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**Making Risk Sharing Models Work with Farmers,
Agribusinesses and Financial Institutions**

by Lillian C. Diaz and Jennifer E. Hansel

This paper was chosen through an open call for research in rural finance, whereby the selected individuals were invited to Rome, Italy, to share their results during the conference and to discuss key issues in shaping the rural finance research agenda as well as ways of strengthening the ties between research, policy and practice.

**International Conference on Rural Finance Research:
Moving Results into Policies and Practice**

**Practitioner-Led Action Research:
Making Risk-Sharing Models Work with Farmers,
Agribusinesses, and Financial Institutions**

31 January 2007

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SECTION 1

EXECUTIVE SUMMARY

The reality is that financial relationships exist among farmers and agribusinesses in the value chain. They are important to study in order to expand rural financial services. This paper examined four models that were pilot-tested by International Development Enterprises (India),¹ Financiera EL Comercio (Paraguay), and Caja Nor Peru (Peru) and how they went from analyzing the existing financial relationships found in different value chains and contexts to developing innovative risk-sharing models that can be replicated by their own institutions and by others to expand rural financial services.

This report presents findings from the 18-month SEEP Network Practitioner Learning Program in “Strategic Alliances for Financial Services and Market Linkages in Rural Areas.” The action research presented here identified practical ways that financial institutions, practitioners supporting value chain development, and agribusinesses in the value chain and farmers can come together to reduce the risks and costs of lending to small farmers and capitalize on the benefits.

The following are the main findings of this research on developing risk-sharing models:

- **Analyzing and mapping value chains are a critical first step to forming risk-sharing models.**
- **Developing the profile of each potential partner of the risk-sharing model is important for both financial institutions and market facilitators when selecting partners for risk-sharing models.**

¹ IDE India piloted two models.

- **gaining commitment from all stakeholders and structuring all the operational details and contingencies is vitally important in the beginning and may require investment of time and resources.**
- **Dynamic and organized value chains offer more possibilities for forming risk-sharing models with agribusinesses in the value chain, but they are not required.**
- **Pilot tests are necessary before replication is attempted.**
- **Market facilitators can be catalysts for linking farmers to formal financial sources.**

The research partners identified the following areas for further research and investment:

- **Developing a value chain analysis tool for financial institutions that is cost-effective and that examines the existing financial relationships between farmers and agribusinesses**
- **Validating a decision-making matrix and tool kit for financial institutions and market facilitators**
- **Studying risk-sharing arrangements in weaker, fragmented value chains**
- **Measuring the cost-effectiveness and impact of alternative delivery channels on financial institutions and farmers**
- **Further examination of the role of market facilitators in expanding rural financial services.**

The PLP action research methodology helped the research partners capture the process of forming risk-sharing models and provided a platform to discuss common challenges and potential solutions during the implementation process. It is hoped that the results of this action research will be useful to financial institutions and practitioners, and that it will motivate them to open dialogues with new actors and explore more risk-sharing models, with the ultimate goal of expanding access to finance and enabling farmers to avail of improved market opportunities.

SECTION 2

INTRODUCTION AND RATIONALE FOR RESEARCH

2.1 The Importance of Rural Finance

The contribution that rural economies make to national economies may be larger than official statistics capture.² In India, Paraguay, and Peru for example, agriculture's contribution to GDP is 20 percent, 29 percent, and 9 percent, respectively. However, considering the forward linkages and net export contribution, these figures would be significantly higher. Considering the majority of the poor live in rural areas—in Paraguay and Peru, at least 70 percent of their rural populations live in poverty³—leveraging the existing economic activity and market opportunities in rural areas has the potential to greatly improve the lives of the world's poor.

Most rural households demand financial services for both their household needs and to invest in agriculture, the main livelihood for most rural families and off-farm enterprises. Nonetheless, even in countries with an extensive network of financial institutions in rural areas, like India, access to financial services and products are limited.⁴ Challenges to expanding rural financial services are well documented.

² Guillermo Perry et al., “Beyond the City: The Rural Contribution to Development” (Washington, DC: World Bank, 2005), 11.

³ Ibid.

⁴ Priya Basu, “Improving Access to Finance for India's Rural Poor” (Washington, DC: World Bank, 2006).

The majority of formal financial institutions consider single-crop farmers too risky or costly to serve.⁵ Sometimes, farmers gain access to credit through their business transactions and relationships with agribusinesses—specifically input suppliers, traders and brokers, processors, wholesalers, and exporters. Agribusinesses can provide a reliable source of short-term working capital for farmers during the production cycle through input credit, contract farming, or warehouse credit.⁶ Examining the financial relationships between farmers, agribusinesses, and financial institutions in detail provides a clearer understanding of the situation and can spur other successful solutions to the challenge of increasing access to finance in rural areas.

2.2 Foundation for Action Research Conducted

2.2.1 The Importance of Financial Relationships among Farmers, Agribusinesses, and Financial Institutions

Rather than viewing rural finance in isolation, using a financial analytical lens to examine a value chain allows financial institutions and practitioners to identify non-financial, and financial, constraints and opportunities in a value chain.⁷ Fries and Akin argue that mapping financial flows, including the financial services and products offered by financial institutions and agribusinesses presents a more realistic portrayal

⁵ Wittlinger, Bettina, and Tiodita Mori Tuesta. 2005. “Providing Cost Effective Credit to Small-Scale Single Crop Farmers: The Case of El Comercio in Paraguay,” *Insight*, no. 19 (Washington, DC: ACCION), 1.

⁶ Doug Pearce and Bob Christen, “Managing Risk in Designing Products for Agricultural Microfinance: Features of an Emerging Model,” *CGAP Occasional Paper*, no. 11 (Washington, DC: CGAP, 2005), 2; and Robert Fries and Banu Akin, “Value Chains and Their Significance For Addressing the Rural Finance Challenge” (Washington, D.C: Accelerated Microenterprise Advancement Project (AMAP), USAID and ACDI/VOCA), 8.

⁷ A value chain commonly refers to the full range of activities required to bring a product or service to market—from conception, through the different phases of production (often involving multiple physical transformations of the input), to delivery to final consumers, and to final disposal after use.

of the financial constraints and opportunities for farmers and agribusinesses (e.g., the challenges faced by small farmers when linked to input and product markets).⁸

Shepherd's study on financial agricultural marketing in Asia states that working capital is available through the *vertical* financial linkages within marketing systems. He argues that working capital is not the major constraint, but rather a lack of investment capital appears to limit the ability of agribusinesses to expand their businesses or limits the entry of new agribusinesses.⁹

Pearce and Christen maintain that contractual arrangements (between agribusinesses and farmers) reduce price risk, enhance production quality, and help guarantee repayment.¹⁰ By examining how, and under what conditions, agribusinesses in a value chain provide credit to small farmers, they claim that financial institutions may be able to complement—but not replace—the agribusinesses that offer agricultural credit.¹¹

2.2.2 Examining Alliances

Alliances between financial institutions can also help increase access to financial services in underserved markets. Case studies of Pro-Mujer and FIE in Bolivia, and ICICI Bank and Cashpoor in India, illustrate how financial institutions try to balance expected benefits, risks, and costs in order to create alliances that yield desired results.¹² While alliances between financial institutions are one way to increase access to finance in rural areas, another way is to create alliances between financial

⁸ Fries and Akin, "Value Chains and Their Significance for Addressing the Rural Finance Challenge."

⁹ Andrew W. Shepherd, "Financing Agricultural Marketing: The Asian Experience," AGSF *Occasional Paper*, no. 2 (Rome, Italy: FAO, 2004), 1.

¹⁰ Pearce and Christen, *Managing Risks in Designing Products for Agricultural Microfinance*, 4.

¹¹ *Ibid.*, 24.

¹² Hillary Miller Wise and John Berry, "Opening Markets through Competitive Partnerships: An Analysis of an Alliance between FIE and PRO MUJER," *microREPORT 23* (Washington, DC: Accelerated Microenterprise Advancement Project (AMAP), USAID, and Development Alternatives Inc., 2004); and Robin Bell, "Opening Markets through Strategic Partnerships: ICICI Bank and Cashpoor," *microREPORT 18* (Washington, DC: Accelerated Microenterprise Advancement Project (AMAP), USAID, and Development Alternatives, Inc., 2006).

institutions and agribusinesses, such as ICICI Bank's newly developed "service provider"¹³ and credit franchisee¹⁴ models.

2.3 Action Research Objective: Developing Risk-Sharing Models To Overcome Rural Finance Challenges

The research presented here identified practical ways that financial institutions, agribusinesses in a value chain, and market facilitators, can come together to reduce the risks and costs of lending to small farmers and capitalize on the benefits. Specifically, it evaluated how developing risk-sharing models or strategic alliances¹⁵ with farmers, agribusinesses, and financial institutions in value chains can effectively increase access to finance for farmers underserved by formal financial institutions.

In Section 3 the action research methodology used is described. Section 4 describes the key actors and research partners while Section 5 is a detailed synopsis of the four risk sharing models developed and pilot-tested by the research partners. Section 6 discusses when and how one of the models was replicated, and Section 7 analyzes the action research conducted and describes the key findings. Section 8 concludes the paper and points out areas for future investment and research.

¹³ Basu, "Improving Access to Finance for India's Rural Poor."

¹⁴ Bindu Ananth et al., "The Blueprint for the Delivery of Comprehensive Financial Services to the Poor in India," Centre for Microfinance Working Paper Series (Chennai, India: Institute for Financial Management and Research, 2004).

¹⁵ Strategic alliances are defined here as linkages between non-financial actors (such as input suppliers, producer associations, traders, processors, buyers, etc.) and financial institutions (commercial banks, cooperatives, finance companies, microfinance institutions, etc.) that aim to facilitate greater access to rural finance and market opportunities. Incentives to enter into strategic alliances include information exchange, complementary resources, economies of scale, and business expansion. See Lillian Diaz Villeda and Jennifer Hansel, "The Missing Link in the Value Chain: Financing for Farmers and Rural Entrepreneurs" (Washington, DC: SEEP Network and USAID, 2005).

SECTION 3

RESEARCH METHODOLOGY: THE PRACTITIONER LEARNING PROGRAM

The Practitioner Learning Program (PLP)¹⁶ engages practitioners in a collaborative learning process to pilot-test, document, and share findings that enable program partners¹⁷ to identify effective, replicable practices and innovations. Lessons are shared with the wider industry during and after the program's implementation stage, and results are disseminated broadly through practitioner-oriented learning products, such as technical articles, voice-over PowerPoint presentations, and "how-to" guides.¹⁸

This report presents findings from the 18-month SEEP¹⁹ PLP, "Strategic Alliances for Financial Services and Market Linkages in Rural Areas."²⁰ This program pilot-tested the use of risk-sharing models in rural areas to offer novel ways

¹⁶ The Practitioner Learning Program, launched in 2001, is a SEEP Network initiative funded by USAID and other donors that explores major challenges facing microfinance and microenterprise.

¹⁷ Participants for each PLP are selected through a competitive grants process.

¹⁸ The SEEP Network has conducted six PLPs, focusing on a variety of research topics, which have produced over 40 learning products that document the research of the PLPs. See Jennifer Hansel, "Practitioner Learning Program: Annotated Bibliography of Learning Products" (Washington, DC: SEEP Network, 2006), <http://www.seepnetwork.org/content/library/detail/4706>.

¹⁹ The SEEP Network is an association of 73 international NGOs that fosters innovation and sets industry standards in microfinance and microenterprise development.

²⁰ Partners in the Strategic Alliances PLP included: ACCION International partnering with Financiera El Comercio A.S.E.C.A., Paraguay; American Refugee Committee (ARC), Sierra Leone; Caja Nor Peru (CNP), Peru; EDA Rural Systems Pvt Ltd., India; International Development Enterprises (IDE), India; Kenya Business Development Services (Kenya BDS) partnering with Resource Mobilization Center (RMC), Kenya; and Mennonite Economic Development Associates (MEDA) and International Microloan Fund (IMON), Tajikistan.

to deliver financial and non-financial services, helping microenterprises better integrate into growing markets, and creating economic growth and wealth in poor, rural communities. Three partnering organizations in the action research program—IDE India, Financiera El Comercio in Paraguay, and CNP in Peru—are featured here.

3.1 Research Techniques and Knowledge-Sharing Tools

The PLP uses a combination of fieldwork and technology to engage practitioners and capture learning. As participants pilot-test new strategies, the PLP—through joint meetings, peer exchanges, and virtual information sharing—provides a forum for asking questions, exploring gaps in knowledge and practice, challenging assumptions, and learning from peers. SEEP hires industry experts as facilitators and resources to provide additional technical assistance.

Box 1. Ten Steps for Facilitating Rural Access to Financial Services

Milestone 1: Market Assessment

- Step 1 **Identify and select a product market**
- Step 2 **Analyze the value chain**
- Step 3 **Use financial services lens to examine value chain**
- Step 4 **Identify constraints and potential commercial solutions**

Milestone 2: Selecting Partners and Forming Strategic Alliances

- Step 5 **Develop criteria and assess potential partners**
- Step 6 **Structure strategic alliances or partnerships**

Milestone 3: Implementing Solutions

- Step 7 **Develop financial product or service delivery model**
- Step 8 **Pilot product or service and evaluate results**

Milestone 4: Exit Strategy and Replication

- Step 9 **Implement exit strategy**
- Step 10 **Replicate model**

During the Strategic Alliances PLP, two workshops were held, complemented by conference calls, list-serv discussions, facilitator site visits, peer exchanges, and a web-based project workspace to generate and document findings.

3.2 Developing the Strategic Alliances PLP Learning Framework

The action research learning framework is a set of common

questions or research objectives to be explored, created by partners at the first workshop. The learning framework is a guide for partners in sharing and documenting their experiences throughout the program. Experiences and emerging lessons are shared at open venues, such as the SEEP Network Annual Conference.

The learning framework, described by Diaz Villeda and Hansel, categorizes the collaborative learning process into four milestones that are the basis for peer learning and guides participants in documenting lessons and findings throughout the program. These four milestones are market assessment, selecting partners and structuring strategic alliances, implementing solutions, and exit strategy and replication.²¹ The steps (or sub-topics) discussed in each of the four milestones are shown in box 1.

²¹ Diaz Villeda, and Hansel, “The Missing Link in the Value Chain.”

SECTION 4

PROFILE OF KEY ACTORS AND RESEARCH PARTNERS

4.1 Key Actors

4.1.1. Farmers

Farmers and their households are the central focus of this research, since the objective is to increase farmers' access to finance. Farmers often have business relationships with input suppliers and other market actors, such as traders, processors, and buyers.²²

4.1.2 Agribusinesses

Agribusinesses are comprised of the commercial actors in the agricultural value chain between the farmer and the end consumer, i.e., input and equipment suppliers, wholesalers, distributors, processors, marketers, and retailers. This report examines agribusinesses' roles in three specific value chains: storage providers in Paraguay; buyers, irrigation suppliers, and input suppliers in Peru; and sugarcane factories and drip irrigation dealers in India.

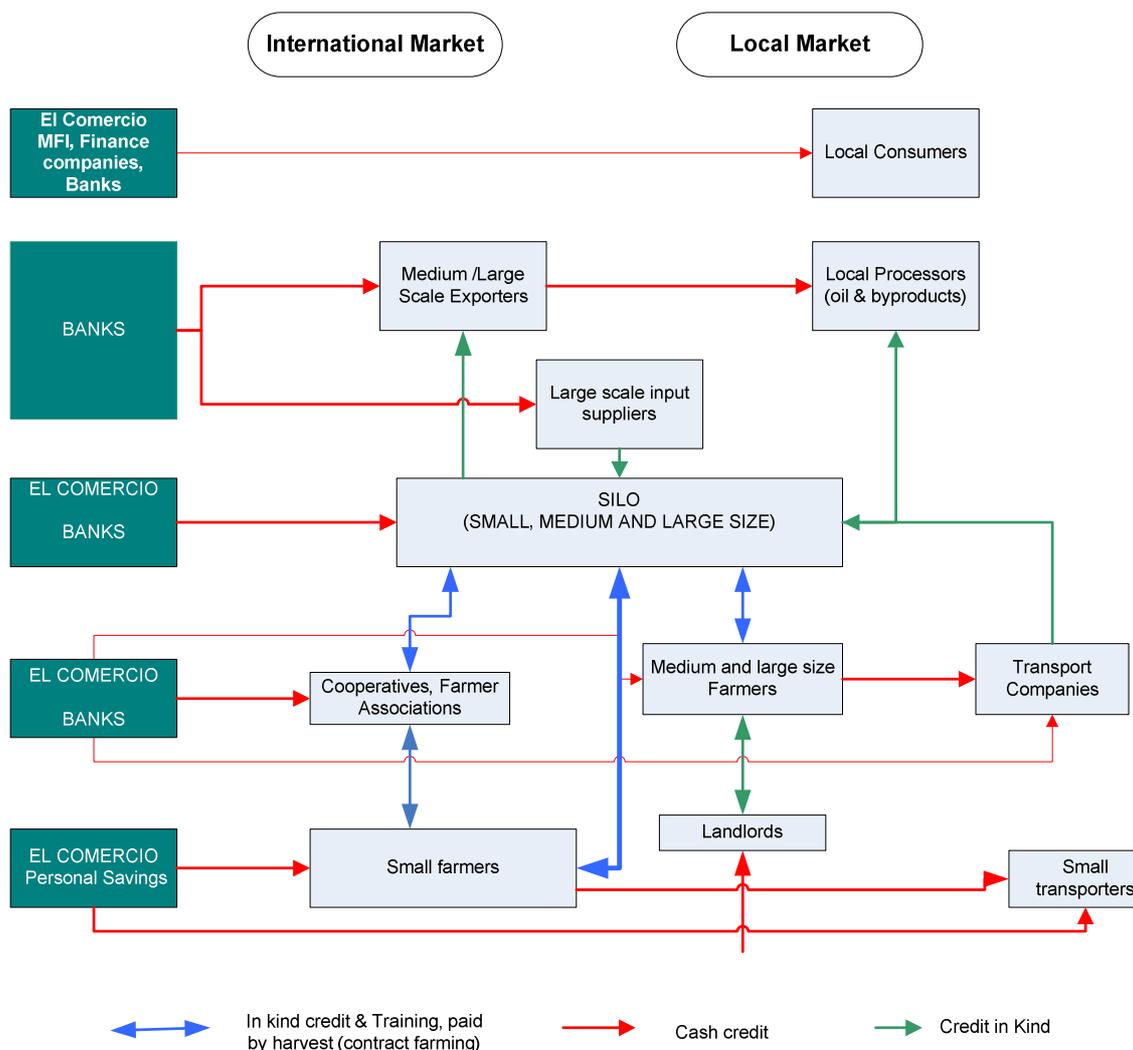
4.1.3 Financial Institutions

This action research focuses on three types of financial institutions: a finance company (Financiera El Comercio), a commercial bank (ICICI Bank), and a savings

²² Raphael Kaplinsky and Mike Morris, *A Handbook for Value Chain Research* (Ottawa, Canada: IDRC, 2001),

and loans institution (Caja Nor Peru). Figure 1 depicts a value chain map and the different services that financial institutions can provide to farmers and agribusinesses, as well as important vertical financial relationships in the value chain.

Figure 1 A Value Chain Map Can Show Financial Relationships



Source: Wittlinger and Mori Tuesta, "Providing Cost Effective Credit to Small-Scale Single Crop Farmers," 3.

4.1.4 Market Facilitators

Market facilitators develop private-sector markets for goods and services, making them more inclusive of—and beneficial to—micro and small enterprises. They are typically either project management units of value chain and enterprise development projects or stand-alone organizations supporting value chain development. This

research examines how a market facilitator (IDE India) helps increase farmers' access to finance, products, and market linkages.

4.2 Research Partners

Three PLP research partners, Caja Nor Peru (CNP), Financiera El Comercio A.S.E.C.A. (El Comercio), and IDE India (IDEI), focused extensively on developing risk sharing financial models.

Table 1 Action Research Partners at a Glance

<i>Research Partner</i>	CNP: Savings and Loan Institution	El Comercio: Finance Company	IDEI: Not-for-Profit Market Facilitator
<i>Headquarters</i>	Trujillo, Peru	Asuncion, Paraguay	New Delhi, India
<i>Year Founded</i>	1994	1976	1991
<i>Staff</i>	300	213	180
<i>Assets and Deposits</i>	<ul style="list-style-type: none"> ▪ Assets: USD 41 million ▪ Deposits: Over USD 29 million 	<ul style="list-style-type: none"> ▪ Assets: USD 18 million ▪ Deposits: USD 12 million 	N/A
<i>Clients</i>	<ul style="list-style-type: none"> ▪ 21,727 borrowers, ▪ 20,816 depositors 	<ul style="list-style-type: none"> ▪ Over 27,000 borrowers ▪ 6,572 depositors 	Over 800,000
<i>Services</i>	Loans, savings, and other financial products and services	Loans, savings, and other financial products and services	Market facilitation and affordable irrigation technology
<i>Target Market</i>	Farmers with over 5 hectares of land	Small and medium farmers with 1–200 hectares of land	Small and marginal farmers with fewer than 2 hectares of land

Source: The Mix Market, <http://www.mixmarket.org>; Caja Nor Peru, <http://www.cajanorperu.com.pe/index1.html>; El Comercio, <http://www.elcomercio.com.py/home.html>; IDEI, <http://www.ide-india.org/ide/index1.shtml>.

Caja Nor Peru is the leader within the rural banking system of Peru. Their agricultural loans are for farmers with more than five hectares of land. El Comercio has a strategic focus on rural microfinance and agricultural finance. It serves small farmers who cultivate soybeans on 10–200 hectares of land, but wants to expand its rural outreach and tap farmers who cultivate traditional crops (tobacco, cotton, and sesame) on as little as 1–20 hectares. IDEI operates in 12 Indian states. It stimulates

the development of well-functioning agricultural markets by creating demand for affordable irrigation technologies and ensuring a sustainable supply chain. IDEI concentrates on serving small and marginal farmers holding fewer than two hectares of land.

Table 2 Background Country Information for Paraguay, Peru, and India

<i>Country</i>	<i>General Information</i>	<i>Economy</i>
Paraguay	<ul style="list-style-type: none"> ▪ Total population: 6,506,464 ▪ Rural population: Approx. 43% (2003 Census) ▪ Population below poverty line: 32% ▪ GDP per capital (PPP): USD 4,700 ▪ Surface area: 406,752 km² 	<ul style="list-style-type: none"> ▪ Agricultural contribution to GDP: 29% ▪ Agriculture: 63.5%; livestock: 27% ▪ Main crops: Soy bean, maize, cotton, mandioca, wheat ▪ Annual inflation: 9.0% (est. 2006)
Peru	<ul style="list-style-type: none"> ▪ Total Population: 28,302,000 ▪ Rural Population: 27% ▪ Population below poverty line: 54% ▪ GDP per capita: USD 6400 ▪ Surface area: 1,285,220 km² 	<ul style="list-style-type: none"> ▪ Agricultural contribution to GDP: 9% ▪ Main crops: Asparagus, coffee, cotton, sugar cane rice, potatoes, corn, plantains, grapes, oranges, coca ▪ Annual inflation: 2.1% (est. 2006)
India	<ul style="list-style-type: none"> ▪ Total population: 1,095,351,995 ▪ Rural population: 75 (1991 census) ▪ Population below poverty line: 25% ▪ GDP per capita: USD 3,700 ▪ Surface area: 3,287,590 km² 	<ul style="list-style-type: none"> ▪ Agricultural contribution to GDP: 19.9% ▪ Main crops: Rice, wheat, oil seed, cotton, jute, tea, sugar cane, potatoes, cattle ▪ Annual inflation: 6.0% (est. 2006)

Source: <https://www.cia.gov/cia/publications/factbook/print/pe.html>

SECTION 5

PILOT TESTING FOUR RISK-SHARING MODELS

The research is based on the practical experiences of International Development Enterprises-(India), Caja Nor Peru (CNP), and ACCION International partnering with Financiera El Comercio A.S.E.C.A. (El Comercio) and their pilot-tests of four risk-sharing models. In this section, the credit constraints that the models aimed to solve, the basic structure of the models, the expected benefits, how risks and challenges were overcome, and the outreach and results are discussed.

Model 1: Market facilitator partners with bank to develop credit franchisee model

Model 2: Market facilitator links buy back arrangements as guarantee for drip irrigation

Model 3: Financial institution creates risk-sharing model with a trust fund to finance red pepper

Model 4: Financial institution uses buyer contract as guarantee for soybean farmers

Table 3 Risk-Sharing Models—India, Peru, and Paraguay at a Glance

<i>Model</i>	<i>Institutions</i>	<i>Model Description</i>	<i>Value Chain</i>	<i>Actors</i>
Model 1 Market Facilitator Partners with Bank to Develop Credit Franchisee Model	IDE India	IDEI partners with the largest commercial bank in India, ICICI Bank, to develop a franchisee model with irrigation dealers, reducing the cost of lending to farmers and enabling them to purchase drip irrigation.	Various, not value-chain specific	<ul style="list-style-type: none"> ▪ Commercial bank ▪ Equipment dealers

<p>Model 2</p> <p>Market Facilitator Links Buy-Back Arrangements as Guarantee for Drip Irrigation</p>	<p>IDE India</p>	<p>IDEI creates a risk-sharing model that links a financial institution to farmers by using a buy-back arrangement between a sugarcane factory and farmers as a guarantee for a loan to purchase drip irrigation.</p>	<p>Sugar</p>	<ul style="list-style-type: none"> ▪ Bank ▪ Sugarcane factory ▪ Farmer
<p>Model 3</p> <p>Financial Institution Creates Risk-Sharing Model with a Trust Fund to Finance Red Pepper Farmers</p>	<p>Caja Nor Peru</p>	<p>CNP develops a financial product for small farmers who want to grow red pepper, a riskier non-traditional export product. The risk is shared among the agribusinesses and farmers through a risk-sharing model with a trust fund.</p>	<p>Red peppers</p>	<ul style="list-style-type: none"> ▪ CNP ▪ Exporter ▪ Input suppliers ▪ Farmers
<p>Model 4</p> <p>Financial Institution Uses Buyer Contract as Guarantee for Soybean Farmers</p>	<p>ACCION/EI Comercio</p>	<p>ACCION International and EI Comercio leverage existing contract farming relationships between storage providers (silos) and small and medium soybean farmers to expand financial services in rural Paraguay.</p>	<p>Soybeans</p>	<ul style="list-style-type: none"> ▪ EI Comercio ▪ Storage providers ▪ Farmers

5.1 Model 1: Market Facilitator Partners with Bank to Develop a Credit Franchisee Model

In the Indian state of Maharashtra, farmers often request credit from dealers to purchase drip irrigation systems. Dealers cannot meet all their requests due to a shortage of working capital. Recognizing this gap, IDEI approached different banks to encourage them to lend to small farmers. Unfortunately, most banks were not interested because of the high transaction costs for loans (around USD 113–226). However, ICICI Bank was already beginning to test models to scale up their outreach in rural areas and saw the potential of partnering with IDEI.

ICICI Bank, the largest commercial bank in India, is a leader in creating alliances to reach underserved market segments. Where there is not sufficient scale to justify an ICICI Bank branch office, a credit franchisee becomes an effective delivery

channel that lowers the cost of rural lending. Credit franchisees contribute equity, understand local conditions, know the clients in a given area, and are willing to enter into risk-sharing models with banks to provide access to financial services.²³ They are expected to conduct loan appraisal, determine loan size, process, manage, and collect loan repayments from farmers.

5.1.1 Basic Structure of the Model

IDEI had a network of established drip irrigation dealers who fit the desired profile for ICICI Bank credit franchisees, so the bank partnered with IDEI to develop a franchisee model²⁴ that would deliver credit to small farmers to purchase drip irrigation systems. The dealers in turn contribute an equity amount that they can leverage up to 10 times from ICICI Bank to lend to farmers. The loan appraisal process is designed to take two days and the repayment period varies according to crop cultivation cycles, with a maximum two-year loan term. The interest rate is 14 percent per year, which includes a 3-percent margin for franchisees, who decide whether or not to pass the margin on to the farmer. The loans are always on the books of ICICI Bank,²⁵ and the bank trains the credit franchisees in credit appraisal.

5.1.2 Expected Benefits from Participating in the Model

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

²³ Bindu Ananth et al., "The Blueprint for the Delivery of Comprehensive Financial Services to the Poor in India," 19.

²⁴ For more information related to this model, refer to Suresh Subramanian, "Credit Franchisee: Increasing Farming Incomes through Irrigation," voice-recorded PowerPoint presentation for the SEEP Network Annual Conference, Washington, DC, October 2006.

²⁵ Basu, "Improving Access to India's Rural Poor," 54.

incomes. Drip irrigation can increase farmers' yields by 40–70 percent and reduces fertilizer and labor costs by 50–70 percent, depending on the crop.²⁶

Because of their association with ICICI Bank and IDEI, farmers will trust the credit franchisees more, which will attract more farmers wishing to purchase drip irrigation or other products sold at the franchisee-dealer retail outlet. The credit line to the dealers will enable them to finance more farmers, and the 3-percent margin will be an additional income source.

With this model, ICICI Bank will be able to increase their rural customer base in India. It will reduce the transaction costs and risk of lending, since the credit franchisees will use local knowledge of client credit histories and process loans. IDEI will be able to expand the scale of purchase and use of drip irrigation systems in rural India using this model.

5.1.3 Step-by-Step Process for Pilot Testing the Model

From April through December 2005, IDEI contacted banks to discuss forming potential alliances to overcome the credit constraints of farmers, which prevented them from purchasing drip irrigation systems. Pritha Sen's article in *Small Change* showed the massive scale and results of IDEI's supply chain network, raising IDEI's credibility in the eyes of potential alliance partners.²⁷

IDEI and ICICI convened the first meeting with IDEI to discuss the franchisee model using drip irrigation dealers in January 2006, and afterward, representatives from ICICI Bank visited farmers and dealers. Six months later, IDEI, ICICI Bank, and dealers met again, negotiated the details of their alliance, and signed an agreement.

²⁶ In addition, with drip irrigation, farmers can cultivate for the first time winter and summer crops. Gross cropping intensity increases from 100% to 250–300%.

²⁷ Pritha Sen, "'Krishak Bandh': The Farmer's Friend." *Small Change*, November 1, 2005, www.smallchange.id.

Some dealers submitted their applications to be credit franchisees immediately after the meeting. In December 2006, the ICICI Bank branch managers, dealers, and IDEI met to standardize the operational procedures, and ICICI sent signboards to the credit franchisees to launch the promotion.

Both IDEI and ICICI Bank are monitoring the progress of the franchisee model. Between January and September 2006, the main focus was on structuring the model. Until July 2007, they will monitor the number of franchisees established, the number and size of loans disbursed, the percentage of equity leveraged, loan repayments, and adherence to the loan process. In the case of default, a loan loss provision is considered in the retail price of the final product.

5.1.4 Overcoming Risk and Other Challenges

In the beginning, structuring a win-win scenario that benefited all actors was not easy. ICICI Bank wanted credit franchisees to be able to finance any product they sold while IDEI wanted to limit them to financing drip irrigation systems. After negotiation, they agreed that during the first six months of the pilot, the credit franchisees would only offer loans for one product, the registered trademark KB drip irrigation.²⁸ After this initial period, if the credit franchisees perform well, they can add financing of other non-drip products in their retail outlets, such as seeds and fertilizer.

Settling operational details, such as how cash would flow in the model, was challenging. ICICI Bank wanted IDEI to disburse the loan to each credit franchisee, but this was outside IDEI's role as a market facilitator. IDEI wanted ICICI Bank to pay the credit franchisees directly, concluding that the loan would flow through the

²⁸ Other drip irrigation brands, which vary in quality and price, are available in India, but the KB drip irrigation is the system marketed and approved by IDEI.

drip irrigation wholesalers, who would then transfer the loan to the franchisees or adjust the amount against their accounts receivables.

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

5.1.5 Outreach and Results

Structuring the operational details and developing a model with a win-win scenario for all actors took over nine months in planning. The delayed monsoon season delayed farmers' need for irrigation systems from December to February, so the credit franchisees are gearing up to start disbursing loans in February 2007. At present, five IDEI dealers have been appointed as credit franchisees. ICICI Bank and IDEI aim to disburse 200 loans by July 2007. If the pilot is successful, ICICI bank and IDEI intend to appoint at least 50 more dealers in the next two years.

Figure 2 **First Dealer Appointed as Credit Franchisee
For Drip Irrigation**



Source: International Development Enterprises-India, 2006.

5.2 Model 2: Market Facilitator Links Buy-Back Arrangements As a Guarantee for Drip Irrigation

A buy-back arrangement between farmers and agribusinesses in a value chain are becoming more popular with financial institutions as a method to guarantee lending to small farmers. A buy-back arrangement lowers the risk and transaction costs of lending to small farmers because loan collection is often delegated to the agribusiness, which ultimately deducts the loan payment from sale proceeds to repay the financial institution. Furthermore, financial institutions also directly pay service providers rather than provide credit directly to farmers, but the challenge is developing models that can be scaled up and replicated.²⁹

5.2.1 Market Facilitator Identifies Credit Constraints

International Development Enterprises-India (IDEI) observed that farmers had little cash and minimal access to credit to purchase low-cost drip irrigation and dealers

²⁹ A recent World Bank study on rural finance in India looks at how financial institutions are entering alliances with “integrated agricultural service providers,” such as extension service providers and input suppliers. A buy-back arrangement is also used in these cases, but the financial institution directly pays the “integrated agricultural service providers” for the purchase of inputs or extension services. See Basu, “Improving Access to Finance for India’s Rural Poor,” 54.

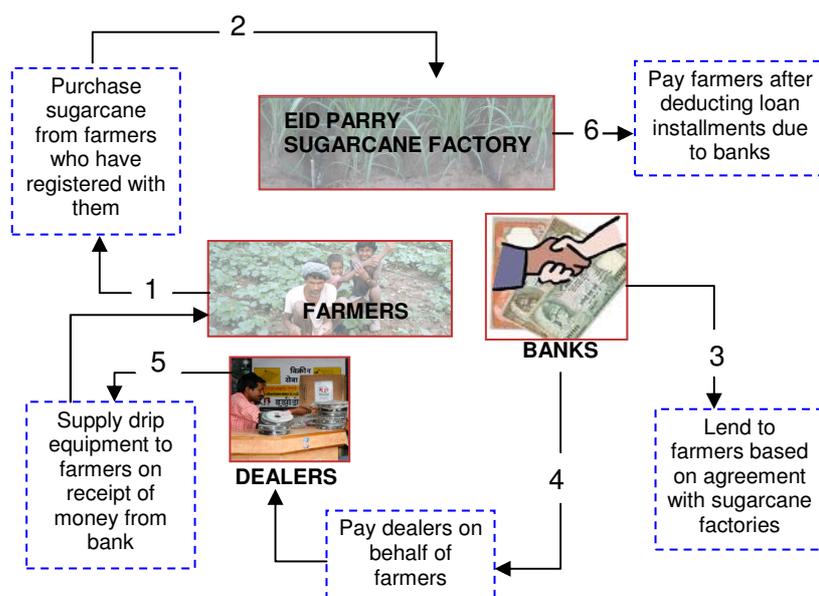
could not meet this credit need. Also, without a buy-back arrangement to secure a market channel and a fair price for crops, small farmers were hesitant to invest in irrigation. By facilitating a buy-back model, IDEI made access to credit for small farmers to purchase drip irrigation systems possible and secured a market for the farmers' final product.

5.2.2 Basic Structure of the Model

This model consists of small sugarcane farmers, a sugarcane factory, a financial institution, and irrigation dealers (see figure 3). The farmers first register their lands with a sugarcane factory (Step 1) and enter into buy-back arrangements with the factory, sealed with a registration letter (Step 2). Farmers agree to sell a certain volume of sugarcane exclusively to the factory at a price set at the beginning of the season. A monetary bonus is given to the farmer if the crushed sugarcane produces more than 9 percent sugar.

The farmers present the registration letter from the sugarcane factory to the bank. The loan agreement is between the bank and the individual farmer (Step 3), but the loan does not go to the farmer directly. The bank pays the drip irrigation dealer (Step 4); the dealer supplies the irrigation equipment and installs it in the farmers' field (Step 5). The dealer then submits an installation certificate, verified by the farmer, to the bank. The loan, plus interest, is deducted from the final payment from the sugarcane factory to the farmer, and the sugarcane factory repays the bank after harvest (Step 6).

Figure 3 Step by Step: IDEI Buy-Back Arrangement



Source: Suresh Subramanian, "Credit Franchisee: Increasing Farming Incomes through Irrigation," voice-recorded PowerPoint presentation for the SEEP Network Annual Conference, Washington, DC, October 2006.

EID Parry, a sugarcane factory in Tamil Nadu, pilot-tested the model. They made buy-back arrangements with over 300 small farmers and 6 dealers. The average loan size ranged from USD 226–905, with loan terms of one to three years and an interest rate of 8 percent per year.

5.2.3 Expected Benefits from Participating in the Model

Drip irrigation can increase a farmer's productivity by 15–30 percent, and reduces fertilizer and labor costs by 30–50 percent. Sugarcane is an 11-month crop that needs steady water throughout the year, and many farmers cannot afford to irrigate it. Through IDEI's credit model, they can buy KB drip irrigation systems for their crops. This meets the farmers' need for credit to purchase drip irrigation systems, while the sugarcane factory receives a greater volume of needed sugarcane. The sugarcane factory is assured that farmers will not misuse the loan since the bank pays the dealer directly and the farmer receives the irrigation system and not cash. Working with

certified dealers lowers the risk that the drip irrigation will not be improperly installed or poorly repaired.

Banks are assured of recovery because of the buy-back arrangement, and can potentially graduate farmers to larger loans. The dealers can sell irrigation systems to more

Figure 4 IDEI Marketing Activities at a Sugarcane Factory



▲ (left) IDE India displays information on KB Drip irrigation systems at a workshop at the EID Parry sugarcane factory. (right) Farmers question KB staff about the irrigation system.

Source: International Development Enterprises-India, 2006.



▲ (left) Farmers look over an exposed KB Drip irrigation system installed in a sugarcane plot. (right) An EID Parry demonstration plot, which is visited by at least 100 farmers every month.

Source: International Development Enterprises-India, 2006.

small farmers, allowing them to increase their sales and lower their costs since they no longer have to recover loans made to farmers. IDEI essentially solved the working capital shortage.

As the market facilitator, IDEI developed this model in several steps. First, it promoted the benefits of drip irrigation to the sugarcane factories. It demonstrated the potential yield increase in demonstration plots and gave feedback from farmers to the factory about the benefits of drip irrigation. Second, IDEI developed good working relationships with the sugar cane factory management, essential for replicating the model in other factories. For the short-term pilot to succeed, it was important to have realistic goals that showed results quickly and that clearly defined the roles and responsibilities of each actor in the strategic alliance. The model was successful, and the next step is setting the model up with additional sugarcane factories.

5.2.5 Overcoming Risk and Other Challenges

Banks are more willing to lend to small farmers when risk is reduced: in this strategic alliance, there is a secure market for the farmers' crops, farmers' productivity increases, and crop quality improves. IDEI solved a major challenge of demonstrating the operation and

benefits of the KB drip irrigation systems by setting up numerous demonstration plots, and successfully convincing the sugarcane factory. Once the factory joined, the banks followed. IDEI also had to assure the sugarcane factory that farmers would receive help with technical problems. Adding the element whereby the dealer not only installed, but also serviced the irrigation system was challenging.

5.2.6 Outreach, Results, and Replication

Over 300 loans for the purchase of drip irrigation systems were made to farmers

**Box 2 PLP Bi-Monthly Diary Excerpt
From IDEI**

The following is an excerpt from a bi-monthly diary entry made by Suresh Subramanian of IDEI about the steps taken to replicate Model 2 in another sugarcane factory.*

“During the last couple of months, we decided to work with another sugarcane factory. We wanted to test the model with farmers in different scenarios and diverse situations to enrich our learning experience. In this case, we were approached by the management of a sugarcane factory, who had heard about IDEI’s products from various sources.

We decided to promote the KB drip irrigation system and buy-back arrangement in their area to get a feel for their take on the product. Promotional activities included meetings with farmers and a public demonstration with brochures and banners.

In response to the promotion, four farmers installed KB drip irrigation systems in their sugarcane plots. The factory management, which already had faith in the product, was further convinced by the positive reaction of their customer base. The factory has since taken two steps: 1) They asked their officers to advertise the product and purchasing model to the entire customer base, and 2) they have contacted a financial institution to arrange for loans for the product.

We expect this model to be similar with EID Parry sugarcane factory. In this arrangement, the financial institution will directly provide a loan to the farmer after entering into an agreement with the factory.”

* Suresh Subramanian made the diary entry in December 2006, during the Strategic Alliances PLP. Program partners keep diaries to capture their experiences and the diaries are shared among the PLP partners and saved on SEEP’s internet based workspace.

through more than five banks and fifteen bank branches, with the buy-back arrangement as a guarantee. The pilot-tests of this model enticed IDEI, other sugar cane factories and agribusinesses to replicate it. The EID Parry sugarcane factory is expanding this model to four more sugarcane factories across Tamil Nadu. The model has been so successful that two more sugarcane factories have decided to adopt this arrangement. Not only can farmers buy drip irrigation systems, but once they repay their loans, banks are willing to extend new loans to expand initial drip systems, or for other purposes, even without buy-

back arrangements. IDEI’s experience regarding the initial progress towards replication is captured in box 2.

**5.3 Model 3: Risk-Sharing Model with a Trust-Fund Financed
Red Pepper Value Chain**

Many *caja rurales*³⁰ incorporated the same weakness in their attempts to finance agricultural loans in Peru by investing primarily in one or two regionally dominant agricultural products. When weather patterns such as El Nino surfaced, insects or disease afflicted crops, or market demands changed and prices dropped, they were hit hard. Furthermore, the difficulties of the agricultural portfolio were aggravated when the Peruvian government implemented its “Agricultural Financial Rescue” package.³¹

5.3.1 Financial Institution Sees an Opportunity to Build Relationships

Caja Nor Peru (CNP) observed that the relationships between farmers, input suppliers, and buyers were weighed down by mistrust. Farmers sought loans to purchase inputs, but shortly after the sale, the farmers would often resell the inputs at a higher unit price. When the farmers did not use adequate inputs, such as fertilizers, buyers saw crop quality decrease. Without a contract, which pays more for better quality, farmers had no incentive to use inputs appropriately. In some cases, farmers who obtained in-kind credit from one buyer would side-sell to other buyers.

5.3.2 Basic Structure of the Model

CNP created a risk-sharing model with a network of key agribusinesses in one value chain,³² plus a financial institution to pool capital and other resources, guaranteeing the risk of

³⁰ Caja Rurales de Ahorro and Prestatmos are rural savings and loans institutions in Peru. As of August 2006, 12 are operating. For more information, see http://microfinancegateway.org/resource_centers/reg_sup/micro_reg/country/36/

³¹ This package gave producers the option of refinancing agricultural loans in arrears with government-sponsored bonds. The bonds covered a portion of the loan, and the financial institutions were obliged to refinance a portion as well. This created a long-term problem for the *cajas rurales* because farmers were able to refinance their loans over a 10-year extension. There is still hope that the government will forgive the debt of farmers to the financial institution.

³² Such as input suppliers and buyers.

lending to farmers. Rather than each agribusiness providing in-kind credit, cash advances, or other non-financial services to small farmers, they created a trust fund. Each actor pledges inputs, financial or non-financial services so that the final product meets the market requirements. All pledges are assigned a value and each actor agrees to allocate the fiduciary responsibility of the trust fund to the financial institution.³³

The most important element in this model is the role of a network manager. A network manager is a service provider that manages all of the partners' contributions to the trust fund and provides and /or coordinates technical assistance to farmers.

5.3.3 Benefits of Participating in the Risk-Sharing Model and Trust Fund

Working together in a risk-sharing model like CNP's, all parties are expected to share information and forecast potential risk related to external and internal factors.³⁴ As a result, each actor is better able to forecast potential risk, profits, and losses.

Each actor had specific benefits they wanted from the venture. Peruvian farmers previously depended on the spot market, but with a formal relationship and associated financial and non-financial services, they expected to enter a new, lucrative market and receive discounted prices for inputs. Input suppliers previously provided in-kind credit to farmers and were repaid after the harvest. Now CNP provided working capital based on accounts receivables with the farmers. The buyers anticipated better productivity and quality with the stipulated technical assistance and the farmers' proper use of inputs. Finally, CNP hoped to develop a new product that could be replicated in other value chains in Peru.

5.3.4 Pilot Testing the Model Step-by-Step

³³ A fiduciary is a person who acts in another person's benefit, like a trustee or guardian. It also means something based on trust and confidence.

³⁴ External factors include price fluctuations, weather irregularities, and disease.

CNP played the lead role in developing the red pepper risk-sharing model.³⁵ The process can be broken down into four steps: analysis of the market, selecting partners for the risk-sharing model, development of the trust fund, and credit management and monitoring.³⁶

Analyzing the market. CNP explored a number of value chains, including rice, maize, sugar cane, artichokes, red peppers, and asparagus. They met with different farmers and agribusinesses to understand the inputs needed for production, the cost structure, and the local and international demand for products.³⁷

Selecting partners for the risk-sharing model. CNP met with input suppliers, processors, buyers, and farmers to measure their interest in participating. They selected five farmers, two national input suppliers,³⁸ and one buyer. The buyer, Camposol, selected the red pepper value chain and 20 hectares were put under cultivation.³⁹ Market analysis and partner selection took three months.

Developing the trust fund. All the actors pledged contributions to the risk-sharing venture and signed a contract. The input suppliers contribute fertilizer, pesticides, and irrigation equipment while CNP provides financial services. The buyer provides seedlings and makes a buyer-farmer agreement with the farmer. The network manager's tasks include: playing a significant role negotiating prices, providing technical assistance, supervising the production cycle, and monitoring product quality.⁴⁰ Buyer contracts, contracts to hire additional agricultural technicians, and the

³⁵ For more information related to this model, see Danilo Chavez Wendorff, "New Experiences in Agricultural Financing: Case of Red Pepper," voice-recorded PowerPoint presentation for the SEEP Network Annual Conference, Washington, DC, October 2006.

³⁶ Quoted from the CNP application submitted to SEEP PLP, December 2004.

³⁷ Caja Nor Peru, "Diagnostic of Market Analysis and Focus Group Discussions," internal PLP document, 2005.

³⁸ The two national input suppliers were Procampo and Sistema de Riego Ingenieros..

³⁹ Four international and national buyers were interviewed and one was selected.

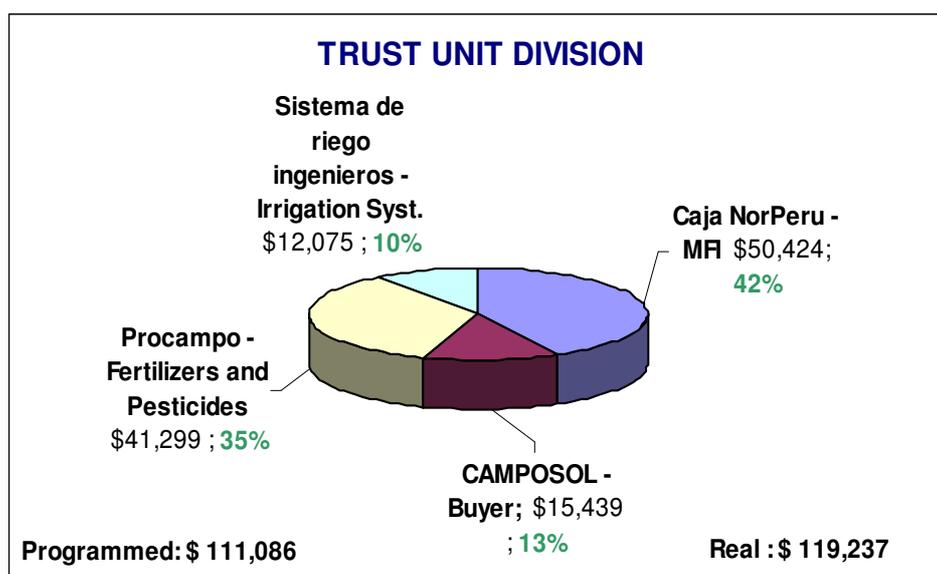
⁴⁰ The network manager is compensated in two parts. One part is a fixed fee per hectare supervised and the second part is based on quality, quantity, and sales price of final product. For example, if the

network manager’s contract are transparent so that commitments are known to all parties.

A trust fund ensured the coordination and administration of loan disbursements, credit inputs to farmers, pre-harvest payments to farmers, and collection of loan repayments. CNP was given the fiduciary responsibility of the trust fund.

Credit management and supervision. CNP promoted the loan product among the farmers and did the necessary credit analysis, prepared loan agreements, disbursed loans, and monitored repayment. The network manager visited the farmers weekly (with the agricultural technician who evaluated production aspects) and sent out a weekly report to each agribusiness.

Figure 5 Distribution of Risk: CNP’s Risk-Sharing Model



Source: Danilo Chavez Wendorff, “New Experiences in Agricultural Financing: Case of Red Pepper,” voice-recorded PowerPoint presentation for the SEEP Network Annual Conference, Washington, DC, October 2006.

5.3.5 Overcoming Risks and Other Challenges

sales volume is USD 5,000 per hectare and the sales price is USD 8,000, then the network manager earns a 5-percent commission over USD 3,000.

The percentage breakdown of credit risk shared by each of the agribusinesses is the risk-mitigation feature of this model (see figure 5). This ensures that the financial institution does not assume all of the risk when financing credit to farmers.

Internal challenges appeared early in the pilot test. Pepper seedlings were transplanted late in the season, making production targets difficult to reach from the start. Despite the network manager's management skills, the farmers needed more expert agricultural technical assistance. Unfortunately, it had not been clearly defined who would provide and pay for the expert agricultural services. Also, irregular weather patterns in Peru caused problems with disease and insects, negatively affecting production.

**Figure 6 External Factors Matter: Infestation (Heliothis sp. and Pseudoplusia sp.),
CNP Model**



Source: Chavez Wendorff, "New Experiences in Agricultural Financing: Case of Red Pepper."

Despite a solid model structure, sales did not reach the projected targets, and the buyer and input suppliers did not honor their commitments when it came time to cover losses. The buyer's strong bargaining position made it difficult to negotiate. In retrospect, CNP should have had all actors identify potential challenges up-front and discuss how they would solve them to ensure that they were aware of the risks of participating in the risk-sharing model.

5.3.6 Outreach, Results, and Replication

Unfortunately, the pilot did not achieve the desired results. In the planning stages, program costs were estimated at USD 111,086 versus real costs of USD 119,236. Initial projections estimated sales at USD 136,000,⁴¹ but final sales were USD 39,246. As shown in table 4, total loss was USD 80,000, with CNP taking the largest loss.

Despite the results, CNP is still confident that this model can successfully work. Using the lessons learned from their pilot test, CNP is expanding the model to the avocado and cotton value chains, and exploring the possibility of including the government to help cover a percent-age of the risk.

Table 4 CNP Model: Shared Benefits and Losses

Project Results	
<i>Concept</i>	<i>Amount</i>
Investment	\$ 119,237
Income Generated	\$ 39,246
LOSS	\$ 79,991
Distribution of Loss	
<i>Institution</i>	<i>Amount</i>
Caja Nor Peru (MFI)	\$ 38,827
Camposol (buyer)	\$ 10,357
Procampo (input supplier)	\$ 27,706
Sistema de Riego Ingenieros (input supplier)	\$ 8,101
TOTAL	\$ 79,991

Source: Chavez Wendorff, "New Experiences in Agricultural Financing: Case of Red Pepper."

5.4 Model 4: Financial Institution uses Buyer Contracts as Guarantee for Soybean Farmers

In certain contexts, farmers obtain credit in-kind through contract farming—a formal arrangement where the farmers sign purchase agreements with buyers,⁴² to get “access to inputs and finance, higher productivity, and a more reliable access to markets.”⁴³ However, sustainability of contract farming is contingent upon a regulatory

⁴¹ They estimated that 640 metric tons would be produced, with 75 percent sold fresh at USD 0.25 per kg and the remaining 25 percent dried and sold at USD 0.60 per kg. Six kg of fresh red peppers produces 1 kg of dried red peppers.

⁴² Fries and Akin, “Value Chains and their Significance for Addressing the Rural Finance Challenge, viii.

⁴³ Ibid., viii, 15.

environment that prevents side selling and ensures that loans are used for working capital purposes (inputs, for example). There is also a bias toward larger farmers with their economy of scale and higher value or export crops.⁴⁴

Soybeans are Paraguay's primary agricultural crop, and silos (owned by national or multinational businesses) that store soybeans⁴⁵ often provide credit in-kind to farmers through contract farming. Silo owners have been unable to meet farmers' demand for in-kind credit to purchase additional inputs, especially their need for cash credit to purchase more land for cultivation, pay for transportation services, store soybeans, or for household purposes. Part of El Comercio's strategic plan is to increase outreach in rural areas,⁴⁶ and it saw an advantage in the existing contract farming relationships between silos and farmers, where the risk of providing cash credit to soybean farmers could be reduced.

5.4.1 Basic Structure of the Model

El Comercio provided loans to complement the in-kind credit already provided by silos. Collateral for the farmers' loans is in the buyer contracts with the silo, produce in the warehouse, and/or a guarantee from the silo, formalizing El Comercio's financial relationships with farmers.

Through this formal contract, the silo provides inputs to the farmer and agrees to purchase the future soybean crop either at a price set when the contract is signed or at market price at a specified time.⁴⁷ Although a portion of contracts stipulate a fixed price, the majority are open, where the price is fixed for a certain product volume on a specified purchase date. The remaining portion is sold at the market price.

⁴⁴ Ibid., viii, 16.

⁴⁵ Wittlinger and Mori Tuesta, "Providing Cost Effective Credit to Small-Scale Single Crop Farmers," 4.

⁴⁶ Financiera El Comercio, <http://www.elcomercio.com.py/antecedentes.html>.

⁴⁷ Ibid.

5.4.2 Expected Benefits to Participating in the Model

The model is transparent; every actor has clear interests and expectations from the partnership, and roles and responsibilities are balanced. Farmers receive a loan in the form of seeds and fertilizer from the silos and in cash from El Comercio. Despite El Comercio's high interest rates (40 percent per year), the loan is attractive to farmers because of its fast and convenient loan appraisal and disbursement, and can be used for both business and household needs.

Silos have well-established farmer networks and know the farmers' credit histories and can identify potential new clients for El Comercio. El Comercio gains access to reliable information on potential clients, reducing the time and cost of finding new clients. Using the existing contractual relationships between the silos and farmers is an efficient mechanism for reducing risk, since the loan repayment can be automatically deducted from the sale of the crop to the silo. El Comercio has also designed other lower-risk financial products (small loans) for soybean agribusinesses, finance transport companies, small silos, input suppliers, and service stations (that repair the machinery, provide petrol, etc.). Credit terms are always linked to the soybean harvest because they are members of the value chain.⁴⁸

With strong competition among silos, farmers can choose to which silo to sell. To remain competitive, silo owners are driven to expand their range of services to farmers, such as machinery rental, transport, quality control, technical assistance, and input supplies. El Comercio enables the silo owners to remain competitive through the strategic alliance formed by providing access to monetary credit to farmers.

⁴⁸ Wittlinger and Mori Tuesta, "Providing Cost Effective Credit to Small-Scale Single Crop Farmers," 4.

5.4.3 Step-by-Step Process for Pilot Testing the Buyer Contract Model

El Comercio analyzed the soybean value chain to understand the financial relationships among agribusinesses and farmers. It designed financial services appropriate for the opportunities and risks with agribusinesses and farmers, promoting them through its twelve rural branches.⁴⁹

A strategic alliance is successful when it benefits all parties; thus, El Comercio approached silos determined to be competitive and needing credit, mainly the smaller silos. After checking references, making site visits, and reviewing the credit worthiness and experience serving small farmers of potential partners, El Comercio developed and maintained strategic alliances with 10 of the approximately 50 small- and medium-size silos in Paraguay.

Although silos provide credit in-kind to the farmer, if the farmer has additional cash needs, the silo refers the farmer to El Comercio. A loan officer visits the farmers and evaluates their credit viability. The farmer signs a traditional credit contract with El Comercio, accepts the loan conditions, and repays after harvest.⁵⁰

In about one-fourth of the strategic alliances, the silo automatically discounts both the cost of inputs and loan repayment from the sale of the crop when the farmer brings the harvest to the silo. Once El Comercio is comfortable with the soybean farmer's risk profile, El Comercio covers the loan, assuming the risk for default.

A silo's in-kind credit costs approximately 27–35 percent annually. El Comercio makes its loans to farmers in US dollars with a 12–15 percent interest rate paid at receipt of the loan. Loan sizes vary from USD 500–12,000, with a fixed commission of USD 25.

5.4.4 Overcoming Risk and Challenges

⁴⁹ Ibid., 5.

⁵⁰ Ibid., 5.

El Comercio's management information system does not have the capability to easily identify loan repayment by crop and type of alliance—it must be done manually. Although favorable external factors—strong international demand for soybeans and stable prices—greatly contributed to this model's success, these factors (demand, price, weather, etc.) can change quickly.

The soybean value chain is well developed, with strong competition among silos. The biggest challenge is replicating this model with less-favorable external factors or with a crop with a less-developed value chain, as El Comercio intends.

5.4.5 Outreach and Results

This alliance has worked well. El Comercio reduced the credit risk of providing loans to small farmers holding 10–20 hectares. From 2003–2006 *El Comercio* dispersed 2959 loans and 371 medium loans. The average medium loan size was USD 34,002 in 2003, but was reduced to USD 15,212 in 2006, an amount that El Comercio was more comfortable lending. During these years, both arrears and portfolio-at-risk rates were low.

Table 5 El Comercio: 2003–2006 Strategic Alliance Performance

	Number of Small Loans	Number of Medium Loans	Small Loan Portfolio Amount (US\$)	Medium Loan Portfolio Amount (US\$)	Average Small Loan Size (US\$)	Average Medium Loan Size	Small Loan Portfolio at Risk	Medium Loan Portfolio at Risk	Strategic Alliances
Dec. 2003	369	38	722,660	1,292,104	1,958	34,002	0.04%	3.59%	2
Dec. 2004	360	106	610,262	1,737,720	1,695	16,393	3.23%	2.10%	7
Dec. 2005	239	102	549,071	1,797,063	2,297	17,618	1.09%	2.03%	12
Dec. 2006	1991	125	1,737,137	1,901,494	872	15,212	2.12%	0.65%	10

Source: Cristhian Barrios, Financiera El Comercio

Unfortunately, defaults on loans made through this alliance have been increasing in some regions—mainly due to bad weather and poor soil conditions. Nonetheless, the strategic alliance between El Comercio and the silos held strong, and met some of El Comercio’s expectations in terms of loan recovery. The silos supported El Comercio in the recovery process: they paid for some of their clients and offered additional guarantees for them—and they continued to provide inputs for the next production cycle. Overall, this strategic alliance has been the source of the good performance of the portfolio.

SECTION 6

REPLICATING MODELS IN OTHER SECTORS OR GEOGRAPHIC AREAS—EL COMERCIO

In 2005, El Comercio attempted to replicate its successful soybean-silo strategic alliance (Model 2) in a tobacco value chain. El Comercio created an alliance with a silo and provided credit to 65 small farmers. Unfortunately, the strategic alliance broke down because the silo did not fulfill its agreed-upon roles and responsibilities: it neglected to provide appropriate and timely technical assistance; unexpectedly changed the price for the final product; and did not pay small farmers. Unfortunately, El Comercio had to put a lot of effort into recovering these loans.

After learning from other research partners' experiences in the Strategic Alliance PLP, and from its failure with tobacco, El Comercio decided to pilot-test a variation of Model 2 in cotton (a strong value chain with formalized links between agribusinesses and farmers) with its key actors—small farmers, small silos, and larger national and international silos (warehouses). To address the credit gap of small silos (they lack liquidity at the beginning of the harvest season), El Comercio developed an alliance with one warehouse and 45 small silos that work with the warehouse and purchase cotton from small farmers. In this alliance, El Comercio provides loans (USD 1,000–1500) to the small silos, which pay back the loan after the cotton is sold, and to small farmers (USD 578) recommended to El Comercio by the silos, with a loan term (5–7 months) that matches the cultivation cycle. Two factors in the success of this alliance are the strong pre-existing relationships between the silos and the

small farmers, and the existence of a competitive market for the warehouses, which allows small farmers and small silos to negotiate prices and terms for their product.

El Comercio is also pilot-testing an alliance model to reduce risk, without a guarantee from the silo, for sesame. In this alliance with a large international warehouse, El Comercio finances small sesame farmers (averaging 2–5 cultivated hectares) without requiring a buyer contract as a guarantee. Instead of assuming part of the risk, the warehouse provides El Comercio with the list of small sesame farmers that are receiving technical assistance, seeds, and other inputs. In addition, El Comercio requires that loan recipients meet certain qualifications, including diversification of income sources beyond sesame production. Both of these elements help reduce credit risk without requiring a risk-sharing model.

In general, El Comercio looks for the following attributes when considering potential silo and small farmer partners for model replication:

For silos

- Extensive, long-term experience in the region
- Good relationships with agribusinesses and farmers over an extended period of time
- Good references from members of the value chain
- Financially solvent and stable (execution of due diligence)
- Commitment to small farmers and El Comercio

For small farmers

- Diversification of income
- Farming experience and small production for own consumption is strongly preferred

When evaluating possible value chains for model replication, El Comercio considers the following questions:

- How similar is the value chain to the soy value chain?
- Do El Comercio staff members have existing knowledge about the region?

While a strong value chain with formalized links between farmers (contract farming), competition, stable price conditions, and a short production cycle is preferred, weaker value chains are also being considered.

SECTION 7

ACTION RESEARCH KEY FINDINGS

7.1 Project-Specific Analysis

Most risk-sharing models, developed to overcome the credit gap in rural finance, focus on either reducing the risk or lowering costs of lending to help both agribusinesses and financial institutions expand their operations. Each model described in Section V highlights the main benefits that each actor expected from participating. In summary, the risk-sharing models contributed to one or more of the following: 1) lowering the farmers' risk of selling their agricultural products at unfavorable prices; 2) helping farmers enhance production quality enabling them to meet market requirements and become an attractive source to buyers; 3) creating an alternate credit guarantee mechanism; and 4) lowering the cost of lending.

As shown in table 5, the experiences of IDEI (Model 2), CNP (Model 3), and El Comercio (Model 4) show that risk-sharing models helped to lower the **price risk** for farmers by intentionally exploring and securing markets. El Comercio's experience was unique because the farmer-buyer contract was fixed for a certain product volume at an agreed price, and open for the remaining volume.

The experiences of IDEI (Models 1 and 2) and El Comercio (Model 4) show that facilitating the purchase of drip irrigation systems and providing technical assistance and/or inputs contribute to enhanced **production quality**. CNP's experience (Model 3) was designed to give farmers technical assistance, but when insufficient technical assistance and knowledge about red pepper was delivered

(coupled with unseasonable weather patterns that adversely affected production), the desired **production quality** was not achieved.

Table 6 Risk-Sharing Model: What Did Each Model Achieve in Terms of Risk and Cost?

<i>Model Description</i>	<i>Model Achievements</i>				<i>Advantages</i>	<i>Disadvantages</i>
	<i>Lower Price Risk for Farmer</i>	<i>Enhance Production Quality</i>	<i>Guarantee for Repayment</i>	<i>Lower Cost for Financial Institution</i>		
Model 1: Market facilitator partners with bank to develop credit franchisee model	Not designed to achieve this	Drip irrigation increases production and productivity	Better credit appraisal and proximity to farmers increases chances of repayment	Credit franchisees contribute equity and administer loan process	Potential for scale where drip dealers are located	Investment in training and developing internal controls for credit franchisee
Model 2: Market facilitator links buy-back arrangements as guarantee for drip irrigation	Farmer gets access to secure markets and agrees on price	Drip irrigation increases production and productivity	Letter of agreement is used as guarantee at bank	Sugarcane factory repays loans reducing transaction costs	Potential for scale in all areas where buy-back arrangements are present	Existing debts could prevent farmer from accessing credit
Model 3: Financial institution creates risk-sharing model with a trust fund to finance red pepper crops	Farmer gets access to secure markets and agrees on price	Network manager and technical assistant did not provide sufficient technical expertise	Buyer did not cover losses incurred after pilot	CNP covered losses	Risk-sharing and experience of all players will be helpful to farmers	Need to develop an entrepreneurial network manager
Model 4: Financial institution uses buyer contract as guarantee for soybean farmers	Farmer gets access to secure markets and agrees on price (fixed and open contracts)	Technical assistance and inputs provided by silo improve quality	Farmer/buyer contract used as guarantee at El Comercio	Silo repays loans, reducing transaction cost	Scale and replication is possible in other value chains. MFI can cross-sell other financial products and services	More difficult, but not impossible to replicate in weaker value chains

(Technical assistance, paid for by the farmers, was not provided by the buyer but by a third party or the network manager)

When relationships were formalized in a contract (Model 4) or registration letter (Model 2), the legal agreement was a **guarantee for repayment**. In Model 4, when some soybean farmers fell into arrears, the silos assisted El Comercio in loan recovery by repaying loans on behalf of farmers, offering additional guarantees, and continuing to provide inputs to the small farmers. In Model 3, despite having a trust fund in place as a repayment guarantee, the buyer hesitated to comply with the agreement.

Costs were reduced when the agribusinesses—the silos (Model 4) and sugarcane factories (Model 2)—automatically deducted loan repayments from sale proceeds to repay financial institutions. Moreover, El Comercio increased its loan portfolio volume in some branches, helping to reduce operational costs. Additionally, the experience of IDEI (Model 1) showed the potential of having agricultural input and equipment dealers administer and collect loans to expand outreach in rural areas. It also revealed a need to invest in up-front training for credit franchisees.

7.2 Overall Findings

7.2.1 Market Facilitators Can Be Catalysts for Linking Farmers to Formal Financial Sources

In Model 1, IDEI introduced ICICI Bank to a network of certified dealers as potential credit franchisees. Ultimately, IDEI's strong value chain experiences, coupled with ICICI Bank's financial skills, strengthened both the financial product and the operational procedures of the delivery channel. In Model 2, IDEI stimulated farmer and sugarcane factory demand for drip irrigation and partnered with banks to

reinforce the credibility of IDEI-certified dealers, and created a successful relationship.

7.2.2 Value Chain Analysis and Mapping Is a Critical First Step

For successful risk sharing models in specific value chains, each partner must analyze the existing constraints, relationships, and market opportunities. El Comercio leveraged its staff's knowledge of agriculture to appreciate the details of the in-kind terms and conditions offered by the silos to the farmers to design financial products that complemented the in-kind credit and matched farmers' demands. Through interviews and focus-group discussions with farmers and agribusinesses, CNP recognized that farmers needed technical assistance to switch crops. Value chain analysis also permitted the institutions to measure the power relationships, such as the bargaining power of each actor, that exist in the value chain.

7.2.3 Developing the Profile of Potential Partners in the Risk Sharing Model Is Important for Both Financial Institutions and Market Facilitators

The research partners' experiences indicate the importance of defining the necessary characteristics, or profile, of potential partners in a model. After an unsuccessful attempt to replicate their model with the tobacco value chain, El Comercio developed detailed soybean farmer and silo profiles. Furthermore, El Comercio has modified its credit procedures to include due diligence of the silos and reference checks of different agribusinesses in the value chain to evaluate the commitment and trust between players. CNP's experience with red peppers demonstrated how important understanding the buyer is. If a buyer does not directly provide technical assistance to farmers or pay it, this may be a preliminary indication that they are not committed to the risk sharing model. IDEI successfully screened for flexibility, innovation, and risk taking in its partners, particularly financial institutions.

7.2.4 Gaining Commitment from All Stakeholders and Structuring All Operational Details and Contingencies Is Vital

Field visits and demonstration plots to showcase installed KB drip irrigation systems effectively convinced farmers, sugarcane factories, and eventually banks to participate in Models 1 and 2. However, commitment is more than signing a contract, and CNP learned the necessity of discussing potential challenges and their solutions in the early stages of forming an alliance. Model 1 also revealed the importance of each detail when involving many stakeholders, even if it means investing in planning without immediate results. IDEI is positive that the careful planning of Model 1 will lead to positive results. Overall, structuring a risk sharing model requires broad consensus among partners on the primary purpose of the model, the roles and responsibilities of each actor, expected benefits and costs, operational matters, and contingencies.

7.2.5 Dynamic, Organized Value Chains Offer More Possibilities for Risk Sharing Models with Agribusinesses

Sugarcane, soybeans, and red pepper have value chains that are reasonably well organized and have strong final markets,⁵¹ which was common to both Model 2 and Model 4.⁵² Sugarcane factories and silos play a pivotal role in their value chains because, as large agribusinesses, they process large quantities of produce, have access to working capital from formal institutions, and leverage it to farmers.

7.2.6 Pilot Tests Are Needed before Replicating

Successful pilot tests are the first step towards replication and achieving scale. For some institutions, such as El Comercio, a successful pilot can lead to replications with other soybean silos and even other value chains (tobacco, cotton, and sugarcane, for

⁵¹ Soybean is expected to rise in price over the next year and demand is outgrowing production. Joe Carroll and Jeff Wilson, "Investing: Soybean Prices Expected to Soar," *International Herald Tribune*, December 27, 2006.

⁵² India, the largest consumer of sugar and second largest producer of sugar in the world has over 453 sugar mills involving more than 50 million sugar cane farmers. See www.indiansugar.com.

example). For IDEI, its successful pilot with the initial sugarcane factory prompted it to implement it in its other factories. Additionally, other “copy cats” have expressed interest in adopting or replicating this model in their sugarcane factories—the highest compliment. Even when models are not successful, documenting the process and identifying when and why challenges occurred can help an institution modify the model for another attempt, as Caja Nor Peru intends with avocado and cotton value chains.

SECTION 8

CONCLUSIONS AND AREAS FOR FUTURE WORK

The reality is that financial relationships exist among farmers and agribusinesses in a value chain, and they are important to study in order for rural financial services to expand. By including a market facilitator in this action research project, this report has been able to show how financial institutions and a market facilitator can analyze the existing financial relationships in different value chains, in different contexts, and then develop risk-sharing models that they—and possibly others—will be able to replicate. For most of the models, selecting partners and structuring the details of risk sharing were the most significant challenges.

8.1 Emerging Issues for Further Research

8.1.1 Value Chain Analysis Tool for Financial Institutions

Conducting market analysis and selecting agribusinesses with which to work is tricky. Developing a simplified value-chain analysis tool,⁵³ tailor-made for financial institutions, would streamline the time and cost of conducting detailed value chain analysis. Informal methodologies are sometimes used to gather information about the value chains, such as staff's familiarity with a region and agricultural knowledge. A

⁵³ In the Strategic Alliances PLP, this potential tool was called "Value Chain Analysis With Financial Services Lens." EDA Rural Systems in India and American Refugee Committee in Sierra Leone documented pilot tests of their own versions of this tool. More exploration is warranted especially with market facilitators.

highly structured tool that uses tested methodologies and data-gathering mechanisms may ensure a more systematic approach.

Box 5
PLP in Action: Idea for a Decision-Making Tool Is Born on Bus

On a bus ride coming back from visiting soybean silos and El Comercio staff in "Campo Nueve" outside Asuncion, Danilo Chavez Wendorff, a PLP partner from Caja Nor Peru, began scribbling in his notebook. His notebook scribbles were actually matrices that pinpointed two variables for decision-making behavior from the perspective of farmers, agribusinesses, and financial institutions.

The matrix below shows the two factors that drive decision-making from the perspective of a buyer. If buyers need high volume and high quality product, they may need to develop a formal relationship with farmers. By identifying their behavior based on two variables, Chavez Wendorff was convinced that both financial institutions and market facilitators could improve their selection of alliance partners and structure better alliances.

		Buyers Matrix Model for Farmers	
High VOLUME		Need technical assistance	Agreement with producer or farmer to avoid selling
	Low	Throw out	Find more or new markets
		Low	High
		QUALITY	

His matrices sparked debate at a PLP workshop in Asuncion in July 2006, and again during a conference call in November. Chavez Wendorff's idea is now being refined and tested by other PLP partners as they select potential partners and structure new alliances.

Suresh Subramanian, from International Development Enterprises-India, has adapted the matrices to his context to help him determine which model best suits new alliances based on two factors that are present in rural India.

8.1.2 A Decision-Making Matrix and Tool Kit

Guaranteeing the actors' commitment to a model requires mutual trust; broad consensus on the roles, responsibilities, risk and benefits; and awareness of each actor's incentives for participating in the model. The better the financial institutions or market facilitators understand the major motivations that drive

partners' decisions to enter a risk model or strategic alliance, the more likely strategic alliances that meet participants' expected benefits will be sustainable.

All research partners realized the importance of understanding actors' motivations, as well as the business relationships that exist between farmers and agribusinesses. For example, IDEI is keen to analyze to what effect the formality of

the farmer-buyer contract, the relative size of the buyer, and the frequency of business transactions have on risk-sharing models.⁵⁴ CNP and IDEI are both pilot-testing a decision-making matrix to help financial institutions and market facilitators determine the most potentially successful strategic alliances and optimal partnerships. Box 4 explains how this decision-making tool was invented during the action research program.

8.1.3 Risk Sharing Arrangements in the Weaker, Fragmented Value Chains

Contract farming and buy-back arrangements with one pivotal actor, such as the sugarcane factory or silo, may not be required for successful alliances. Today, El Comercio is also financing small farmers who are not strategically allied with a silo. This modified model has been replicated with sesame and cotton, where contract financing is not common or applicable. ACCION International will try to replicate success in new value chains in Latin America, using informal agreements to guarantee repayments since many agribusinesses do not operate with formal contracts. Precisely because larger agribusinesses are absent in some areas, IDEI is experimenting with the credit franchisee model and other models to reach farmers who may not have formal farmer-buyer contracts.

8.1.4 Measurement of Impact

Measuring the benefits of risk sharing models is challenging for financial institutions. El Comercio is attempting to compare and evaluate the portfolio at risk (PAR>30 days) of their overall agricultural loan portfolio with the portion of the agricultural loan portfolio that is linked to a strategic alliance. Preliminary analysis is showing that

⁵⁴ Suresh Subramanian, "Innovative Models: Agricultural Value Chain Finance," unpublished working paper, 2007.

financing small farmers without a strategic alliance has a higher risk with poorer performance.

Financial institutions are also motivated to analyze the extent to which new clients were reached through the model and benefited from the financial institution's ability to cross-sell other financial products and services. Also, both market facilitators and financial institutions are also keen on calculating the cost and returns of investments, such as developing the capacity, promotional materials and operational systems necessary to maintain credit franchisees—in the case of IDEI. In addition, both market facilitators and financial institutions would like to measure more regarding how much the models benefit the farmers. For instance, IDEI is particularly interested in promoting models that reach the poor, small and marginal farmers living on less than USD 1 per day. Finally, the extent to which farmers are able to diversify crops as a result of access to finance in these models is intriguing to all research partners.

8.1.5 The Role of Market Facilitators

IDEI's catalytic role in fostering Model 1 and Model 2 shows the tremendous promise of market facilitators to not only support value chain development but also facilitate farmers' access to finance. In agriculture, it is clear that non-financial services (technical assistance, market information, etc.) are needed to help farmers improve productivity and quality, and find improved market channels. Market facilitators familiar with value chains offer skills that may complement those of financial institutions. Other PLP partners have also shown the importance of market facilitators conducting value chain analyses with financial institutions.⁵⁵

⁵⁵ This is occurred with MEDA and IMON in Tajikistan.

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