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A study on the agricultural value chain financing in India

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Abstract: Agriculture in developing countries is experiencing profound, fast-moving changes. Globalization, although advancing more rapidly in some countries than others, has hastened the transition from the traditional, low-productivity agriculture toward a modern, high-productivity agricultural sector. The resulting processes of structural change are having profound consequences for employment, the methods of generating income, risk management, poverty alleviation, and the wellbeing in rural households in these countries. This study describes the approaches for the organised value chains as a new business model in a globalized world and it describes about the great variety of financial arrangements found in India and the actors in the agri-food chain with varying degrees of formality and informality. The study also brings about the role of the value chain in promoting the rural financing deepening, the financial operators that use agricultural value chain to provide dynamic, innovative services with low cost transaction costs and the technical assistance programs to help the participants in the chain to upgrade their operations, to reduce risk and to improve the access to financial services and concludes by identifying the changes in paradigm.

Key words: financial deepening, financial services, globalization, productivity, risk management

The flows of funds to and among the various links within a value chain comprise what is known as the value chain finance. It means any or all of the financial services, products and support services flowing to and/or through a value chain to address the needs and constraints of those involved in that chain, be it a need for finance, a need to secure sales, to procure products, to reduce risk and/or to improve efficiency within the chain (Miller 2011).

Agricultural value chain financing

The agricultural value chain finance adopts a *systemic approach*, resulting from an overview of all

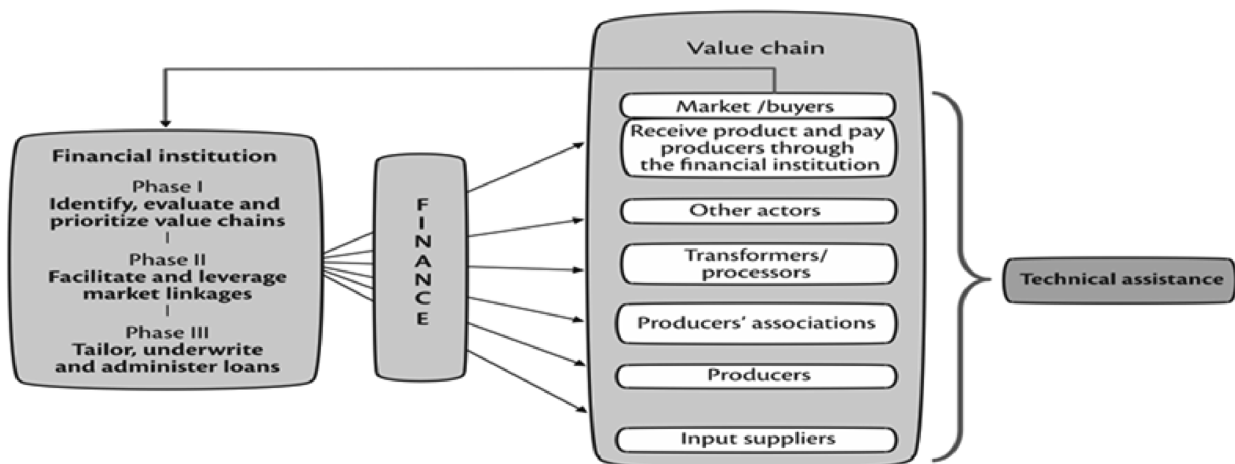

Figure 1. Value chain finance methodology

Source: Clark (2010)

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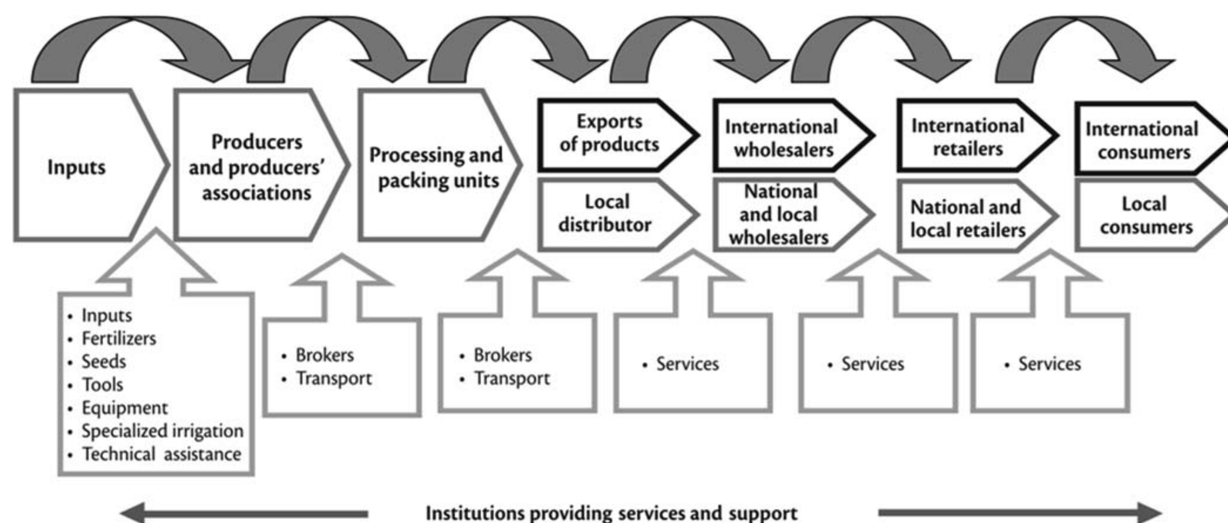

Figure 2. Actors in the agricultural value chain

Source: Urquidi (2010)

the actors and activities involved. Above all, it is a concept of how we see the chain, or the set of activities associated with the chain, and implies looking for ways to structure the finance accordingly, in order to minimize costs, to maximize efficiency and to minimize or reduce risk – which is the most important. In other words, it is a concept based on the information and analysis of risks, costs and benefits.

The value chain finance offers an opportunity to expand financing for agriculture, improve efficiency and repayments in financing, and to strengthen or consolidate linkages among participants in value chains. It can improve the quality and efficiency in financing agricultural chains by:

– Identifying the financing needed to strengthen the chain.
– Tailoring financial products to suit the needs of the participants in the chain.
– Reducing the financial transaction costs through the direct discounting of loan payments at the time of product sale.
– Using the value chain linkages and knowledge of the chain to mitigate risks to the chain and its partners.

Table 1. Evolution over the Years in Agricultural Finance in India

Stages of Agricultural Finance	
Agricultural Credit Era (1950 to 1985)	Donor Microfinance Era (1980 to 2000)
Directed production credit Subsidized credit High transaction costs of lending High loan losses Government and donor refinanced lines of credit through agricultural banks and others Informal family and trader finance for small farmers	Rapid, small working capital loans Group lending approaches Focus on non-agricultural activities Forces groups savings Separation of financial services and business support services. High cost of microfinance
Commercialization of MFIs (2000 to present)	Value Chain Finance (2005 to present)
Formal MFIs Little subsidy Multiple products Expansion and competition New technologies Interest by capital market investors and lenders	Strategic focus on market potential of businesses Linkages among suppliers, producers & marketing companies Growing importance of standards Greater use of risk mitigating tools Growing integration between banks and business Growing use of new technologies

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It is not that the beginning of one of these eras means an end to the other. But indeed, the governments and donors have realized that a majority of rural households in rural India effectively do not have an access to agriculture and agribusiness finance. At the same time, business leaders in both finance and agriculture have come to realize that with the new innovations in communication technology, information management and business models, there is a wealth of new opportunities for them to profitably work directly and indirectly together. The the aaditional adversarial relations can be replaced by a win-win situation where transaction costs and mutual risks are reduced (Miller 2007).

FINANCIAL INSTRUMENTS USED IN AGRICULTURAL VALUE CHAIN FINANCING

The agricultural value chain financing is an approach to financing. It uses an understanding of production value added and marketing process to determine financial needs and how to best provide financing to those involved. The various financial instruments that are often used are classified below from Vorley et al. (2008) and Miller and Jones (2010).

Product financing

– ***Trader credit***

Traders advance funds to producers to be repaid, usually in kind, at the harvest time. This allows traders to procure products, and provides a farmer with the needed cash (for farm or livelihood usage) as well as a guaranteed sale of outputs. Less commonly, the trader finance can also be used "upward" in the chain whereby the trader delivers products to buyers with delayed payments.

– ***Input supplier credit***

An input supplier advances agricultural inputs to farmers (or others in the VC) for the repayment at the harvest or other agreed time. The cost of credit (interest) is generally embedded into the price. Input supplier credit enables farmers to access the needed inputs while increasing sales of suppliers.

– ***Marketing company credit***

A marketing company, processor or other company provides credit in cash or in kind to farmers, local traders or other value chain enterprises. Repayment is most often in kind. Upstream buyers are able to procure outputs and lock in purchase prices and in exchange farmers and others in the value chain receive the access to credit and supplies and secure a market for selling their products.

Lead firm financing

A lead firm either provides direct finance to the value chain enterprises including farmers, or the guaranteed sales agreements enabling access to finance from the third party institutions. Lead firm financing, often in the form of contract farming with a buy-back clause, provides farmers with the finance, technical assistance and market access, and ensures the quality and timely products to the lead firm.

Receivable financing

– ***Trade receivable finance***

A bank or other financier advances working capital to agribusiness (supplier, processor, marketing and export) companies against the accounts receivable or confirmed orders to producers. Receivables financing takes into account the strength of the buyer's purchase and the repayment history.

– ***Factoring***

Factoring is a financial transaction whereby a business sells its accounts receivable or contracts of sales of goods at a discount to a specialized agency, called a factor, who pays the business minus a factor discount and collects the receivables when due. Factoring speeds the working capital turnover, the credit risk protection, the accounts receivable bookkeeping and the bill collection services. It is useful for advancing financing for inputs or sales of processed and raw outputs that are sold to reliable buyers.

– ***Forfaiting***

A specialized forfaitor agency purchases an exporter's receivables of freely negotiable instruments (such as unconditionally-guaranteed letters of credit and 'to order' bills of exchange) at a discount, improving exporter cash flow, and takes on all the risks involved with the receivables.

Physical asset collateralization

– ***Warehouse receipts***

Farmers or other value chain enterprises receive a receipt from a certified warehouse that can be used as a collateral to access a loan from the third party

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financial institutions against the security of goods in an independently controlled warehouse. Such systems ensure to quality of inventory, and enable sellers to retain outputs and have opportunity to sell for a higher price during the off-season or other later date.

– ***Repurchase agreements (Repos)***

A buyer receives securities as collateral and agrees to repurchase those at a later date. Commodities are stored with accredited collateral managers who issue receipts with the agreed conditions for repurchase. The repurchase agreements provide a buy-back obligation on sales, and are therefore employed by trading firms to obtain access to more and cheaper funding due to that security.

– ***Financial lease (Lease-purchase)***

A purchase on credit that is designed as a lease with an agreement of the sale and ownership transfer once full payment is made. The financier maintains ownership of the said goods until the full payment is made making it easy to recover goods if the payment is not made while allowing agribusinesses and farmers to use and purchase machinery, vehicles and other large ticket items without requiring the collateral otherwise needed for such a purchase.

Risk mitigation product

– ***Insurance*** products are used to reduce risks by pooling the regular payments of many clients and paying out to those affected by disasters. Payment schedules are set according to the statistical data of loss occurrence; and mitigate the effects of loss to farmers and others in the value chain from natural disasters and other calamities.

– ***Forward contracts*** is a sales agreement between two parties to buy/sell an asset at a set price and at a specific point of time in the future, both variables agreed to at the time of sale. Forward contracts allow the price hedging of risk and can also be used as a collateral for obtaining credit.

– ***Futures*** are forward contracts that are standardized to be traded in futures exchanges. Standardization facilitates ready trading through commodity exchanges. Futures provide price hedging, allowing trade companies to offset the price risk of forward purchases with counter-balancing of futures sales.

Financial enhancement

– ***Securitization instrument:*** Cash flow producing financial assets are pooled and repacked into securities that are sold to investors. This provides financing that might not be available to smaller or shorter-term assets and includes instruments such as the collateralized debt obligations, while reducing the cost of financing on medium and longer-term assets.

– ***Loan guarantees:*** Agricultural loan guarantees are offered by 3rd parties (private or public) to enhance the attractiveness of finance by reducing lending risks. Guarantees are normally used in conjunction with other financial instruments, and can be offered by private or public sources to support increased lending to the agricultural sector.

– ***Joint venture finance*** is a form of shared owner equity finance between the private and/or public partners or shareholders. The joint venture finance creates opportunities for shared ownership, returns and risks, often with the complementary partner technical, natural, financial and market access resources.

AGRICULTURAL VALUE CHAIN FINANCING IN INDIA

Farmers deposit their goods into a warehouse; as indicated, their asset can be as little as one bag of product. Grading is done. Now, the farmer has an electronic warehouse receipt, and he/she can use it in whatever that he/she wants. The people can fill out loan forms and then that electronic receipt is pledged against finance. The farmer does not need to enter into any bank office; the farmer does not need to meet any bank officer, and the bank does not need to have offices all over the place, and it uses the warehouses as its agents. If the farmer wants to sell his/her products, there is no problem: he/she can put it into our electronic trading platform; he/she can put a minimum price that he/she is willing to accept; he/she can sell at the best price available, and he/she can even link the finance and the trades: basically, automatic reimbursements of the bank once his/her goods are sold. And the buyer, if he/she wants to finance, he/she does not need to have a working capital burden; only the moment that the goods leave the warehouse he/she will need to finance the warehouse, he/she will need to finance the goods. This can be linked to the ATMs, smart cards, which allow the farmers to get cash almost immediately against the goods they put into a warehouse.

The total agricultural credit has been rising steadily each year and it has crossed Rs. 5 lakh crore in the FY 2011–12. However, the bank credit has predominantly

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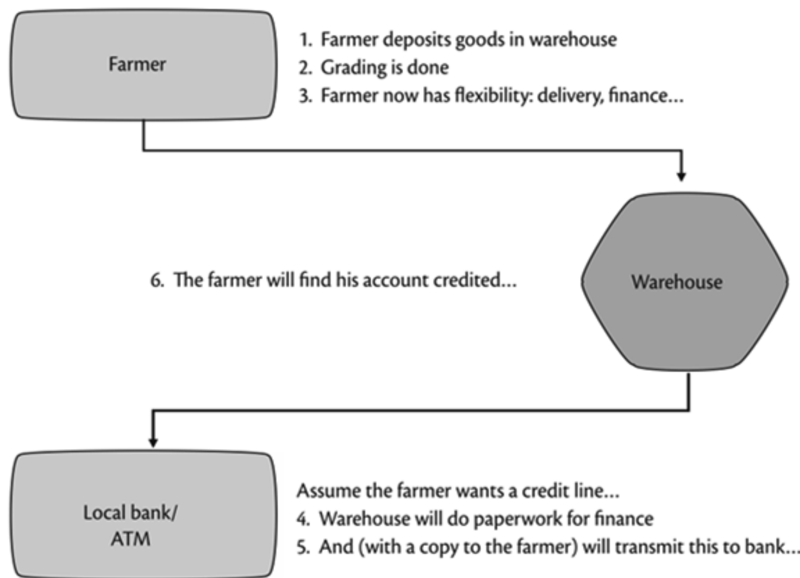

Figure 3. Opportunities for Banks in India for the Agriculture Value Chain in Financing

Source: Rutten et al. (2010)

been crop loans and there are significant opportunities in other areas of the agricultural value chain for the banks to finance and provide the necessary impetus to this sector. It is important that banks not only finance production but finance productivity (CAFRAL 2012).

– ***Integrated agriculture development projects***

The Balasore project by the NABARD and the Million Farmers' Initiative by the FICCI and the Small Farmers' Agri-business Consortium (SFAC) are two excellent examples of the integrated agriculture development projects which are outcome focused and ensure a holistic approach to the agriculture growth through the integration of all stakeholders like farmers, input providers, extension services, government subsidies, financing and technology. This provides more opportunities for financing in addition to crop loans, such as the bank credit for soil testing facilities, farm mechanization, extension services and storage. A close monitoring and integrated approach of the project would also result in lower risks for the banks.

– ***Leveraging the business correspondent model***

The Business Correspondent (BC) model provides a tremendous flexibility to banks to expand outreach in the remote areas. The Union Bank of India and the NDDB project for milk pourers is one such example of how the payment mechanisms at the last mile can be made efficient through use of technology and partnership with the BCs. An imaginative use of the BC model by the banks combined with the mobile, smart card, internet and other technologies can result in a significant increase in the outreach of the bank credit at an affordable cost.

– ***Warehouse construction financing***

As per the National Collateral Management Services Limited (NCMSL), there is a total warehousing gap of 35 MT, which presents an opportunity for private entrepreneurs and banks to finance the new capacity creation. Land acquisition is a major hurdle in the warehouse construction and this can be addressed by exploring partnerships with the PACs for land lease. The Grameen Bhandaran Yojana, the Central Sector Capital Investment Subsidy Scheme and the NABARD refinance facility is available for construction of warehouses. The long construction and gestation period of warehouses requires long-term loan products from the banks. The existing 7 year period for repayment of loan to be eligible for interest subvention is too short.

– ***Warehouse receipt financing***

The Warehouse Development Regulatory Authority (WDRA) has launched the Negotiable Warehouse Receipt (NWR) System whereby the warehouse receipts issued by the warehouses registered with the WDRA would become a fully negotiable instrument backed by the Central Legislation. Banks should insist on the accreditation of warehouses and provide better lending rates and margins against the NWRs. The NWRs can also be used as a tool for procurement which would result in reduced carrying cost, better prices for farmers and less wastage. The WDRA would soon be launching electronic warehouse receipts and also an accreditation model for cold storages.

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– *Cold chain financing*

Presently the production of fruits and vegetables is 150 MT and the cold storage capacity is only 23 MT. There is tremendous opportunity for financing the Deep Freezers, Ripening Chamber, Cold store, Bulk milk coolers, etc. Projects of apples in Kinnaur, Himachal Pradesh, and bananas in Tamil Nadu have demonstrated that the cold chain is viable. Specific commodities should be identified from specific states and then a complete value chain and branding is created around them. The Ministry of Food Processing is offering subsidies. The Blue Star Ltd., a key supplier of the cold chain equipment, is working extensively in different states to create a complete value chain for various fruits.

– *Dairy financing*

Financing individual famers with 2–3 animals is not a viable approach to dairy development. Farmers are looking at establishing dairy farms on a commercial basis. Banks should look at larger size projects with a holistic approach, i.e. to have a say in selection of better breeds, look at breeding policies, and to include scientific animal nutrition components and practices that result in lower feed cost and higher yield. Capital investments such as bulk milk coolers, processing units, etc. should be included in the project cost. The Hatsun dairy model and the Gokul dairy female calf rearing programme, are good examples where the dairy not only does procurement but also provides a range of the extension services to the farmers like breeding, feeding, etc.

– *Contract farming*

The model APMC Act provides for permitting contract farming by the registration of contracts with APMCs, allowing the purchase of contracted produce directly from farmers outside the market yards, and the exemption of the market fee on such purchases. There have been examples of a successful implementation of contract farming projects such as the potato farming programme in the West Bengal. However, more than the enforceability of contracts the key to success lies in winning the farmer loyalty through "contact farming" i.e. to have a multiple pronged engagement with the farmer. Banks could look at providing a whole basket of products such as loans, insurance, savings, payment solutions.

–*Funding start up entrepreneurs*

In order to meet the huge growth challenge ahead, there is a need for thousands of new enterprises to enter the eco-system across the entire spectrum of the agro value chain. Banks through the hassle-free provision of credit should encourage such enterprises with viable business propositions.

– *Agricultural extension services and agricultural infrastructure projects*

Many service providers are providing the information dissemination, technical inputs and extension services at the doorstep of farmers through use innovative technologies and personal contact programmes. The Kisan call centres in vernacular languages are being extensively used by farmers and are helpful in the problem resolution and providing expert advice. Studies have demonstrated a positive impact in the farmer's productivity/income through sustained use of extension practices. Banks should integrate the use of extension services in their project plan. Agricultural infrastructure projects such as the Mega Food Parks, Terminal Markets, etc. should be encouraged for funding by banks with the support of the government in providing subsidies and facilitating approvals for such projects.

– *Drip irrigation*

The concept of the drip irrigation has proven to be beneficial in dry crops like cotton as well as for the water guzzling crop like sugarcane. The Jain Irrigation Banks could explore opportunities of funding drip irrigation projects and also include the awareness-building programmes for farmers which educate them about the optimal water utilization.

RISK MANAGEMENT IN COMMODITY FINANCE

The series of loan products targeting different parts of the value chain and, what can be seen there, are different loan products for different parts of the chain. Now, this is different for value chain financing, which does not have different products, which basically moves money alongside the way that the commodities themselves move (Rutten et al. 2010).

How to manage risk at every step in agricultural lending? (Kosodiy and Bondarenko 2008)

– Ensure demand for crops
– Create proper policies and procedures
– Assess real financing needs
– Establish appropriate guarantees on individual loan
– Diversify the loan portfolio
– Adapt loan terms according to the crop season
– Distribute loans in vouchers
– Encourage farmers to diversity crops.

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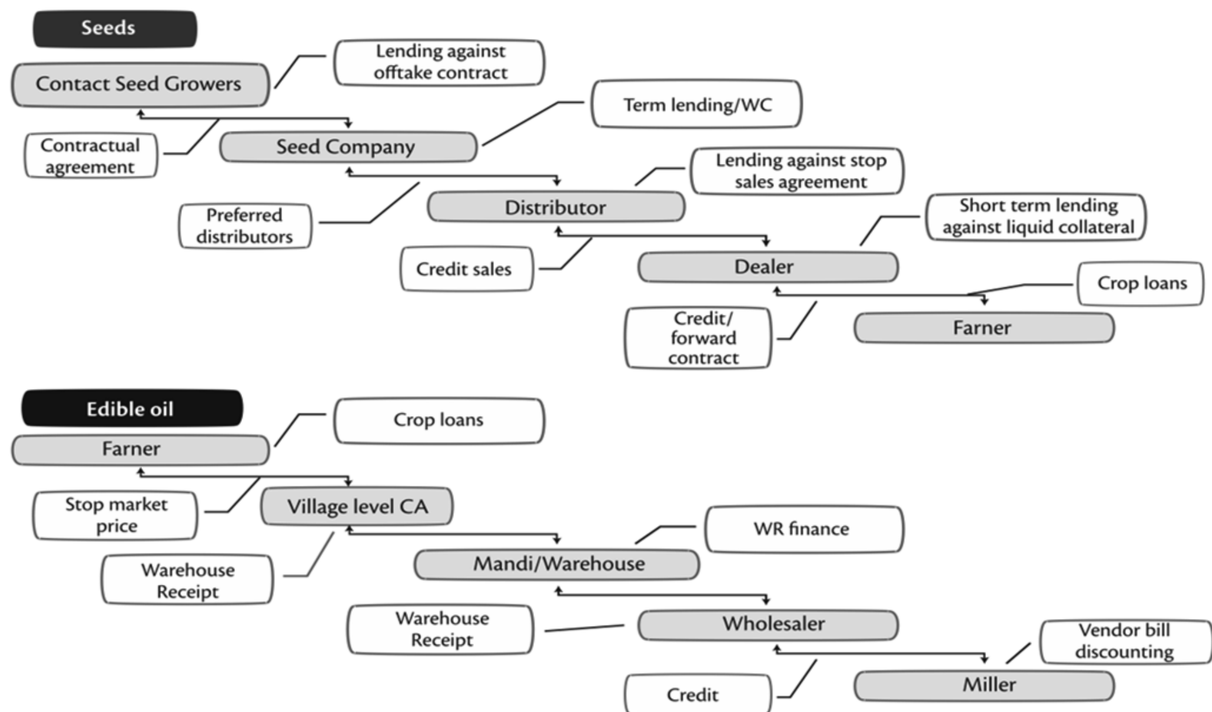

Figure 4. Value chain financing for seeds and edible oil in India

The farmer, buyer and credit union should all be involved in deciding which crop is the best suited for the value chain. Some factors to consider include:
– Crop value
– Market demand
– Availability of inputs
– Ease of transport
– Climate and growing conditions
– Farmers' experience and ability to perform labour
– Monitoring crop performance
– Receiving payment through credit union.

CONCLUSION

For a successful value chain financing (Quiros 2006, Gonzalez-Vega 2006):
– Solid financial institutions that have offices near the producers and are committed to the rural sector.
– Organized producer groups with market potential.
– Basic infrastructure including roads, electricity and telephone networks.

Legal systems that enforce contracts and provide some type of the land ownership documentation (not necessarily a title).
– End buyers who are willing to actively participate in the value chain.
– Staff members who meet a basic profile to manage the process.
– Projects or private providers of technical assistance.
– Access to basic, reliable market data either through public sources or other value chain participants.

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