycle from planting to harvesting takes 45 days with an annual yield of 100 tons (wet weight) per hectare, and which translates into 10 tons of dry seaweed or 2.5-3 tons of carrageenan. The seaweeds are dried, producing a nutrient-rich sap which can be cheaply sold to local farmers as fertilizer. For the next production stage, however, dried seaweeds must at present be shipped off to the group's central South East Asia facility for further processing into carrageenan.

3.6 Financing model for seaweeds

The State Bank of India has organized a marketing tie up for the self-help groups[28] (SHGs) to sell seaweeds to PepsiCo India on a pre-agreed price which is paid by SBI, which then deducts the monthly percentage of the loan amount, along with running a savings account for the beneficiary. Loans are extended for the planting material, making of bamboo rafts where the seaweeds are grown and other working capital requirements. The value the Bank sees in the scheme is the opportunity for livelihood and entrepreneurship development in coastal areas, supporting women development and assured returns for bank going by the nearly 100 per cent loan recovery from self-help groups. The Bank assists seaweed cultivation projects in collaboration with a Chennai-based non-government organization, Aquaculture Foundation of India. It helped them tie up with PepsiCo for marketing the seaweeds. Each member of a SHG earns over Rs 5,000 (US$120.52) a month and they are able to repay a Rs 5-lakh[29] (US$12,051.97) loan in three years with an interest of 7%. The Bank hit up on the scheme in consultation with Aquaculture Foundation of India as a new model for funding livelihood restoration projects following the destruction suffered by fishermen and coastal communities during the tsunami of December 2004.

With the mechanism developed by the State Bank of India, the seaweed cultivators were not only able to get easy loans from the bank but also have a kind of salary account with the bank where they get their money on time. The bank deducts a nominal loan amount every month and also saves nominal money for the beneficiary and pays the rest to the beneficiary so that he can meet his monthly expenses. Meanwhile, PepsiCo provides extension services to the fishing communities where 80% of the members are women. The company has also extended its focus to wet seaweed, whose derivative is a liquid fertilizer that significantly increases yields of various plants.

Box 2.3 Economic Importance of Seaweeds

Some 221 species of seaweed are utilized commercially. Of these, about 145 species are used for food and 110 species for phycocolloid production (e.g. agar). Seaweeds have been a staple food in Japan and China for a very long time. The green seaweeds *Enteromorpha*, *Ulva*, *Caulerpa* and *Codium* are utilized exclusively as source of food. These are often eaten as fresh salads or cooked as vegetables along with rice. *Porphyra* (Nori), *Laminaria* (Kombu) and *Undaria* (Wakame) are used for making fish and meat dishes as well as soups and accompaniments. Agar-agar, agarose and carrageenan are commercially valuable substances extracted from red seaweeds and find extensive use in many industries. The greatest use of agar is in association with food preparation and in the pharmaceutical industry as a laxative or as an outer cover of capsules. With the advent of modern molecular biology and genetic engineering, agar gums producing an 'agarose' factor are used extensively in electrophoresis in most laboratories around the world. Carrageenans are generally employed for their physical functions in gelation (include for example, foods such as ice cream), viscous behavior, stabilization of emulsions, suspensions and foams, and control of crystal growth. Chemicals from brown seaweeds such as alginic acid, mannitol, laminarin, fucoidin and iodine have been extracted successfully on a commercial basis. As the alginates can absorb

continued on page 36

[28] Self-Help Groups (SHGs) appeared in India in the early 1990s. SHGs are made up of individuals formed into groups, where each group consists of 10–20 farmers (often women). Membership is voluntary and members generally meet weekly. The SHGs have a common purpose of working at mutual development, discussing problems, exploring solutions, developing governance and leadership, undergoing training, and operating internal lending.

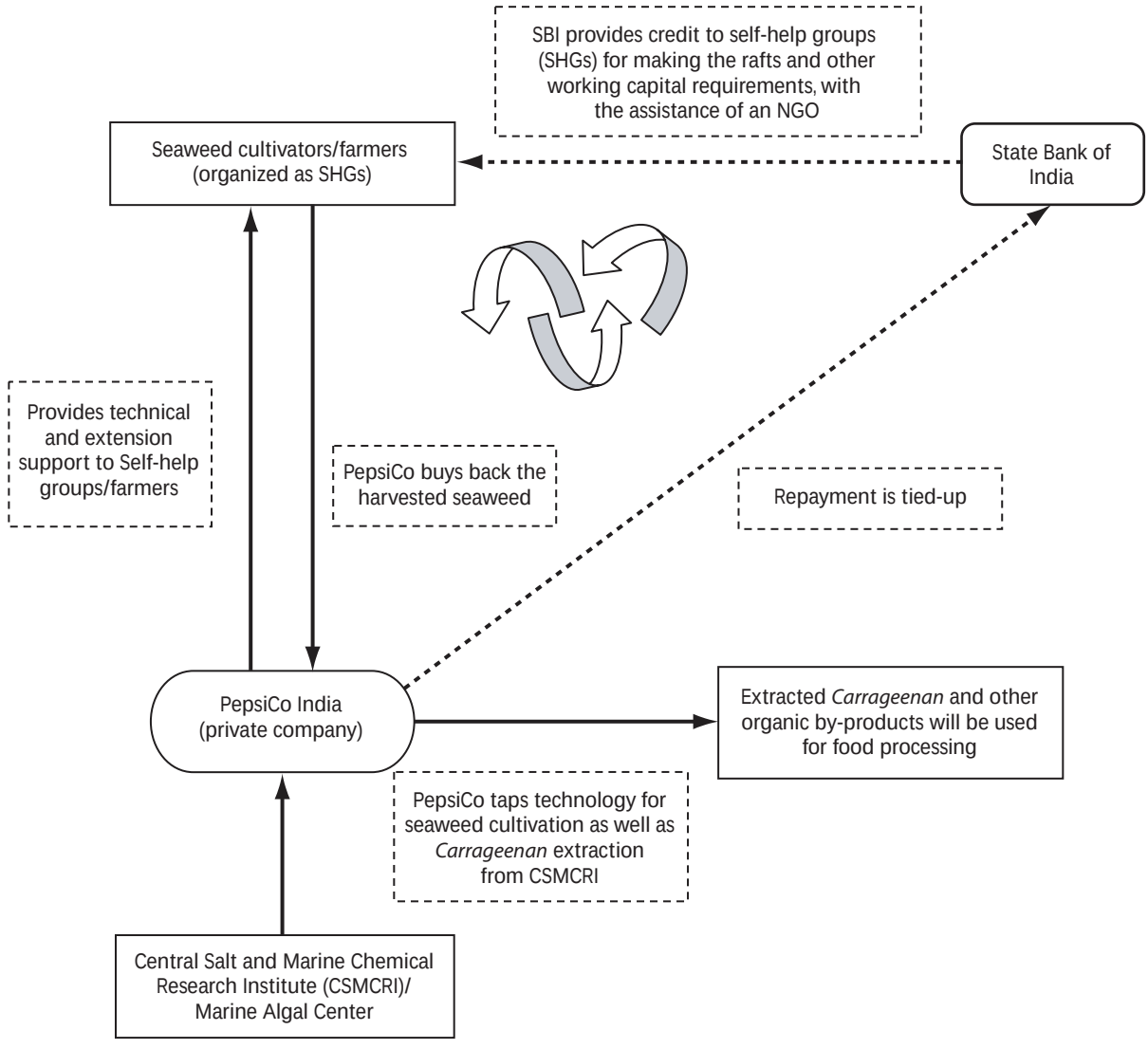
[29] Lakh also written as lac is a unit in the Indian numbering system equal to one hundred thousand (100,000).

continued from page 36

many times their own weight of water, have a wide range of viscocity, can readily form gels and are non-toxic, they have countless uses in the manufacture of pharmaceuticals, cosmetic creams, paper and cardboard, and processed foods. Being rich in minerals, vitamins, trace elements and bioactive substances, seaweeds are called medical food of the 21st century. *Digenea* (Rhodophyta) produces an effective vermifuge (kainic acid). *Laminaria* and *Sargassum* species have been used in China for the treatment of cancer. Anti-viral compounds from Undaria have been found to inhibit the Herpes simplex virus, which are now sold in capsule form. Research is now being carried out into using *Undaria* extract to treat breast cancer and HIV. Another red alga *Ptilota* sp. produces a protein (a lectin) that preferentially agglutinates human B-type erythrocytes in vitro. Some calcareous species of *Corallina* have been used in bone-replacement therapy. *Asparagopsis taxiformes* and *Sarconema* sp. are used to control and cure goiter while heparin, a seaweed extract, is used in cardiovascular surgery.

Source: Seaweed Mariculture: Scope and Potential in India. Sajid I. Khan and S.B. Satam
College of Fisheries, Dr. B.S. Konkan, Agricultural University, Ratnagiri

Figure 2.4 Value Chain Financing Model for Seaweeds



4 RECENT DEVELOPMENTS IN INDIA'S AGRICULTURAL FINANCE

Scheduled commercial banks, cooperative banks, and regional banks are responsible for the smooth flow of credit to the agriculture sector in India. At the same time, a huge unorganized market which provide timely funds to this sector but at exorbitant rates of interest. Among organized credit disbursement to agriculture, commercial banks play a vital role with a share of about 70% whereas the cooperative sector and RRBs contribute 20% and 10%, respectively. The Kisan Credit Card (KCC) scheme was introduced to provide adequate and timely support from the banking system to the farmers for their cultivation needs. This scheme has made rapid progress with more than 645 lakh cards issued up to October 2006.

The 'Farm Credit Package' announced by the Government of India in June 2004 stipulated doubling the flow of institutional credit for agriculture in the ensuing three years. Annual targets for this package are being surpassed in the two consecutive years from its introduction and it is likely to surpass targets in the third year also.

Meanwhile in agricultural insurance, the Government of India in coordination with the General Insurance Corporation of India (GIC), had introduced National Agricultural Insurance Scheme (NAIS) from rabi[30] 1999-2000 season. The main objective of this scheme is to protect the farmers against losses suffered by them due to crop failure on account of natural calamities. The Agricultural Insurance Company of India (AICI), which was incorporated in December 2002, took over the implementation of NAIS. AICI introduced Rainfall Insurance Scheme called "Varsha Bima" during 2004 southwest monsoon period. Varsha Bima provided for five different options suiting varied requirements of farming community:

1. Seasonal rainfall insurance based on aggregate rainfall from June to September.
2. Sowing failure insurance based on rainfall between June 15 and August 15.
3. Rainfall distribution insurance with the weight assigned to different weeks June and September.
4. Agronomic index constructed on the basis of water requirements of crops.
5. A catastrophe option covering extremely adverse deviation of 50% and above in rainfall during the season.

During kharif[31] 2006, this Varsha Bima scheme is being implemented in around 150 districts covering 16 states across the country. AICI is also piloting another weather related insurance product for mango and coffee.

In the microfinance area, a scheme has been introduced by NABARD, the apex bank for agriculture and rural development in India, to improve the access of the rural poor to formal institutional credit and other financial products. All 547 banks, which include 47 commercial banks, 158 RRBs and 342 cooperative banks, are now actively involved in the operation of the Self-Help Group (SHG)-Bank Linkage Programme to spread the facility of microfinance to the needy small and marginal farmers and tiny entrepreneurs. The program has enabled nearly 329 lakh poor families in the country to gain access to microfinance facilities from the formal banking system.

Marketing of agricultural products is essentially part of the value chain financing in India. Agricultural markets in India are dominated by the existence of unorganized and unregulated agricultural mandies with the presence of a large number of middlemen and widespread prevalence of malpractices. Absence of proper warehousing facilities in the villages, lack of proper transportation facilities and infrastructure such as rails and good quality all weather roads and ignorance about the market prices of their products are some of the important factors contributing to the exploitation of farmers by middle men. Farmers are forced to sell their products to these middlemen at the farm gate at throw-away prices. Agricultural Market Reforms in India has been instituted by the Ministry of Agriculture. It had formulated a model law on agricultural marketing in consultation with State/Union territory governments to bring about marketing reforms in line with emerging trends. This model act enables the establishment of private markets/yards, direct purchase centers,

[30] spring.
[31] a cropping season with the harvest period at the beginning of winter.

consumers/farmers markets for direct sale, and promotion of public-private partnership (PPP) in the management and development of agricultural markets in the country. It also provides for exclusive markets for onion, fruits, vegetables, and flowers. Regulation and promotion of contract farming arrangement have also been made a part of this legislation. A provision has also been made for constitution of State Agricultural Produce Standard Bureau for promotion of grading, standardization, and quality certification of agricultural produce. So far, 15 States and 5 Union Territories have amended their Agricultural Produce Marketing Committee (APMC) Act to derive the benefits of market reforms.

Another innovation introduced in India was the e-chaupal. It is a business platform consisting of a set of organizational subsystems and interfaces connecting farmers to global markets. It has been initiated by International Tobacco Company (ITC) which is quite active in the agricultural sector in India. This e-chaupal business platform consists of three layers each of different levels of geographic aggregation. Each of the three layers is characterized by three key elements: i) the infrastructure (physical or organizational) through which transaction takes place, ii) the entity (person or organization) orchestrating the transactions, and iii) the geographical coverage of the layer. The first layer consists of the village-level kiosks with internet access (e-chaupals), managed by an ITC trained local farmer and within walking distance (1-5 kilometers) of each target farmer. Each cluster of five villages gets an e-chaupal, which is justified by sparse population in rural India. The second layer consists of a brick and mortar infrastructure called hubs managed by the traditional intermediary who has local knowledge/skills called a Samayojak and within tractorable distance (25-30 kilometer) of the target farmer. To introduce future trading in agricultural commodities in India, two commodity exchanges have been introduced in 2003 for future trading, namely: National Commodity and Derivatives Exchange Limited (NCDEX) and Multi-Commodity Exchange of India Limited (MCX). These exchanges are mainly dealing with agricultural commodities. They are involved in forward trading to mitigate price risks of the farmers.

In the recent Union Budget (2007-08), agriculture has gotten considerable attention with the various policy initiatives from the side of the Finance Ministry. Some of the important policies are:

- During 2006-07 (until December 2006), 53.37 lakh new farmers were brought into the institutional credit system. A target of Rs 225,000 crore as farm credit and an addition of 50 lakh new farmers to the banking system have been fixed for the year 2007-08. The two per cent interest subvention scheme for short-term crop loans will continue in 2007-08, and a provision of Rs 1,677 crore has been made for that purpose.
- A special purpose tea fund has been launched for re-plantation and rejuvenation of tea. Government soon plans to put in place similar financial mechanisms for coffee, rubber, spices, cashew and coconut.
- Accelerated Irrigation Benefit Programme (AIBP) has been revamped in order to complete more irrigation projects in the quickest possible time. As against an outlay of Rs 7,121 crore in 2006-07, the outlay for 2007-08 has been increased to Rs 11,000 crore.
- Rs 17,253 crore had been budgeted for fertilizer subsidies in 2006-07. However, according to the Revised Estimates, this will rise to Rs 22,452 crore.
- The National Agricultural Insurance Scheme (NAIS) will be continued for Kharif and Rabi crops during the year 2007-08.
- The two per cent interest subvention scheme will continue in 2007-08.
- Rs 100 crores have been allocated to new Rainfed Area Development Programme, set up for coordinating all schemes for watershed development.

5 SUMMARY AND CONCLUSION

Agriculture of India is one of the biggest in the world, in terms of production level. Majority of its population earn a living in agriculture. The agriculture finance in India remains wrought with weaknesses and inefficiencies. The problem on scarcity of available loans, high transaction costs, shortage of manpower to deliver credit in the rural areas and the prevalence of informal lending institutions are the precursor of group lending schemes to enhance utilization of loan proceeds and improve repayment rate. These group lending schemes, as typified by contractual arrangement between the lender (usually a bank) and the group of farmers (self-help groups/small producers) with the third party (processor or business enterprise), have come into the value chain financing limelight.

This paper has presented schemes in India's value chain approach as being supported by State Bank of India. Schemes for Coleus tubers, cut flowers and seaweeds are centered at self-help groups, which borrow working capital from SBI under a contract farming agreement. Technical assistance is always a factor in production to improve output efficiency and this is usually provided by the Government or private business enterprises like PepsiCo and Tanflora industries. Term loans provided by the SBI can finance the production and other post-harvest activities such as sorting, grading, transporting and packaging. SBI has branches outside India, which can accommodate loan requests from importers.

The role of self-help groups in India's rural finance is vital in the value chain approach as this translates to output efficiency, income improvement, better profits and enhanced economy in general. As India's agriculture is integrated to global value chain, its financial institutions are gearing up to assist its farmers through various mechanisms. Nonetheless, these schemes could only be successful if effectively implemented through rigorous monitoring. Its success lies in the formation of quality groups, adequate and timely credit support along with the identification of appropriate and profitable economic activities such as seaweed and cut-flower production.

Value chain financing in India is widely practiced. A number of formal financial institutions, government and private, have already delved into this kind of approach in view of global economic setting. Nevertheless, non-institutional lenders remain in the picture especially the agents and middlemen who have their own capital and can negotiate prices of the produce in their favour. Not that they are not helping the rural economy but the usurious practice of majority of them put the small producers at a disadvantage. And therefore, the institutional lenders should widen its reach thru expansion of rural bank networks, infuse more funds in the rural areas, and organize more farmers into self-help groups in order to keep them from the unscrupulous practices of informal lenders.

6 RECOMMENDATIONS

For India's financial institutions to be successful in the value chain approach and enhance agricultural finance in general, the following are recommended measures:

1. **Prioritize bigger investments in agriculture.** Since majority of India's rural population depend on agriculture, there is a need to bring in large scale investments through public private partnership or foreign direct investments. The declining level of capital investment in agriculture will make India less productive and less competitive in the global market.
2. **Provision of credit to the entire supply chain, from seed to shelf.** Credit should not only be extended to traditional production activities of crops, livestock and fishery sectors. This would also call for investment in sunshine industries such as agro-processing, agri-marketing, bio-technology, post-harvest management, contact farming, organic farming, horticulture, dairy, poultry and livestock, fishery, food parks, cold chain financing, cold storages, market yards, agri-export zones, financing against warehouse receipts. It also calls for the provision of credit to fruits and vegetables, horticulture crops and activities related to post harvest operations such as sorting, grading, processing, packaging, storing, transporting and marketing.
3. **Infrastructure investment in rural areas**. Public sector investment in rural areas should be increased as this is basic and crucial in the development of agriculture and agricultural finance. Existing government programs such as the Rural Infrastructure Development Fund (RIDF) and Bharat Nirman encourage public-private partnership.

4. **Enhance financial inclusion.** Most of the actors in the value chain financing in India can not be reached by banks such as the State Bank of India. Along the chain, the farm workers or small producers may avail of financial assistance from informal lending institutions. The Government, whose goal is to include more borrowers in the formal lending spectrum, should strengthen the self-help group movement by empowering SHGs with reference to credit, markets, agriculture extension, agriculture input services thru agri-clinics and agri-business centers or thru e-chaupals.

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Chapter 3

Agricultural Value Chain Financing in Indonesia

Maria Teresa J. Santos

1 INTRODUCTION

The Indonesian economy performed better in 2007, as reflected by macroeconomic indicators such as growth in gross domestic product (GDP), lower unemployment rate, reduction in percentage of population below the poverty line and stable single digit inflation rate (Table 3.1). In particular, GDP grew by 6.3 percent in 2007 or 8 percentage points higher from its 2006 level of growth. By industrial origin, the engine of growth was brought about by the performance of transport and communication which improved by 14.4 percent and electricity, gas and water supply which improved by 10.4 percent. Meanwhile, the agriculture, livestock, forestry and fishery sector which accounted for 13.8 percent of the total gross domestic product (GDP) grew by 3.5 percent.

In spite of this, the Indonesian economy is facing a greater challenge in micro structural problems which burden investment and export competitiveness. The problem of banking intermediary also needs to be resolved in order to boost the economic expansion (Satria D., website)

Over the past three years (2005-2007) the agricultural sector continues to supply an average of 13.4 percent of the GDP and employed about 47 percent of the total labor force. Among agricultural products/crops, Indonesia is the leading producer and exporter of oil palm, oil palm kernels, pepper, cashew nuts, rubber, cocoa beans, coffee and tea (FAOSTAT, 2005-06).

With agriculture as one of the important drivers of economic growth and source of income of many rural households, it is imperative that the government focus its priorities in the development of the sector. Thus, the Ministry of Agriculture of the Republic of Indonesia identified two core programs of national agricultural development. These are: i) improving food security; and ii) enhancing the development of competitive, sustainable, people-centered and decentralized agri-businesses.

However, in order to attain food security and economic development, an adequate and stable supply of agricultural commodities must be sustained. Global trade can help communities improve rural incomes, but these benefits may be compromised by inadequacies in infrastructure or governance, by difficulties in controlling post-harvest deterioration or by an inability to produce competitive products. The Australian Centre for International Agricultural Research (ACIAR) considers that, in the face of globalization, the progress and resilience of rural communities will depend increasingly on their understanding of and access to markets, the flexibility and strength of their financial base, and the quality, efficiency and versatility of their production, processing, distribution and marketing systems. Rural communities and governments must become more 'market smart'. They must balance sustainable resource use with the challenges of quality requirements, higher food-safety standards and long and complex supply chains.

Global value chains that link agricultural production of developing countries with global markets are especially promising in terms of broad-based and sustainable economic growth, employment creation and poverty reduction. In many cases, there should have been a shift from just supplying products to consumer

driven production, be it production of cash crops or food crops. Meeting consumers' needs involves integrated management of the transactions and relationships between farmers, traders, and firms as well as processes within them. Managing these relationships provides an opportunity for negotiating the shares between chain members of the value produced and added within the chain. Asian experience of using supply chain management to analyze fresh produce indicated that the most significant constraint was getting the product right. Getting the product right means right in terms of what customers want.[32]

Thus, the Indonesian government forged partnerships with private and international organizations to undertake various studies on supply and value chains, focusing, mostly on cash crops like cocoa, banana, vegetable, mandarins, etc. The studies looked, mostly, on all aspects of the supply chain from farm to consumer to determine the areas or the industry that need to improve in terms of efficiency and profitability.

Take for example the cocoa industry of Indonesia. In Asia, most of cocoa production comes from Indonesia – the world's third largest producer of cacao after Ghana and Cote d'Ivoire in Africa. It is reported that of the total global cocoa production of 3,289,000 tons in 2005, Indonesia accounted for 13.2 percent. The United States is one of the top buyers of Indonesian cacao, along with Brazil, China, the Philippines, Malaysia and Singapore.

In 2007, the Indonesian foreign income derived from cocoa export was valued at almost US$1 billion which makes cocoa the third main source of foreign income among plantation crops.

Global demand for cocoa is strong and Indonesia has maintained its important position in the world market making it one of the major sources of Indonesian foreign income. However, in recent years Indonesia's competitive advantage has been threatened by poor and inconsistent quality plus supply projections suggest potential shortfalls in supply. These prompted international organizations (e.g. USAID, ACIAR) in collaboration with the government of Indonesia and private sectors to embark in various value chain studies on cocoa industry.

It must be emphasized that the opportunities created by global trade can only be realized into economic and social gains if economic policy succeeds in removing the constraints that impede export growth. An important aspect that should be looked into is the competitiveness of rural producers because they can only benefit from trade liberalization, if they can compete in the global as well as regional markets. And this is where the establishment and organization of value-added chains shall play a critical and important part for the Indonesian cocoa.

1.1 Objectives of the Study

The paper, therefore, looks into the development and state of value chains studies in Indonesia, particularly the cocoa industry. Specifically, the paper attempts to provide more comprehensive discussion and analysis on the financing aspect within the value chain, such as issues and constraints on credit, lessons learned, current initiatives and developments, etc.

1.2 Scope and Methodology

The paper reviewed and documented existing value chain case studies of the cocoa industry which were found to focus on:

a. Characteristics of the cocoa industry in Indonesia;

b. Major issues, constraints and opportunities to growth and expansion of the cocoa sector in Indonesia (primarily Sulawesi);

c. Proposed strategies for alleviating or at least mitigating constraints;

d. Current public and private sector investments to support cocoa in Indonesia;

[32] Dr. Erna M. Lokollo, Programme Leader Research and Development, UNESCAP-CAPSA, Bogor, Indonesia.

e. Research and development initiatives that could be explored/implemented to improve smallholder incomes; and

f. Strategic interventions that could be implemented collaboratively with various stakeholders to address major constraints.

The major sources of data and information are the following:

1) Value Chain Assessment: Indonesia Cocoa by Henry Panlibuton and Maggie Meyer funded/ sponsored by the United States Agency for International Development (USAID) through the Accelerated Microenterprise Advancement Project (AMAP).

2) A Value Chain Assessment of the Cocoa Sector in Indonesia by Simon Badcock, Brian Matlick and John Bako Baon for the USAID and Agri-business Market and Support Activity (AMARTA).

3) Linking Farmers with Markets: the Case of Cocoa by G.I. Hohnson, Arief Iswanto, J. Ravusiro, P.J. Keane, N. Hollywood, S.V. Lambert, and D.I. Guest for the Australian Centre for International Agricultural Research (ACIAR) in collaboration with the Indonesian government through the Indonesian Agency for Agricultural Research and Development (IAARD), and the Indonesian Center for Horticulture Research and Development (ICHORD).

4) The Study on the Improvement of Farmers' Income: Agricultural Processing and Rural Microfinance in Indonesia – South Sulawesi Component: Study on Cocoa Sector. July 2007. The Ministry of Agriculture, Indonesia and Japan International Cooperation Agency (JICA).

Given the available information and data on the above mentioned studies, this paper explored the financing or credit aspect within the chain. Other literature on financing were also included and cited to provide a more comprehensive discussion.

2 THE COCOA VALUE CHAIN (refer to Figure 3.1 for the value chain map)

The island of Sulawesi produces 80% of the Indonesian cacao for export. Production is mostly from small farmers cultivating land that ranges from 0.5 to 1.5 hectares. Considering total laborers employed, some 1.1 million farmer families (mainly in eastern parts of Indonesia) rely on cocoa production.

Historically, the production boom of cocoa in Indonesia was spurred by high world cocoa prices in the late 1970s, prompted by a sharp reduction in output from West Africa and the Dominican Republic. The reasons for the success of the smallholder farmers include: i) an abundance of land available for cocoa production in Southeast Sulawesi. Cocoa farm land in Indonesia is approximately 1.05 million hectares, mostly owned by small farmers; ii) knowledge and capital disseminated by farmers who had experienced farming in Sabah, Malaysia; iii) government policy that required dissemination of seed from government and private plantations; and iv) adequate transport infrastructure (cocoa production in Sulawesi, website).

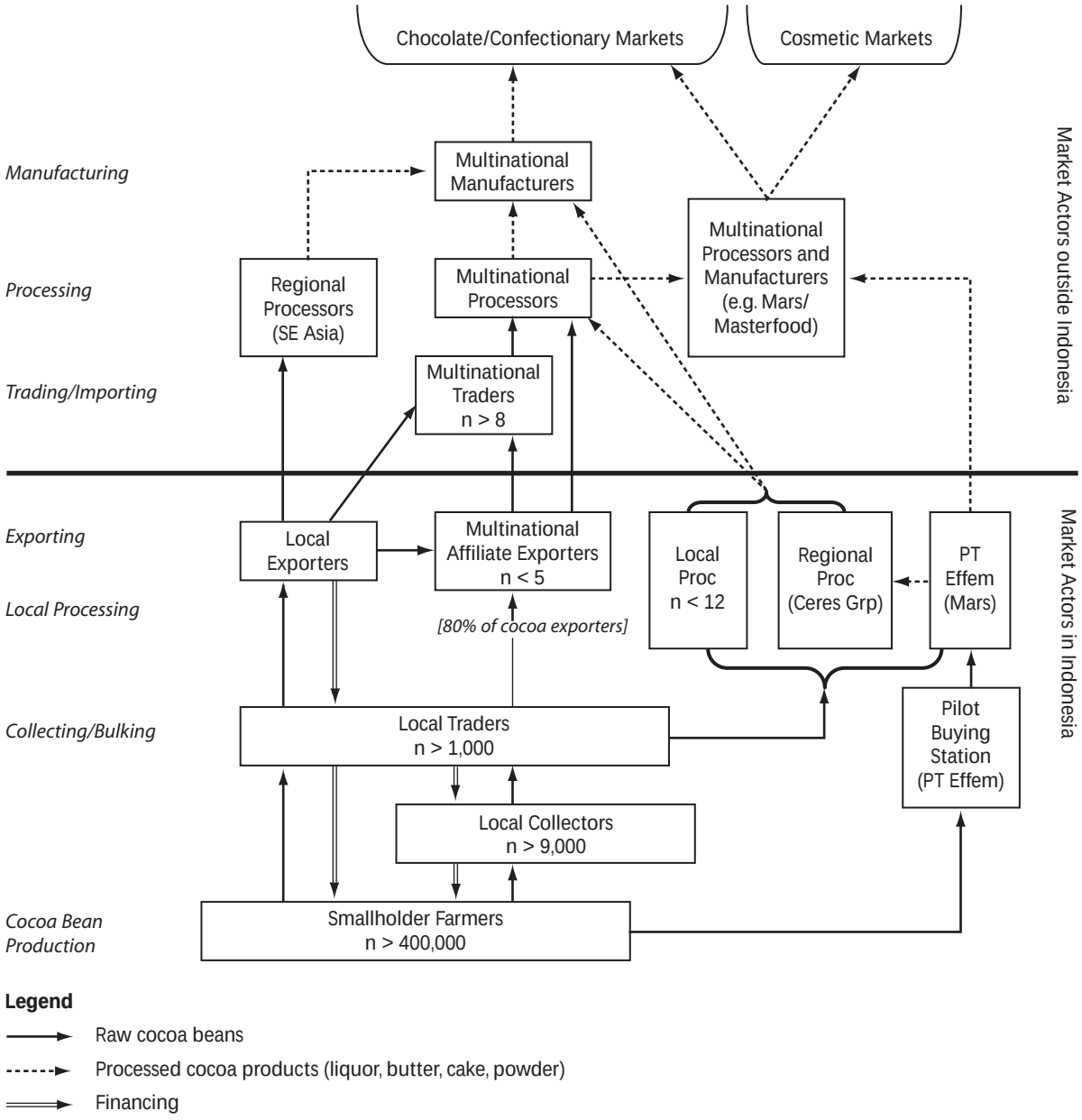
Moreover, Indonesia has competitive advantages in terms of low cost production, high production capacity, efficient infrastructure and an open trading/marketing system.

The following section described/documented the characteristics, actors involved in the cocoa value chain and its functions and relationships, the issues and constraints identified, possible solutions and recommendations of the various studies:

2.1 Growing/farm production

Cocoa is the primary cash crop for most Sulawesi farmers though they have also grown rice, maize and other food crops. The approximately 400,000 smallholder farmers in Sulawesi cultivated an average of less than 1.5 hectares and produced the bulk of unfermented cocoa for export. Farmers and their household members usually work in the fields and only a few hired laborers. Some larger estates (farms) also grow cacao but they supply only 10% of the total production in Indonesia.

Figure 3.1 Value Chain Map



Source: Panlibuton and Meyer, 2004.

Indonesia's primary competitive advantage in global cocoa trade lies in its ability to supply large quantities of fat beans.[33] Cocoa grown in Indonesia was developed for its high yield (fat), not its flavour. Current cocoa yields in Indonesia which range from 400 to 800 kg/ha and has a potential to increase yields as high as 1 to 1.5 MT/ha are much higher than in West Africa and other major producing countries of only an average of 300 kg/ha or less.

Cocoa production inputs are seedlings, planting materials, tools, fertilizers and pesticides. There are two large fertilizer/input supply companies, which distribute their products via a network of wholesalers/distributors and local kiosks and retailers. Farmers typically buy their inputs from small retailers. However, since these retailers are located in the town proper, many farmers who live far from the town proper have difficulty or limited access.

[33] There are two types of cocoa beans produced – i) beans from Latin America which have the richest flavour; and ii) beans from Asia which have little flavour and are used for fat content or called "fat beans". According to a major chocolate manufacturer, approximately 80% of international trade in cocoa beans is based on fat content versus 20% based on flavour content of beans.

Farmers sell their produce to local collectors while some sell directly to traders. It was reported that there are few cooperatives or marketing groups among smallholders farmers.

Indonesian cocoa is traded in the global market as an unfermented, fat, bulk bean. Fermentation of cocoa beans can help bring out their inherent flavour and also command higher price but is not generally done in Sulawesi, Indonesia. The main reason for this is that farmers usually cannot wait for their beans to ferment because they need cash. The usual practice is to sell their produce after little drying (or none at all) to collectors and/or traders which accepted this practice. There are some areas in Indonesia where farmers ferment their beans, but their production is quite small and mainly sold to local processors rather than exported. There have been efforts to encourage smallholder farmers in Sulawesi to expand production of fermented beans, but commercial incentives for such a widespread shift in production practices are inadequate.

The major issues and constraints in production identified by these studies, the opportunities and possible viable solutions and corresponding facilitation activities that need to be undertaken to address issues and concerns are the following:

Table 3.1 Major Issues and Constraints, Opportunities and Solutions, and Facilitation

KEY CONSTRAINTS	OPPORTUNITIES AND POSSIBLE VIABLE SOLUTIONS	CORRESPONDING FACILITATION ACTIVITIES
1. Decreasing production, due to infestation of pests and diseases (CPB), age and variety of existing tree stock, poor soil nutrition, and drought. 2. *Lack of access to credit by smallholder farmers to purchase fertilizers decreases their production yield and income potential.* *Smallholder farmers lack acceptable collateral to offer to financial institutions.*	Provision of training and technical assistance in improved cultural practices and other improved crop husbandry techniques. *Availability of and access to credit for smallholder farmers to purchase fertilizers and other production inputs.*	• explore use of media to disseminate best practices. • develop alternative (less intensive) models to transfer the needed skills, know-how and information. • *improve smallholder access to finance for inputs by reducing risk to rural commercial lending via loan guarantee mechanisms, alternative collateral options, etc. and improve-ment of land certification process to formalize collateral.* • *support group mobilization to reduce transaction costs and risk.*
3. Smallholder farmers unable to sell their production in large volume and benefit from direct sales with exporters and processors. 4. Lack of incentives for farmers to invest in improving farm productivity or bean quality.	Improved quality through access to up-country buying stations where smallholders can bring large volumes of cocoa beans for direct sale to exporters and processors. Access to an auction system for smallholder farmers to sell their beans more transparently. Provision of formal and informal enforcement mechanisms to ensure compliance with prevailing quality standards for cocoa exports.	• explore feasibility of commercial up-country buying and warehousing system through promotion of existing private sector initiatives by reducing risk for expansion and replication (where appropriate) and assessment of other ownership structures with emphasis on capacity to ensure commercial operations. • introduce transparent grading system to improve quality and support commercial market incentives which could be pilot tested via up-country buying stations. • support group mobilization to improve direct sales to large-scale buyers (i.e., exporters and processors). • improve systems to ensure broad-based compliance with existing national quality standards for cocoa bean exports. • improve formal and informal dispute mechanisms (e.g. contracts, industry-based mediation/arbitration services, etc.) to decrease risk.

Table 3.1 *(continued)*

KEY CONSTRAINTS	OPPORTUNITIES AND POSSIBLE VIABLE SOLUTIONS	CORRESPONDING FACILITATION ACTIVITIES
5. Limited commercial distribution and availability of improved planting materials for smallholder farmers.	Access to affordable and improved planting materials for smallholder farmers. Availability of a dedicated research and development facility for cocoa.	• increase commercial availability and smallholder farmer access to inputs. • promote commercial distribution of improved planning materials that are appropriate for local conditions. • support the development of materials to inform farmers on the appropriate use and application of fertilizer for cocoa (for distribution via private sector channels). • improve the capacity of private input supply companies to deliver a range of embedded services. • support dedicated cocoa research and development to identify appropriate plan varieties and other inputs. • conduct research on effect of pending legislation (local, provincial, or national) on continued growth and competitiveness of cocoa sector.

2.2 Collecting/bulking of cocoa beans

The cocoa trading network in Sulawesi is complex. A long and highly competitive supply chain links farmers with collectors, traders and exporters. Price information is relatively clearly transmitted between exporters and provincial traders, and even to village-level traders and collectors. The highly competitive nature of the marketing system, good transportation and infrastructure, and the relative lack of government interference in the cocoa value chain have helped to sustain high percentage of the freight-on-board (FOB) price for Indonesian cocoa. Farmers, in fact, received up to 85% of the FOB price while the remaining 15% is shared by the remaining participants. Given the slim margins shared by local collectors and traders in the value chain they depend on quick turnover and high volume transactions. However, this efficient and competitive marketing system somewhat disintegrates between farmer and collector in different geographic areas. The reason for this is the role played by the village collector.

Local/village collectors. Local collectors are also farmers or rural entrepreneurs who purchase directly to farmers during harvest periods. Village collectors ensure exclusive supply of cocoa bean by tying the farmer into informal debt. This practice is well accepted by many farmers, despite apparently having a strong negative influence on depressing prices (*This will be discussed thoroughly in the financing section*).

Collectors usually sell to larger traders though some directly sell to exporters and processors. Collectors do not need licenses or permits to operate, thus competition is strong. There are about 9,000 local collectors in Sulawesi and most of them relied on own resources and advances from traders and exporters for their working capital needed to purchase cocoa beans and to provide advances to farmers.

Local Traders. Traders purchase cocoa beans from collectors, or, to a lesser extent, directly from farmers. They make purchases at collection points (towns and markets) and they arrange transport of beans to the main cities. Traders primarily sell their cocoa beans to exporters though some sell to processors. Traders receive daily price information from New York and from their main sources of information. Likewise, traders do not need licenses or permits to operate. In Sulawesi, there are more than 1,000 estimated traders.

A local private buying station (a pilot test) was established to directly buy cocoa beans from farmers. The station offers slightly higher price and a relatively more transparent procurement process.

One issue on trading identified is that traders have limited access to working capital loans, which decreases their turnover and income. The paper recommended that financial services should also be made available to traders using alternative sources of collateral such as inventory based or the warehouse receipt system.

2.3 Local Processing

Cocoa processing or grinding entails the transformation of dried beans into a variety of processed cocoa products, including: cocoa paste or liquor, cake, powder and butter. Processors buy beans from traders and collectors. Approximately 10% of Sulawesi cocoa beans are processed locally; the rest is exported as raw beans.

There are only about 12 local cocoa processors and over half of them are either non-operational or operating below capacity due, among others, to problem in taxes, lack of working capital, lack of good equipment, lack of efficient management. To address the problem of lack of access to working capital, the paper, likewise, recommended that alternative form of collateral be explored (e.g. warehouse receipt system).

The multi-national processors, on the other hand, get their beans from their affiliates exporters. There are two large multi-national processing plants in Indonesia (PT Effem-a subsidiary of Mars/Masterfoods and Ceres Group), which sell processed cocoa products to other manufacturing plans in the USA, Brazil, and other countries.

2.4 Local Manufacturing

Manufacturing is the process of producing final finished chocolate products. There are a number of local small-scale manufacturers producing for the domestic market. The Ceres Group is also the only fully integrated cocoa manufacturer and product exporter based in Indonesia.

2.5 Exporting

There are 10-20 local small-scale cocoa bean exporters. These exporters buy beans from collectors and traders and sell to regional buyers for processing. Few medium-to large-scale exporters sell both to regional buyers and to U.S-based buyers. Many small-scale exporters found it difficult to compete with multi-national affiliate exporters, thus, instead of exporting the beans directly they are selling it to larger multi-national exporters. One problem identified is the lack of working capital of exporters to become more competitive. The possible solution recommended is to make available commercial loans through alternative forms of collateral (e.g. inventory based).

There are five (5) multi-national affiliate exporters in Indonesia. These exporters purchase bulk beans from collectors and traders, sort and grade them for quality, and then sell them to international buyers (USA, Malaysia, Singapore, Brazil) for processing. Some started to explore buying directly to farmers to obtain better quality but still most of them prefer to have traders bring the beans to their warehouses. There is an Indonesian national quality standard for exports but government enforcement is still limited.

2.6 International Trading/Processing/Manufacturing

Multi-national traders sell cocoa beans to processors and manufacturers around the world while multi-national processors are major producers of processed cocoa products such as cocoa liquor, butter and cake. Multi-national manufacturers (e.g. Hershey Foods, Lindt, Cadburys, etc.) are chocolate producers based abroad.

3 FINANCING THE VALUE CHAIN AND CONSTRAINTS

In a recent workshop (July 2008) on Economic Growth conducted/sponsored by the USAID and the government of Indonesia, it was identified by various stakeholders that the main obstacle to accessing credit is the physical guarantee or valuable assets required by banks which small farmers cannot provide. Cocoa farmers are not exempted from this financing constraint.

Because of this constraint, cocoa farmers rely mostly on advances from their regular collectors/traders for their production needs, especially fertilizer, and even for daily home consumption, and emergency medical expenses. This practice is well accepted by many farmers despite it having a negative influence on depressing prices because local collectors and some traders offer a service which most banks reject. Some of the factors that make the system work are: i) local collectors/traders accept cocoa pods on the tree as collateral against cash advances/loan; ii) collectors (who are mostly farmers themselves) live in the farming community/neighborhood and therefore very accessible to farmers; iii) no restricted banking hours, among others.

It should be noted that advances or pre-financing arrangements results in lower returns on cocoa production because most often they will be paid a price lower than the prevailing market price. Also, it limits farmer's opportunity to sell to a broader range of buyers in the market place to bargain for good price. However, it must be considered that the relationship between farmers and the traders/collectors were built over many years of regular business dealings. In this case, farmers are beholden or indebted to regular traders/collectors who always provided them with advance payment/pre-financing or short-term loans with a promise to pay in kind in the next cropping/harvest time of cocoa beans.

Aside from grower-farmers, traders/exporters and processors also need access to working capital loans to remain competitive. Since most processors, exporters, and traders lack access to formal credit, they rely mainly on their own resources to finance working capital needs and in the case of traders, from advances from exporters.

These advances from exporters and between intermediaries, whether in cash or in-kind, are some of the main tools used to increase leverage and ensure a consistent supply of cocoa. Intermediaries who depend on this source of working capital often become captive suppliers and have few marketing options.

4 INNOVATIVE MODELS OF VALUE CHAIN FINANCE USED

Since the cocoa industry is a very important source of foreign income and source of livelihood of many small farmers, all concerned stakeholders including the government, financial institutions, and donors are working hand-in-hand to address major constraints on cocoa production, including financing/access to credit of small farmers and traders/exporters. Among the proactive financial institutions that are currently implementing innovative financing/tehnical assistance schemes for cocoa farmers are:

4.1 Bank Indonesia (BI) Makassar branch. Using the Financial Intermediary Consultant Approach (Konsultan Keuangan Mitra Bank or KKMB), Bank Indonesia, Makassar branch has facilitated the improved access to financing of SMEs and farmers' groups by providing training and technical assistance to several non-government organizations (NGOs) and business development service (BDS) providers. These groups, in turn, serve as financial intermediary consultants who will be providing technical assistance to SMEs and farmer groups. The scheme, which started in 2004 in South Sulawesi, has already trained 53 consultants as credit facilitators. To date, however, only 16 credit facilitators/consultants remain active. Credit facilitators charge a fee (a certain percent of loan amount/dealing price) in return for technical assistance such as good farming practices, securing sufficient yield, assistance in borrowing procedures, and monitor the use and repayment by farmers on behalf of lenders. These consultants facilitated/assisted close to Rp 17 billion worth of loans for various projects/commodities including cocoa. Of the total loans outstanding of Rp 757.5 million for 5,500 accounts, Rp 406 million has been released to the cocoa sector, mostly for traders. Only 3% of the loan had been utilized for production/plantation.

4.2 Bank Niaga and Bank Mandiri. For the past two years, both banks have been piloting the Warehouse Receipt Program. The scheme provides working capital to local traders and exporters

using warehouse receipt of beans as collateral and fixed asset-based lending products to its higher-end clients. The scheme also requires exporters/traders to have selling contracts with buyers. Banks appoint the third party collateral manager to check the quality and quantity of cocoa stock. To date, the program under Bank Niaga has only 5-6 exporter-clients. The concept of inventory-based collateral to access credit could benefit more participants in the value chain (e.g. traders/exporters) if it could be made more accessible.

Specifically, under the warehouse receipt system, any exporter can deliver cocoa to a warehouse, have the quality checked, and obtained receipts which can be used as collateral against loans. The advantages of this system are increased liquidity and greater transparency in price differentials depending on quality.

4.3 Bank Rakyat Indonesia (BRI). Partly subsidized by the government, BRI started the Credit for Agriculture-based Energy Development and Estate Revitalization (Kredit Pengembangan Energi Nabati dan Revitalisasi Perkebunan or KPEN-RP) program, wherein cocoa is one of the estate crops for financial assistance. The scheme intends to facilitate rehabilitation and development of plantations through the provision of concessionary loans directly to farmers (in case of cocoa). Under the non-partnership model for individual farmers, applicant farmers should be a member of a farmers' organization, hold personal registration, and follow guidance from the Chief of Plantation Administration (Kepala Dinas Perkebunan or DISBUN). A certification from the Mayor is also required. The maximum land area for credit is 4 hectares per farmer, and the land certificate is accepted by the bank as collateral. Loan repayment period is 13 years with a grace period of five (5) years, during which an interest rate of 10% is applied.

In the partnership model, cooperatives with maximum land areas of 2,000 hectares are qualified. The procedures and requirements follow after the commercial loan, but the conditions regarding grace period and interest rate are the same as non-partnership model. DISBUN has to give guidance to the borrowing farmers in both cases.

5 SUCCESS FACTORS AND CONSTRAINTS

Several financial institutions have implemented innovative financing schemes for the cocoa industry to improve credit access of small cocoa farmers and traders/exporters. These two important players in the supply chain were found to be in need of financing to improve and produce quality beans and to sustain its efficient marketing system. With the limited information/data available on the different models and schemes being implemented, this paper attempts to analyze the constraints and success factors in each scheme.

5.1 Bank Indonesia (BI) Makassar branch. Using the Financial Intermediary Consultant approach, the scheme was found to reach out to more traders/exporters in terms of loan amount (about 97% of the total allocation for cocoa sector was released to traders) while only a minimal amount (only 3% of the total outstanding loans) was provided to farmers for production/plantation. It seems the mechanism of providing financial intermediary consultants or credit facilitators is effective only for traders/exporters. Bank Indonesia, Makassar branch attributed the low availment of production loans with the lack of collateral of farmers. While the scheme is targeting farmers' organizations, farmer-members still cannot avail of loans because of collateral problems. Since cocoa is a long gestating crop, the problem concerning the term of the loan should also be looked into.

5.2 Bank Niaga and Bank Mandiri. The Warehouse Receipt Program introduced by both banks is still being piloted. Unfortunately, only a few traders/exporters have participated in the program. The concept of inventory-based collateral to access credit could benefit more participants in the value chain if it could be made more accessible to all local traders/exporters. However, large and established exporters are resisting this system because it takes away their advantages in providing financing to middlemen and collectors, and it also takes away their control of determining good quality cocoa. The warehouse system would be an objective source of grading cocoa, whereas the current system allows the exporter to gain extra profits by sorting cocoa by grade and selling sorted good quality cocoa at a premium.

5.3 Bank Rakyat Indonesia (BRI). The Credit for Agriculture-based Energy Development and Estate Revitalization of BRI is a new program. It is open to individual and farmers' groups. Under the scheme, BRI requires farmers to acquire land certificate to access loans. The concessionary terms and conditions of the program such as a 13-year loan term with a grace period of five years and an interest rate of 10%, among others, will be attractive to farmers.

6 EMERGING DEVELOPMENTS

In January 2006, the Government of Indonesia established the Indonesian Cocoa Commission (ICC) to provide advice to the Directorate General of Estate Crops and Directorate General of Agricultural Marketing and Processing of the Department of Agriculture (DOA) in formulating policy and regulations for the cocoa sector; and to analyze the possibility of having an Indonesian Cocoa Board. In coordination with key cocoa stakeholders (e.g. Asosiasi Kakao Indonesia or ASKINDO, Kepala Dinas Perkebunan or DISBUN, Asosiasi Industri Kakao Indonesia or AIKI, Asosiasi Petani Kakao Indonesia or APKAI), ICC will work on two major concerns such as ensuring the sustainability of cocoa supply by improving yield and quality and to revitalizing the local processing industry. Under the ICC operational committee on farmer empowerment, one of its functions is to improve access to finance.

In some developing countries, a Warehouse Receipt Financing (WRF) is being adopted to access financing from banks. Under this scheme, a warehouse receipt shall be issued by an independent third party (e.g. collateral manager) that details the types and amount of commodity stored at a certain location. The warehouse receipt serves as proof of storage of goods under the control of a collateral manager. As such, a warehouse receipt can be used as collateral to get loans from financial institutions. Since a warehouse receipt serves as evidence of ownership, it offers a strong mitigation for credit risk from banks' solvency requirement. However, warehouse receipt financing schemes are relatively short term in nature because of the limited shelf life and the maintenance requirement of some commodities such as coffee, grains, cocoa, pepper, edible oils and fats, etc. Thus, the facility duration reflects the durability of the commodities to ensure that by the time the loan is due and payable, the quality of the goods remains acceptable and they can be sold at good prices to generate cash flow to service the debts. Among others, a warehouse receipt can also be used as a means of intermediation between suppliers and buyers which can significantly reduce performance risk of both parties (the suppliers and buyers). By having a collateral manager to manage commodities, the supplier can realize a sale and obtain cash without having to take a performance risk on the buyer. These structures are also very well suited to help both suppliers and buyers in managing their just-in-time delivery programs. However, the absence of a regulatory framework for WRF does not provide the much needed comfort for many banks to execute warehouse receipt-based transactions with their respective clients. Thus, with all the promised benefits offered by the WRF, the Warehouse Receipt System Law was enacted in July 2006. This was seen to address and alleviate some of the issues and concerns on WRF which could encourage banks to lend to a wide range of clients, including cocoa traders/exporters.[34]

7 CONCLUSIONS AND RECOMMENDATIONS

The main concern in the cocoa industry of Indonesia is the decreasing productivity and quality of its beans. Without improved productivity (both in quantity and quality), it will be impossible to sustain the level of global trade of Indonesian cocoa and cocoa products. Addressing this key constraint was the major focus of the government and all stakeholders in the chain.

Specifically on financing/credit constraints, existing literature recommends that cocoa smallholders' access to financing for production inputs must be improved through: i) reduction of risk to rural commercial lending through guarantee mechanisms and alternative collateral options; and ii) improved land certification process to formalize collateral.

For exporters, traders, and processors, access to bank financing may be improved by exploring alternative forms of collateral like using the upcountry warehousing system or rural-based warehouse (inventory based) finance program.

[34] W. Suryadi and A. Savitry, Corporate Banking Division of Rabobank International Indonesia.

It was reported that the government has implemented major credit programs in the past but still failed to reach small farmers (including cocoa farmers) because of banks' risk aversion. While credit insurance and warehouse receipts are being developed as alternatives to guarantee, there is still a need to assist the government in creating financing schemes that can be enjoyed by all farmers, including small ones, such as the establishment of farmer banks, improving the capacity of banks to conduct proper credit assessments of potential borrowers, improving the availability of credit risk information, and the further development and empowerment of microfinance institutions.[35]

For cocoa farmers, efforts (through innovative schemes and models cited above) to address credit constraints are already in place. For example, the Financial Intermediary Consultant model of Bank Indonesia is a welcome move for assisting farmers and traders/exporters in their financing needs. However, the program design should be reviewed and revised to make it work for small farmers since majority that benefit under the program are traders/exporters. For instance, on top of its existing functions of providing good farming practices, securing sufficient yield, assistance in borrowing procedures, and monitor the use and repayment by farmers on behalf of lenders, functions of credit facilitators or intermediary consultants should include how to improve farmers' capability to apply for the loan. The scheme should also be designed to cater to long-term cocoa plantation.

The Bank Rakyat Indonesia model of Credit for Agriculture-based Energy Development and Estate Revitalization is new. A massive information campaign and marketing is needed to create awareness, appreciation and knowledge among the program's target clients – the farmers and cooperatives. Since there are few strong cooperatives and farmer organizations in Sulawesi, it is recommended that institution capacity building activities to establish and strengthen farmers' organizations in managing projects and credit be integrated in the model.

Since many financial institutions (banks and non-banks) are willing to provide credit to cocoa farmers using land certificate as collateral, the government should address the major constraint of farmers in acquiring land certificate such as high cost and longer period of processing. While one provincial government (South Sulawesi) is implementing a program that will enable farmers to avail of financing for the processing requirements of land certificate, beneficiaries of the program are very limited.

The concept of inventory-based collateral or the Warehouse Receipt System is also a promising program for the sector. However, it could benefit the wider cocoa industry if it could be made more accessible to other participants in the value chain. The recent passing of the law on the Warehouse Receipt System in July 2006 was seen to address and alleviate some of the issues and concerns on warehouse receipt financing. The law might encourage banks to lend to a wide range of clients, including cocoa traders.

However, the limited information/data on the different models being implemented, makes it difficult to make specific recommendations. For purposes of increasing and making available information on the extent of credit access, this paper recommends that the following be monitored and further studied: i) data on the extent of lending of banks to cocoa industry (loans granted by banks, number of beneficiaries); ii) documentation of innovative schemes/models cited above (e.g. program design, status report, outreach, etc); and iii) monitoring of the status of implementation of the Warehouse Receipt System Law.

[35] (Economic Growth Stakeholders Workshop, July 2008, USAID/Indonesia).

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Chapter 4

Agricultural Value Chain Financing in Lao PDR

Cenon S. Atienza

1 INTRODUCTION

1.1 Background and objectives

Value chain financing highlights the role of finance providers from the production of a particular commodity up to its marketing. A value chain involves a series of actors and activities needed to bring a product from production to the final consumer. When credit or other financial services flows through actors along the chain, it is referred to as value chain finance.[36] A value chain includes the actors who design a product, who provide or transform inputs to produce it and who can sell it to a consumer. Often, one actor along the chain finances the transaction of another, with buyers advancing cash or sellers advancing product and is known as trader credit.[37]

The Lao People's Democratic Republic (Lao PDR), an APRACA represented-country and famous in the region as a source of glutinous rice and one of the best coffees in the world, shall be the focus of the paper. Case studies, therefore, on these two commodities shall provide insights on how a small country copes with the demands of the times in terms of providing the necessary infrastructure and resources, particularly value chain financing, to its relatively poor farmers.

1.2 Agriculture Sector in Lao People's Democratic Republic (Lao PDR)

1.2.1 Gross Domestic Product (GDP) and Related Statistics

Lao PDR has a population of 5.5 million in 2005 and its population growth rate is 2.5%. Eighty three percent (83%) of the population are in the rural areas wherein the most important activity is agriculture. Agriculture accounts for nearly half (44.5%) of the GDP and employs 4.1 million or 3/4 of the national workforce. The GDP per capita is US$380.

1.2.2 Agriculture value chain

Agricultural development in Lao PDR has been dependent on previous and current economic policies introduced by the government, particularly the Ministry of Agriculture and Forestry (MAF). Reports have indicated that agricultural production in the country is based on subsistence agriculture. This is basically a low-input low-output production system. With agriculture as the main economic activity and farming being ineffective coupled with poor agri-business environment, the result is high incidence of poverty. The infrastructure like roads, irrigation, extension facilities, etc., that are needed for a more

[36] Asian Productivity Organization. 2008. Southeast Asian Regional Conference on Agricultural Value Chain Financing. p. 2.
[37] PLP in Strategic Alliances for Financial Services and Market Linkages in Rural Areas. Rural Finance for Value chains Quarterly. Oct 2005 Vol. 1, No. 1, p. 3.

efficient agricultural production, are inadequate.[38] Furthermore, market access is limited due to poor infrastructure, insufficient market information and a regionally confined marketing system dominated by a limited number of traders.[39]

In 1986, the New Economic Mechanism (NEM) was enacted in order to transform subsistence agriculture to a market-oriented approach primarily through commercialization of agricultural production. The scenario in a number of areas in Lao PDR has changed including the agricultural value chain. Contract growing in rice and massive export of Lao coffee as a result of the agricultural commercialization program of NEM added new actors in the supply and value chain of these commodities and brought new trends in both production and marketing system in the country.

1.3 Focus and scope of the study

Rice and coffee shall be the focus of the study since these are two of the most important agricultural commodities in Lao PDR. The status of each commodity, with particular reference to production, post-production and marketing, is presented. Two case studies on value chain financing showing the various players, financial relationships among these players or sources of financing, risk reduction and access to financial services, issues in financing, and emerging developments, are likewise presented. Analysis, in terms of success factors and constraints as well as recommendations are provided by the author.

1.4 Organization of the report

The report focuses on the various strategies and activities that brought about the twin results of increased production of rice and coffee and income for both government and the small farmers in Lao PDR through value chain financing. For each commodity, the current state of systems of production, post-production and marketing brought about by events and interventions by government, the private sector and international organizations are provided. The various actors in the value chain are identified and the financial transactions between and among these players are highlighted. Likewise, details of the program for each commodity, sources and delivery mechanisms of financing, lessons learned and emerging trends are presented in this particular order. A summary of main findings and short analysis is presented towards the end of the report.

2 SITUATIONER OF SELECTED COMMODITIES

2.1 Rice

Table 4.1 presents the importance of rice farming in terms of total area planted and the people directly dependent on this commodity for livelihood. With a total crop area of only 1 million hectares, rice is planted to 750,000 hectares or 75% of the total. Likewise, with a population of 5.5 million in 2005, 4.4 million are rice farmers. The total rice production in 2005 was 2.6 million tons (t) and the average yield per ha is 3.5 tons in rain-fed areas while in irrigated lands, the average yield is 4.5 tons.

There are two primary zones where rice is grown in Lao PDR (Table 4.2). Rain-fed agriculture, which comprises 66% of the aggregate rice area, is practiced in lowland areas in central and southern provinces wherein single rice crop is cultivated. Glutinous rice varieties are cultivated in 60-70% of the area. Around 2.15 million people depend on rain-fed rice farming. The second zone is the irrigated agricultural areas with 91,800 ha or 13% of the total rice area. These produce two crops (one in wet season and another in dry season).[40]

[38] Setboonsarng, S., P. Leung and A. Stefan. 2008. Rice contract farming in Lao PDR: Moving from subsistence to commercial agriculture. ADB Discussion Paper 90. Tokyo: Asian Development Bank Institute.
[39] MPDF (Mekong Private Sector Development Facility). 2004. Lao PDR SME Agri-business Study for the Vientiane Plain. In: Leung et al., 2008.
[40] Special Report: FAO/WFP Crop and Food Supply Assessment Mission to Lao People's Democratic Republic. 2001. www.fao.org.

Table 4.1 Rice statistics, Lao PDR, 2005

Number of rice farmers	4.4 million
Total crop area ('000 ha)	1,000
Total rice area ('000 ha)	761
Total number of landholdings	674,200
Number of landholdings for rice	614,000
Average rice yield (ton/hectare)	3.5 (rain-fed); 4.5 (irrigated)
Rice production (tons)	2.6 million
Rice imports	0
Rice exports	0

Source: Ministry of Agriculture and Forestry, Lao PDR, 2005.

Table 4.2 Areas devoted to rice and other crops in Lao PDR

Primary zone	Area	Number of rice cropping/ Other Crops
Rain-fed agriculture	500,000 ha	Once a year
Irrigated agricultural areas	92,000 ha	Twice a year
Highland farming	Minimal	Once a year
Upland farming	Minimal	Once a year
Urban areas	Minimal	Cash crops
Plateau areas	Minimal	Coffee, tea and fruit trees

2.2 Coffee

Coffee is the most important high-value crop in Lao PDR, being the fifth largest export earner for the country and with 23,000 families involved in its production.[41] The area planted and export earnings generated in 1998 was 41,000 ha and USD48 million, respectively.[42] In 1998, coffee accounted for more than 14% of the total export value of Lao PDR.[43] Robusta is the dominant variety and is mainly cultivated in the Bolaven Plateau comprising of four provinces.

Most permanent crops, including coffee, are planted in plateau areas (Table 4.3). Coffee production involves both smallholders and big estates. Management systems range from zero input and low yields for smallholders to high input intensive system of the large estates. The government of Lao PDR encouraged more coffee production in the 1980's. However, the International Coffee Board at the time excluded Socialist countries and coffee produced in Lao PDR was used to pay debts to the Soviet Union and Vietnam. Similar to what the country did with rice, Lao PDR, in the 1990's, encouraged private sector investment in coffee production and promoted coffee as an export commodity.

Table 4.3 presents the increasing trend in coffee production, area harvested and coffee yield from 2006 to 2008. There was a 17% increase in the area harvested and 126% increase in yields for the years in review.

The government even assisted in the development of larger farms. There are two new big firms that operate their own coffee producing farms and thus control the production process as well as guarantee quality the crucial parameter in exporting coffee to the world market. This shall be discussed in more detail in the portion of emerging trends in the coffee value chain. On the other hand, the southern part of Lao PDR is the hub of marketing coffee. With the low market price compared to the world market price, trading in the world market is considered an incentive.

[41] Winston et al., 2005.
[42] ADB Report, 1999.
[43] Sisouphantong, 2000. In: M. Andersson, A. Engvall and A. Kokko. 2007. Regional development in the Lao PDR. SIDA (Publisher).

Table 4.3 Statistics on production, area harvested and yield of coffee in Lao PDR, 2006-2008

Year/Category	2006	2007	2008
Production ('000 tons)	25.3	33.2	31.1
Area harvested ('000 ha)	43.1	45.0	57.9
Yield (tons/ha)	0.59	1.32	3.01

Source: National Statistical Center, State Planning Committee and Finance and Ministry of Agriculture and Forestry.

3 FINANCING THE RICE VALUE CHAIN

3.1 Inter-dependent Linkages of the Chain, Key Actors in the Value Chain

The ordinary rice value chain in Lao PDR is simple in the sense that there are very few players involved. Marketing of both paddy and rice is regulated by the Government, particularly the State Foodstuff Enterprise (SFE). There are also some private enterprises engaged in trading like import-export companies or private rice millers. The market structure for rice is as follows:

Small farmers typically sell paddy to traders/middlemen who visit rural areas or deliver paddy mills located along the main road for consumption or direct sale in the village. Middlemen usually buy paddy after harvesting and sell the paddy to the SFE or to private rice mills. The paddy is processed and the milled rice is distributed to retail markets in the province, and to household processing units for noodle and alcohol distillery. The primary role of SFE is to supply rice to government agencies in the provinces and to export rice whenever possible to neighboring countries. The millers, on the other hand, have three different operations pertaining to milling arrangements and trading of rice, namely:

a. Custom milling – farmers or small traders bring paddy to the mill. If the miller keeps the bran, the milling is free of charge which is the most common practice. The bran is sold to poultry or pig farmers. Otherwise, a milling fee of 2,000 kips/12 kg (or US$0.21/12 kg) or rice is collected. This is done by small- and medium-sized mills only;

b. Commercial milling – the miller buys paddy and sells rice directly to the market retailers or via intermediary traders. Millers who have warehouses and financial resources usually store paddy up to 10 months to take advantage of higher rice prices before the new harvest; and

c. Contract milling – this is for government institutions like the Department of Commerce in the Provincial Government, the SFE, and for international organizations.[44]

The predominance of spot markets is probably the primary reason why prices are set by traders and the common practice of price fixing among traders. As a result of these, there is a wide perception that traders are exploiting farmers.[45]

The following figure gives an estimate of the percentage of the volume of rice traded through the different channels.

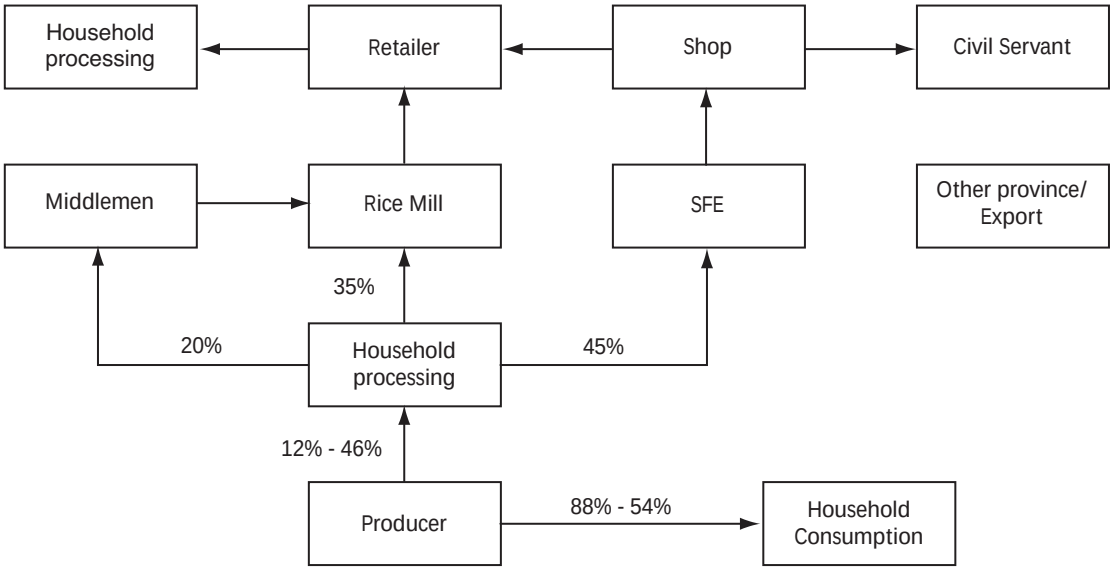
Most paddy and rice are channeled to the market through middlemen/collectors, rice mills and SFEs. At the producer level, about 12% to 46% are marketed and the remaining products are kept for household consumption and reinvestment in production.[46]

[44] Hanephom

[45] Oraboune, S. and K. Nanthavongdouangsy. 2006. Agricultural commercialization – a strategic direction for farm families to overcome poverty in Lao PDR. Country Team Paper for ITC Executive Forum on National Export Strategy, Berlin, 27-30 September.

[46] JICA, *"Market Study on Agriculture."* July 2002.

Figure 4.1 Rice Value Chain



Source: Market Study on Agriculture, July 2002 by JICA.

3.2 Financing Schemes, Programs, Sources and Delivery Mechanisms

The Agricultural Promotion Bank (APB) is a Government bank engaged in financing some activities in the value chain of rice. It is the only institution that provides financial services to rural households and farmers (both individuals and groups) from the formal sector. The bank channels subsidies to the agricultural sector through soft loans.[47] The interest rates charged for rice production and irrigation ranged from 10 to 12 percent. Funding of APB is sourced mainly from the Ministry of Finance (around 60%) and pays 5-7% interest. Aside from being a bank, APB is also an agriculture promoting agency and acts as a "super-coop" for agricultural inputs and equipment by importing and providing loans for fertilizers, hand tractors and equipment to borrowers.

The New Economic Mechanism which was enacted in 1986 opened the country to international markets. A new actor in the value chain of rice was added: contract growers who are private sector investors. The Government of Lao PDR facilitated the transition from subsistence to a market-oriented economy by encouraging foreign direct investment by the private sector in the rural areas. Contract growing is an institutional arrangement that links farmers not only to consumers but also to vital inputs. The contractor provides the farmer with production inputs and in-kind credit which are reimbursed by the farmer at the time of sale. The contract growers receive a premium price and are provided with technical assistance. This is exemplified by the contract growing scheme by Lao Arrowny Corporation.

The Lao Arrowny Corporation, a Lao-Japanese joint venture, contracted more than 2,000 farmers since 2004 to produce organic Japanese rice for export. A contract is drawn by the private company and the contract farmer. The company supplies seeds and organic fertilizer (bat manure) which is called in-kind credit and provides technical assistance. The financial relationship between the two is simple, that is, the former pays a premier price for the paddy after subtracting the amount of credit used for inputs. Some contract farmers who are near the capital city have access to formal credit from the Agriculture Promotion Bank (APB), an indication that contract arrangement can facilitate improved access to credit.

In a study done to compare the contract grower from the non-contract grower in terms of availing credit in 2003, it was found out that only 16% of the surveyed households had loans from the APB; of this, 20% are contract growers and 10% are non-contract growers. The amount of loan by the contract growers from the APB was 2.24 million kip or US$231.93 compared with 1.85 million kip or US$191.55 for non-contract

[47] ADB Report, 2002.

growers.[48] The proximity of contract growers to the nation's capital and the office of Lao Arrowny is the primary reason for the difference in access to credit. Furthermore, the number of farmers that accessed from the formal sector is way higher than the national average in Lao PDR – a mere 3%.

3.3 Lessons and Emerging Trends

One of the risk-reducing mechanisms employed by the private corporation, Lao Arrowny Corporation, is the provision of technical assistance to participants in the contract growing scheme. The corporation provided training to the team leader, a former government extension agent on organic rice production in Japan.

Other than contract growing, access to financial services is presented here in the context of the available services provided by the government. In general, access to financial services in Lao PDR is very low. In a study conducted in 1996, it was found out that only 11% of rural households had debts and only about 1% had bank deposits; about 80% of rural small and medium enterprises never had loans. Family members and friends were the usual sources of loans (15%) and some borrowed from money lenders (only 3%).[49] There is a dearth of information, however, on the financial services that are available in the country. Since government is the prime mover of agricultural development, the provision of agricultural credit has been supply-driven rather than demand-driven. These services directly support government projects and hence are characterized by heavy subsidies and fixed interest rates.

Demand for credit is very limited. Most production and post-production activities are done manually by family members or labor exchange with relatives and friends that do not involve cash exchange. Likewise, barter trade is widely practiced, that is, instead of paying in cash, farmers pay in kind-usually rice.

Contract growing of organic rice is an effective private-led mechanism to facilitate the transition from subsistence to commercial farming. This brings direct foreign investment in the rural areas – a source of financing for small farmers in Lao PDR. However, the lack of working capital by Lao Arrowny is one of the issues in financing contract rice growing. The private company was unable to meet the market demand in 2004 since it was able to export only 540 tons out of the potential demand of 10,000 tons. The produce of some farmers were not sold since procurement and subsequent processing of the produce were not done due to lack of capital.

The role of APB as a development agent, according to a study, creates an environment that deters the emergence of sustainable microfinance institutions and involvement of the private sector in the business of importing agricultural supplies. Nonetheless, its policy on lending to farmer groups rather than to individual farmers is a success factor in value chain financing.

Major constraints to increased productivity also cause low demand for credit. In rice, there are no big investments yet for irrigation and mechanization. There are very few microfinance institutions in Lao PDR, hence the supply of financial services has remained low. This is coupled by limited data on prices of commodities at any given time. As mentioned earlier, the Agricultural Promotion Bank is basically a policy bank, meaning it has the dual function of banking and agricultural development. According to a report filed by the Asian Development Bank, the APB is the only institution providing financial services of any significance to the rural households from the formal sector. The most significant sources of rural credit are still family, friends and household-to-household loans.

According to a study conducted by the Lao PDR National Strategy Team, the lack of a functional value chain is the reason for the low state of agricultural commercialization and low farm family income. The smallholder farmers have poor access to inputs, credit, technology, and market information. The various actors in the value chain, like farmers, processors and traders, have poor linkages hence opportunities arising from rapidly growing urban, regional or international markets are missed.

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[48] Setboonsarng et al., op cit.

[49] Slover, C., J.W. Williams, F. Duflos and J. Garson. 1997. Microfinance in rural Lao PDR: A national profile. UNDP and UNCDF, pp. 47-52.

The contract growing scheme currently undertaken in Lao PDR is considered chain upgrading – this is a movement to a new value chain by changing direction of markets, that is, from local to international markets.[50]

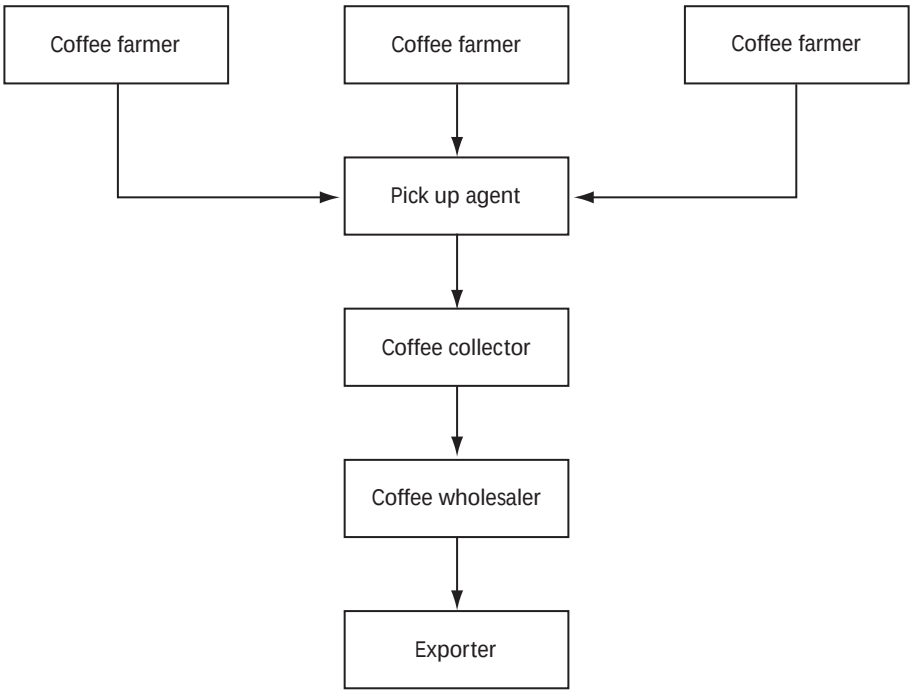
Agricultural commercialization is a government strategy that is envisioned to alleviate poverty in the rural areas. Government policies shall target solutions to persistent problems like lack of capital, insufficient market information and linkages, absence of product standards, lack of commercial credit facilities in the rural areas and lack of appropriate farming technologies. It was recommended by the Strategy Team that specific policies shall improve the capacity of farm families to meet the demands of a commercialized industry and marketing system. Interventions related to value chain financing are: i) development of linkages between stakeholders and improving access to markets; ii) development of contract based production systems; iii) linking smallholders with agri-business enterprises through the development of contract farming models and nucleus estates and large enterprise models; iv) improving value added along the marketing and value chain; v) strengthening quality control; vi) linking value-added production with markets; and vii) strengthening market information systems.

4 FINANCING THE COFFEE VALUE CHAIN

4.1 Inter-dependent Linkages of the Chain, Key Actors in the Value Chain

Farmers in the Bolaven Plateau have 1-3 ha planted to coffee with an average yield of 0.75 tons/ha. They do not have access to markets and just rely on pick-up agents to market their produce (Figure 4.2).

Figure 4.2 Value Chain of Lao Coffee



The coffee collector is the local trader of coffee and as such, finances procurement of coffee. He has a pick-up agent who scouts for sources of coffee, makes arrangements to buy their produce and assembles all procurements. The farmer is paid in cash by the agent. In order to assure the needed supply, the collector establishes contact with farmers through the village chief. There are also cases wherein the wholesaler and/or exporter have pick-up agents who directly deal with coffee farmers. This eliminates the trader from the usual value chain.

[50] Andersson, M., A. Engvall and A. Kokko. 2007. Changing markets for Lao coffee. In: Regional development in the Lao PDR. SIDA (Publisher), pp 26-36.

The wholesaler contacts the coffee collector and usually needs 3-7 tons per harvest season. The main task of the wholesaler is make arrangements for export. A certificate of origin and phytosanitary certificate are issued in the name of the wholesaler by the Ministry of Commerce, Trade and Service and Ministry of Agriculture, respectively.

The coffee exporter contacts customers from other countries, particularly Germany, France, Poland and other European nations. Once orders are placed by the importers, the exporter contacts the wholesalers, who in turn do the paperwork for export to be consummated. There are three possible ways by which exporters deal with their buyers: i) buyer goes directly to the exporter; ii) buyer orders through e-mail, fax or telephone; or iii) through a middleman in Bangkok.

The Lao PDR customs regulations at the international border crossing point necessitate logistics service providers (transport services) in order to deliver the coffee from Lao to Thailand. Transport services provided by Lao PDR are allowed only at a specific point in Thailand and for the coffee to reach the Thai ports, the services of Thai transport providers are needed.

4.2 Financing Schemes, Programs, Sources and Delivery Mechanisms

Increased coffee production was a government initiative in the 1980's through clearing of new areas and identification of the Bolaven Plateau as the most suitable area for coffee production. In the 1990's, the government of Lao PDR encouraged the private sector to invest in coffee production and promoted coffee as an export commodity. As a result, private investors entered the trading business and larger farms were developed through government assistance.

The southern commercial town of Pakse, which is near the border to Thailand, became the center of Lao coffee exports. On the other hand, the wholesalers are located in Pakxong which are closer to the farms. With Europe as the main destination of Lao coffee, marketing is either direct or through middlemen in Bangkok. The exporter, located in Pakse, receives orders from importers in Europe then contacts the wholesaler who then contacts the coffee collector. Usually 3-7 tons of coffee is collected and traded. The wholesaler does the paperwork for export.

Although it was mentioned that the Government assisted in the development of new farms, there was no mention of the nature of assistance. The coffee collectors or their agents buy the coffee on a cash basis. The agents receive money from the collector and buy the coffee immediately upon harvest. The total coffee production area is covered through a network of collectors; about 80% are collected through coffee collectors, while 15% are sold directly to wholesalers and 5% to wholesaler-exporters. The coffee is sold FOB in Bangkok and the term of payment is either through Letter of Credit or cash on delivery after harvest.[51]

The Lao Coffee Exporters Association monitors all coffee exports. There are three main export flows of Lao coffee with distinct chain financing schemes: i) Lao exporters sell 8-10% of the total exports direct to foreign buyers on an FOB Bangkok basis using a Letter of Credit; ii) 45% are sold through a Thai trader who buys coffee FOB and pays within 2-3 days; and iii) 45% are sold through a Lao broker who acts as an agent in behalf of the exporter and receives a commission of 2-3%.

Lao financial institutions provide credit to coffee farmers. The usual interest rate is 8-10% but the bank withholds 10% of the loan as guarantee, thus increasing the interest to 9-11%.

It was found out that with the involvement of middlemen in Bangkok in the supply chain, coffee prices increased.[52] Transaction costs increased as coffee changed hands – meaning the more the actors in the chain, the less efficient is the value chain.

[51] Arnold, J., R. Banonyong and N. Ritthinoule. 2003. Logistics development and trade facilitation in Lao PDR
[52] Andersson et al., op cit.

4.3 Lessons and Emerging Trends

The operation of large farms and its effect on reducing the number of participants to the value chain is a risk-reduction strategy. In 2007, when large farms became operational and markets liberalized, the producers had a larger share of the value added. There was direct control of coffee production and sales whereas in 2005, where actors still (Figure 4.2) had a hand in trading, the value chain was much more complicated, resulting in higher transaction costs.

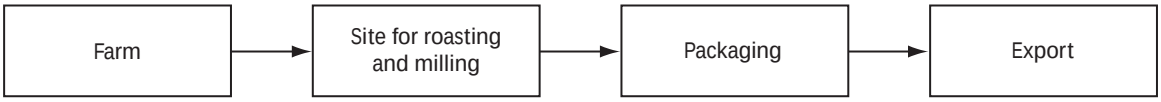
There are three important success factors in the coffee value chain in Lao, namely: i) the development of new larger farms initiated by government; ii) the involvement of the private sector in the opening of new coffee areas; and iii) trading quotas and customs-free access to the European market which resulted in a competitive advantage for Lao coffee. On the other hand, two major constraints in the value chain were identified, namely: i) scattered location of production units; and ii) poor rural infrastructure. These constraints limit the possibilities to add value to the product since export markets demand high quality and reliable deliveries.

The case of Lao PDR coffee is a typical example of chain upgrading (like in rice) wherein a new value chain resulted in change in direction of markets and production. Niche markets were identified and there was increase in export earnings.

From a value chain without much value-added services, the emerging trend seems to be that of an in-house value chain wherein just one firm has the ownership of the coffee from production to the export of the final product (Figure 4.3).

Whereas earlier, transaction costs increased each time the coffee changed hands along the value chain, the recent involvement of two large private firms in upgrading the coffee value chain resulted in a new development in Lao PDR. Before, the transfer from farmers to pick-up agents and wholesalers to exporters involved extra costs and low efficiency as the goods had to be transported to the new owner. Now, with larger farms owning the production site, economy of scale is achieved and makes it possible to eliminate the pick-up agents.

Figure 4.3 In house value chain of the emerging large Lao Coffee Producers



Source: Andersson et al. (2007)

5 CONCLUSIONS AND RECOMMENDATIONS

Two case studies on value chain financing in Lao PDR were presented. There were marked differences in the supply-value chain for rice and coffee between the pre- and post New Economic Mechanism (NEM).

Prior to NEM, there was no functional value chain for rice since the prevailing condition was subsistence farming. The advent of contract rice growing opened new opportunities for Lao farmers and participation in the program improved the quality of life of these farmers. The participation of the private sector in identifying farmer-participants and subsequent export of rice were the most important features in the new value chain. The lack of capital of the contractor posed as a constraint to the further development of rice contract growing; this is where interventions or financial services of either government or the private sector should be focused.

The entry of Lao coffee in the world market, particularly the European market, brought about changes in terms of participants to the coffee value chain. There were more actors as an offshoot of the government program on expansion of coffee areas, namely: agents, collectors, wholesalers, logistics providers and exporters. With new areas developed by the private sector through government assistance, the emergence of coffee traders, both in the local and export markets was phenomenal. However, financing the value chain has also

become more complicated in the sense that there were higher transaction costs- from agent to collector then wholesaler to exporter. The establishment of two large firms showed improved efficiency in production and reduced transaction costs due to elimination of some players in the value chain like agents, collectors and wholesalers. One of the constraints, though, to a more efficient marketing system is the presence of middlemen in the export market. Direct sales from Lao to Europe would mean higher incomes for both Lao exporters and the two large firms than when coffee is exported via Bangkok, Thailand.

Agricultural commercialization should be encouraged since this brings direct financial investment in the countryside. Contract growing, in the case of rice, should be pursued coupled with increased investment by government in infrastructure and marketing. Aside from opening new and larger areas for coffee, financial assistance to small coffee growers should be prioritized by the Lao government.

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Chapter 5

Agricultural Value Chain Financing in the Philippines

Annalyn R. Garay

1 INTRODUCTION TO THE VALUE CHAIN

A Value Chain is the inter-linkages established between the economic agents involved directly or indirectly in the activities required to bring the goods from production to the final consumer. In contrast with the supply chain, a value chain includes vertical linkage of the chain actors that generate value to the end market.[53] Economic agents referred to as chain participants in this paper, include input suppliers, traders, producers, logistic service providers, processors/manufacturers and consumers. Each step in the value chain adds value to the goods being sold. In order to have a competitive advantage, the final product must be delivered to the market efficiently, with a higher quality and at a lower cost to penetrate not only the local market but the global market as well. As such, financing is important in every aspect of the value chain. Without agricultural financing, producers would not have access to better farm inputs and technology resulting in low quantity and quality of produce. In addition, lack of credit for agricultural producers and agri-processors create problems in hiring labor for production, storage, processing, transportation and accessing markets.[54] The right finance at the right time is necessary to have greater efficiency, improved product quality and increased income.

The agricultural value chain in the Philippines follows the traditional supply chain, though it focuses more on how value is being added to the product as well as product innovation, development and marketing. Some activities add more value and some chain participants have more powers than the others. This paper will focus on the value chain finance of rice and vegetable industries in the Philippines and will try to look into the inter-linkages of the value chain participants and their access to finance. It also aims to examine some of the innovative financing schemes being implemented in the Philippines.

1.1 Rice Value Chain

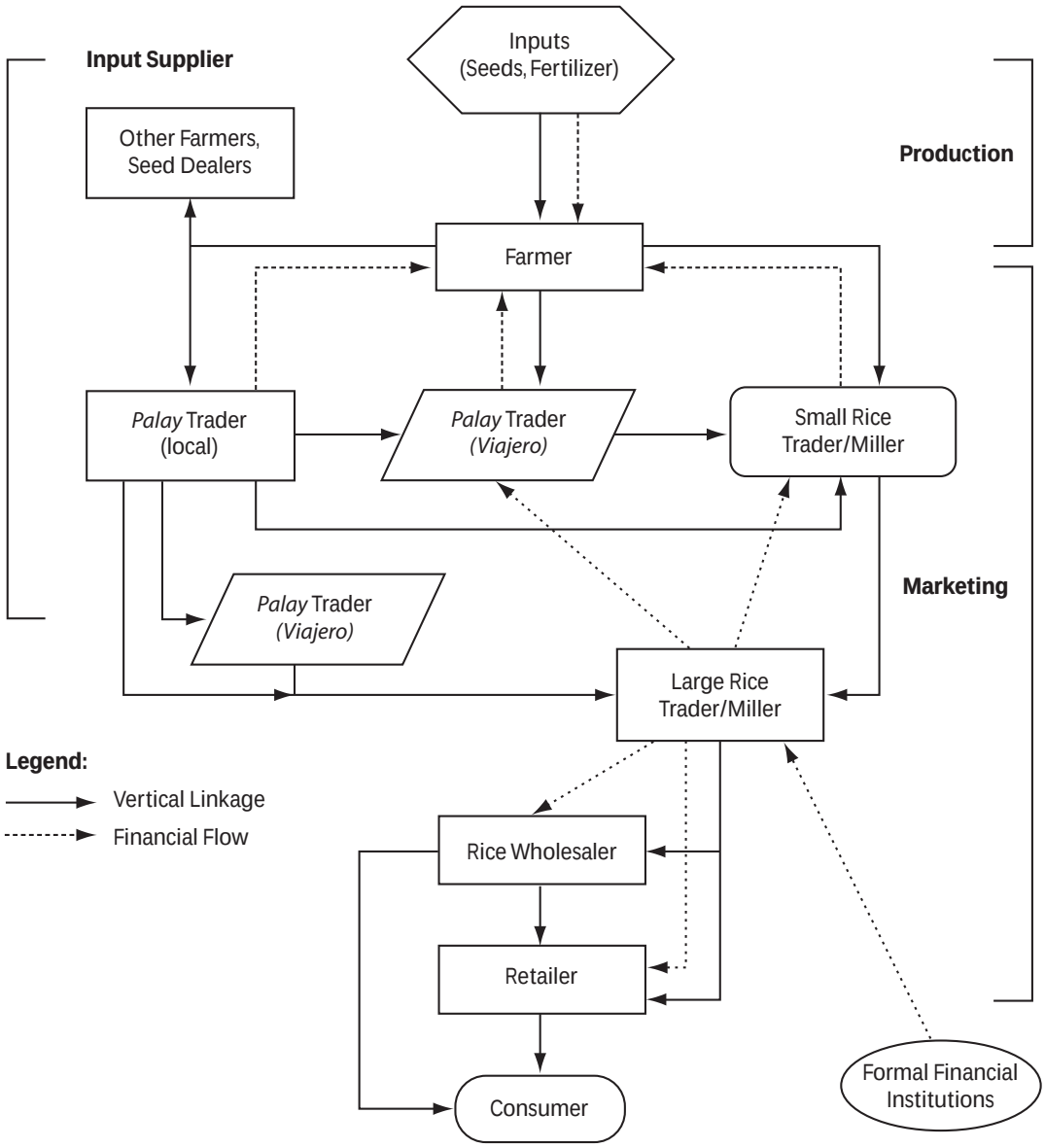
Rice is the basic staple food of most Filipinos in the country. In 2007, the total area harvested for palay was estimated at 4.3 million hectares, wherein Central Luzon has the highest share of area planted at 15%. Total palay productions during the same year have reached 16.2 million metric tons. Again, Central Luzon has the highest percentage of contribution at 17.5%. The value chain approach for the Philippine rice industry covers four (4) stages: input supply, production, processing/marketing and consumption. In a study conducted by ACPC (2007) on the rice supply-value chain particularly in the province of Nueva Ecija (please refer to Figure 5.1), the top palay producing area in Central Luzon, farmers purchased their palay seeds either from small seed growers, dealers, retailers or from the Philippine Rice Research Institute (Philrice). Selection of seeds is important to obtain high quality of rice variety. It is because the markets are heterogeneous, as such, significant variations may govern their purchasing decision like product quality and propensity to pay.[55]

[53] Shwedel, K. (2006). Value Chain Financing: A Strategy for an Orderly Competitive, Integrated Market. Costa Rica, 16-18 May 2006. Paper presented in Agricultural Value Chain Finance. FAO.

[54] World Bank (2005). Rural Finance Innovations. Topics and Case Studies. Washington, DC: The World Bank.

[55] Manalili, et al. (2007). "Supply Chain Perspective". Securing Rice, Reducing Poverty: Challenges and Policy Directions by Arsenio M. Balisacan, and Associates. SEARCA, PhilRice & DA-BAR Publication. November 2006. pp. 239-275.

Figure 5.1 The Philippine Rice Value Chain



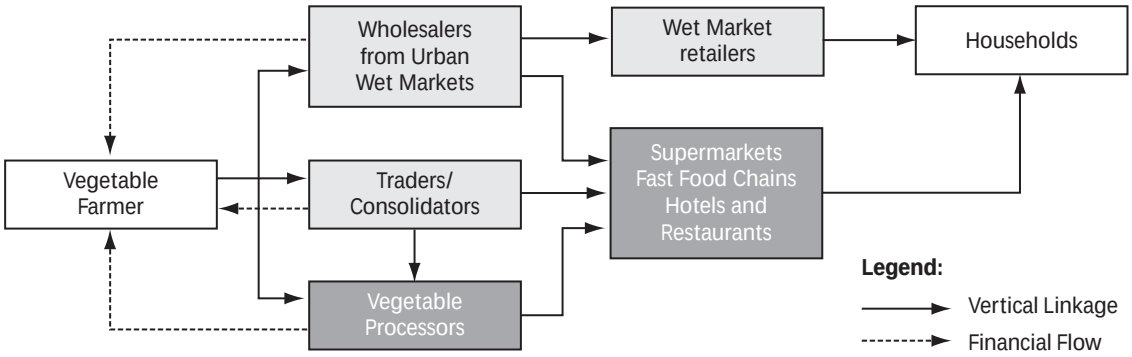
Source: ACPC (2007) Credit in the Supply and Value Chain of Selected Agricultural Commodities

Fertilizers are then sourced from input suppliers based in the area. These farm inputs are either picked-up by farmers or delivered by the suppliers. The production of rice involves land preparation; sowing of seeds; fertilization; pest and disease management; and finally harvesting. Upon harvest these farmers sell their produce to the barangay (village) or municipal assemblers mostly cooperatives or palay traders. For those farmers who do not have "suki" or patron buyers, assistance from agents to negotiate with palay traders is often practiced. These palay traders are either local residents or "viajeros" from nearby provinces. The local palay traders who have storage/warehouse facilities and hauling trucks transported their palay to the large millers in the province and to nearby provinces including the Intercity in Bocaue, Bulacan. The viajeros, on the other hand, get the palay directly from the farm and transported them for milling in nearby provinces. Small palay traders who do not have logistic services, request their buyers to pick up the palay stocks. However, there is price differential with regard to the pick-up and delivery price of palay to the rice millers. Palay prices tend to be higher when delivered since the transportation costs are added in the purchased costs. Retail outlets for the milled rice are usually the public markets around Metro Manila and as far as CALABARZON though a substantial percentage of the milled rice finds their way into the supermarkets.

1.2 Vegetable Value Chain

High-value crops such as vegetables offer alternative income opportunities for small farmers. Vegetable production area for the year 2005 was estimated at 604,000 hectares with a total production of 4.5 million.[56] The commodity flow of vegetables in the Philippines starts from the rural areas to the urban centers. Just like the rice value chain, vegetable growers also source their farm inputs from the input suppliers either by pick-up or delivery. Farmers sell their produce through agents who facilitate the transaction with the traders or consolidators (also called assemblers).[57] (see Figure 5.2) The agents act as the collector of the products from the farm and sometimes monitor the farm fields.[58] The traders then purchase and transport the vegetables to the market where it is sold to wholesalers, retailers, supermarkets and other institutional buyers. These vegetable traders and consolidators also sell the vegetables to the *bagsakan* centers around Metro Manila. However, only a small percentage of the vegetable farmers supply directly to vegetable processors and institutional markets.[59] The traditional wet market continues to play a significant role as primary retailers for the consumers as well as the institutional markets.

Figure 5.2 The Philippine Vegetable Value Chain



Source: Digal and Concepcion (2004).

In some areas in the country, like in La Trinidad, Benguet, there is a trading post where the farmers and wholesalers transact their business. Farmers who have transportation services bring their vegetables to the trading post to be sold to vegetable traders or assemblers. However, for those farmers who do not have transportation services, it is the consolidators or vegetable traders who come to their farm and negotiate the sale. Vegetables bought from the trading post are then transported either to Balintawak public markets or in Divisoria markets as well as some supermarkets in Metro Manila. Meanwhile, vegetable producers from the provinces of Cavite and Laguna have a greater advantage over the farmers from Benguet in terms of proximity to Metro Manila markets. As such, these producers maximize their market opportunities by supplying directly to the institutional markets such as hotels, restaurants and top end supermarkets. Mindanao vegetable producers, on the other hand, require a very efficient and reliable delivery system because of their distance to the Metro Manila market.

Performing value adding activities in the vegetable supply chain like cleaning, sorting and packaging increases the prices of vegetables.[60]

[56] Manghirang, 2006 cited in Batt et al., 2007

[57] Digal, L. and Concepcion, S. (2004). Regoverning Markets Securing Small Producers Participation in Restructed National and Regional Agri-Food System. The Case of the Philippines. Manila: International Institute for Environment and Development.

[58] Hendricks, M. (1994). Trade arrangement and interlinked credit in the Philippines. In Bourman and Hospes eds. Financial landscapes reconstructed. The fine art of mapping development. www.gcw.nl.

[59] Batt, P. et al. (2007). The Vegetable Industry in the Philippines. Canberra: Australian Center for International Agricultural Research.

[60] Digal et al., 2006 cited in Batt et al. 2007

2 KEY PLAYERS IN THE VALUE CHAIN OF RICE AND VEGETABLE INDUSTRIES

Small-scale farmers are just one of the players in the systems of production and marketing that include other value-chain participants such as input suppliers, processors, traders, agents/viajeros, the National Food Authority (NFA) for rice, wholesalers/retailers and buyers. These interacting individuals, groups, institutions and organizations perform various roles, motivated by different interests. Among chain participants in the rice industry, for instance, rice millers assume the most number of roles – assembly, processing and wholesaling.[61] The same role is performed by the NFA except that it does not function as wholesaler but as retailer. Rice farmers, on the other hand, assume dual roles: production and milling, though the milling function of the farmers is only for the purpose of home consumption. In the distribution of vegetables, the trader takes the role of financier, assembler and transporter.[62]

3 INTER-DEPENDENT LINKAGES OF CHAIN PARTICIPANTS

The value chain for rice and vegetable industries in the Philippines shows an example of how vertical linkages and inter-firm cooperation (horizontal linkages) of chain participants can improve the competitiveness of the value chain and its access to finance. This section describes the roles of and links among the participants including their access to finance.

3.1 Vertical and Horizontal Linkages

In a value chain, the participants are vertically and horizontally linked to each other. The relationship of these participants is imperative in bringing the goods from the farm to the end-market.[63] Vertical linkages include the transfer of learning, information and technical services from one participant to another along the chain. These are essential elements in a relationship that will sustain value chain competitiveness. Closer coordination and cooperation between chain participants may reduce transaction costs and increase the ability of the chain participants to meet and adjust to the consumer demands.[64] Trust, long-term relationship and mutual respect are some of the characteristics of vertical linkages between the chain actors.

In the case of the rice value chain in the Philippines, information flow strengthens the vertical linkage between farmers and rice millers. Millers play a significant role in the efficient flow of rice.[65] Farmers rely on the information provided by the millers on which variety of seeds will provide better milling recovery as well as market demand. On the other hand, the wholesalers/retailers order rice from the millers through phone call or mobile text messaging. It is from the wholesalers/retailers that the millers get information on which variety of rice the consumers prefer to buy and at what price they are willing to pay. The closer coordination and cooperation between rice millers and farmers and between the millers and wholesalers/retailers help improve the farmer's access to market information, which can be used in his farm operations.

Meanwhile, horizontal linkages among chain participants such as, associations, cooperatives, formal and/or informal groups are important because of their potential in improving value chain efficiencies.[66] Farmers are typically individual based seasonal producers and that they operate largely in isolation from the markets for their produce.[67] Since individual rice farmers rarely have access to bigger markets and depend mostly on traders/assemblers coming to their area to buy their product, forming groups like cooperatives (engaged in processing or trading) or marketing associations may help small-scale rice farmers have a sure market for their produce and greater access to the end-market. Hence, instead of selling their produce to local traders, viajeros or assemblers, small-scale rice farmers could sell their produce to their own group. Having an organized group reflects a shorter and usually a more efficient rice chain.[68]

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[61] Manalili, op cit.
[62] Hendricks, op cit.
[63] Campbell, R. (2008). The Value Chain Framework. Competitiveness at the Frontier, July 2008 p. 3-4. ACDI/VOCA.
[64] Gallizi and Venturini, 1999, cited in Bloom et al. 2007
[65] Manalili et al., op cit.
[66] Bloom, D. et al. (2007). Integrating Micro and Small Enterprises in Value Chain. Evidence from Guatemalan Horticulture and Handicrafts. MicroReport No. 78. United States: United States Agency for International Development
[67] Santacoloma and Rottger (2003). Strengthening Farm-Agri-business Linkages. Occasional paper (Draft): Agriculture Management, Marketing and Finance Services (AGSF), FAO
[68] Manalili, op cit.

With this kind of horizontal linkages, the rice farmers were able to eliminate a layer of intermediaries (traders/ agents), giving them an opportunity to reduce transaction costs thus increasing their chance to earn higher income. The buying price of palay by producers groups such as cooperatives and/or farmers associations was higher than that of the traders.[69] Due to the proximity of the cooperatives/associations to the farm, there are less transaction costs incurred; hence, rice farmers were able to sell their produce at a higher price. In addition, farmers' groups provide services other than marketing, such as financial and technical. Consequently, being a member entitles them to these services aside from the patronage refund they get every time they transact with their cooperatives/associations.

In addition, the horizontal linkages among farmers benefit them in terms of collective bargaining power, lower price for farm inputs due to bulk purchasing resulting in economies of scale. Cooperatives or associations who are also providing farm inputs to their members through credit in kind or sale in cash were able to buy farm inputs from suppliers at a lower price due to the volume required. Cooperatives are still the best option to serve the marketing needs of agricultural producers in the country because of their proximity and knowledge of the area of production.[70]

Meanwhile, individual vegetable farmers in the Philippines do not have adequate production in sustaining the quality or continuity of vegetable supply. In addition, most of these farmers do not have the financial capacity to access the right technology nor purchase the required inputs in order to produce quality product on a consistent basis.[71] Hence, forming groups or associations is important to enable them to access the resources needed to upgrade the quality of their produce. Most of the vegetable growers in the Philippines who were able to penetrate the institutional markets are organized through associations or cooperatives engaged in vegetable marketing.[72] One of them is the Northern Mindanao Vegetable Producers' Association (Normin Veggies), which manage to market their produce in Metro Manila, particularly fast food restaurants. Institutional markets such as hotels and restaurants indicated quality, assurance of supply and price as among their requirements. Most of them transact with consolidators or distributors who can meet these requirements (Batt, et al. 2007). Though institutional markets also buy vegetables from the traditional wet market, most of them developed relationships with the consolidators/associations that provide them a complete line of vegetable products.

The formation of marketing groups like Normin Veggies was able to achieve economies of scale particularly in transporting the vegetables to the market wherein farmers delivered their produce to the Normin Veggies Consolidation Center (NVCC) for consolidation and marketing, resulting in less transaction costs since the sum of transaction costs would be smaller than if each produce was delivered separately. Batt, et al., (2007) stated that members of Normin Veggies were able to access development assistance from different government agencies as well as non-government organizations, share market intelligence, production including post harvest facilities.

On the other hand, Digal and Concepcion (2004) examined the linkages of supermarkets and vegetable farmers and found out that poor communication, transport systems, inconsistent quality and sustainability are some of the problems encountered in dealing directly with the small farmers. As such, they opted for consolidators who act as their full line suppliers of vegetables. Kostas Stamoulis of FAO's Agricultural and Development Economics Division stated that *"unless farmers are helped to tap into the supply game and become players in the new market, they will be left on the sidelines"* (cited in Digal and Concepcion, 2004).

Only a few markets in the Philippines like the NVCC in Davao City deal directly with vegetable farmers in Maragusan, Compostela Valley. It is because the NVCC aims to provide their customers with high quality but cheaper price of products. Hence, they started getting their vegetable supplies directly from the farmers. Without the role of traders, the NVCC will be able to get vegetables at a lower price. The qualities of vegetables delivered are usually checked before acceptance. Quality standard is one of the characteristics of vertical linkages between chain participants. In the vegetable industry, institutional markets informed the consolidators/suppliers as to the size, shape, weight or color of the products that they require. The delivered produce should pass their required quality specifications.

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[69] Bordado, G. et al. (1996). Marketing of Rice by Small Producers Group in Selected Regions of the Philippines.
[70] Manalili et al., op cit.
[71] Batt, et al., op cit.
[72] Digal and Concepcion, op cit.

3.2 Financial Relationships among Chain Participants

Actors of the chain have close financial relationships with one another at different stages of the value chain. This financial arrangement includes, among others, consignment of goods and provision of inputs through credit. They have also come to develop personal relationships over a long period of time.

Palay traders (also input suppliers) operating in the area normally provide credit to farmers for inputs and fertilizers (see Figure 5.1). Trader credit can be in the form of cash or in kind and the terms are usually short-term or seasonal. Aside from production purposes, they also provide credit for the subsistence needs of these farmers. The relationship indicates a secure supply of palay to the trader, on the one hand, and a guarantee of sale to the farmer, on the other. However, there is a downside in this kind of farmer-trader relationship since the latter has more power to dictate the price of palay at the expense of farmer's income. It is because repayment terms on these tied-loans are based on lower purchase price than the prevailing market price.

On the other hand, the nature of traders and millers financial transactions varies depending on their mutual beneficial "suki" relationships. For small-scale traders who lack financial capability to buy large volumes of palay, they only act as middlemen and it is the rice miller who provides the financing (see Figure 5.1). An ACPC study on the credit in the supply and value chain of agricultural commodities showed that traders sold palay to rice millers, either on a cash basis or payable within one month with a deposit of at least 30% advance or payable within a week after the transaction is made.[73] Shepherd (2004) noted that for trading partners with a longstanding business agreement, consignment is normally practiced. However, during a shortage of rice supply, this type of agreement is temporarily suspended and cash is demanded. The same case is true for the miller – retailer financial relationships. Retailers who already have good credit track record with the millers are often offered consignment arrangements (see Figure 5.1). A common practice in the Philippines for the millers or wholesalers is to consign around 30 bags of rice to a retailer.[74] The payment is collected every other day based on the quantity of bags sold by the retailer. Small-scale rice millers are often self-financed while medium or large-scale rice millers depend on bank loans for their financing.

Meanwhile, production of vegetables require working capital to buy seeds and farm inputs and hire laborers, which the farmers cannot finance without obtaining loans from traders or wholesalers. Vegetable traders and/or wholesalers often provide financing to small vegetable growers to ensure continues supply of vegetable in the market (see Figure 5.2). Like the trade arrangement in the rice industry, the farmer is obliged to sell the harvested vegetables to the trader/lender at prices less than the prevailing market price. Low prices for farm products given to farmers by the traders indicate hidden forms of interest, in contrast to the high nominal interest rates charged by other informal lenders.[75]

There is also evidence of horizontal credit among chain participants, in this case, credit between traders of the same level, often in the form of product rather than cash. Shepherd (2004) showed in his study that traders in the Agora wholesale market in Mindanao lend their produce to other traders who have a contract to fulfill but unable to procure the sufficient volume of produce to meet the contract. Farmers groups, on the other hand, are reluctant to directly supply institutional markets such as hotels and restaurants because of the unfavorable terms of payment. The terms of payment of these institutional markets ranges from 15-30 days or sometimes up to 90 days.[76] Furthermore, since majority of farmer-members are smallholders, they require cash for payment. Meanwhile, small retailers/traders obtain their vegetable stocks on a 2-3 day consignment basis (see Figure 5.2).

Most large traders, wholesalers and rice millers, access financing from formal lenders since they require large amounts of working capital which cannot be supplied by informal sources due to insufficient funds (see Figure 5.1). This is confirmed in a study conducted by the ACPC on credit in the supply chain of selected agricultural commodities, wherein large millers/traders sourced their loans from formal lenders such as rural banks, private commercial banks and Government-owned banks like Land Bank of the Philippines (LBP). Their loans are fairly large, ranging from P1.5 million to P60 million.

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[73] ACPC, 2007.

[74] Shepherd, A. (2004). Financing Agricultural Marketing. The Asian Experience. Agricultural Management Marketing and Finance Occasional Paper No. 2. Rome: FAO.

[75] Geron, 1989 cited in Hendricks, 1994.

[76] DA-AMAS cited in Batt et al., 2007.

The succeeding section discusses how value chain participants respond to the dynamics in the market and participate in efficient value chains.

4 INTEGRATING DYNAMIC AND EFFICIENT VALUE CHAINS

The chain actors create the dynamic elements in the agricultural value chain which includes:

1. Upgrading – investment made by the chain participants to increase competitiveness through product innovation, improvement in production and marketing techniques
2. Value chain governance – describes who among the chain participants define the terms and conditions of transactions
3. Power exercise by value chain actors in their relationships with one another
4. Transfer of information and learning between value chain participants[77]

The interaction of producers with other players in the value chain makes way for them to acquire new skills and knowledge. In addition, the chain creates linkages among chain participants in order to work together. As such, there should be coordination in decision-making and exchange of information. And in order to coordinate, value chain governance is needed. Chain governance is defined as "*the process of specifying, communicating and enforcing compliance with key product and process parameters along the value chain.*"[78] Governance occur when a chain participant follows the standards or parameters set or being enforced by another participant.[79] To ensure that the participants comply with the required specifications, a reward, in the form of higher prices for the products and greater volume of purchases, is provided to those who comply whilst sanctions like exclusion in the supply chain or reduction in the volume of purchases is given to those who do not meet the standards. Henceforth, in order to increase the value of agricultural commodities, the value chain participants need to meet the demand of the consumers and be competitive in the business.

In the case of fresh vegetable producers in Northern Mindanao, who are also members of the Normin Veggies, they are committed to a production plan that ensures their target customers will receive the desired quality and quantity of product at the required time. Through regular monitoring, Normin Veggies makes sure that its members produce high quality fresh vegetables that could command better price and be competitive in the market. This is because institutional markets such as retail supermarkets and fast-food chains have several specifications with regard to the quality of vegetables they prefer to buy. However, farmers' lack of access to information is one of the constraints in the value chain. Often times, farmers depend on traders as their source of information, consequently, large institutional buyers prefer to source vegetables through a processor.[80]

On the other hand, rice producers in Mindanao involved under the One Rice Program of the One Network Bank (ONB) comply with production technology that will benefit them by being globally competitive in terms of yield and quality. Farmers under the program adopt best practices prescribed by the technician in order to produce a minimum of six (6) tons per hectare each harvest otherwise they will be expelled from the program. Strict monitoring is also being enforced to check if the farmer-members comply with the parameters set and be able to deliver the desired quantity at a given time. The ONB has an agreement with Davao del Sur Agro-Industrial Corporation, Inc. (DASURAICOR) such that there will be an assured market for the produce rice of the farmers under the program.

Using efficient farming practices would give rice and vegetable producers' comparative advantage over competitors. As such, the involvement of institutions or associations like the Normin Veggies and ONB in the monitoring and enforcement of compliance on the parameters/standards set is important in the value chain. This improves the farmer's ability to access dynamic markets in the Philippines and to respond to changes in market requirements. In addition, upgrading their production practices increases productivity and profitability.

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[77] Campbell, op cit.
[78] Humprey, J. and Schmitz, H. (2004) Governance in Global Value Chain. Institute of Development Studies. University of Sussex.
[79] Ibid.
[80] Batt, et al., op cit.

It is said that in order to be competitive, value chain participants need to innovate continuously through upgrading. Upgrading refers to the *"acquisition of technological capabilities and market linkages that enable value chain participants to improve their competitiveness and move into higher-value activities."*[81] Process, product and functional upgrading enhance productivity and competitiveness of value chain participants.[82] Market linkage is just part of the process of establishing an effective value chain; continuous process and product innovation is also important in a dynamic market.[83]

In the case of the vegetable industry, particularly that of Normin Veggies, the volume of vegetables being shipped from Northern Mindanao significantly increased, which can be attributed to the adoption of cluster farming by Normin Veggies. The latter engaged in process upgrading wherein their farmer-members formed a cluster in response to a requirement of their institutional buyers. Each cluster follows a production protocol and the cluster leader ensures that the members abide by the protocol and assist those that have problems with their crops. This resulted in improved quality and quantity of vegetable production. The clustering strategy of Normin Veggies enables small vegetable farmers in Northern Mindanao to actively participate in the vegetable supply chain since the small farmers were able to meet the demands for consistent volume and quality of vegetables, as well as participate in dynamic markets like fast-food chains and supermarkets. In addition, through the formation of clusters, Normin Veggies has been able to achieve economies of scale in transporting the vegetable products.

To be able to remain competitive in the market, Normin Veggies adopted the technology of rain-shelter, which gives high-harvest recovery with low cost. This kind of technology yields a highly differentiated product in terms of product safety because farmers use less agrochemical inputs like pesticides/insecticides. With this, other buyers in Metro Manila started to inquire about Normin Veggies' high quality vegetable products, hence, expanding their market niche. Moreover, Normin Veggies adopted post-harvest practices such as air drying, cleaning and sorting/grading of products at the farm. They also upgrade their packaging by using plastic crates, boxes and/or wooden crates instead of using ordinary sacks to pack their vegetables produce. Confirming that adoption of appropriate technology reinforces the competitive position of the chain and it allows development of differentiated products in terms of packaging, presentation, shelf life and type of products.[84]

Another factor in achieving competitiveness is functional upgrading such as logistic functions. Normin Veggies established NorminCorp to act as their marketing arm and become the link of Normin Veggies to the final destination of the vegetables. It also acquired a facility (Normin Veggies Consolidation Center) in the Agora Wholesale Market where the consolidation and marketing of vegetables are done. Normin Veggies transport their vegetable products to their markets in Luzon and Visayas by truck, vans and by sea and uses a refrigerated van for their highly perishable products to supply their market. With this functional upgrading, Normin Veggies was able to respond to the standards of the consumers and, hence, able to command a better price and deliver the products on time. The Normin Veggies experience clearly shows that an organized group has the ability to respond to a dynamic market and participate in an efficient value chain.

A growing trend in today's agriculture is the development of product differentiation. In the case of the rice industry, there are two types of rice being sold in the market, the conventional or white rice and the non-conventional or the organic rice. Conventional rice can be further grouped into: i) regular rice, these are usually broken type of grains found in the traditional wet market; and ii) fancy rice – characterized as aromatic and long grain rice. Since the market for rice is not homogenous, there are several factors that may govern their decision to purchase. As income increases and urban Filipino consumers' lifestyle and preferences changes, there is a demand for differentiated products in terms of quality, variety as well as packaging. As such, rice producers use the information and learning they get from other chain participants like rice millers (as to the variety of rice the consumers prefer), in their farming practices to be able to meet the demands of their target consumers. Likewise, rice millers respond to the message being conveyed by the end-users with regard to product quality, variety and packaging. However, there are no incentives for investing in quality

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[81] Kaplinksy and Morris, 2001 cited in Fromm, 2007.

[82] Fromm, I. (2007). Upgrading in Agricultural Value Chain. The Case of Small Producers in Honduras. GIGA Working Paper No. 64. Hamburg: German Institute of global and Area Studies.

[83] Lundy, M. and Reardon, T. (2007). Learning to compete in Dynamic Food System: Elements for Successful Supply Chain in CAFTA-DR.

[84] Lundy and Reardon, op cit.

processing and facility or product differentiation because it entails added costs to the chain participants that nobody is willing to absorb.[85] Upgrading in the assembly and processing stages will result in higher price of rice. As such, only those catering to a target market that is willing to pay the price differential, engage in product differentiation.

For conventional rice, value-adding activities such as labeling – as to the variety – as well as branding – wherein the producer's or miller's name is printed on 50 kg or 25 kg sacks – are being practiced.[86] Branding is also important in the organic type of rice, being a differentiated product. Organic rice producers like Pequaria Development Cooperative in Camarines Sur and Full of Grace Organic Agricultural Producers in Nueva Ecija sell their product under the brands Healthy Rice and Full of Grace. These are mostly sold in specialty organic outlets and health shops and selected modern retailers like supermarkets and grocery stores. In a study conducted by Manalili et al. (2007), organized group-led rice value chains for both conventional and non-conventional types are usually more efficient and able to respond to changes in market requirements by going for higher value and differentiated products, catering mostly to large scale retailers such as supermarkets and groceries.

On the other hand, to be able to remain competitive in the business, investment in facilities (irrigation, mechanization) at the production level as well as product innovation and adoption of technology are factors necessary for rice farmers to achieve the desired level and quality of yield. However, producers' lack of access to finance poses a great barrier to upgrading and responding to the dynamics of the market and an efficient value chain.

The next section describes farmers' access to financial services in the Philippines as well as the risk reducing mechanisms being implemented by chain actors.

5 FINANCING THE VALUE CHAIN IN AGRICULTURE

5.1 Access to Financial Services and Risk Reduction

Agricultural lending in the Philippines has always been perceived to be unprofitable and of high risk. Moreover, the high transaction and supervisory costs involved in agricultural lending make formal lenders wary of providing financing to small farmers, since the latter have little or no collateral to offer.[87] In many developing countries like the Philippines, a number of government credit programs and financial facilities are made available to the rural households, in the hope that it would reduce farmers' reliance on informal credit or at least provide a trickle-down effect that would lower the very high interest rate being charged by these informal lenders. However, past studies have shown that they have had only limited success. These programs have not reached a large number of target clients as envisioned by the Government. As such, these small farmers continued to rely on informal credit for their production and household needs.

Since small-scale farmers are unappealing to formal financial institutions due to high risk involved in lending to agricultural projects, the informal credit market exists because the supply of formal credit is inadequate or because formal credit is not available at the beginning of the crop cycle. Only a small portion of the farmers have access to formal financial institutions. In a recent study conducted by the ACPC (2007), farmers and fisherfolk continued to borrow from informal sources for their financing needs. Some of the factors that influence their continued reliance from the informal lenders are: lending terms flexibility; timeliness in the release of loan, lack of tedious forms and application procedures, and even geographic nearness.

This is consistent with studies from the past regarding the extent of borrowing from formal and informal sources where farmers' formal borrowings had been very little. The distribution of agricultural loans from the formal sector is concentrated on large borrowers such that small borrowers are left out because only the large borrowers can provide acceptable collaterals.[88] Because of this, majority of the agricultural producers,

[85] Manalili, op cit.
[86] Ibid.
[87] Cañeda, L., & Badiola, J. (1999). Small Farmer Credit Experience, 1970s to 1990s. Paper presented at the Small Farm Credit Delivery After the 1980s Reform, Pasig City
[88] Llanto, G. (2004). Rural Finance and Developments in Philippine Rural Financial Markets: Issues and Policy Research Challenges (No. Discussion Paper Series No. 2004-18). Manila: Philippine Institute for Development Studies.

particularly the small farmers who have no or insufficient collateral to offer, resort to informal lenders to finance their farming operations notwithstanding the high interest rate charged on loans. These borrowers are more concerned with the timeliness and accessibility of loans than the price of credit. Therefore, the longer it takes to process their loan applications the more they will want to borrow from informal lenders which they have easy access to. Prices of loans become of secondary importance for these farmers since the longer it takes to process their loan application, the higher will be the transaction costs of borrowing funds from the bank. Further, banks rationed out credit to small borrowers because of the high transaction costs involved in small loans.[89]

On the other hand, past studies have shown that the traditional approaches being done in the Philippines to improve farmers' access to credit like subsidizing credit or instructing the banks to lend part of their loan portfolio to the agricultural sector, were ineffective. UNCTAD (2004) noted that credit programs like these were only a financial burden to the government and it hampered the growth and development of rural credit markets. In the traditional approach of agricultural lending, credit was grabbed mostly by large borrowers. Since loanable funds are limited, formal financial institutions still prefer to lend to bankable clients. Hence, outreach to small-scale borrowers, like rice and vegetable farmers, is very minimal. Despite the financial reforms in the Philippines, poor Filipino farmers still lack access to formal credit.

Meanwhile, informal lenders such as traders and millers often borrowed their loanable funds from banks for retail lending to the small farmer borrowers. However, because of their limited fund base, these informal creditors cannot meet the growing credit demands of small farmers. As such, these agricultural borrowers adjust by resorting to reduction in farm inputs, sub-optimal production techniques, and borrowing from family, friends and relatives.[90] The limited investment of farmers in their farm operation resulted in low productivity and quality, making them less competitive in the market.

Improving the quality and quantity of production of farmers as well as their market linkages will help in the reduction of risk in agricultural credit. This is because with increased harvest and good quality of products, farmers can command a better price, resulting in income increase and, consequently, an increase in their capacity to repay the loans. The new paradigm in agricultural lending is that credit should be based on the performance of the farmer's position in the value chain rather than the borrower's risk on credit.[91] The strategy being used by the One Network Bank in providing finance to rice farmers in Davao province under the One Rice Program ensures higher and improved production quality and yield. As such, rice farmers were able to increase their income and profitability. Their market linkage with DASURAICOR also guarantees an assured market for their produce. With higher income and an assured market, farmers were able to repay their loans from the bank. By integrating credit, technical and marketing assistance, One Network Bank was able to mitigate the risk in lending to agricultural commodities like rice.

Risk in agricultural credit increases if a borrower cannot repay his loans, hence, lenders wanting to reduce their credit risk engaged in contractual enforcement or agreement. Under this agreement, the lender provides credit to farmers with a negotiated contract for a specific commodity to be bought by large-scale buyers. In this way, the lender was able to minimize the default in loans of farmers due to the latter's inability to sell the produce in the market. An example of this is the agreement of the National Food Corporation (NFC) and tomato farmers under the Tomato Financing Program of Quedancor. Tomato farmers in the Ilocos Region were able to obtain loans from Quedancor provided that a certain percentage of their tomato production will be delivered/sold to the NFC. This kind of contract agreement ensures loan repayment of borrowers on the part of Quedancor, an assured market on the part of tomato farmers, and continuous and adequate supply of tomato for the tomato paste production of the NFC. In addition, to be able to assure the farmers that there will be a market for their produce, Quedancor also provides financing assistance to the NFC for their working capital.

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[89] Lamberte, M. (1995). Small Enterprise Access to Formal Financial Services: A Review and Assessment. Makati City: Philippine Institute for Development Studies.

[90] World Bank (2005). Rural Finance Innovations. Topics and Case Studies. Washington, DC: The World Bank

[91] UNCTAD (2004). Financing Commodity Based Trade Development: Innovative Agricultural and Financing Mechanisms. Geneva, United Nations Conference on Trade and Development.

Other risk reduction mechanisms being implemented in the Philippines to entice the banking industry to service the financing needs of the agricultural sector, particularly the small and marginal farmers, are crop insurance and credit guarantee which seek to address the problem of project riskiness and enhance the bankability of small farmers and fisherfolk. Under the credit guarantee scheme, the banks are provided security that effectively reduces loan recovery risks. The guarantee scheme will cover 85% of the outstanding loans in case of borrower default. In the insurance scheme, indemnity will be paid to the borrowers in case of production loss due to natural disasters, pest infestation or plant disease. As such, the borrowers will still be able to repay their loans because of this insurance. However, findings from a study showed that guarantee schemes failed to stimulate the banks to lend to the target sector as the number of outreach is small.[92]

5.2 Direct and Indirect Value Finance

In order for the producers, processors and other value chain participants to remain competitive and meet the requirements of formal sectors, they need access to credit such that they will be able to invest in farm assets, technology and equipment as well as meet their working capital needs.[93] The chain actors in the agricultural sector are financed in three ways: first, the farmers self-financed their operations through their own savings; second, direct value chain finance or informal finance wherein an actor in the chain other than the financial institutions provide some sort of financing to another actor within the chain; and third, formal financial institutions provide indirect credit to one or more actors in the chain.[94]

Very few palay and vegetable farmers in the Philippines finance their own farm production. Most chain participants engaged in informal lending through trader credit or direct value finance, wherein the palay or vegetable producers obtain loans from input suppliers or traders to finance their farm production expenses. This type of finance is categorized as an open-account financing wherein the input suppliers provide farm inputs to farmers with the expectation that they will be paid when the crop is harvested.[95] Through this open-account agreement, rice and vegetable farmers in the Philippines were able to access fertilizers, pesticides and other farm inputs; it also allows the input suppliers/traders to have a market for their goods.

Meanwhile, the advance cash being provided by some traders/millers/processors enable the farmers to hire labors and pay for transportation and storage of goods. In this type of advance payment agreement, farmers were able to access the necessary working capital for their farm production, whilst guaranteed supply for the traders/millers/processors. However, there are risks involved in these agreements (open account and advance payment), since farmers may default on their payment due to some factors such as low production, decline in the price of produce and illness in the family. In addition, farmers may fail to deliver on time or fail to meet the contract agreement. There is also a disadvantage with this direct value chain finance, because farmers have limited ability to expand their market due to their reliance on close personal relationships with the lender/buyer.

Due to some failures experienced in providing financing in the agricultural sector particularly to the small-scale farmers, very few formal financial institutions remained actively involved. It is because in the traditional agricultural lending approach, the focus is on how to improve the small-scale farmers' access to credit through subsidized credit and instructing the banks to set aside a certain portion of their loanable fund to lend to the agricultural sector. However, past studies have shown dismal results in using the traditional approach because it relied on the borrower's willingness to repay their loans. In addition, the traditional approach does not look into the value chain in its entirety. The greatest challenge now in agricultural finance is to link the formal financial institutions in the value chain.

In order to reduce the risk in agricultural credit, banks should look into the borrower's position in the value chain rather than the borrower's credit risk.[96] In addition, integrating credit to other services within the value

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[92] Orbeta, A., Lopez, C., & Adams, D. (1998). An Assessment of Loan Guarantee Programs for Small-Scale Borrowers in the Philippines. Manila: Credit Policy Improvement Program.

[93] UNCTAD, op cit.

[94] Meyer, R. (2007). Analyzing and Financing Value Chains. Cutting Edge Development in Value Chain Analysis. Kampala, Uganda, 20-23 August 2007. Paper presented in 3rd African Microfinance Conference New Options for Rural and Urban Africa. IFAD

[95] World Bank, op cit.

[96] UNCTAD, op cit.

chain is perceived to be an effective way of financing the agricultural value chain. The linkages established within the value chain reduced the problem of information asymmetry and high transaction costs as well as discouraged moral hazard and adverse selection behaviour normally seen in traditional financing.[97]

Innovation in providing credit to the value chain participants is important in order to have a successful agricultural value chain.[98] Unlike in traditional financing where formal financial institutions have a wide selection of financial products for each type of chain actors, the new approach encourages that the banking activity should focus on the linkages of the value chain. Because it is riskier for the banks to deal directly with individual farmers, it would be better for them to finance other value chain participants such as traders, processors and millers who have long-term business relationships with the small farmers. The stronger contact between the small farmer and the traders/processors/millers, the easier the finance because the interdependency of the value chain participants indicates an efficient and functioning value chain. This, in turn, increases the financial intermediary's willingness to lend to value chain actors who are vertically integrated. An example of this is the tomato paste financing project of Quedancor with the NFC. Quedancor provided financial assistance to the NFC such that the latter would have additional working capital to be able to buy the produce of tomato growers in the Ilocos Region with whom they have a contract growing agreement.

In the previous sections, the importance of grouping or clustering of farmers in order to join a value chain and reap the benefits from it have been discussed. With an organized group, they can enjoy economies of scale, have strong bargaining power and receive technical assistance to strengthen their activity. Collective action and group formation of farmers are more likely to result in improved access to markets that small individual farmers cannot easily access.[99] With this, banks treat them as creditworthy borrowers, thereby, increasing the chance to access credit from the formal sources. In a standard structure trade finance, banks viewed organized borrowers as bankable and perceived prospective clients who are not organized as non-bankable.[100] However, in the new principal finance approach, some banks adopted a pro-active role that they help these farmers who are not organized to become bankable. In this case, the One Network Bank adopted such kind of pro-active role. One Network Bank invested in DASURAICOR, a rice mill and marketing business that provides the farmers with all the services they needed in the rice production up to the processing and marketing stage of milled rice. The ONB also extend credit to rice farmers provided that they have formed into clusters or groups and have adopted the technology or best practices prescribed by the Bank to ensure high production yields and be competitive.

Similar to production innovation and technological upgrading, the design of suitable financial packages should respond to the needs of the value chain participants.[101] In addition, the provision of credit in the value chain should be complemented with technical and marketing assistance.

5.3 Issues in Financing the Value Chain

Lack of information in borrowing and lending transactions is one of the issues in financing the agricultural sector.[102] Lenders need valuable information regarding the credit potential worthiness of the borrowers.[103] However, because of the heterogeneity of the borrowers, obtaining such information is costly for the lenders. This asymmetry in information discourages the formal financial institutions in providing the credit needs of farmers.[104]

Due to these information problems, most of the formal and informal lenders used screening mechanisms to ensure repayment from the borrowers and minimize their lending risks. Formal credit institutions use interest

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[97] World Bank, op cit.
[98] Shwedel, op cit.
[99] Batt et al., op cit.
[100] UNCTAD, op cit.
[101] Lundy and Reardon, op cit.
[102] Ho, G. (2004). Rural Credit Markets in Vietnam: Theory and Practice. Unpublished Thesis, Macalester College.
[103] Duong, P., & Izumida, Y. (2002). Rural Development in Vietnam: A Microeconometric Analysis of Household Surveys. World Development, 30(2), 319-335.
[104] Llanto, op cit.

rates and collateral requirements as indirect screening mechanisms to sort out high risks borrowers whilst informal lenders use direct mechanisms such as geography, kinship and market inter-linkages to solve their problems on information and enforcement of loan contract.[105] The existence of information asymmetry is common in most developing countries like the Philippines.[106] Because of the heterogeneity of borrowers and lenders in the rural credit market, they have asymmetric information on each other. Some characteristics and attributes of the borrowers may not be acceptable to the lenders and, likewise, the lending services of some formal or informal creditors may not satisfy the credit needs of the borrowers.

Another problem encountered in financing the value chain is the high transaction cost. High transaction costs in agricultural financing result from the voluminous documentation, inspection, control, and monitoring requirements. Banks rationed out credit to small borrowers because of the high transaction costs involved in small loans, thus, banks prefer to lend to large borrowers to minimize their lending costs.[107] The occurrence of credit rationing particularly in the formal financial institutions creates a credit gap. This is because of the excess demand for loans in the credit market that the formal sector cannot fulfill and which the informal lenders attempt to accommodate. However, due to liquidity constraints of the majority of the informal lenders, they cannot meet the growing credit demands of small borrowers, hence, the latter remained credit-constrained.

6 INNOVATIVE MODELS OF VALUE CHAIN FINANCE USED

In the Philippines, there are several innovative models being adopted in financing the value chain. One of them is the One Rice Program (ORP), which started in 2004 as an offshoot of the More Rice Program (MRP) cum Integrated Cooperative Farming System (ICFS) of the One Network Bank (ONB) and Land Bank of the Philippines (LBP). The ORP is a low-risk integrated farming system which aims at:

- Increasing the farm yield of participating farmers to 150-180 bags/hectare at 55 kg per bag;
- Increasing the farm net income of farmer-members to a minimum of P30,000 per hectare per cropping; and
- Providing an alternative source of convenient and low cost production loans.

The ORP is a “no failure” farming system that requires highly disciplined farmer-members who are members of Self-Help Groups (SHGs) and who adopt essential features of the farming system under the intensive supervision of Corporative System’s Foundation, Inc. (CSFI), a technical arm of the ONB. Under the Program, farmers are grouped together and required to adopt production techniques and technology such as: i) planting window, which refers to the 45-day planting period influenced by the lunar cycle; ii) synchronized planting, wherein farmers should synchronize their planting with co-farmers in the adjacent farm; and iii) use of recommended production technology to ensure that they will be able to produce a minimum of 6 tons of rice per hectare. These farming practices being implemented under the Program make certain that damage to crops will only be minimal.

The ONB will provide credit to these small farmers even without hard collaterals provided that their profitability is assured by the following critical value chain factors:

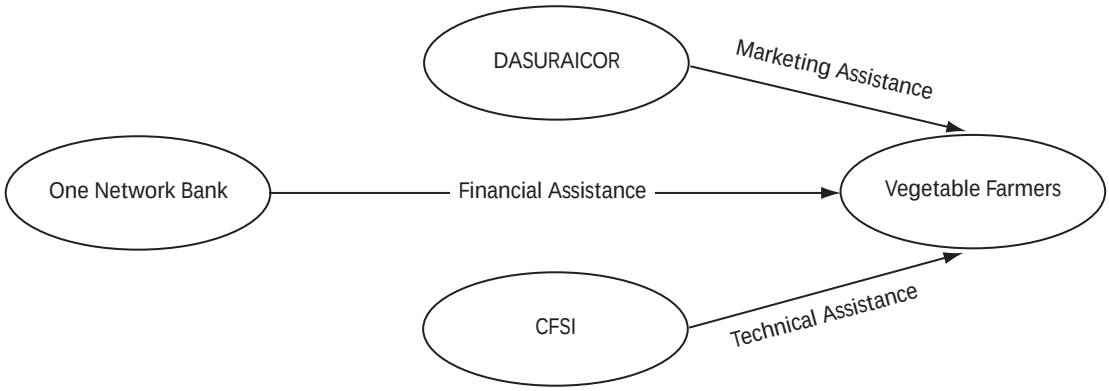
- Production technology is risk-free and globally competitive in terms of yield;
- Product has an assured long-term buyer; and
- Processing facilities (if needed), is put up and co-owned by the financed farmers in the “corporative” way.

The production loan will be released through the Special Savings Account of the farmer-borrowers. The DASURAICOR provides safe-keeping for the passbook of the farmer-borrowers. A counter signature of the

[105] Ho, 2004; Llanto, 2004.
[106] Floro, S., & Yotopoulos, P. (1991). Informal Credit Markets and the New Institutional Economics: The Case of Philippine Agriculture. Colorado, USA: Westview Press.
[107] Lamberte, op cit.

Agricultural Technician of the CSFI is necessary in the withdrawal slip before a farmer could withdraw from his special savings account. For expenses on land preparation and transplanting, farmer-borrowers will be given cash, while credit in kind will be provided for farm inputs such as seeds, fertilizers and chemicals. The ORP contains a quadri-partite agreement between the farmer, the CSFI, DASURAICOR (buyer) and ONB (lender). The farmer-borrower will deliver to DASURAICOR 65% of their marketable palay produce. DASURAICOR serves as the marketing and collection arm of the ONB. The payment of delivered palay will be coursed through the ONB for the automatic deduction of the borrower's production loan and the balance will be credited to the farmer's special savings account. Below is the diagram of the innovative financing scheme being implemented by One Network Bank under their One Rice Program.

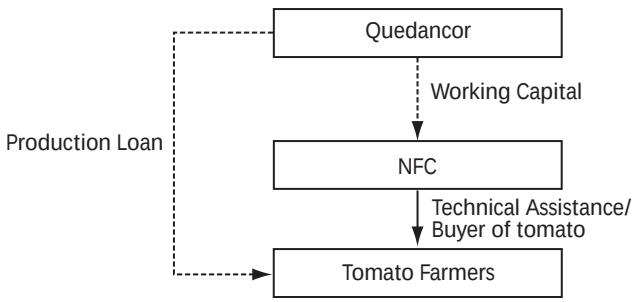
Figure 5.3 Innovative Financing Scheme of One Network Bank



The implementation of this program benefits the participants within the value chain, first – the rice farmers has an increased production yield; second – the integrated agri-finance strategy enables the small farmers to obtain loans from the bank even without collateral and third – direct market linkage between rice farmers and buyers eliminate the role of traders/agents resulting in higher income for farmers. In addition, the program benefits the farmers in terms of adequate and timely release of loan.

Another innovative agricultural financing being implemented in the Philippines is the Tomato Paste Financing of Quedancor with NFC (see Figure 5.4). The NFC is an agri-based processing firm that produces tomato paste. NFC serves as the market link of small tomato farmers who are contracted to deliver their tomato products to be processed as tomato paste. To ensure the quality of produce, the NFC provides the input requirements and gives technical assistance to farmers, such that the latter will be able to produce the desired quality and quantity of tomatoes. The processed tomatoes are then distributed to various other processors/end users such as fish canners, processed sauce, ketchup manufacturers and major burger chains. The NFC availed of financing from Quedancor to augment their working capital requirement. On the other hand, tomato farmers were also provided production loans on the condition that they will deliver at least 20% of their produce or red tomato to the NFC. This type of agreement assures the farmers a sure buyer of their products and continuous supply of raw tomato to the NFC due to the direct market link between tomato farmers and NFC. It also provides the farmers techniques and technology that enhances their farm production resulting in improved quality and quantity.

Figure 5.4 Quedancor-NFC Tomato Paste Financing



7 SUCCESS FACTORS AND CONSTRAINTS

Under the One Rice Program, rice farmers were able to increase their production yield because of the proper technology that they adopted. In addition, the practice of new farming techniques enabled the farmers to minimize their cost of production since the new technology eliminates the stem-borer problem and hardly uses any pesticides. The tri-partite agreement of the farmers, ONB and DASURAICOR indicates an assured market for the rice produce and increases farmers' profitability and capacity for loan repayment. Moreover, the integrated agri-finance strategy of ONB benefits the farmers in terms of timely and adequate release of loans. It also enables the farmers to purchase inputs at a lower cost. However, there are some difficulties and problems encountered such as the low participation of farmers to the program. The program requires at least 20 hectares of adjacent farm to compose compact farming yet some farmers who have adjacent farm lands to program-financed farmers are not willing to participate under the program because they still have unsettled accounts with the traders. Another constraint reported is the difficulty of convincing some farmers to adopt the prescribed technology. In agriculture, the success of a lead farmer presents an important demonstration effect to encourage other farmers to adopt new practices.

The contract agreement between the tomato farmers in Ilocos Region and the NFC, on the other hand, assures the former of an assured market for their produce. In addition, the technical assistance provided by the NFC to the tomato farmers helps them increase their production yield as well as profitability. Moreover, the coordination between Quedancor and the NFC enables the farmer to receive an adequate loan in time for their production needs. The tomato farmers were also able to purchase low cost of inputs since the NFC facilitates the bulk purchasing of farm inputs from the suppliers. However, there are some difficulties encountered, one is the tendency of some farmers to side selling which indicates a lack of respect on their contract agreement. It was reported that some farmers sold their produce tomato to local traders since the latter have higher buying price compared to the NFC. Another is the unwillingness of some farmers to try the new farming technology for fear that it may not work well compared to their traditional farming technique.

Meanwhile, the market clustering strategy of the Normin Veggies enhances the sharing of market information among farmers and enables them to actively participate in the vegetable value chain. The strong linkages developed by Normin Veggies with their institutional partners provide their members access to resources available only to group and not to individual farmers. The horizontal linkages of members enable them to have better bargaining power due to the high quality, volume, variety and regularity of the vegetable produce. The establishment of Normin Corporation strengthens the position of Normin Veggies to respond to the dynamic market and benefit its members by helping them bring closer their produce to the end-market.

Normin Veggies also encountered some problems like the significant change in the market for the demand of lettuce which affected their farmers' supply to institutional partners. Nonetheless, the decline in their demand for lettuce products poses a challenge to the members to invest in indigenous greenhouse and start to grow the romaine type of lettuce which is the current trend in the market.

8 EMERGING DEVELOPMENTS IN RICE AND VEGETABLE VALUE CHAINS

The following are some of the emerging trends in the Rice and Vegetable Value Chain in the country:

- Hybrid rice technology

A sustainable and efficient production of rice has always been the ultimate goal of the Philippine government. In order to address this food challenge, the government introduces the hybrid rice technology. To encourage the farmers to use the hybrid rice seeds in the country, the government provided marketing and financial assistance to farmers such as production loans, low prices of hybrid seeds, installment payment schemes, and fertilizer support. Hybrid rice grain was also preferentially procured by the National Food Authority, the government's grain procurement agency, at a price equivalent to that of premium class grain. The government procured hybrid seed, produced by both the public and private sector. In addition, production inputs such as gibberelic acid and parental line seeds as well as and production loans were also provided to seed growers.

- Provision of cold chain systems and cableways in the upland areas

The Bureau of Post-Harvest Research and Extension (BPRE) provided a cold chain system for vegetable growers and traders to reduce the volume of highland vegetables being wasted during transport of the vegetable products from the farm to the market. Such wastage is unfavourable to the vegetable growers who lost a substantial amount of potential income. In addition, the consumers deserve fresh, safe and quality vegetables. Cableways were also provided in upland areas to enable farmers to transport their produce much easier.

- Provision of vegetable noodles processing plant in Benguet

The Government recently extended PhP 10 million for the establishment of a vegetable noodles processing plant, which is set to be inaugurated soon at the Benguet State University (BSU) in La Trinidad, Benguet. This project would promote locally produced vegetables in the global market.

- Appropriate packaging system for fresh vegetable produce

The Department of Science and Technology (DOST) assisted farmers' groups in the adoption of an appropriate packaging system for fresh and processed agricultural products. The adoption of proper packaging system will enable the farmers to provide the consumers with safe and quality vegetables.

9 CONCLUSIONS AND RECOMMENDATIONS

The linkages established by chain participants in the rice and vegetable value chain in the Philippines show the importance of developing partnerships to be able to acquire new skills and market information that enable them to become competitive in the dynamic market. Also, the relationships of farmers with other chain participants in the value chain facilitate the flow of financing. The farmers require adequate financing to access better farm inputs and technology that would help them achieve the desired production yield and quality, hence, financial intervention is necessary. Agricultural finance in the Philippines is mostly provided by the participants within the value chain or what is known to be the direct value finance. The predominant suppliers of credit for rice and vegetable farmers are the traders, millers and/or input suppliers. The close relationship that the farmer develops with other chain actors reduces the problem on information asymmetry, hence, the informal lenders have an advantage of knowing the borrower's information compared to the formal financial institutions. However, due to the limited resources of informal lenders, they can only provide short-term loans. For investment in technology, equipment and product upgrading, long-term loan is essential to enable the chain actors to expand their activity and be competitive in the market.

On the other hand, very few formal financial institutions are actively involved in financing the agricultural value chain because of the high risk involved. The challenge now lies on how to encourage the banking industry to finance the agricultural value chain. Financial intervention from outside the chain like bank financing should complement the existing informal credit. Innovations in the provision of credit to chain participants are important to have a successful value chain. Innovative financing approach can be improved by designing a suitable financial package that responds to the credit needs of the chain participants. In order to entice the formal financial sector to engage in agricultural lending, there should be a good business enabling environment. The government should look into the policy, structural and other agricultural finance issues and conditions that may constrain the financing of the agricultural value chain. If the Philippine government wants to improve agricultural financing, particularly value chain financing, it should design a policy or develop a legal framework that would provide an efficient financing package resulting in a sound policy environment.

Lastly, there has been very little research study conducted on the Philippine agricultural value chain financing. An in-depth study on this area could help finds ways in identifying and designing the right financial intervention for farmers and other chain participants as well as other intervention necessary to make the value chain effective.

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Chapter 6

Agricultural Value Chain Financing in Thailand

Rebec A. Fernandez

1 INTRODUCTION

1.1 Background of the case study

This case study attempts to identify financing modalities of the rice value chain in Thailand. There are five (5) major sections of the study. Section 1 presents the background and purpose of the case study. Section 2 is a brief overview of the past and present status of the Thai economy. The discussion on the 3rd Section is centered on the state of the rice industry, covering state policies/programs affecting the sector. The remaining part of the section presents the roles and interactions of the different players of the rice chain. The successful Fair Trade rice value chain model is the focus of discussion in Section 4. Built-in in Sections 3 and 4 are descriptions of the mode of financing arrangements commonly practiced in the rice chain. The last Section (5) is the summary and lessons learned from the study followed by some recommendations.

2 THAI ECONOMY: AN OVERVIEW

Quite remarkable is Thailand's transformation from a subsistence agrarian society into an industrializing free-market country in the last 30 years. The economy has undergone rapid and sustainable growth and has been cited as one of the most successful countries in the developing world over the past two decades. This status was attained due to government's implementation of an industrial and export-oriented agricultural development policy that favours business and investments. In particular, the government's implementation over the past several years of the sixth National Economic and Social Development Plans (NESDP) enabled the country's economic level and the standard of living of Thais to improve. In 1997 however, Thailand and most of the Asian countries were hit by financial crisis.

The succeeding years was a great challenge for Thailand's road to economic recovery. The country's recovery period (1999-2000) however, was unstable. Economic growth during the period almost stagnated due to rising unemployment. But in 2002, the Thai economy expanded substantially with a growth rate of 5.4% compared to 2.1% in the previous year (Piriya, 2005).

Performance in the agricultural sector, particularly rice farming, has been increasingly falling behind. In 1990, agriculture contributed only about 15% of the GDP whereas the share of the non-agricultural sector is 85%. Table 6.1 shows that, from year 2000 to 2005, cereals and other field crops consistently contributed more than 53% of the GDP in the agricultural sector. Recent available data (2006)[108] revealed that services constitute 45% of the GDP, followed by the industry sector, also with a 45% share, while agriculture contributed the remaining 11%.

[108] http://www.worldbank.or.th/WBSITE/EXTERNAL/COUNTRIES/EASTASIAPACIFICEXT/THAILANDEXTN/0,,menuPK:333322~pagePK:141132~piPK:141109~theSitePK:333296,00.html.

Table 6.1 Percentage of Gross Domestic Product of Major Commodities in the Agricultural Sector, 2000-2004

	2000	2001	2002	2003	2004
Agriculture, Livestock, and Forestry	83.63	84.42	84.54	84.57	83.14
• Cereals and other field crops	52.66	54.04	53.09	54.56	53.18
• Vegetables, horticulture	6.73	6.72	6.86	6.52	7.10
• Fruit, nuts, beverage and spice crops	9.82	8.66	9.06	8.79	9.37
• Cattle, sheep, goats, dairy farming	2.55	2.67	2.80	2.67	3.20
• Other animal farming, animal products	8.17	8.68	9.13	8.75	7.08
• Agriculture and animal husbandry service activities	2.55	2.55	2.50	2.20	2.08
• Forestry, logging and related service activities	1.15	1.09	1.10	1.08	1.13
Fishing	16.37	15.58	15.46	15.43	16.86
GDP in Agricultural Sector	100.00	100.00	100.00	100.00	100.00

It is interesting to note however, that out of the total labour force of about 35.5 million, employment in agriculture still captures the highest share compared to the services and industry sectors.

3 THAI RICE INDUSTRY

3.1 Rice Policy/Program

In Thailand, the government sets its rice policy on a yearly basis through the Rice Policy and Measures Committee. In recent years, the government's thrusts in agriculture have been to stabilize domestic prices through a price support program and to promote private sector-led rice exports. In order to achieve these goals, the government adopted program/policies such as i) paddy mortgage scheme, ii) paddy and milled rice purchases and iii) packing credit for exporters.

Under the paddy mortgage program, farmers can obtain loans by mortgaging their crop to the Bank for Agriculture and Agricultural Cooperatives (BAAC).[109] Farmer-borrowers are given loans worth up to 90% of an officially set target price. In 2008, BAAC increased the maximum limit for the year's paddy mortgage scheme to 500,000 baht per farmer from 350,000 baht. This entitles a farmer to mortgage as much as 35 tons of paddy rice compared to the previous ceiling of 25 tons. The current scheme offered 14,000 baht (US$428) per ton of paddy rice with a moisture content of up to 15%.[110]

With regard to rice purchases intervention, the government allowed its agencies to buy paddy and milled rice. In 2001-2002, about US$44 million worth of paddy and milled rice are sold to the local market or to military personnel. In addition to the rice purchase program, the Bank of Thailand (BOT) provides packing credit to rice exporters and millers to liquidate paddy stocks for export. Under this scheme, BOT extends loans to exporters through the commercial banks. BOT generally charge the commercial banks 5% per annum for their loans. However, an annual interest of three to four percent (3-4%) is charged if the loans are provided to small exporters whose revolving capital is not more than 10 million baht. Traditionally, the major beneficiaries of this kind of credit are the large exporters of agricultural products. However, recent changes in regulations resulted in the availment of the facility by many small exporters of non-traditional products which include, among others, canned fruits and foods, leather goods, toys, plastic products, electronics, and automobile parts.[111]

[109] For brief information of BAAC please refer to Appendix I.
[110] http://www.bangkokpost.com/180608_Business/18Jun2008_biz36.php
[111] http://www.tdri.or.th/library/quarterly/text/s89_1.pdf

Another financial institution under the supervision of the Ministry of Finance, the Export-Import Bank of Thailand (EXIM Thailand), had an enhanced packing credit plus program. This program involves a revolving credit line and export credit insurance that is provided to small- and medium-sized export enterprises to meet their pre-and post-shipment financial needs. Exporters can obtain the export credit insurance privilege if they apply within one month after signing the credit agreement. Export credit insurance covers the risk of non-payments by overseas customers subject to EXIM Thailand's terms and conditions.[112]

It is sad to note, however, that while Thailand as a major net agricultural exporter ought to benefit from the mandated tariff reductions under the WTO Agreement on Agriculture, experience shows that only a few big farmers engaged in the export business and Bangkok-based middlemen benefited in the trade. Small rural producers, especially those who were not cultivating for the export market, did not enjoy the same benefit.

3.2 Rice Industry Chain

An estimate of Thailand's total number of rice smallholdings is at 3.8 million as of 2005. Approximately 20 million tons of rice are produced annually by the Thai farmers, two-thirds (2/3) of which is consumed by farmers and their families, used as seeds or sold in the local market. The remaining third (1/3) is exported. The most demanded variety of Thai rice for export is the *Hom Mali* or popularly known as *Jasmine* rice.

Production, processing and marketing of rice is a complex process especially if the producer aims for a good price for his product. Strict observance of quality standards set by the buyers/consumers is a must. Rice product produced after milling paddy rice may come in one of the many possible forms such as rice for cooking, ready to eat rice snacks, crackers mixed with nuts, syrup, wine, vinegar, etc. Moreover, the waste products of milling paddy rice are used as ingredients of feeds for animals and livestock. Recent studies also show that rice hull is an excellent source of energy particularly as material for household cooking.

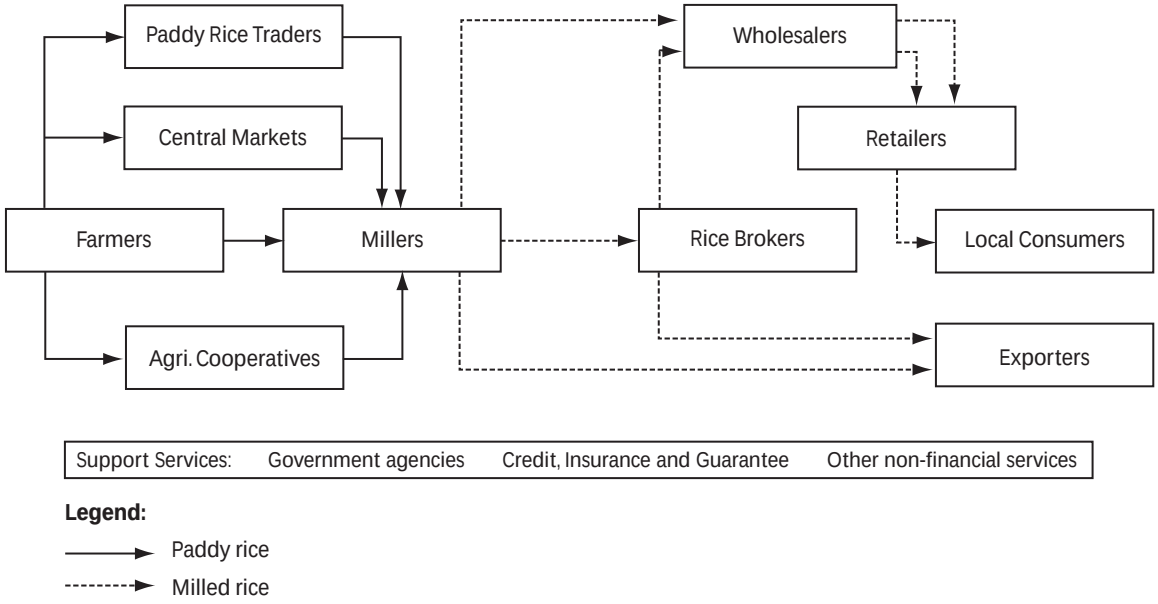
Marketing of rice is made at two levels namely: i) the paddy market and ii) milled rice market as shown in Figure 6.1. Local assemblers play the major role at the paddy market. Paddy rice passes through these merchants before it changes hand to the millers. The central paddy markets, on the other hand, are market centers located in the main production areas which are either set up by government or by the private business sector. They serve as a meeting place for assemblers and millers to negotiate and make transactions. Depending on the size of a market center, service facilities may include labour, warehouse, moisture gauges, drying equipment and other devices, and loans. Owners of large market centers normally do not involve themselves in the trading business to avoid price distortions. They prefer to earn from the fees or rent and repayments of loans they have provided. BAAC put up three (3) large centers in three (3) major rice production areas in the North, Northeast and Central regions of the country. The Department of Agricultural Extension, of the Ministry of Agriculture and Cooperatives, also established many centers but of smaller sizes.

Under the milled rice market, the broker plays a very important function of building marketing connections between rice exporters or wholesalers and millers. They are responsible for searching certain types or quality as well as quantity of rice to meet the requirements of the exporters. Majority of small millers sell rice to wholesalers and exporters through brokers.

It is interesting to note that the rice chain can work more efficiently if there is mutual support from both the government and the private sector, particularly on the stage/area in the chain with identified gaps requiring immediate assistance.

[112] http://www.exim.go.th/eng/services/packing_credit_plus.asp

Figure 6.1 Paddy to Milled Rice Marketing Chain and Support Services



Source: Agricultural Business Research Section, Kasetsart University (1997).

3.3 Value Chain Major Players Situationer

3.3.1 Farmers, Paddy Traders and Middlemen

The farmers' poor economic conditions make them an easy prey for loan providers who demand high rates of interest on loans and repayment of past debts usually after harvest where the price of paddy is always at its lowest. Paddy traders provide loans and farm inputs (seeds, fertilizers, pesticides) to farmers at the beginning of the farming season. Repayment of their loans can be made either with paddy or in cash which is normally higher than those charged by formal lending institutions.

Majority of farmers do not have transportation. In remote areas, farmers are solely dependent on the traders to transport the farm produce to rice markets. Traders provide the needed services where the basic trading infrastructure is not sufficient. While rice farming is generally small scale and unevenly dispersed throughout the country, paddy traders are responsible for collecting and transporting the paddy from the farms to the mills. Middlemen, on the other hand, buy farm produce at prices usually below the market price and demand high interest rate on loans they provide to the farmers.

3.3.2 Processors/Millers

Local dealers/traders, who generally provide transportation services to collect paddy on the farms for delivery in the mills, play an important role in paddy trading through private channels. Paddy rice is de-husked in general in a local rice mill. Any further refinement such as parboiling, polishing and packing takes place in the importing country or in the producer country. It is quite common for the importer to do specialized milling and the packing of rice since small village mills cannot meet the quality standard required for export.

The majority of successful mills are large scale mills with a milling capacity of about 200 tons of paddy rice per day in order to make a profit. In Thailand, most millers control the price of paddy rice because they have easy access to information that rice exporters are willing to pay. This information is usually provided by their rice agents.

Generally, farmers lack the capital to make adequate investments in their farms. Their inability to put up appropriate storage facilities means selling rice quickly in order to repay the loan borrowed from

millers and middlemen. This difficult situation leaves farmers little bargaining power with the millers/ loan providers, since they are forced to sell their produce usually a month after harvest and therefore miss the opportunity of higher price during the lean months. To some extent, farmers who sell their rice to intermediaries at low prices must later buy rice for their own consumption at prices which are twice as high.

3.3.3 Milled Rice Traders and Exporters

The main channel for selling rice is Government-to-Government deals. In Asia, around half of all annual rice transactions are realized through these kinds of deals. The physical trading of rice is organized through rice traders and brokers. Farmers can sell their paddy through both government and private channels. The main function of government related bodies is to sell the paddy at the government's intervention price. In Thailand, intervention price is 10% higher than the market price.

After the rice leaves the mill, it can be sold directly to local consumers, paddy traders, brokers or the government. The price that rice brokers and paddy traders buy rice is not always fair, nor clearly determined which, in theory, should be determined by considering supply and demand on a global scale as well as the information provided by the United States Department of Agriculture (USDA).

Private export trading has risen over the years because of the liberalization of the commercialization of production chains and the termination of cereal import state monopolies hence, allowing the transition from government to private-led trading to take place. However, a small number of Thai families still control the conventional rice trade and it remains extremely secretive.

3.3.4 Brokers

A large portion of the international rice market is a trade in surplus. Therefore, participants in the market change on a yearly basis depending on the level of production. Consequently, it becomes difficult to find a suitable partner to buy or sell rice. In addition, it is time-consuming and costly to search new partners, thus, making transaction costs very high. This is where brokers play a crucial role in the movement of rice and efficient functioning of the market.

Brokers and traders act as intermediary between exporters and importers. Their clients may be countries, trading companies, millers and food processors. The vast majority of Thai rice exports are sold through brokers and not directly to international trading companies.

4 FAIR TRADE RICE VALUE CHAIN IN THAILAND

A successful project known as the Fair Trade Value Chain Project was implemented in Thailand more than a decade ago by multi-national organizations, namely: the International Fair Trade Association (IFAT)[113], Fairtrade Labelling Organization International (FLO)[114] and European Free Trade Association (EFTA)[115] and in collaboration with local Thai NGOs. The project's main objective is to contribute more value from trade in rice for the benefit of Thai small-scale farmers. As defined in the project, value does not only mean the monetary return derived by the farmers from participating in the project but also include social and other benefits such as assured market, training/education on agricultural technologies, cooperative management, etc.

[113] IFAT is now known as the World Fair Trade Organization. It is a network of more than 350 Fair Trade Organizations in 70 countries whose mission is to improve the livelihoods and well being of disadvantage producers by linking and promoting Fair Trade Organizations, and advocating for greater justice in the world trade.

[114] FLO is non-profit, multi-stakeholder association involving 23 member organizations (Labelling Initiatives and Producer Networks), traders, and external experts. The organization develops and reviews Fairtrade standards and provides support to Fairtrade Certified Producers by assisting them in gaining and maintaining Fairtrade certification and capitalizing on market opportunities.

[115] Established in 1960 the association is an alternative for European countries that were either unable to or chose not to join the European Economic Community now called the European Union. EFTA member estates work on the principle of liberalization of trade among themselves and to other countries where they have concluded free trade agreements.

The project started through a partnership between local Thai NGOs and Swiss-based Fair Trade Organization, Claro. In Thailand the first rice organization involved in Fair Trade rice export was Surin Farmer Support (SFS). SFS has the advantage over other farmer groups since the organization has been producing organic rice for many years, before its partnership with Claro. In 1996, the project expanded its scope to include organic farming as its primary focus because of the high demand for organic products in the world market. As of 2005, the Organic and Fair Trade rice project is a collaborative undertaking of four (4) local farmer organizations, local NGOs, Earth Net Foundation and Green Net Cooperative.

4.1 Chain Players/Actors

4.1.1 Green Net

Green Net is a Thai NGO which was established in 1993. This NGO is an IFAT member which has been very active in promoting sustainable agriculture and providing Fair Trade market service to producer cooperatives/groups. The organization also advocates the consumption of organic food among Thai consumers. Green Net is one of the few licensed large exporter of rice and food products to the EFTA.

4.1.2 Claro

Claro of Switzerland, on the other hand, is the official importer of Fair Trade rice. All Fair Trade Organizations in Europe that would like to buy rice products place their orders for Thai rice from Green Net through Claro. Currently, the importers of Fair Trade rice are Solidar Monde (France), Oxfam (Belgium), Oxfam (United Kingdom), Gepa (Germany), CTM (Italy), Eza (Austria) and Claro (Switzerland). Traded rice in Europe with Fair Trade label is *Jasmine* or *Hom Mali* rice. Many EFTA members have been importing *Hom Mali* rice from Thailand for the past ten years.

4.1.3 Progressive Farmers Association

Another important partner group of Fair Trade is the Progressive Farmers Association (PFA) of North Thailand. PFA assists farmers in the production of both conventional and organic rice. Through PFA, farmer members were able to avail of inexpensive credits with their rice and buffalo banks lending scheme.

Participating farmers are granted low interest loans for the purchase of fertilizers through PFA and in cooperation with a local bank. After harvest, the cooperative buys the paddy rice from the farmers at Fair Trade price for storage and then sold on the latter part of the year when the price of paddy is high. The net profit after the sale is shared to the members of the cooperative.

Mechanized farming in Thailand is limited to few farmers who can afford the cost of acquiring the farm machineries/implements and the high cost of fuel. Hence, most of the farmers prepare their farms for planting by buffalo. Unfortunately, many of these farmers do not own the work animal so they usually rent one during the planting season. Through the buffalo bank scheme, the cooperative purchases and raises buffaloes for their members. The cooperative provides a fertile female buffalo to a farmer member. After the animal has given birth, the first calf is returned to the cooperative. The outcome of all succeeding births will be shared between the cooperative and the farmer where all the odd numbered calves go to the cooperative and the even ones to the farmer. This scheme benefits a farmer member because it enables him to acquire assets which can be easily converted into cash. A fully raised buffalo calf is worth 15,000 baht which is almost equivalent to the farmers' average yearly income. In addition to the lending service, PFA also provide programs that support women's self-help groups to enhance their role in rural development.

FTO Netherlands was the first Alternative Trade Organization (ATO) importing from PFA and Migros Switzerland is their regular big client. Traidcraft of UK and Agrocel are its latest addition of clients. In partnership with FTO, many PFA farmer members have completed organic farming training programs and thus enjoy all the benefits of a certified FLO farmer.

4.1.4 Reis Mühle Brunnen

Another major player in Fair Trade is a rice mill also based in Switzerland, the Reis Mühle Brunnen (RMB). The mill was established in 1956 and since 2004 has been a part of the 'Coop'. Coop is one of the biggest supermarkets in Switzerland. Presently, RMB is a rice mill and packing company equipped with modern facilities. It started with Fair Trade products in 2002 then begun processing organic *Jasmine* and parboiled conventional rice from Thailand. The undertaking was very successful. Part of the rice processed at RMB is exported to Eza (Austria) and Italy. In 2004, the estimated turnover of Fair Trade rice processed by RMB was 1,100 tons.

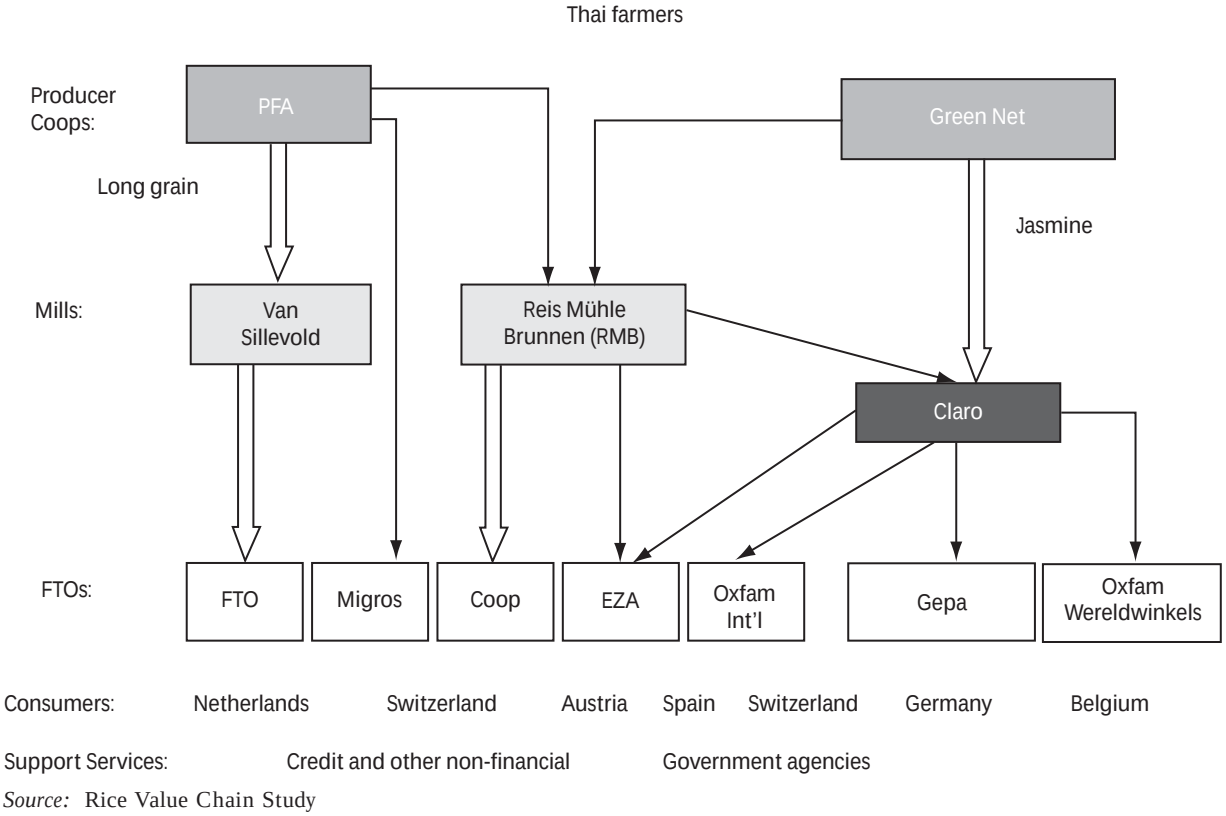
4.1.5 Van Sillevoldt

Van Sillevoldt is milling around 100,000 tons of rice that is handled every year. The rice which this Dutch company has been processing and distributing originates from Thailand, India, Pakistan, Guyana, Surinam, USA, and Italy. Van Sillevoldt packages and distributes 'private label' rice types such as Fair Trade, Albert Heijn, Superunie, Laurus, TSN, Aldi, and Lidl. The company is open to projects with specialty rice and can provide support services in the field of logistics, food safety requirements, packaging and distribution.

4.1.6 Participating Thai Farmers

In Thailand, there are about 3,500 farmers involved in the Green Net network of which 950 are in the Thai provinces of Yasothorn and 500 in Surin. About 750 farmers are involved in organic farming and certification. It is interesting to note that most of the Fair Trade rice is organic, but not all and not always certified. Figure 2[116] shows the flow of Thai rice through Green Net and PFA, mills, FTO members until the finished rice product reached their respective customers.

Figure 6.2 Fair Trade Rice Supply Chain



Source: Rice Value Chain Study

[116] This Figure is part of the international rice chain where Fair Trade is involved. This includes rice producing countries such as Thailand, Lao PDR, India and the Philippines.

4.1.7 FTO and Domestic Consumers

Thai rice consumers include the local and foreign consumers. Exported Thai rice in Europe from the producer cooperatives Green Net and PFA reached the end-consumer through the FTO of an importing country. Also shown in Figure 2 are the European consumers of Thai rice such as the Netherlands, Switzerland, Austria, Spain, Germany and Belgium.

4.2 Recent Developments

The Fair Trade rice project is a success. A report in a 'Co-op America'[117] publication said that the Fair Trade rice from Thailand already reached the US market along with coffee, tea, mangoes, pineapples, and other tropical fruits. The report cited some benefits to farmer members of Fair Trade-supported cooperatives. For example, farmers who had been dependent on the millers who control the price of their farm produce can now make use of the Fair Trade revenues to put up their own mill. With Fair Trade, a Surin cooperative which is involved in Fair Trade Jasmine rice production has created a program to protect an endangered forest, and provides supplies to local schools. With organic farming, farmers already feel the benefits through increases in farm biodiversity and reduction of health problems created by misuse of chemical fertilizers and pesticides.[118]

Meanwhile, the Thai government had strengthened programs implemented by government financial institutions, particularly the packing credit and insurance for small- and medium-sized entrepreneurs.

5 SUMMARY/LESSONS LEARNED/RECOMMENDATIONS

It appears that Thailand has been practicing the concept of value chain financing. This is shown in the agricultural programs the Thai government has been supporting with active participation of financial institutions and other agencies of the government. In particular, the paddy mortgage scheme and packing credit are two programs that have been benefiting farm producers, exporters and millers, respectively. BAAC implements the paddy mortgage scheme. On the other hand, commercial banks provide loans to the target beneficiaries at reasonable rates through the packing credit scheme. EXIM Thailand likewise implements an enhanced packing credit program with an insurance package that protects its clients from non-payment of the clients' foreign customers. In addition to the loans obtained from the formal institutions, farmers have also availed themselves of loans and services from traders/millers such as loans to buy fertilizers, seeds, other farm inputs and transport services.

Financing the paddy rice farmers under the Fair Trade Rice Chain is done by the cooperative in partnership with local banks. PFA not only assists its farmer members in obtaining loans at low interest through partnership with a local bank but also provide alternative livelihood through their buffalo bank scheme. Furthermore, the farmer organization provides trainings on production of both conventional and organic rice.

As reported in the Van Dooren paper, there are several lessons that can be learned from the Fair Trade rice chain project covering issues both financial and non-financial in nature such as environment, social, and health among others. The highlights of some of these lessons are as follows:

- The Fair Trade rice value chain scheme implemented in Thailand is profitable and benefits all the actors/players of the chain. While small farmers benefited from the higher market price of Fair Trade rice, it is still not sufficient to elevate them from poverty;
- Most of the rice value-adding activities are done by the millers, FTOs and traders and therefore receive the larger financial benefits. On the other hand, farmer-producers get meager income from the sale of their crops;

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[117] Co-op America, previously known as Green America, is a non-profit organization whose mission is "*to harness economic power-the strength of consumers, investors, businesses, and the marketplace-to create a socially just and environmentally sustainable society*".

[118] http://www.exim.go.th/eng/services/packing_credit_plus.asp

- Privately-owned rice mills set the price of paddy rice. They manipulate the price using weight and quality as an excuse to purchase the farmers' produce at a lower price;
- Production of organic rice is more profitable than conventional since it demands a higher price both locally and internationally;
- Organic rice farming is more environment friendly than conventional farming. Health of the farmers will not be put at risk due to the effects of exposure to various pesticides; and
- Cooperatives can increase the farmers' income by setting up rice and buffalo banks or other similar income-generating activities.

The study showed that income from rice farming alone is not sufficient to support household needs of the farmers. Farmers should be provided training/information on small farm or non-farm projects such as vegetable production, fish production, vending or simple rice value adding project for them to start activities that would generate additional income. Sufficient and affordable credit support must be provided to the farmers who are qualified to undertake a new project.

Rice mills are an essential factor in controlling the chain in favour of the farmers. Support should be provided to farmer organizations which are capable of putting up there own mills. Consequently, the success of the mill means more benefits to its members.

Appendix I. Bank for Agriculture and Agricultural Cooperatives

In Thailand, the task of financing the agricultural sector has been delegated to the Bank of Agriculture and Agricultural Cooperatives (BAAC). The Bank was founded in 1966 as a state-owned Bank supervised by the Ministry of Finance. Its primary objective is to stimulate agriculture through the provision of financial assistance for agricultural production, investment and marketing purposes.

Being highly decentralized, its field offices have served as the Bank's most important outreach unit for its daily operations and organizational strategy. As of 2007, the Bank has 4,340,000 individual farmer-clients and 965 farmer-institutional clients with membership of about 1,570,000. Latest data show that the Bank has expanded into 75 provincial offices and about 1,200 branches and field units.

Among the lending approaches being implemented by the Bank, the most extensively used are retail loans through a group joint liability scheme. Under this scheme, BAAC extends non-collateralized loans through groups of farmers who are made co-liable for each other's loans. A typical group should consist of 12 to 15 members to qualify as loan beneficiary.

In practice, BAAC still asks farmers for individual landholdings and may require the deed for "safekeeping" as added loan security. Loan size is set at about 60% of projected revenue of sale of the crop produced by the borrowing farmer.

[Source BAAC website]

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http://www.exim.go.th/eng/services/packing_credit_plus.asp

lr. Corn Van Dooren, 2005 Rice Value Chain Analysis "Each life start with a little seed"

http://www.coopamerica.org/pubs/realmoney/articles/fairtraderice.cfm

Chapter 7

Agricultural Value Chain Financing in Vietnam

Gregoria M. Guce

1 INTRODUCTION

1.1 Case study objectives

This study of the value chain financing of rice in Vietnam aims at documenting and assessing the current state of rice value chain financing practices in the country. It investigates the role of financing in each link of the rice chain as well as the financial relationships between and among the major players of the rice value chain. Likewise, issues and constraints pertaining to rice value chain financing are identified and recommendations to improve access to financing services are submitted.

This case study forms part of the regional study on value chain financing of agricultural commodities championed by selected countries in Asia including Vietnam.

1.2 Agriculture in Vietnam

Reforms in the agricultural sector transformed Vietnam from a country experiencing extreme food insecurity into being one of the world's largest exporter of agricultural commodities including rice, coffee, rubber, tea, vegetables, fruits, coconuts, sugar cane, cashew nuts, soybeans, groundnuts, cassava and pepper. With its favourable climate and rich soil, levels of cultivation, livestock, and aquaculture have been upgraded through the application of intensive farming, and advanced technologies thus further improving the quality of agricultural products (see Annex 1 for other selected economic indicators).

Consequently, agriculture now plays a relatively important role in the economy of Vietnam. The combined sectors of agriculture, forestry and fishery account for about 21 percent of the country's GDP behind the industry (42 percent) and services (38 percent) sectors.[119] Since its transition from a centrally planned to a market-oriented economy in 1986, the country's GDP growth averaged 7.2% per year from 1997 to 2007 (with an 8.5 percent growth in 2007) even against a background of the Asian financial crisis and a global recession.[120] During this same period, agriculture in Vietnam also grew at an average annual rate of 4 percent. Since 2001, Vietnam has also reaffirmed their commitment to economic liberalization and international integration.

1.3 Focus and Scope of the Study

The study will focus on how the rice value chain is financed in Vietnam, the current practices and sources of financing the rice chain. Observations and survey results of related studies on some financing models and innovations are presented to give the readers a fairly broad idea of how the value chain financing of rice is being undertaken in Vietnam. Emerging issues and constraints to financing will also be discussed.

[119] World Bank, 2006.
[120] Ibid.

1.4 Organization of the Report

The discussion of the report will focus on the flow of activities in the rice value chain, from production to its final product, with emphasis on the delivery mechanisms and sources of financing along the chain. Lessons and emerging trends (including success factors and constraints) will also be dealt with.

2 RICE VALUE CHAIN

Vietnam is still largely an agricultural economy wherein rural folks depend primarily on agriculture for a living. Rice is the most important crop, which is planted to 84 percent of the cultivated area and constitutes more than 85 percent of Vietnam's total grains output.[121] The cropping sub-sector in Vietnam is characterized by a large number of small scale producers with a relatively small land area. The average land area per capita in rural areas in Vietnam varies between 0.06 hectares in the Red River Delta and 0.29 hectares in the central highlands region. The national average is 0.14 hectares per capita in rural areas.[122] Production of paddy has increased significantly during the mid-1990's and early 2000 to respond to the country's priority of achieving food security.

A value chain is defined as "the full range of activities required to bring a product or service from conception through the intermediary phases of production, delivery to final consumers, and the final disposal after use."[123] One benefit of the value chain analysis approach is it provides a detailed account of the constraints that participants face along the different stages of the chain. Thus, the concept of a value chain simply means improving the quality of the produce before selling it, which allows integration of the various players in agricultural production, processing and marketing. Any gains in productivity or the share of growers/producers/processors in the value chain will lead to improvements in the welfare of rural poor people.

2.1 Relationships and Key Actors in the Rice Value Chain

The relationship among the different participants in the chain is important to improve one's position within the chain. Strategies identified by UNCTAD (2000) to improve relative position may involve cooperative solutions through vertical and horizontal integration within the value chains, direct contractual relations between smallholders and retailers and upgrading by upstream actors.

In the rice value chain, different actors interact with each other wherein each player is responsible for each activity along the chain, from production to consumption. The inter-dependent linkages can be better understood by examining the channels to which paddy/rice is distributed. Figure 7.1 traces the channel of paddy/rice to the final consumers.

Likewise from the flowchart, the following specific distribution channels in Mekong River Delta can be gleaned:

1. Farmers-State-owned food companies-Out/export
2. Farmers-State-owned food companies-Domestic consumer
3. Farmers-Assemblers-State owned food companies-Out/export
4. Farmers-Assemblers-Private millers-State owned food companies-Out/export
5. Farmers-Assemblers-Private millers-Private wholesalers-State-owned food companies-Out/export
6. Farmers-Assemblers-Private millers-Private wholesalers-Private retailers-Domestic consumers
7. Farmers-Private millers-Private wholesalers-Private retailers-Domestic Consumers
8. Farmers-Assemblers-Private millers-Private wholesalers-Wholesalers of other provinces-Retailers of other provinces-Inter-regional consumers

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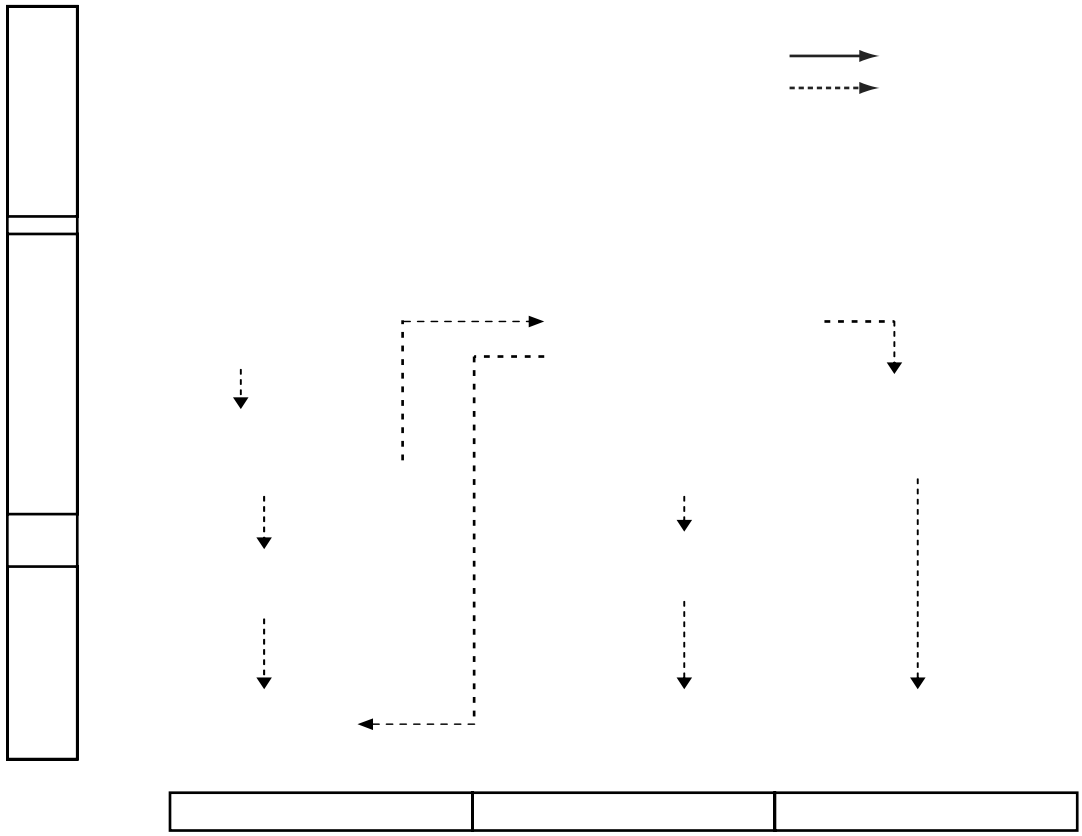
[121] Ibid.
[122] Agrifood Consulting Int'l., Linking the Poor with Rice Value Chain, 2002.
[123] Kaplinsky (1999).



[124] Luu Thanh Duc Hai. The Organization of the Liberalized Rice Market in Vietnam. Dissertation. 2002.

[125] In Vietnam, farmers/producers are not the dominant actors in the rice chain, a great deal of power rests with state-owned enterprises engaged in rice trade, particularly through government to government contracts involving large amounts of low-quality rice. (East Asia Integrates: A Trade Policy Agenda for Shared Growth. World Bank Publication, 2003.)

[126] Rice Value Chains Study in Vietnam.

Private wholesalers/brokers ship rice to private retailers in the province.

State-owned enterprises and companies are big traders that purchase paddy and rice from farmers, assemblers, wholesalers, miller-wholesalers, private wholesalers or agencies and perform initial processing and latter sell for domestic and/or export markets. The following actors belonging to SOEs include procurement stores, millers/polishers, wholesalers/exporters and retailers. Procurement store provide most of the raw material-paddy for SOEs. Working capital for procurement of paddy usually comes from SOEs. Millers/polishers of the SOEs produce brown, milled or polished rice and are involved in processing only. Retail selling units of the SOEs are State-owned retailers of milled rice, usually second grade rice that do not pass quality standards for export and are sold to medium- and low-income households.

Brokers operate as commission agents who are private rice traders. They get commission for rendering negotiation, bargaining and providing weighing, packaging, loading and unloading services to traders.

State farms manage and control their own business from production of palay to milling and marketing of finished products. Usually they have their own distribution channels to transfer the product to consumers in the domestic market or directly export it to foreign markets. They also buy paddy from other farmers.

Lastly, other actors in the chain are facilitators who provide different services for the traders. Usually they are groups that provide transportation and own warehousing facilities. They also include moneylenders, banks, quality control services, tax offices, and other agents for market regulation.

2.3 Integrating Dynamic and Efficient Value Chains

Risks related to prices and coordination can considerably be reduced by establishing strong linkages among farmers' groups, input dealers, traders/processors and more importantly through establishment of binding contractual agreements between farmers and those purchasing the products. A linkage between rice farmers – through their organization or cooperatives – and other players in the chain has emerged in Vietnam through contract farming. The contract farming model in Vietnam which provide linkage between farmers and enterprises supported production of agricultural commodities tied up to ready markets.

Other schemes being practiced in Vietnam is credit-in-kind from input suppliers or other actors of the chain. The linkages established with other actors of the chain like the miller/trader and wholesalers will facilitate financing to flow up and down the chain. Production inputs are provided to farmers and repaid directly from the sale of the product without going through a traditional loan process.

2.4 The Security of a Market Driven Demand

An assured market for the products reduces risk by making it easier to obtain financing from banks and financing from informal sources. Experiences documented under the Rice value chain study in Vietnam (2003) revealed the following market constraints at different stages in the chain[127]:

a. At the milling sector: lack of market access and volatility constraints were identified in the study. Likewise, the reliance on a small number of markets increases the risks of adverse economic conditions and increases price instability.

b. At the retailer sector: poor marketing and distribution system. The distribution of rice is impaired by inadequate infrastructure and distribution networks. Retailers receive low margins on rice sales due to significant competition among rice retailers and limited competition among State-owned enterprise-distributors.

c. Export sector: millers and exporters have difficulty accessing high quality and consistent inputs due to the structure of distribution and presence of multiple layers between producers and millers/ exporters.

[127] Arulpagasam, Jehan, Golletti, Francesco, Manuelyan Atinc, Tamar and Songwe, Vera. Trade Sectors Important to Poor: Rice in Cambodia and Vietnam and Cashmere in Mongolia. World Bank. 2003.

2.5 Risk Reduction and Access to Financial Services

There are some ways by which risks can be reduced and access to financial services be improved. One is developing competitive strategies to link farmers to input and output markets through contract farming. Based on experience by rice farmers in Vietnam, they lose when rice prices go down.[128] If there are contracts established at the beginning of the season in terms of the kind of rice, price, and quantity, farmers would feel more secure in investing in measures to increase yield. Rice farmers in Vietnam – through farmer cooperatives and organizations – enter into written or verbal contracts negotiated by large enterprises or firms, which provide credit and extension services in exchange for the guaranteed delivery of produce based on an agreed specific quality and predetermined price.

3 FINANCING THE RICE VALUE CHAIN

3.1 Major Source of Financing for Rice in Vietnam

Agricultural value chain financing becomes an integral part of the chain because participants in the chain need money to carry out their activities and to participate in dynamic markets. Practices in Vietnam include embedding other services such as technical assistance, processing, storage and marketing to credit to facilitate the expansion of financial services in rural areas.[129]

According to SEEP Network (2005), value chain finance refers to a variety of services, either provided by businesses within the value chains to one another, or provided by financial institutions to value chain businesses but designed for a particular value chain, and often in partnership with value chain businesses.[130] In other words, the flows of credit and financing among the various links in the chain comprise what is known as "value chain financing".

In Vietnam, formal financial institutions are critical players in providing loans for working capital and investments to large enterprises which in turn extend loans to small farmers. Farmers/growers, processors and retailers are also receiving increasingly large infusions of credit/financing resources from formal sources wherein they maintain trade ties.

The structure of credit in Vietnam is characterized by the presence of a formal and informal sector. The formal sector is dominated by five State-owned commercial banks with a lending share of 73.5 percent.[131] Among them are the Vietnam Bank for Agriculture and Rural Development (VBARD), the People Credit Funds and Rural Shareholding Banks (RSB), Bank for Investment and Development (BID), Bank for Foreign Trade (Vietcombank) and the Bank for Commerce and Industry (BCI). VBARD is the largest bank in Vietnam, with access to most of the communes in Vietnam and also provides wholesale lending to the PCF, RSB and the Vietnam Bank for Social Policy (VBSP). State-owned commercial banks also provide financial services to State-owned enterprises and rural households.

Vietnam Bank for Agriculture and Rural Development.[132] The Bank was established in 1988 to reform the financial system and reintroduce commercial banks in Vietnam. VBARD has a broad outreach of over 2,300 branches nationwide. It has banking relationships with 702 correspondent banks in more than 90 countries throughout the world. VBARD utilizes three different credit methodologies: i) provision of individual loans to rural farmers and entrepreneurs, with collateral requirement (e.g. land use certificate); ii) lending to individuals through joint liability groups to increase coverage of rural households, as well as to reduce transaction costs on small loans; and iii) use of brokerage services of mass organizations which target borrowers who are unable to provide collateral. Under this system, loans are channeled through "guarantee groups" composed of members of mass organizations, which are responsible for their organizations.

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[128] Agrifood Consulting International. Rice Value Chains in Vietnam and Cambodia. 2002.
[129] Fries and Akin. "Working Within the Value Chain to Get Financial Services to Micro and Small Enterprises." Article taken from a longer paper entitled, "Value Chains and their Significance for Addressing the Rural Finance Challenge." ACDI/VOCA.
[130] SEEP Network stands for the Small Enterprise Education and Promotion Network, a leading international network and promoter of best practices in enterprise development and financial services.
[131] World Bank 2002.
[132] Dr. Do Nat Ngoc. VBARD. 2003.

As an agricultural bank, VBARD has specialized lending to rural households and small and medium enterprises (SMEs) involved in agriculture and off-farm enterprises. In 2002, 40% of its total loans and advances were channeled to farmers and traders, 25% to State-owned enterprises and 12% to private enterprises and cooperatives (VBARD 2002 Annual Report). VBARD has implemented innovative ways to reach people at the commune or grassroots level where there is less presence of bank services. Mobile banking units have been introduced to increase the outreach of its credit and deposit services. VBARD vehicles are used to carry loan officers to process loan applications, disburse money, collect repayments and mobilize savings. The visits to remote areas followed a fixed calendar and are announced in advance, to coincide with weekly market days.

There are also some financial institutions in Vietnam that provide subsidized credit specifically aimed at the poor. These are the following:

People's Credit Funds (PCF). The collapse of the cooperative system and the establishment of credit-focused public banks prompted the government to establish in 1993 the new People's Credit Funds to mobilize savings. The PCF network serves 1 million members with loans of an average value of US$700-800. Set up specifically for poor households, VBSP reports a portfolio of 5.7 million borrowers provided with loans at a significantly lower average value of US$368.[133] PCF focused on domestic savings mobilization and also rural credit.

Vietnam Bank for Social Policy (VBSP). Formerly the Vietnam Bank for the Poor (VBP), the VBSP was established in 1995 to provide credit to the poor. Similar to VBARD, this Bank also became a major provider of financial services to the low-income population. Basically, the VBSP has been a channel for providing subsidized credit to poor households. It mainly offers collateral-free credit services to finance production activities (credit services are checked through "poverty committees"). The credit period is based on production cycles but does not exceed over 36 months.

Rural Shareholding Bank (RSB). This Bank is the equivalent of PCF and derives most of their funds from VBARD, which they use for on-lending at higher interest rates.

Informal sources of credit also play a significant role in financing the production and marketing needs of players in the rice value chain. Input credit to small rice farmers are commonly financed by input suppliers, private money lenders, and friends and relatives. Most of assemblers and wholesalers and retailers' credit needs also come from informal sources such as friends, relatives, and traders.

3.2 Financial Relationship among Different Actors in the Rice Value Chain

At the farmer/producer level, trade credit is usually provided by input suppliers to smallholder rice farmers while production loans are provided by banks. In the formal sector, credit practices in Vietnam are mostly collateral-based lending for loans higher than a certain amount (VND 10 million). Below this level, formal financial providers like VBARD used group lending without imposing a joint-liability guarantee by collaborating with mass organizations and NGOs. These mass organizations and NGOs serve as intermediaries between VBARD and/or VBSP and their borrowers.

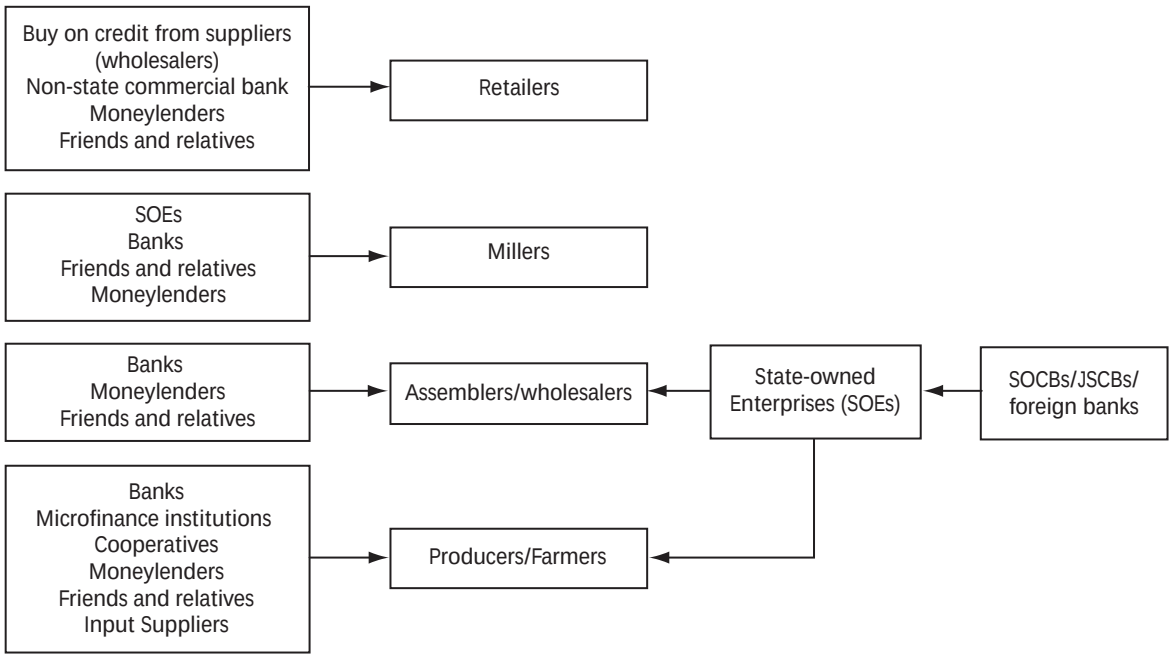
A relatively new development in Vietnam is the linkage of large firms and enterprises with smallholder farmers through contract farming, most notably the two-contract system[134] where a processing company makes a single contract with a farmer organization which, in turn, makes a number of individual contracts with its members.

There are other channels of credit delivery carried out by other players in the rice chain. Specific to each actor in the rice value chain, the following financial practices and relationships were established: i) farmers availed themselves of loans from informal sources such as input suppliers, moneylenders, friends and relatives as well as from banks; ii) assemblers, wholesalers and millers obtained credit from agricultural banks/state commercial banks as well as from informal sources such as friends, relatives, money lenders, and traders;[135] and iii) retailers borrowed from friends/relatives and from rice wholesalers.

[133] VBSP 2007 Year end Report.
[134] "Linking Farmers to Markets through Contract Farming." Markets and Development Bulletin. ADB. March 2005.
[135] Luu Tanh Duc Hai, 2002.

The State-owned enterprises rely mostly on State-owned agricultural banks and/or State commercial banks for financing. For exporters in Vietnam, the typical mode of transaction with a foreign buyer is to sign a contract leading to a letter of credit on the basis of which, funds are disbursed by a credit institution to the marketing agent responsible for the procurement. Figure 7.2 shows the flow of financing/credit to various rice chain actors.

Figure 7.2 Financial Relationships of Rice Chain Actors in Vietnam



3.3 Contract Farming Model in Vietnam

The enactment of Government Decree 80 in June 2002 promoted the sale of agricultural produce through contracts between SOEs and farming households. There are five main types of contractual arrangements/ engagements established between and among major actors of the chain based on the survey conducted by Ahn and Binh (2005)[136], namely: i) sales contract with State processing enterprises; ii) production contract with foreign companies: iii) sale to private merchants by oral engagement; iv) sale through cooperatives and; v) handicraft and industrial village network. Contract farming in Vietnam covers almost all major agricultural products from plantation crops, forestry, livestock and fishery. The Government has played a major role in promoting contract farming in Vietnam by implementing specific policies and legislative measures on land use, investment, credit, technical advances and technology transfer and market and trade promotion. In addition to these, specific support services and incentives were provided to promote contract farming; credit and financial services were facilitated by VBARD while public infrastructure and technology transfers were also provided by Government agencies.

Contract farming provides a link between State-owned enterprises and farmers through its cooperatives or farmer organizations. Under this arrangement, an enterprise makes a single contract with a cooperative and then the cooperatives make individual contracts with its members. Aside from credit assistance facilitated to these cooperatives, technical assistance and marketing are tied up with the contractual arrangement. Contractual arrangements are negotiated for rice, tea, rubber, cotton, sugar cane and corn, and other agricultural commodities.

[136] Dao The Anh and Vu Trong Binh. Agricultural Contracts, Cooperative Action by Farmers, and Poor People's Participation in Northern Vietnam. Making Markets Work Better for the Poor. ADB. 2005.

4 EMERGING TRENDS, SUCCESS FACTORS AND ISSUES IN FINANCING THE RICE VALUE CHAIN

4.1 Rice Credit Constraints[137]

The rice value chain study in Vietnam by Agrifood Consulting International for the World Bank (2002) revealed that rice farmers suffered constraints in accessing credit, especially complying with the bureaucratic procedures necessary to access loans through the formal banking system. The study likewise showed that the repayment system for credit also gives no allowance for the seasonal nature of agricultural production and income.

In another study by Arulpagasam, et al. (2003) the following credit constraints were identified: i) farmers encountered complicated borrowing procedures and unsuitable repayment schedules; ii) repayment system for credit gives no allowance for the seasonal nature of agricultural production and income; iii) lack of access to savings as well as credit institutions also leads to inability to "self-insure" via savings during times of non-production and low income; and iv) lack of working capital among some millers/private enterprises/ exporters limits their capability to adequately purchase paddy from farmers. This study also found out that exporters have access disadvantages relative to State-owned enterprises (SOE) because they are limited to receiving 70% of required capital while SOEs are able to receive 100%. This places SOEs in a stronger purchasing position.[138]

4.2 Success Factors and Constraints

The case of rice value financing in Vietnam has utilized the contract farming model to finance production and marketing of rice. Under this scheme, an enterprise or a company provides inputs on credit which is tied to a product purchase agreement. Other non-credit services like technical assistance and market for the product are also assured. Farmers, upon signing contracts with enterprises, can apply for credit from banks.

In 2003, a few months after Decree 80 was enacted, there was an increase of signed contracts between SOEs and farmers to buy rice covering one million hectares accounting for 40% of total rice output, 50% of tea output, 90% of cotton and fresh milk and 70% of sugar cane output. While there was a marked increase in the number of signed market contracts between farmers and enterprises/SOEs, market completion was not successful. During this year, 90% of signed paddy contracts were not fulfilled.[139] Insufficient working capital among some cooperatives has led to the breach of contract of some farmers as experienced by Thanh Agricultural Cooperative wherein only half or 50% of the volume of rice required under the signed contract was consummated.[140]

Weak contract enforcement could mostly be attributed to limited advances by the company to the cooperative as well as coordination failure among parties due to limited organization of producers and imbalances in market relationships.[141] Data also showed that 20-30% of rice, vegetables and coffee contracts fail because of fixed prices.

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[137] Arulpagasam, Jehan, Golletti, Francesco, Manuelyan Atinc, Tamar and Songwe, Vera. Trade Sectors Important to Poor: Rice in Cambodia and Vietnam and Cashmere in Mongolia. World Bank. 2003.
[138] Agrifood Consulting International. Linking the Poor with Rice Value Chains. 2004.
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5 CONCLUSIONS AND RECOMMENDATIONS

Different modes of credit delivery mechanisms have helped farmers and other actors in the value chain move products to final consumers. Through the initiatives of the government, the contract farming model has emerged in Vietnam to link smallholder producers of rice and other commodities to the market. The following are some of the lessons learned during the implementation of some contract farming schemes:

- Financing the rice value chain through contract farming has resulted in the increase of signed contracts on rice and other agricultural commodities;
- However, sustainability of this arrangement posed a constraint because of failure of contract enforcement on one or both parties (e.g. weak culture on enforcement and farmers' failure to pay their input credit);
- Lack of capital among cooperatives with signed contracts, assemblers, wholesalers and millers limited their capabilities to expand their markets;
- Credit delivery from informal sources like input supplier, traders, private moneylenders, friends and relatives has been a lifeline among small farmers who have no access or limited access to formal sources.

The following are the general recommendations of this study based on the lessons learned:

- Farmer organizations and cooperatives must be organized and coordinated to become an effective linkage channel between farmers and enterprises;
- Contractual arrangements should provide equal sharing of risks and benefits to both contractual parties;
- To expand financial delivery to the rice sector, the role of financial institutions is critical in strengthening the linkage between enterprises and farms; and
- Financial institutions can look into the experiences of enterprises which have had contractual ties with farmers, in order to develop financial innovations that involve smallholders in the production and marketing of rice or other high-value crops.

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ANNEX 1 – SELECTED ECONOMIC INDICATORS

India

Population	1,147,995,904 (July 2008 est.)
Population, average annual growth rate (2001-2007)	1.4%
Labour force, average annual growth rate	1.8%
GDP (US$ billions)	1,171.0
GDP, average annual growth (1997-2007)	6.9%
GDP, 2007	9.0%
GDP per capita, average annual growth 1997-2007	5.3%
GDP per capita, 2007	7.7%
% of GDP by sector	Agriculture: 17.8% Industry: 29.4% Services: 52.8%
Unemployment Rate	7.2% (2007 est.)
Inflation Rate	6.4% (2007 est.)
Agricultural products	rice, wheat, oilseed, cotton, jute, tea, sugar cane, potatoes; cattle, water buffalo, sheep, goats, poultry; fish
Industries	textiles, chemicals, food processing, steel, transportation equipment, cement, mining, petroleum, machinery, software
Exports	$151.3 billion f.o.b. (2007 est.)
Exports commodities	petroleum products, textile goods, gems and jewelry, engineering goods, chemicals, leather manufactures
Imports	$230.5 billion f.o.b. (2007 est.)
Import commodities	crude oil, machinery, gems, fertilizer, chemicals
External debt	$149.2 billion (31 December 2007)

Sources: World Bank Publications.

Indonesia

Population	237,512,352 (July 2008 est.)
Population, average annual growth rate (2001-2007)	1.3%
Labour force, average annual growth rate	1.9%
GDP, 2007 (US$ billions)	432.8
GDP, average annual growth (1997-2007)	3.7%
GDP, 2007	6.3%
GDP per capita, average annual growth (1997-2007)	2.3%
GDP per capita, 2007	5.1%
% of GDP by sector, 2007	Agriculture: 13.8% Industry: 46.7% Services: 39.4%
Unemployment Rate	7.3%
Inflation Rate	2.8%
Agricultural products	Rice, cassava (tapioca), peanuts, rubber, cocoa, coffee, palm oil, copra; poultry, beef, pork, eggs
Industries	petroleum and natural gas, textiles, apparel, footwear, mining, cement, chemical fertilizers, plywood, rubber, food, tourism
Exports	$49.32 billion f.o.b.
Exports commodities	Semi-conductors and electronic products, transport equipment, garments, copper products, petroleum products, coconut oil
Imports	$57.56 billion f.o.b.
Import commodities	Electronic products, mineral fuels, machinery and transport equipment, iron and steel, textile fabrics, grains, chemicals, plastic
External debt	$61.78 billion

Sources: World Bank Publications.

Lao PDR

Population	6,677,534 (July 2008 est.)
Population, average annual growth rate (2001-2007)	1.6%
Labour force, average annual growth rate	2.9%
GDP (US$ billions)	4.0
GDP, average annual growth (1997-2007)	6.3%
GDP, 2007	7.1%
GDP per capita, average annual growth 1997-2007	4.5%
GDP per capita, 2007	5.3%
% of GDP by sector	Agriculture: 40.9% Industry: 33.2% Services: 25.9%
Unemployment Rate	2.4%
Inflation Rate	4.5%
Agricultural products	Sweet potatoes, vegetables, corn, coffee, sugarcane, tobacco, cotton, tea, peanuts, rice; water buffalo, pigs, cattle, poultry
Industries	Copper, tin, gold, and gypsum mining; timber, electric power, agricultural processing, construction, garments, tourism, cement
Exports	$970 million (2007 est.)
Exports commodities	Wood products, coffee, electricity, tin, copper, gold
Imports	$1.378 billion f.o.b.
Import commodities	Machinery and equipment, vehicles, fuel, consumer goods
External debt	$3.179 billion (2006)

Sources: World Bank Publications.

Philippines

Population	96,061,680 (July 2008 est.)
Population, average annual growth rate (2001-2007)	2%
Labour force, average annual growth rate (2001-2007)	3%
GDP, 2007 (US$ billions)	144.1
GDP, average annual growth (1997-2007)	4.5%
GDP, 2007	7.3%
GDP per capita, average annual growth 1997-2007	2.4%
GDP per capita, 2007	5.3%
% of GDP by sector, 2007	Agriculture: 13.8% Industry: 31.7% Services: 54.5%
Unemployment Rate	7.3%
Inflation Rate	2.8%
Agricultural products	Sugar cane, coconuts, rice, corn, bananas, cassavas, pineapples, mangoes; pork, eggs, beef; fish
Industries	Electronic assembly, garments, footwear, pharmaceuticals, chemicals, wood products, food processing, petroleum refining, fishing
Exports	$49.32 billion f.o.b.
Exports commodities	Semi-conductors and electronic products, transport equipment, garments, copper products, petroleum products, coconut oil
Imports	$57.56 billion f.o.b.
Import commodities	Electronic products, mineral fuels, machinery and transport equipment, iron and steel, textile fabrics, grains, chemicals, plastic
External debt	$61.78 billion

Sources: World Bank Publications.

Thailand

Population	65,493,296
Population, average annual growth rate (2001-2007)	0.7%
Labour force, average annual growth rate	1.1%
GDP (US$ billions)	245.8
GDP, average annual growth (1997-2007)	4.2%
GDP, 2007	4.8%
GDP per capita, average annual growth 1997-2007	3.4%
GDP per capita, 2007	4.1%
% of GDP by sector	Agriculture: 10.8% Industry: 43.8% Services: 45.3%
Unemployment Rate	1.4%
Inflation Rate	2.2%
Agricultural products	rice, cassava (tapioca), rubber, corn, sugar cane, coconuts, soybeans
Industries	tourism, textiles and garments, agricultural processing, beverages, tobacco, cement, light manufacturing such as jewelry and electric appliances, computers and parts, integrated circuits, furniture, plastics, automobiles and automotive parts; world's second-largest tungsten producer and third-largest tin producer
Exports	$151.1 billion f.o.b. (2007 est.)
Exports commodities	textiles and footwear, fishery products, rice, rubber, jewelry, automobiles, computers and electrical appliances
Imports	$125.2 billion f.o.b. (2007 est.)
Import commodities	capital goods, intermediate goods and raw materials, consumer goods, fuels
External debt	$59.52 billion (31 December 2007)

Sources: World Bank Publications.

Vietnam

Population	85.1 million
Population, average annual growth rate (2001-2007)	1.3%
Labour force, average annual growth rate	2.2%
GDP, 2007 (US$ billions)	$71.2
GDP, average annual growth (1997-2007)	7.2%
GDP, 2007	8.5%
GDP per capita, average annual growth 1997-2007	5.9%
GDP per capita, 2007	7.2%
% of GDP by sector, 2006	Agriculture: 20.4 Industry: 41.6 Manufacturing: 21.3 Services: 38.1
Unemployment Rate	4.3% (2007 est.)
Inflation rate	8.3%
Agriculture products	Paddy rice, coffee, rubber, cotton, tea, pepper, soybeans, cashews, sugar cane, peanuts, bananas; poultry: fish, seafood
Industries	Food processing, garments, shoes, machine-building; mining, coal, steel: cement, chemical fertilizer, glass, tires, oil, paper
Export	$39.83 billion f.o.b. (2006)
Export commodities	Crude oil, ,marine products, rice, coffee, rubber, tea, garments, shoes
Imports	$44.89 billion f.o.b. (2006)
Import commodities	Machinery equipment, petroleum products. Fertilizer, steel products, raw cotton, grain, cement, motorcycles
External debt	$20.20 billion (2006)

Sources: World Bank Publications.

ABOUT THE AUTHORS

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About ACPC. The Agricultural Credit Policy Council (ACPC) was created in 1986 under Executive Order No. 113, mandated to assist the Philippine Department of Agriculture (DA) in synchronizing all agriculture and fisheries credit policies and programs.

Its major functions include: i) overseeing the implementation of the Agro-Industry Modernization Credit and Financing Program (AMCFP) – the umbrella credit scheme for agriculture and fisheries under the Agriculture and Fisheries Modernization Act (AFMA) of 1997, ii) managing the collection and consolidation of unpaid loans of government directed credit programs (DCPs) into the AMCFP, iii) implementing institutional capacity building (ICB) programs and pilot tests innovative financing schemes (IFS) for marginalized farmers and fisherfolk, iv) conducting regular policy research studies to keep abreast with the current situation of credit and finance services in the countryside, v) synchronizing credit policies and programs in support of the DA's priority programs and vi) reviewing and evaluating the economic soundness of all government agricultural credit programs.

Currently, ACPC is the government's key player in rural finance with its efforts focused on increasing and sustaining the flow of credit to agriculture and fisheries, improving the viability of farmers and fisherfolk, and supporting agriculture modernization, food security and poverty alleviation.

The Asia-Pacific Rural and Agricultural Credit Association (APRACA). APRACA is a regional association that promotes cooperation and facilitates mutual exchange of information and expertise in the field of rural finance and agricultural credit among member countries. It consists of 58 member rural financial and finance-related institutions and agencies in 23 Asian countries and is based in Bangkok, Thailand.

The APRACA – Center for Training and Research in Agricultural Banking (CENTRAB) was inaugurated by APRACA in June 1989 to be its training and research arm. Its principal objective is to upgrade the quality of professionals involved in rural finance through the conduct of training and research promoting better understanding of financial, monetary, banking and economic development matters, particularly those relating to agriculture and rural areas. The APRACA CENTRAB is currently based at the Land Bank of the Philippines headquarters in Manila.

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