

1

VALUE CHAIN FINANCING: A STRATEGY FOR AN ORDERLY, COMPETITIVE, INTEGRATED MARKET

Ken Shwedel

In my presentation, I will be emphasizing the concept of value chains.¹ We now see this concept as a new business model, and you need to start seeing it this way too. It is the key that will help those of us who work in the financial sector to finance these chains and manage risk.

I will begin my presentation by explaining what a value chain is. I would then like to speak a bit about the concept of the value chain as a new business tool, and this is where I will place most of my emphasis. We in the banking sector need to start understanding the agroindustry business as a chain. You should know that when we were developing a policy for the Government of México, some five years ago, we decided that the concept of the chain was critical if we were to protect agriculture and equip it to compete and survive.

As I said before, I want to insist on the importance of this new business model. After that, I will speak briefly about financing, describe the traditional working approach that we bankers have used for so long, and point out a few problems with it. I will also offer a few brief examples, because this is what you will be hearing about during the rest of the seminar. I will finish by talking about what we have learned, and the implications for rural development, for public policy and also for those of us who are ensconced in our financial institutions.

A. Definition of the value chain

I will start with a textbook definition of what a value chain is. The concept of the value chain has been defined traditionally as a function of “Company X” or “Company Y.” We ask which of the company’s activities are strategic, create value and improve its competitive position, and then we apply this methodology to analyze costs and identify points of differentiation. But today I want you to consider the whole array of activities that define the strategic and competitive position of an entire industry.

1. This chapter is a literal transcription and reflects the spontaneous style in which the presentation was given.

This is how we apply these same concepts to the broad agri-food sector. It was what we did in México when we designed the “Farm Policy.” The agri-food value chain can be seen as “a collection of activities or interrelated sequential and parallel functions involved in the production, manufacturing and marketing of foods.”

B. A new agroindustrial business model

You are probably thinking, “This chain concept is nothing new;” and you’re right. In the 1950s, the United States Department of Agriculture (USDA) adopted the chain concept; by the 1960s, they were talking about the interrelationships of systems. When I worked here in Costa Rica in the 1980s, we were also managing marketing systems. Porter, in his classic work on competitive strategy and its clusters, emphasized the imperative of taking a chain perspective.

The chain perspective has been present in the literature all along, in diverse forms. However, there is something new in the way the value chain approach is operating now.

What I will argue here is that we are moving away from a commercial, segmented form of agriculture in which many separate links operate in isolation, out of sync with each other, in which farmers produce in bulk, are exposed to price risks and capital needs and produce independently. This model is giving way to a new agriculture based on integrated systems, differentiated production, risk management, information needs and interdependent farmers.

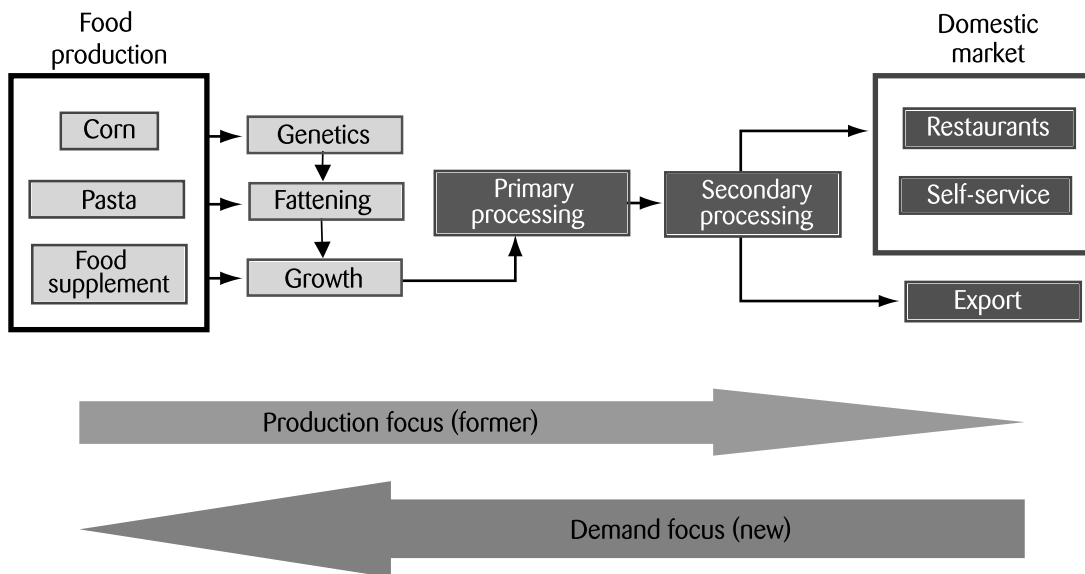
I was impressed with the words of the Vice President of Costa Rica when he spoke about globalization, and I will touch on this point, because today’s producers are interdependent.

When I talk to farmers in México, I tell them: “Look, you need a global vision, you need to compete globally even if you are selling domestically. You are now in a market of interdependence.”

Something new has been happening, as you can see in Diagram 1.1. This illustration does not show all the inputs, but in the past, we have always gotten by with a production-based vision or approach: “I will produce whatever I want, whatever I feel like, the same thing my father and my grandfather and my great grandfather produced before me. I don’t know how I will sell it, but you can be sure I will produce it.”

The entire chain, with all its links, then focuses on pushing this production onto consumers. Today things are changing. It is a new approach that is evolving in response to market structure, as we will see shortly, with a focus on demand. We need to produce what consumers want. It’s no good to me if I cannot sell it.

Diagram 1.1 The production approach and the demand approach



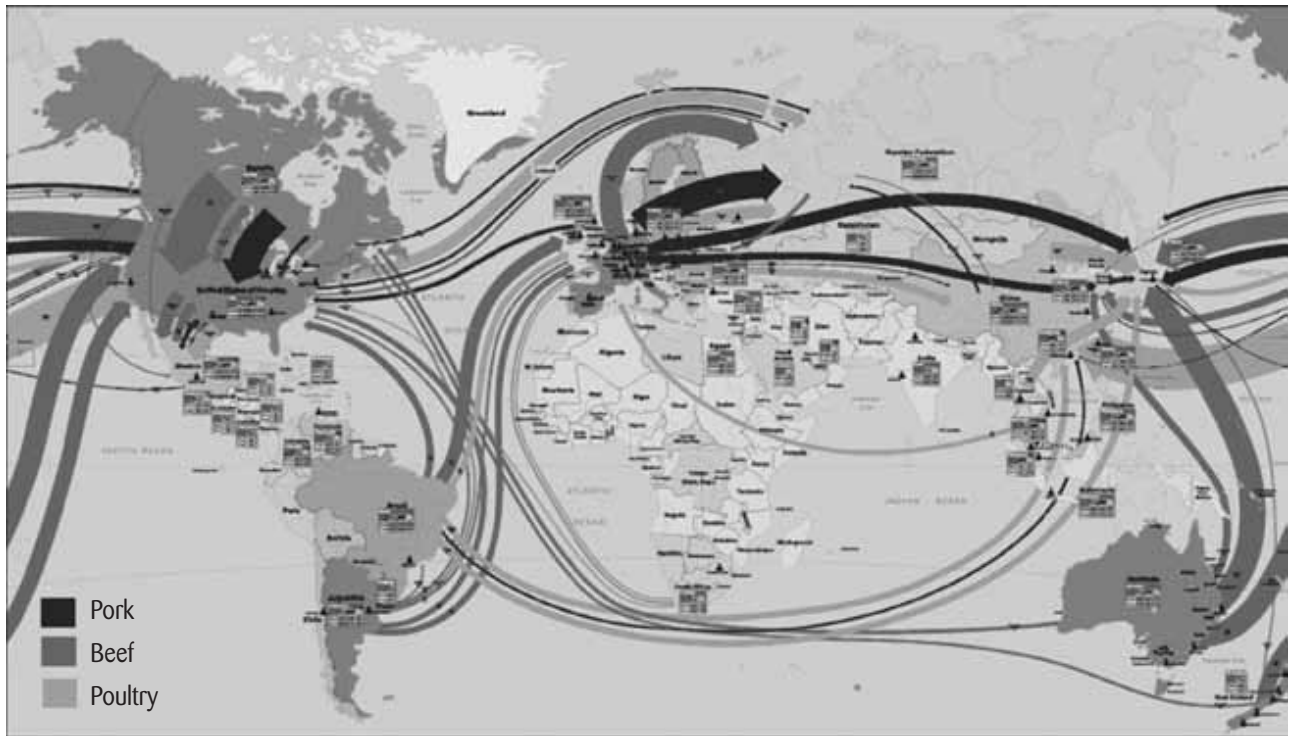
SOURCE: Ken Shwedel, Seminar presentation.

Sometimes people ask me why I studied agricultural economics. As it happens, I studied agricultural economics because of the wisdom of a farmer. I was in a small town working in agricultural extension, and I noticed that on Saturdays, everyone came to the market to buy flowers to go to the cemetery. I asked a farmer, “Why don’t you plant flowers? It looks to me like a pretty good business.” He answered, “Look, if they don’t sell, I can’t eat them either.” In his own words, this man was describing his demand approach: he would produce what buyers wanted. If this farmer could not sell his flowers, he preferred not to take the risk.

So here we have two important concepts: i) **risk** about what consumers want, and this brings in the need for information; it is an innovation, because the model requires a two-way flow of information; and ii) what we are seeing, as Vice President Casas noted, is that business is now **global**.

Diagram 1.2 is a map of the globalization of animal products, and I can show you other maps of other products. The important thing is that for every type of product, agribusiness is now global.

Diagram 1.2 The global market for pork, beef and poultry



SOURCE: Ken Shwedel, Seminar presentation.

Meanwhile, the international food trade has been growing so rapidly that its value has increased by 50 percent over the past 10 years. This is due partly to inflation, but also has much to do with overall growth in global business flows. And speaking of global business, it is also evident that agribusinesses are becoming much stronger. The four largest agroindustrial companies in the United States hold varying shares of control over the market, depending on the sector. In the industry where they have the least control (ethanol production), they make up around 40 percent of total sales, while in the market where they hold greatest sway (beef), they sell more than 80 percent of the total. In other words, agribusinesses are growing stronger, and the agricultural sector is competing on a globalized market where there is more and more concentration at the final end of the chain.

It is also interesting to look at specific companies and examine their global presence. In the oilseed sector, for example, local companies hold 90 percent of the market in China and 55 percent in Brazil. In other countries, local production reports a much smaller share: 45 percent in Argentina, 25 percent in the United States and 15 percent in the European Union. Foreign presence is remarkable in general, and even more so in specific industries. In oilseeds, for example, ADM, Bunge and Cargill all dominate certain markets with shares of up to 30 percent –Cargill in the European Union and ADM in both the European Union and in the United States. These companies are now a powerful presence not only in a single country, but worldwide. Another example is the Mexican company Maseca, that just recently began to invest in China. Egg rolls may soon be displaced by a form of genuine Chinese tacos!

Another important example can be seen in the changing patterns of average production posted by milk bottling plants in the United States. The number of plants has been declining, while average per-plant production has been on the rise. Meanwhile, the number of dairy farms has demonstrated the very same trend, with the number of farms declining while the number of animals on each farm has grown. Why am I telling you this? Because what happens in one part of the chain has consequences for other parts.

I am talking here about concentration in the manufacturing industry, and next I will discuss trends in retail. You may ask “What do I care if there is concentration in that segment of the chain?” It does matter, because what happens at the end of the chain is affecting production.

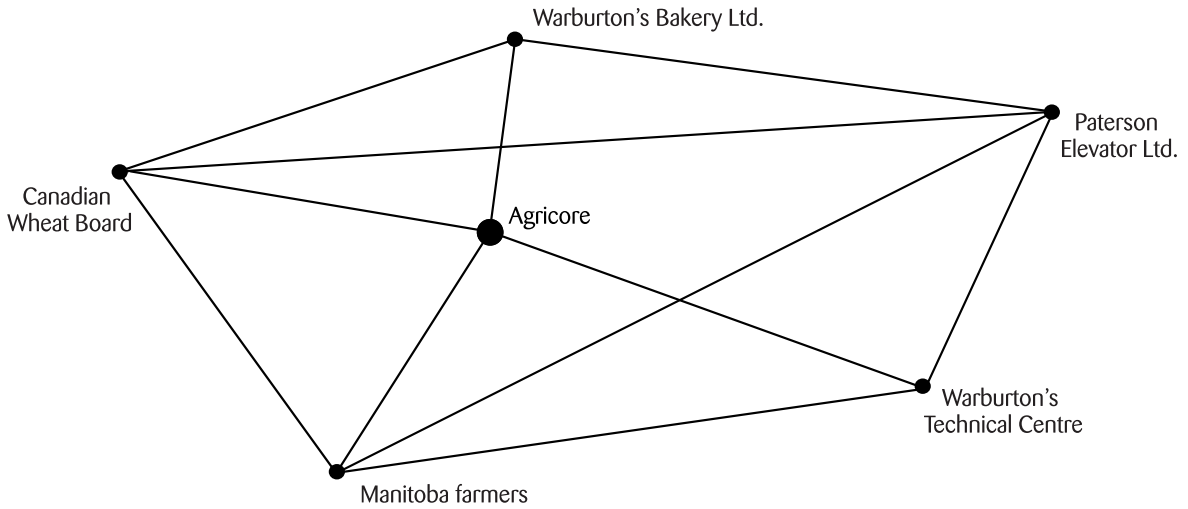
If I show you figures from México, Europe and Asia, you will see the same phenomenon all over the world. What are they doing about it? Another example in the United States is pork producers. What do pork producers do with 20, 50, 100 bellies? What can they do? What they are all doing is to find ways of linking into a chain. In a clear example of vertical production and contract production, nearly 70 percent of the hogs produced in the United States today are sold before they are born.

This is where we bankers enter the picture. We are willing to finance the activity because we know there will be sales at the end. This is what we are doing. This is how end consumers exert their power in the chain, and it falls to the producers to find ways of linking into it. Is this good or bad? I say it is neither good nor bad, but merely a survival strategy.

Diagram 1.3 shows an example of globalization for an English company negotiating with Canadian producers to purchase of certain varieties of wheat. The English buyers notify the warehouses when they need to purchase wheat. The warehouses in Canada contract with producers and finance them; the original company charges certain expenses and sells its bread in England at a higher price. What is the point of this example? It is an illustration of the globalization of interconnection. Who could have imagined that the wheat farmer in Canada would be dealing with a baker in England? But this is exactly what is happening.

All of you need to understand clearly that power is passing into the hands of consumers. Figures for 1999-2003 show heavy concentration at the retail level in China, Brazil, Poland, Argentina, the United States and Australia.

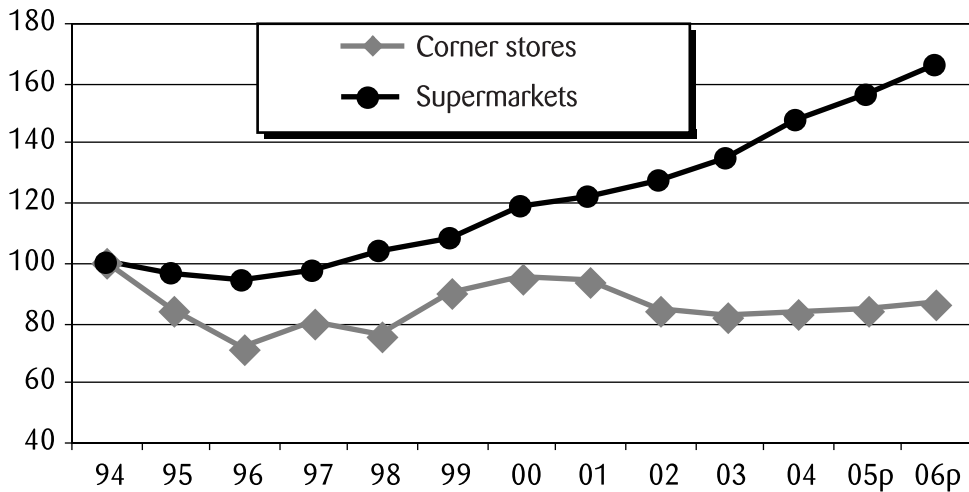
Diagram 1.3 Competing with a chain vision



SOURCE: Ken Shwedel, Seminar presentation.

Supermarkets are also gathering greater power, as you can see in Graph 1.1 for México. Sales in mom-and-pop corner stores, known in México as *changarros* and here in Costa Rica as *pulperías*, have stagnated and ceased to grow. The heavy black line (connecting the circles) shows growth in the supermarket sector. Today in México, nearly half of all food purchases are made in supermarkets. More than 200 cities around México now have full supermarkets, and growth continues. Wal-Mart has announced plans to invest one billion pesos to open new stores in 2006.

Graph 1.1
Index of real purchases in corner stores and supermarkets in México (1994=100)



SOURCE: INEGI

Now, why is all this important? Who is writing the rules of the game? Retailers are, because it is retailers who have the consumer's ear. We were recently at a seminar organized by Rabobank, and a representative of one of the world's largest chains came and told the vegetable suppliers, "If I don't know where it comes from, I'm not buying." What was his message? Whether he was looking for vegetables, cantaloupes or watermelons, if he didn't know where the product came from, he would not buy it. In other words, farmers need to be part of a chain in which everything can be identified. These retailers are writing the rules of the game. The most important factor is neither the government nor its rules and regulations, because if supermarkets don't buy, if producers do not play by their rules, producers cannot sell.

It is also extremely important to understand that consumers have become more demanding. Table 1.1 shows the type of high quality that consumers expect, including availability, flavor, quality, freshness, convenience, environmental safety, traceability, and in addition to all that, they want low prices.

Table 1.1

Consumer demands

1. Year-round availability
2. Flavor
3. Quality
4. Wholesome and practical
5. Freshness
6. Convenience
7. Innovation, new products
8. Care of the environment
9. Care of welfare
10. Traceability
11. Low prices

And more important all the time:
food safety

SOURCE: Ken Shwedel, Seminar presentation.

If farmers hope to sell, they need their products to get into the hands of final consumers with the quality demanded and at low prices. This means they must be part of an integrated chain. More and more all the time, food safety is a prerequisite for the industry today. Just remember the case of mad cow disease. What I am telling you is that concern for safety is fundamental. I will go back to my earlier example. Retailers want to know where the product comes from, what was done to it, and how we are handling it. If farmers are not part of a clearly identifiable chain, and if their products are not handled in accordance with standards demanded by final consumers, they will not be able to sell.

So farmers need to juggle a vast number of requirements, and this is part of the reason why they join value chains. Here I will pause to talk about public policies. I want everyone who is in the government

to understand that even though we are talking about value chains of small-scale farmers and small businesses, competition among nations is also a competition of chains.

We realized this in México in the early years of the Fox Administration, when the existing policy approach was abandoned in favor of a chain policy designed to develop and protect viability in México's agri-food chain. I cannot overstate how important it is for governments to adopt this chain vision for the design of rural development policies.

C. Financing agricultural value chains

I would like to begin with the concept of agroindustrial activity. The traditional view sees an array of isolated, autonomous links. We bankers had developed a wide selection of financial products, one for each link, all separate.

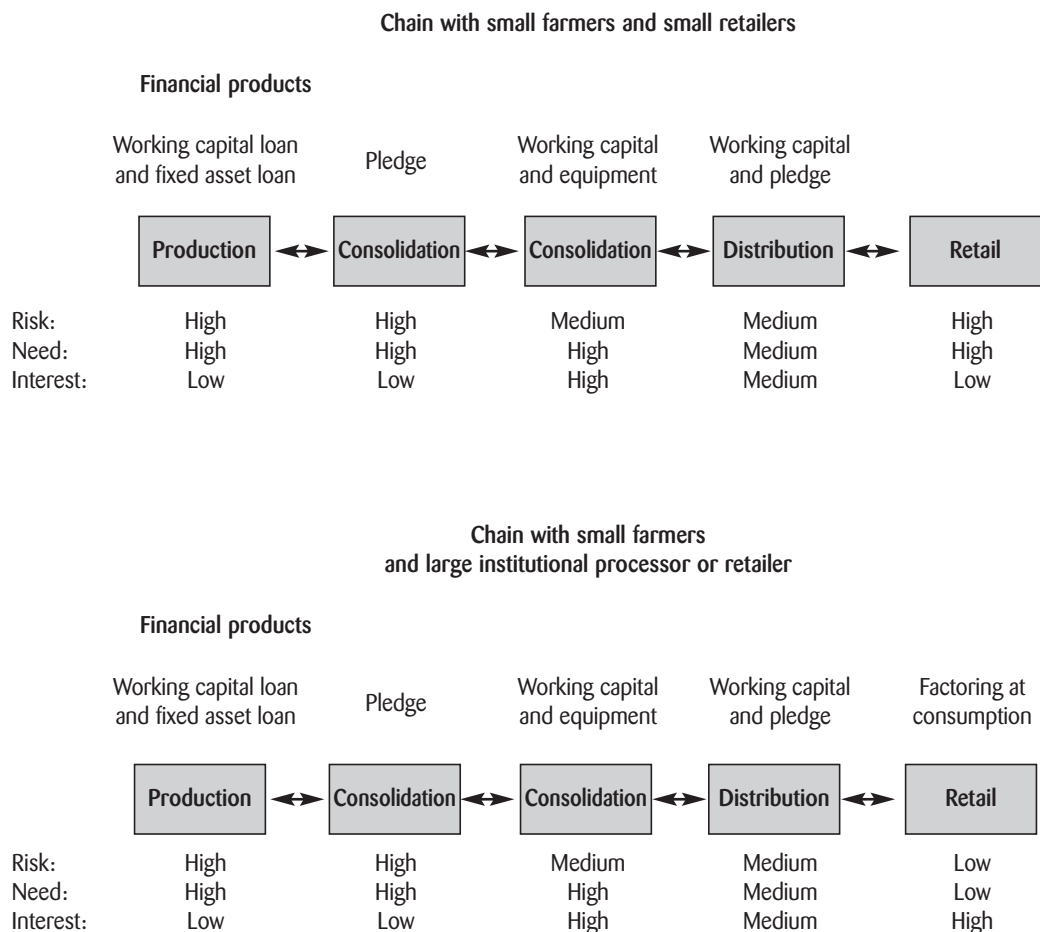
Take a look at Diagram 1.4. At the top center you see a traditional chain with its separate links. Above each one I have named the applicable financial product, and underneath it, the risk assessment, the relative need for financing, and the bank's interest in providing the service. Small-scale producers at the beginning of the chain are a high-risk proposition unappealing to banks. Retail sales at the end of the chain are also unattractive for bank financing. So in a traditional chain where small-scale producers supply small mom-and-pop stores, no one in the banking industry wants to lend financing because it is not an attractive proposition. Quite simply, it is too risky. I as a bank prefer not to take such risks. I am not interested. I am not in the risk-taking business. My job is to make money, and this level of risk is no good to me.

The bottom section of Diagram 1.4 shows the case of slightly larger companies. The situation is not much different. Maybe if the chain culminated in a Wal-Mart or a *Más x Menos* supermarket, I would be willing to finance, but such a fragmented industry structure undermines all possibilities for financing agriculture. This structure produced results that actually exacerbated the fragmentation of chains, worsening isolation and triggering confrontation among the different segments and links of the chain.

When I worked in the *Banamex* bank, we financed the agricultural sector. We did not care what the rest of the chain was doing, or that farmers couldn't pay if they didn't sell. We did not care whether we were undermining the rest of the chain and thus heightening the level of isolation and confrontation. One of the results was a declining flow of financing to the chain, especially to farmers as primary producers.

Costs were higher, because if I was asked to finance a certain farmer, it meant I was being asked to take a risk, and I charge for risk. If I perceive the risk as higher, I charge the client for it. I am not talking about whether the risk is actually higher or lower, but about perceptions of reality. Perceived risk is much more important in my pricing decision than reality itself.

Diagram 1.4 Financial dimensions of a value chain with small farmers, small retailers and a large processor or retailer



SOURCE: Ken Shwedel, Seminar presentation.

The traditional chain also encouraged the development of non-financial intermediaries. I am not criticizing the competition, simply saying that when non-financial players are in the game, financing becomes much more expensive.

So what are the answers? There have been several so far, and this is where I have to criticize public policies:

- i. **Government banks or programs.** In México, we have tried to solve this problem by setting up development banks. We found that development banks were a fiasco, a bottomless pit, and the Fox administration got rid of them. Subsidies after subsidies, and before we knew it, our commercial banks had fallen into the same trap. What were we doing as commercial bankers? We were financing, not based on the quality of the business, but on the quality of the subsidy. If I as a banker could get in on a good subsidy, I jumped at the chance.

“Make way, I’m coming in,” and who cares how good the business is? If the subsidy was attractive and there was a good guarantee, I got into the business, I got into the financing, and I think these are the answers that distort everything.

- ii. **Producer organization.** We also saw many cases in which the government’s solution was to organize producers. I submit here that this approach was a mistake. The problem is not how to deliver a financial product. Yes, we need to bring down the cost of giving credit, especially the cost of working with smallholders, but the problem is not delivery of the product; the problem is risk. Many governments focused on reducing agronomic risk, but agronomic risk is not really my concern, as a first-tier bank; I care more about commercial risk. “If I can’t sell the flowers, I can’t eat them either.” If the only collateral they can offer me is flowers, what use is that to me?
- iii. **Agricultural research.** I have nothing against agricultural research, but what I am saying is that research does not solve the problem of credit.
- iv. **Marketing support programs isolated from the chain.** Nor is the solution to offer marketing support programs disconnected from the chain. All we do with these programs is to support or finance one part of the chain that runs contrary to other parts. Many of these policies actually undermine the integrity of the chain.

So we found ourselves with a traditional approach that had no notion of consolidating chains. Chain-based financing requires the banker to see and understand the business in its entirety. It demands adjustment to new market conditions, more accurate pricing, a better understanding of risk, and consequently, a greater willingness to take risk.

D. Financing value chains: examples

I want to share four examples of financing: agave suppliers in México, beef suppliers in England, cascade financing of flowers in Holland and coffee financing.

1. Indirect supplier financing: agave

Agave production is an interesting example of a value chain. It is a highly complex activity by comparison with the average farm commodity. It is highly cyclical, grown mainly by small-scale farmers with little access to formal financing, and affected by wild price swings.

If I, as a banker, encounter an agave producer, I do not finance him. However, I am willing to consider and handle financing for a company that will use the money to take on the six-year risk of financing a producer, because I understand what a chain is and I understand how it works. I do not take this risk directly. I am not willing to accept a six-year loan term. But I can at least provide financing to someone who will take the risk of lending money to the producer who needs it. In other words, I can finance a client who needs to guarantee his supply of raw material to keep his own business running. This is

the tequila producer. As a tequila producer, not an agave producer, but a manufacturer of the beverage, he understands the farming risk because most tequila producers also have their own crops. So what's going on? I have the chain perspective; I am willing to finance a tequila distiller so he can finance the production he needs.

In a case such as this, the financial institution understands that access to raw materials is a critical factor for the success of the end business. Nevertheless, the bank is not willing to take the risk of financing the primary producer. The flow of financing takes place, in the end, because the farming risk is held by the tequila distiller, who can manage it better than the banks.

2. Direct supplier financing: meat for the supermarkets

This second example is from England, where we are willing to get into the business because we finance the supplier directly. Why am I willing to finance the supplier? This particular value chain has two fully interdependent links. They are not isolated, but interdependent links held together by a long-term business relationship. I have been working with this supermarket retailer for a long time. It is the market leader, and a high percentage of its needs are met by this supplier. The financial institution is willing to take the risk because, even in the absence of a formal contract between supplier and retailer, we have understood the relationship between the links.

Briefly, we understood the chain and the relationships between different parts of the chain, and we were willing to finance suppliers directly. We have seen that:

- supplier and retailer are interdependent,
- these two links of the chain enjoy a long-term business relationship,
- the retailer is a market leader,
- the supplier provides a high percentage of the retailer's meat and
- the meat process is difficult to duplicate.

I should like to add that we were willing to do this in England because we trusted the legal institutions. In other parts of the world, this would not necessarily be so, as the institutions do not inspire trust. Public policy is a very important factor. In this particular case, the financial institution was willing to take the risk even in the absence of a formal contract. In some markets where reliable legal institutions are not available, the working relationship and interdependency among stakeholders becomes even more important than a formal contract.

3. Cascade financing: flowers

This example comes from Holland and also from my same bank. I apologize for continuing to use examples from the bank where I work, but it is what I know best.² Flower marketing has become a specialized global business. Farmers see flowers as a high-value product that requires substantial, costly investments. One hectare of greenhouse floor space in México costs about \$1 million, so the business is highly specialized. Are we willing to finance it or not? In this case, the answer has always been “yes.” This business takes the shape of a “cascade,” making it easy to understand in depth.

We finance farmer needs for working capital, equipment and technology, and we also finance the equipment distributor. We finance the farmers because we know them and understand their marketing system. Essentially, the farmers send their products to an auction market in Holland, and we finance the auction market. We also finance many of the buyers. We have locked up the financing of the whole chain. We have intimate knowledge of production factors, equipment suppliers, and equipment buyers. We also know that the farmers receive their money and deposit it in a Rabobank account, so later we directly debit their accounts for loan payments. We are willing to get into a high-risk business because we finance the entire chain and, modesty aside, I believe that no other financial institution knows as much about flowers as we do.

Not only do we finance, but we have also invested in market analysis and studies, which as I said, has given us in-depth knowledge of the industry. For us, then, it is not an excessively risky business. The risks are manageable and we understand them. We have account executives specialized in this business and account executives who understand the technical part of the business. Because we know the risk, we are willing to take it.

4. Financing for producer groups: coffee

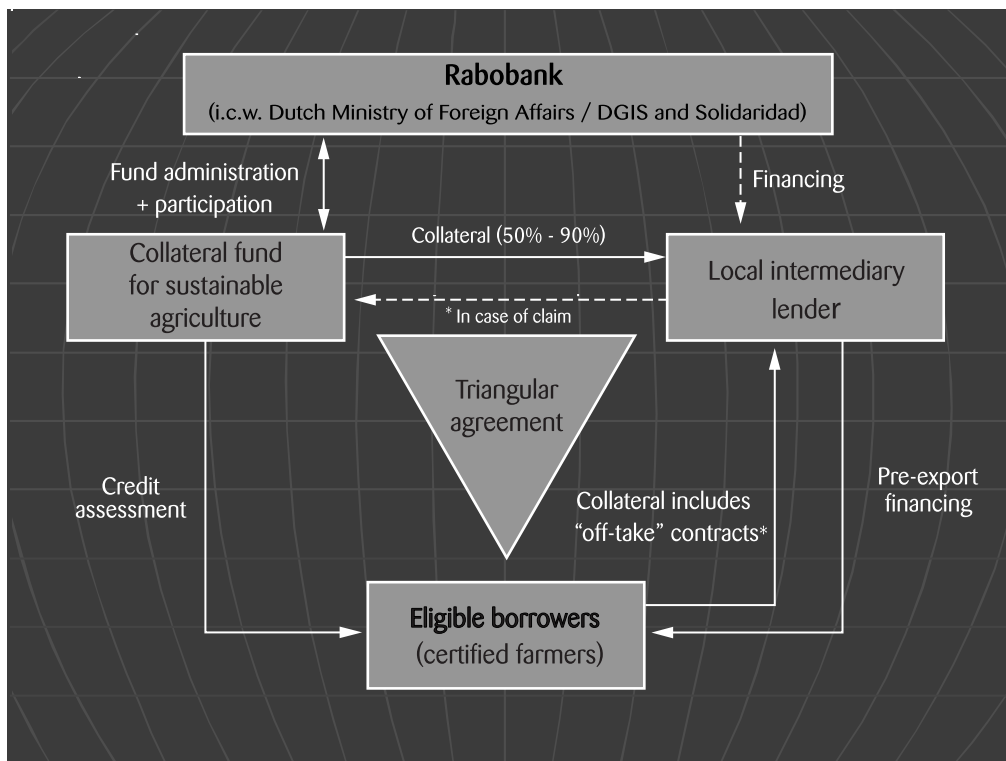
This example brings together a commercial bank, the Rabobank Foundation, and a group of coffee growers. You already know that many coffee growers are non-organized smallholders vulnerable to market risk and dependent on a long line of intermediaries. In this example, producers were organized into cooperatives, and pre-harvest credit was based on sales contracts. We also lent technical assistance.

It was part of a rural development project using the chain perspective and involving other factors besides credit (see Diagram 1.5):

- Technical assistance: flow management, product and storage logistics, and price risk management
- Diversification into other products
- Environmental awareness

2. I should clarify that although I am an employee of Rabobank, I am expressing my own opinions here and do not necessarily speak for the Bank.

Diagram 1.5 Financing coffee with a chain approach



SOURCE: Ken Shwedel, Seminar presentation.

Diagram 1.5 shows our model. Financing comes essentially through local financial intermediaries, backed by the Foundation. What matters here is not that we organized farmers into cooperatives, but that we adopted a new vision. In order to consider this business model, farmers needed to organize so they could enjoy economies of scale, but also they needed to receive certain technical assistance to strengthen their activity. They received support with flow management concepts and logistics, storage, risk management and other such considerations. In other words, the vision of the project was not only to improve the farmers' ability to produce and organize so they could sell with economies of scale, but also to strengthen the whole rest of the chain. The project included environmental awareness and diversification into other products.

The interesting point is that the project evolved into contract-based pre-harvest credit, which is also a key factor here. There was no risk because there was a contract. More long-term financing is now being offered, in some cases for up to two or three years, and even carbon bonds are under discussion.

That gives you a few examples. During the rest of this seminar, you will be discussing many more examples in greater detail.

E. Implications for rural development and for financial institutions

At this point I would ask: What has all this taught us about public policy for the rural sector? The agribusiness environment is changing. This is clear in Table 1.2, a list of actions by all the stakeholders or agents in the economy.

Table 1.2
Changes in the world agri-food system

TRADITIONAL AGRICULTURE	NEW AGRICULTURE
• Separate segments	• Integrated system
• Bulk production	• Differentiated production
• Price risk	• Risk management
• Need for capital	• Need for information
• Independent producer	• Interdependent producer

SOURCE: Ken Shwedel, Seminar presentation.

In order to compete, we will need to find new ways to organize, new ways to structure business. I would like to repeat these key words: business and competition. Banks have got to start understanding the concept of managing financial schemes that will strengthen the overall chain. In the future we need to be very careful to avoid breaking the chain, either with banking practices or with public policies.

1. Rural development policies

For those who work in the government, I want to insist on the idea that value chains are not an academic, theoretical construct. All too often you go in and talk about value chains and people scratch their heads and say, "What? What are you talking about?" It is not academic tall tales. It is the reality of the structure of business today. I repeat, it should be a top objective in implementing rural development policies. Rural development should find ways to fit farmers into value chains. This needs to be the objective because if farmers are not linked into chains, they will remain isolated, in a complex state of poverty.

So there is no other alternative in rural development policy, and particularly on the production side. All activities should include components that strengthen farmers and link them into value chains and that create a favorable environment. A few important issues are:

- **Contract farming.** I have already mentioned this, and you will probably hear much more about it during the rest of the seminar: contracts, contracts, contracts. I will say it again: I am more willing to finance someone who already has a buyer lined up. If he has no one to buy, why is he asking me for money? Should I give you credit to produce flowers if I don't know where you will sell

them? No way! This approach revolves mostly around contract-based farming or some similar model.

- **Price-risk management programs (hedging).** As an example, the coffee market already has a number of instruments available for managing price risk, but not all growers are using them. They are in common use in some of the larger countries.
- **Safety standards and controls.** One of my most frequent criticisms is that in many countries, including México, we have neglected the development of standards and controls. Sometimes we worry too much about Secretariat of Health standards, when in reality this is an agri-food trade concern. While I realize that health authorities have legitimate concerns as well, market standards and controls are extremely important.

When there is money available for rural development, they want us to spend it out in the field. Maybe instead they should be spending it on a cold storage plant in the city. It's all about prevention, and international trade policies should be restructured around the concept of value chains.

2. Implications for financial institutions

Again, the first implication is that the value chain is not a theoretical construct. We find the same thing in the banking sector. We show up and talk about value chains with line and staff employees, and they growl, "Don't come crying to us. That's your problem." No way! Chains are business strategies.

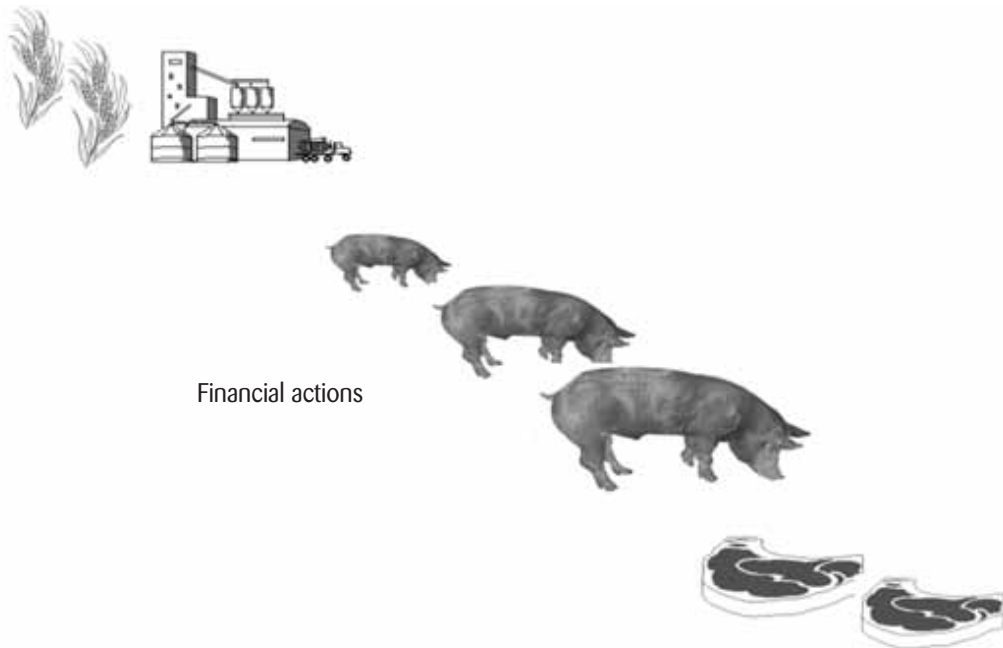
Risk management means that we need to understand the chain thoroughly. The finance business is all about information and knowledge. Don't kid yourselves, and don't try to kid us. If you have no knowledge, if you have no information, you should not be in the lending business.

The structure of payment terms is also important. It needs to be a reflection of the chain itself. Let me give you an example. I go to Italy, I visit a grape farmer, and he says, "Will you give me a year's financing right now so I can plant my vineyard?" My answer is, "No. Do you really think I would offer a year's financing to establish a new vineyard? I would have to be crazy!" Several years will have to go by before it starts to produce, so if I offer just one year of financing to plant the vineyard, he will have nothing to pay me with. Unless I am willing to lend for a term of three, four or five years, I am kidding myself and leading this fool to bankruptcy. The structure of loan payment terms also needs to be a function of the chain, and this calls for full analysis of the efficiency and competitiveness of the chain itself and each of its links. Back to the example of agave: we in the banks are not willing to finance it, but we finance the tequila distiller who is willing to provide agave farmers with six-year loans. This is the full perspective of loan structures and terms, and it needs to be reflected in our arrangements.

Another important point is to find new financial opportunities as a function of the chain. It is fine for the bank to counsel its clients; but under the chain structure, bank and client are full-scale partners. Now the whole chain needs to come under scrutiny: support for suppliers, project financing, and everything else. These are the things we need to consider. I would like to finish with Diagram 1.6,

showing that the success of agribusiness must be grounded in clear, coordinated strategies based on a chain perspective.

Diagram 1.6 Conversion of products from the field to specific markets



SOURCE: Ken Shwedel, Seminar presentation.

I always illustrate with this diagram. It shows that banking activity needs to focus on the chain. The first image is wheat, but you can imagine sorghum or milo instead. The sorghum farmer is not just a producer of sorghum. He is the supplier who sells his grain to an animal feed mill, which in turn sells to swine producers, who sell pork chops to the supermarkets. So ultimately, the farmer who plants milo or sorghum is in fact selling pork chops.

This is what I am trying to stir up in you: the vision of the chain. If you have no one to buy sorghum, why plant sorghum? If the feed mill has no one to buy concentrate, why is it in business? If the swine producer has no one to buy its animals, who does he kill them for? Why is he raising them? And if I am doing all this to supply a swine producer who is raising three hogs, forget it. I prefer not to finance the animal feed mill, and certainly my friend in Banorte will not finance the sorghum farmer.

So if we accept the importance of value chains, how have the traditional financial institutions responded? I will close with this answer: poorly, dreadfully, awfully. This is self-criticism. And this is the challenge that stands before us and the challenge that you must consider during the rest of this seminar.

2

LESSONS LEARNED IN AGRICULTURAL VALUE CHAIN FINANCING

Geoffrey Chalmers, Mark D. Wenner, Pauline Tiffen and Eva Gálvez

This chapter explores experiences and lessons in financing agricultural value chains in various parts of the world. The different sections were contributed by experts from international organizations and researchers who have been exposed to a variety of models. The presenters outline diverse analytical approaches for understanding the operation of agricultural value chains and their environments and inherent risks. It is important to understand all these factors in order to find the best ways of adapting project design to facilitate the supply of financial services. They also describe several types of agricultural chains and various financing arrangements and give recommendations. This chapter summarizes and reorganizes concepts outlined by speakers in the seminar.

A. The value chain concept

Geoffrey Chalmers

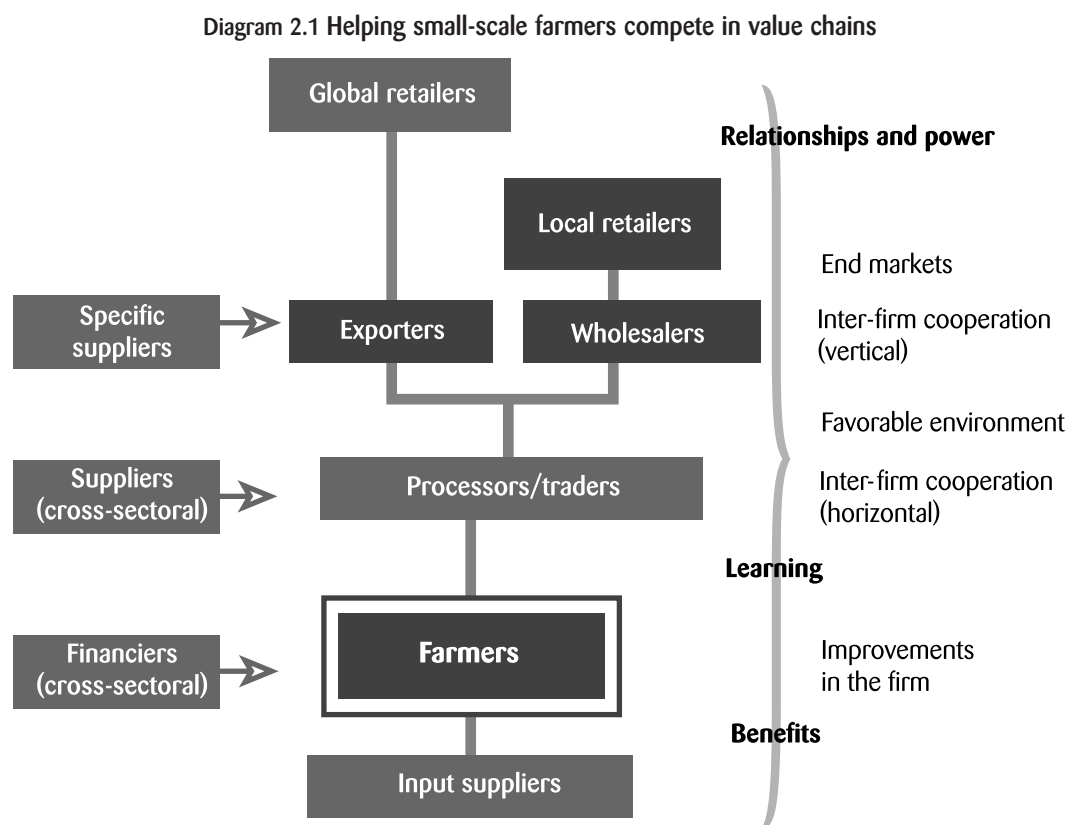
It is important to think about how to deepen the participation of small-scale or isolated producers in rural financing. This is especially so in dual rural economies or dual agricultural systems, as in México but not so much in Costa Rica.

Certain sectors of agriculture already enjoy financial services and the many benefits they promise; the challenge is, first, to take these services to other sectors, and second, to attract more financial entities into working with the agricultural sector. This does not mean only banks, but could also include credit unions, micro-finance institutions, NGOs and others. All these institutions need to do what Ken Shwedel described in Chapter I: to understand value chains and the areas in which they operate and to design products specifically targeting these chains and the real conditions of participants in the chains.

I will not begin by talking directly about finance, but instead I will address the concept of the value chain. This is because finance is only one of several critical issues, certainly not a key one, for

counteracting duality in rural areas and linking small-scale, remote producers into various types of markets.

Diagram 2.1 gives a generic example of a value chain. In the center column is the chain itself, with several types of stakeholders. To the left are what can be described as “support markets,” including everything from technical assistance to financial services. To the right is a listing of different qualities or features of the working environment that reflect improvements inside the companies, as well as relationships among companies.



SOURCE: Geoffrey Chalmers, Seminar presentation.

International cooperation can play a significant role in several of these areas, through various kinds of interventions. One of the analytical models that donors or governments use when they design interventions is to examine the three qualities listed in the bracket at the right side of Diagram 2.1:

- i. *Relationships and power.* Value chains are not a static concept, but evolve continuously. Similarly, the complex series of relationships among participants also changes over time, and this includes relationships of power.
- ii. *Learning.* This basically entails technical assistance. It is not enough to consider financing only. The structure of the value chain, technical assistance and other concerns also need to be considered. In other words, the operation of the chain needs to be analyzed comprehensively.

- iii. *Benefits.* Interventions should be designed so as to promote growth and improve immediate benefits for participants in the chains. If these benefits are significant, they provide sufficient incentive for the chain to progress.

So we have a value chain. On the left is a series of service providers, and on the right, conditions of the general environment and conditions inside each company. Finally, superimposed on the bracket are three overall issues to consider when designing interventions. In the middle section are the links in the chain, or stakeholders that require some type of financial service but also play a dual role. They lend financial services by offering various kinds of financing to other participants in the value chain. It is useful to consider all the links in the value chain that provide financing, and simultaneously examine all the external suppliers of financial services (banks, micro-finance organizations, savings and loans). Such a perspective sheds light on gaps or holes in the financing system. Gaps represent legitimate demands for financial services that are not being met currently by entities of the financial system or other links in the chain. These are the opportunities to improve financial deepening.

Financing from inside the chain is a practice that has been in existence for decades, or even centuries. This is the financing that processors or traders lend to farmers to ensure their own supply of inputs. It occurs when there are no other financing options, due to the absence of banks or micro-finance organizations offering appropriate products to meet farmer needs. This lack of services actually reflects how difficult it is for financial transactions to develop in these rural environments. Given the lack of external financing for the chain, participating links find creative and interesting forms of finance from within.

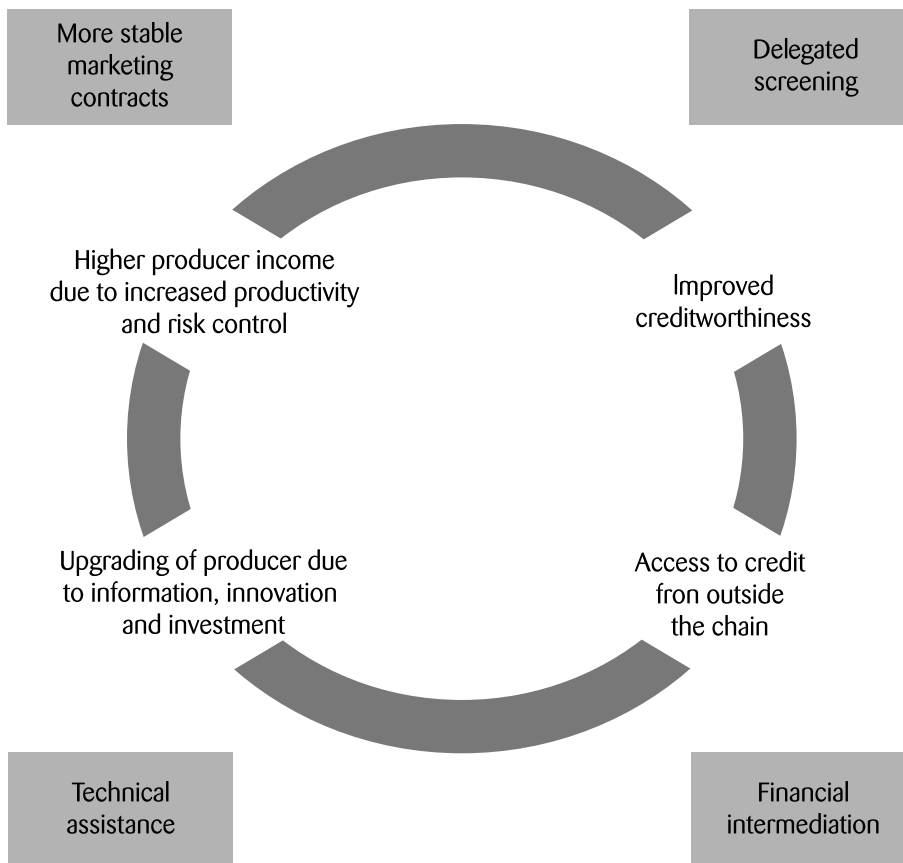
B. The virtuous circle of financing

Geoffrey Chalmers

If the idea is to grow, if we want to take a leap forward by introducing new technologies, if we want to incorporate producers who have remained outside the organized chain, financing from inside the chain is not likely to meet these investment needs. A recent case study of farmers who supply a supermarket chain showed that access to funds from financial intermediaries external to the chain improves their situation, leading to the formation of a **virtuous circle**.¹ Financing facilitates the growth of production activities by each farmer and expansion of the overall chain when financing begins to flow in from outside the chain in the form of credit from financial intermediaries (see Diagram 2.2).

1. See Claudio González-Vega, Geoffrey Chalmers, Rodolfo Quirós and Jorge Rodríguez-Meza, "Hortifruti in Central America. A Case Study about the Influence of Supermarkets on the Development and Evolution of Creditworthiness among Small and Medium Agricultural Producers," The Ohio State University Rural Finance Program, for the USAID Rural and Agricultural Finance Initiative.

Diagram 2.2 Virtuous circle of access to external finance for small producers



SOURCE: Geoffrey Chalmers, Seminar presentation.

As González-Vega explains in Chapter III, the idea behind Diagram 2.2 on the virtuous circle of external financing is that producers can build their creditworthiness with financial intermediaries. This happens when their ensemble of market relations develops and grows stronger through participation in a modern, organized chain. Financing is an important component of this involvement in a chain. When farmers receive technical assistance from buyers or when their buyers in some way guarantee purchase of the product, they improve their standing for receiving loans from financial intermediaries. This means they can obtain or improve financing from outside the value chain. The very existence of these contractual relationships, whether explicit or implicit (as Ken Shwedel explains in Chapter I, no written contract is required) improves producer creditworthiness. They allow the financial intermediary indirectly to delegate part of the task of screening producers for credit risk to some other participant in the chain, thus bringing down costs and lessening risk.

Spurred by their contractual relationships with other participants in the chain, farmers are more likely to invest, improve their technology or seek out new buyers, and this in turn allows them to make a leap forward in productivity by adopting upgrades. If they have a standing source of technical assistance, they become more attractive to buyers, in turn improving their income and

creditworthiness and ultimately increasing their access to financing. Farmers can enter the circle at any point and begin the circular movement of virtuous improvement, seizing the benefits of all these relationships.

The key question is, “What producers or participants should be selected to initiate the process of joining a virtuous circle and improving productivity? ” Should it be those who are already involved in this virtuous circle? Or would it be better to bring in others who have remained outside the circle and come from the most backward agricultural sectors? What interventions would be most appropriate for each case? In which cases is the absence of financial intermediaries a barrier to entering the circle? If those on the outside are brought in at some point on the virtuous circle, will the rest of the circle accept them?

It is instructive to compare theory with reality when we consider external and internal financing gaps in the chains. It seems that some of the intermediaries, including banks, have little interest in interacting actively with the agricultural sector. They restrict their transactions to large corporate clients, whether in agriculture or agribusiness, or to taking deposits in rural areas. They do not see the great business potential that small- and medium-scale producers have to offer. Table 2.1 describes this situation and the preferences and comparative advantages of each type of intermediary. Micro-finance organizations and credit unions are generally more willing to serve micro- and small-scale producers. However, the products they offer are often ill-suited to the demands and needs of the agricultural sector.

Table 2.1
Financial institutions and potential financial flows

TYPE OF FINANCIAL INSTITUTION	TYPICAL CLIENTS	TYPICAL PRODUCTS	POTENTIAL MARKET NICHE
Commercial banks	Large businesses	Short- and medium-term loans; deposit services	Short- and medium-term loans for medium-scale and large processors, exporters, producer groups and micro-finance institutions; term deposits
Non-bank financial institutions	Micro - and small enterprises	Short- and medium-term loans	Loans to small-scale farmers and groups; remittances; insurance
Community-level micro-finance institutions	Micro-enterprises, poor households	Short-term loans	Loans to micro-producers and micro- and medium-scale enterprises; savings
Credit unions and farm cooperatives	Rural households; micro- and small-scale producers	Short- to medium-term loans; savings	Loans to micro- and small-scale producers; savings

SOURCE: Geoffrey Chalmers, Seminar presentation.

There are cases of financial entities that operate in rural areas, but they tend to be the exception. Most financial intermediaries are fearful of lending to agriculture because they feel it is too risky. In actual fact, agriculture is not as risky as many organizations perceive it to be, but these institutions lack

appropriate credit technologies for evaluating such risks accurately. A handful of microfinance institutions do operate in rural areas with agricultural portfolios and a full range of products adapted to the kinds of activities they finance. Again, however, these are the exception rather than the rule.

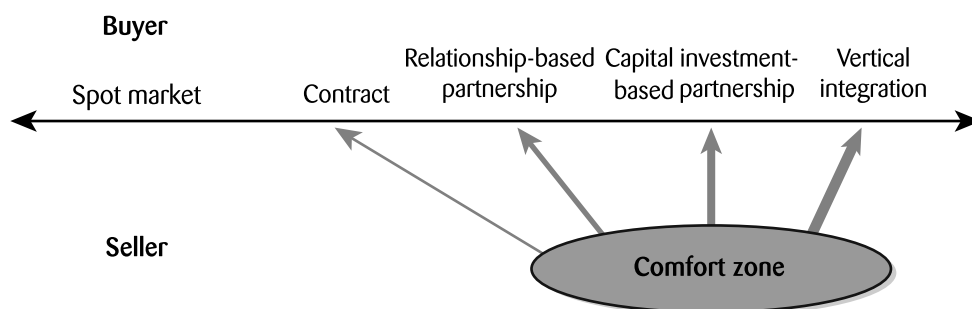
C. The financial intermediary's comfort zone

Mark D. Wenner

Financial intermediaries have varying degrees of fear of financing the agricultural sector; these can be understood as a function of how the value chain is coordinated. Diagram 2.3 describes different value chain structures, defined in terms of the relationship between two stakeholders: buyer and seller. The buyers are agricultural processors, exporters or distributors, or in some cases, supermarkets. Producers are the people or links that sell their products to these individuals or organizations.

The relationship between these two stakeholders, buyer and seller, can be described through five types of linkages: (i) the instant or spot market, where producers come to sell their commodities, and prices fluctuate; this is the most risky market; (ii) a contract that produces an arrangement known as contract farming; (iii) partnership based on a long-term relationship characterized by trust; (iv) partnership based on a capital investment by one of the buyers, characterized by high levels of producer credibility; and (v) a company that has achieved full vertical integration, such as the large industries found in certain countries.

Diagram 2.3 Different ways to coordinate and structure the value chain



SOURCE: Mark D. Wenner, Seminar presentation.

As was already explained, financial intermediaries have a number of limitations. They have not developed products appropriate for agriculture, they have not set up rural branches, they do not have the right technology for serving this sector, and most of all, they labor under the perception that the sector is too risky, not very profitable and very difficult to understand. So the comfort zone or margin of trust of these financial intermediaries will depend on the type of linkage they see between buyers and sellers. They will develop high levels of trust only with companies that are vertically integrated

(represented in the diagram with a thick, solid arrow), and the degree of comfort shrinks as the relationship shifts to the left. At the far left is the type of linkage that financial organizations least prefer: the spot market.

So access to credit can be explained with the following equation:

$$\text{Access to credit} = F [P, f(Z), C, E]$$

where P is a vector representing the personal characteristics of the producer (farm size, education, location, distance to market, degree of technology adoption), $f(Z)$ is the relative maturity and efficiency of the chain, C describes the degree of competition, efficiency and structure of the financial market (whether there are many financial institutions present, whether there is much competition, whether technologies are appropriate for reaching this sector), and E reflects macroeconomic conditions. Financial intermediaries always prefer to minimize transaction costs and risks, and this should be taken into account when targeting interventions, based on all the characteristics in question.

An excellent means of allaying the reluctance of financial intermediaries to go into rural areas is to form **strategic alliances**. The advantage of these partnerships is that they serve an instrument for taking the financial organization directly into rural areas, where it can familiarize itself with the needs of stakeholders in agricultural value chains.

Two different kinds of alliances may develop. The first are activated from within. These are initiatives promoted by a rural financing institution that builds an alliance and provides financial services to farmers. The objective of the alliance is to develop appropriate financial products that will offset the specific limitations of the value chain. For example, the financial entity may focus on developing financial services for stakeholders in the chain, such as processors, buyers and input suppliers; these same stakeholders may then use the services as a means to extend their own loans to small-scale farmers.

The second category is strategic alliances activated from outside. They are promoted by “market developers” operating from outside the alliances they themselves helped create. The objective is to introduce stakeholders into rural financial markets and help them develop new financial products or new models for offering these services. One of the concerns about this type of alliance is that the market developers are not sustainable players. They tend to be programs financed by the government or by international donor agencies. Ideally, after a project of this kind has been in operation for a few years, it will have built enough of a demonstration effect to trigger the appearance of self-sustaining private activities.

D. Importance of the environment

Pauline Tiffen

One of the main considerations for agricultural financing is the overall environment. Some international organizations, such as the World Bank, consider the policy environment above all other factors. The governments of the region have an important role to play: helping to overcome the challenges that face agriculture. Many things need to be done to create a favorable environment for this type of production, often unrelated to financing per se.

A favorable environment does not mean dollars or loans or lines of credit; instead it refers to the environment in which financial entities and agricultural enterprises operate, and to the presence of some form of leadership. For example, governments need to find ways of raising product standards by focusing on the country's very culture in terms of competitiveness, innovation, risk-taking and adaptation in the face of a global market where demand is ever-changing.

With respect to credit, the government holds the very serious responsibility of refusing to give any signals suggesting that **non-payment** of debts is acceptable. Over the past ten years of crisis in the agricultural sector, we have seen countries faced with the temptation (normally a political temptation) to forgive debts, and this creates a culture of non-payment of loans.

In today's global trade environment, it is also extremely important for governments to honor and help their producers honor all the requirements of the recent Free Trade Agreement between Central America, the Dominican Republic and the United States (CAFTA-DR). The same applies to the upcoming negotiations between Central America and the European Union. In addition, as part of the region's competitive strategy, governments can seek out opportunities for their countries to take a new export position.

Governments need to ensure that conditions are in place so exporters and producers can protect their intellectual property rights, their capital and other non-tangible assets. Ultimately, this will be the source of values that far exceed short-term income and that derive from the entire string of investments in value chains. Certain assets far outweigh the product itself: reputation, reliability. It is also important for the government to ensure consistency and functional systems, to avoid redundant procedures and overlapping red-tape, to be clear in communications and to offer various kinds of certification services.

What system should the countries adopt? Governments can play a useful role by extending incentives for experimentation and investment and by disseminating successful practices or experiences. With respect to financing agriculture, the availability of bank credit for rural production has gone into slow but steady decline, and most banks no longer accept rural pledges or other chattel as collateral.

There is also the problem of the culture of nonpayment, combined with a lack of incentives for private banks to begin financing agriculture. In some cases, the demonstration effect can be very useful, but we have seen that even with reasonably good prices for coffee, most banks in the Central American

region have not resumed lending to the agricultural sector. This is due in part to bad experiences in the past, as many banks got into trouble by lending to agriculture. However, there have been some interesting innovations that may help allay these negative expectations. In any case, crisis situations are always valuable for identifying opportunities.

Another possibility is microfinance. Although this has been an interesting phenomenon, it is basically limited to urban areas. Credit unions could provide an answer, but all too often they operate outside the financial system or are not subject to rigorous supervision. In short, there has been much delay in developing organizations that are actively involved in rural areas, while others have withdrawn from agriculture altogether.

E. Risk management

Pauline Tiffen

We see very little knowledge or awareness of risk management techniques and price volatility control, such as parametric insurance and options, that could be used to offset some of the risk in agricultural value chains.

Experience has shown that there are many ways to reduce risk: information, market knowledge, chain knowledge, or acquiring links throughout the chain. Even though available strategies are many, they tend to be overlooked by local businesses, mostly remaining the province of transnational enterprises.

In some cases, national and sectoral levels have no responses even for catastrophic risks. What can a government do? It can develop explicit policies for intervening in the case of a catastrophic climate event and for supporting any sectors that suffer the consequences. In such cases, it must define very clearly when to intervene and when not to.

We have also seen banks that have high liquidity and a wide variety of financial products, but are often out of reach of producers and medium-sized enterprises. In the case of credit, the World Bank has found a direct connection between volatility and failures in the sector. Specifically, if volatile conditions make it impossible to meet basic goals, loans cannot be repaid. The solution is not so complicated: profits, projections, business plans. These same factors are considered in evaluating a project, and they ensure good management of any production enterprise.

The problem is that many local small- and medium-scale enterprises lack access to the financial products and instruments needed to offset the risks of price volatility. This is a problem not only for company management, but also for competitiveness, because it creates an imbalance between two types of companies –those that have access to these instruments and those that do not.

Moreover, the delivery of financial products and instruments for price risk management encounters the very same problems and challenges as physical marketing of the final product. Small-scale

producers need to join forces and organize if they are to achieve a useful scale of production. The finance system needs to find the right models, many examples of which have been shared in this seminar. It is also important to think about systems for aggregating the demand for financing.

F. Financing agricultural marketing

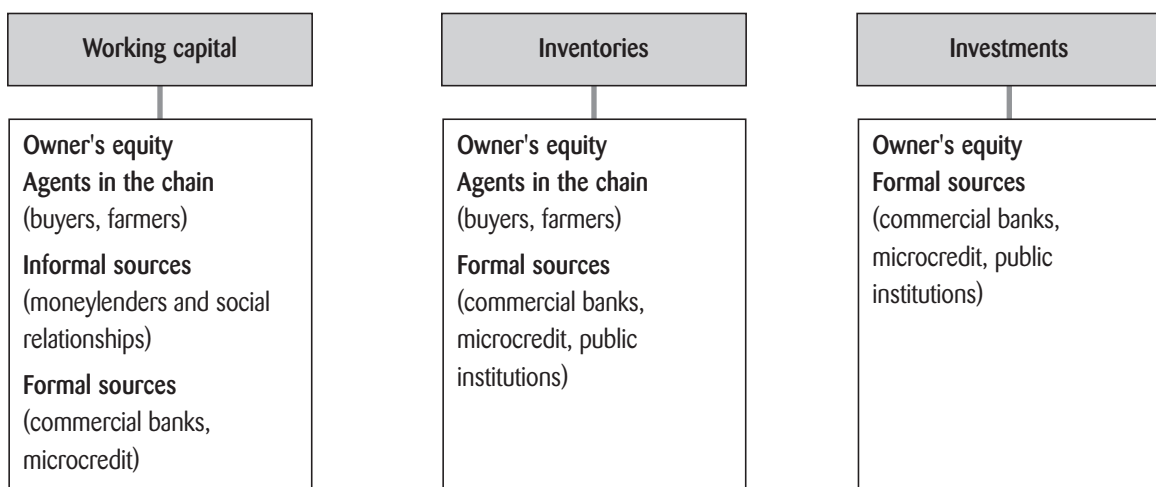
Eva Gálvez

A recent FAO project focused on value-chain-affiliated traders of agricultural commodities in domestic markets and examined how they are financed. The study covered Argentina, Brazil, Costa Rica, Ecuador and Perú as part of a global initiative that also took place in seven countries in Asia and three in Africa.

The study adopted a broad concept of financing that looked beyond bank credit and micro-credit. It also considered financing by other participants in the chain, including buyers, larger farmers, input suppliers and informal sources such as moneylenders, friends or family. The focus of the research was how to finance working capital in fruit and vegetable crops and rice.

To begin with, the study produced information on the most common sources of financing according to purpose –whether the loan would be used for working capital, inventory or investment (see Diagram 2.4).

Diagram 2.4 Sources of financing for agricultural processors and traders



SOURCE: Eva Gálvez, Seminar presentation.

The study then looked more deeply into financing of working capital and confirmed the thesis that traders finance their operations from a combination of sources. Major differences were found among countries, as can be seen in Table 2.2. Owner's equity is at the top of the list, making up 40 percent to 80 percent of the total. In second and third place is financing received from other agents in the agricultural value chain, ranging from 10 percent to 30 percent. This is very similar to institutional financing available to these enterprises, obviously with higher percentages in certain countries, such as Costa Rica. In Ecuador and Perú, a very important source of trader financing comes from moneylenders, in some cases as high as 20 percent.

Table 2.2
Sources of funds for working capital

SOURCE	SHARE OF TOTAL FINANCING (PERCENT)
Owner's equity	40-80
Commercial relations in the agricultural chain	10-30
Institutional financing	10-30 (important in Costa Rica)
Moneylenders	10-20 (important in Ecuador)
Family and friends	0-1

SOURCE: Eva Gálvez, Seminar presentation.

Before these findings can be used for policy actions, careful consideration must be given to the characteristics of relevant chains and the environment in selected countries. The first important point is the nature of the chain itself, especially the degree of informality. Ecuador and Perú are countries where informal agricultural chains are common, and studies have shown that 25 percent of the transactions conducted in Perú are informal. The chains in these countries are fragmented. Perú alone has hundreds of thousands of producers, nearly 1,000 mills and 60,000 rice warehouses, standing in contrast to the chains in Argentina and Brazil, which are increasingly concentrated and integrated. These characteristics are very important, because the participants in informal chains tend to be smaller and have less access to financing. Argentina and Brazil also have small-scale producers, but they are members of strong cooperative movements and generally participate in formal systems where the modern retail trade is picking up a fast-growing share of the market.

Another significant factor is the financial sector: its efficiency and relative coverage. In Costa Rica, for example, regulated financial entities have large numbers of branch offices located throughout the country. The macroeconomic environment is similarly important. Over the past decade, Latin American has witnessed a number of economic or financial crises, transforming the way each participant in the chains is financed. Crisis has also brought changes in the linkages among the different participants.

What are the conclusions of this study on the lack of institutional financing? Trade can survive even in the absence of adequate financing; traders continue to buy and sell products, but they do not grow. Drawing lessons from products developed by microfinance institutions, certain countries have begun to respond to the demands of agricultural traders. They now offer financing with flexible amounts, lines of credit, alternative forms of collateral, other financial products and above all, offices located near the traders.

G. General lessons

Mark D. Wenner

Several lessons can be drawn from the experience of international organizations. The first is that the motivation to strengthen value chains comes from the need to become more competitive and improve product quality and diversification in order to survive, and not so much to improve credit delivery. Finance is key, and could be an obstacle, but the emphasis should always be placed on the entire chain.

Second, the most severe constraints in agricultural value chains are not financial. **Non-financial** barriers are so large and critical that they can nearly crowd out even the discussion of problems with access to financial services. For example, the most significant problems observed in these agricultural value chain projects are lack of technical knowledge, lack of appropriate technology, deficient post-harvest management, lack of information, inefficient channels of distribution and, as a consequence of all this, lack of access to financing. In short, access to credit is a second-tier priority. The fact is, no one can walk into a financial institution and say, "Please finance X group of producers in such and such a chain" when the unsolved problems in the chain are so daunting.

In the third place, the partners in a chain need to make substantial improvements in non-financial areas, especially to create positive economies of scale through collective action. Chain operations produce many externalities, but before this can happen, the chains need to be created and then worked collectively for several years. An IDB grape production project in Colombia is perhaps the most successful example in this area of chains. It took two years to convince the producers and the 11 support institutions that they should work together, that no one person or organization would be the big boss or great leader, that they all had a role to play and needed to focus on solving practical problems. One of the great lessons learned from this experience was that building a chain takes time. The process by which the chain is organized and gains maturity unfolds over three phases: (i) learning and technology adaptation, (ii) expansion and consolidation and (iii) globalization as foreign stakeholders enter the picture to purchase part of the chain.

Fourth, a revolving fund is easy to create but difficult to sustain. Much depends on whether it has had a positive impact and especially on two factors: efficient management capabilities, and a favorable environment in which the group can begin to obtain financing from formal sources. Agricultural and rural cooperatives or small-scale enterprises all too often experience very high levels of turnover in

leadership. Much money can be spent to train leaders and technical personnel who turn around and leave two or three years later, and everything has to start over. Or personal conflicts may arise at the top of the organization, affecting the work of the entire cooperative. In short, it is not a very robust model. It functions, but mostly because of the presence of good people and favorable conditions.

A second arrangement, the non-chain differential model, can work in an atmosphere of respect for contracts. It requires an internal stakeholder who is strong enough to protect the interests of small-scale producers in the chain. In addition, and rather obviously, it requires favorable price and demand conditions.

A third model brings in a catalyst in the form of an intermediary committed to find niches and participate in the market. Examples could include groups involved in fair trade markets, such as Ecologic. These experiences are too recent for drawing any definitive conclusions.

H. Recommendations

Mark D. Wenner

Looking toward the future, it is important to continue investing in social arrangements, in coordinated approaches and in improving products and processes. This last point is essential, especially in the case of products derived from agriculture that require, not only improved technical capabilities among producers, but also crop quality. In a globalized world, as Ken Shwedel explained in his presentation (see Chapter I), it is important to produce for consumers whose quality demands are becoming ever more stringent. So the great challenge is to organize producers to supply a high-quality market in the shortest time possible.

Second, much needs to be invested in risk management. A clear example is the joint project by IDB, the World Bank and other organizations. Financial intermediaries must be given more facilities and instruments for reaching out to rural areas and beginning to finance chains.

In the third place, we need to invest in more structured loans that reflect all the different interests and are able to spread risk throughout the chain.

In the fourth place, we need to think more about new types of funds or lines of credit that can be extended over the medium and long term and that will improve the capacity to harness domestic deposits. Financing in agriculture is very different from microfinance, for example. To have an impact, to be successful, loans must be made for two, five, or seven year terms. Financing of agricultural value chains does not mean one-year loans. Successful, strong agribusinesses require longer-term credit.

3

MODERN VALUE CHAINS: TOWARDS THE CREATION AND STRENGTHENING OF CREDITWORTHINESS

Claudio González-Vega

This morning, Ken Shwedel provided us with definitions, clarifications, and conceptual frameworks needed to understand the topic of agricultural value chains (see Chapter 1).¹ Afterwards, Geoffrey Chalmers (Chapter 2), based on our joint work, explained how the participation of farmers in modern value chains can improve their access to credit and lead to the emergence of virtuous circles, even if the loans come from somewhere else rather than other actors in the value chain itself. I could illustrate this effect now, by talking about a study we just finished on the influence of Hortifruti on the degree of access to credit enjoyed by its suppliers. In fact, Jorge Cavallini is here, and he will be talking later about the complex chains that are taking shape around this corporation (Chapter 4). In short, it would appear that everything I would have liked to say has already been said. So, perhaps, it would be more fun, at this point, to speculate a little about some of the topics the other speakers have already mentioned and, at the same time, share with you some different perspectives.

Much has been said about what exists. I would like to talk about what does not exist. It is something we already started to talk about this morning. This approach is always exciting, because 15 or 20 years ago, among the many things that were being claimed were that it was foolish to give credit to poor people and impossible to recover it and that savings could never be mobilized in rural areas. Back then, I was already talking about things that did not exist, and it is a good thing I did –because others took it up, and now it has happened. Today we admire successful microfinance programs and are amazed at how they have managed to overcome what appeared to be insurmountable barriers. So, maybe the things we are talking about today will turn out to be a foretaste of exciting opportunities that will expand in the future. It is worth going after them.

The research I want to talk about is based on a case study of Hortifruti in Central America. The paper starts by asking how supermarket chains have influenced the creation and development of creditworthiness among small- and medium-scale farmers.² I will not talk about Hortifruti per se, as I

1. This chapter is a literal transcription that preserves the oral style of the presentation.

2. Claudio González-Vega, Geoffrey Chalmers, Rodolfo Quirós and Jorge Rodríguez Meza (2006), “Hortifruti in Central America: Case Study of the Influence of Supermarkets on the Creation and Evolution of Creditworthiness among Small and Medium Agricultural Producers,” Washington, D.C.: USAID.

already explained, but instead I will tell you what I have learned by observing the situation of Hortifruti's suppliers, many of them small-scale producers, through the lens of academic research.

A. Motivations

I should start by recognizing that those of us who are here all have different motivations. We come from a variety of experiences and we hope to share many perspectives that are of mutual interest. These perspectives complement each other, if we consider the complex challenges of rural development. Some of us are motivated by the desire to find mechanisms that will help improve the welfare of rural households and, particularly, alleviate poverty. Some of you are interested in rural development processes in general, especially because most of the poverty in our countries happens to be concentrated in rural areas.

Others want to strengthen value chains –the agri-chains, as Jorge Cavallini calls them– because of their contribution to the country's economic development, especially in rural areas. A particular concern is to promote the growth of value chains that could potentially incorporate large numbers of small- and medium-scale producers. Presumably, the incorporation of small-scale producers into modern, dynamic value chains is a source of wealth creation. The challenge is to overcome barriers to entry and guarantee that these producers will reap the promised benefits of participating in the chain.

Some of us are particularly interested in processes of **financial deepening**. By financial deepening we mean growth in the volume of intermediation between depositors and borrowers at a faster pace than the growth of “real” productive activity. Processes of financial deepening are not complete until a full spectrum of financial services has been taken to rural areas. This is the challenge of rural outreach. Of course, financial deepening, value chains, households –all these are elements of rural development processes, a rural dimension that has been wholly neglected and ignored in the economic development of our countries.

I cannot talk today about all the issues that matter, so I would like to focus essentially on only two factors and, above all, on the ways they influence one another: on the one hand, the value chain, and on the other, financial intermediaries. I would like to continue speaking, as we already have, about how these actors interact and are interdependent; and I would also like to point out that this interdependence and the synergies that arise from these reciprocal influences produce many externalities. It is the generation of these **externalities** that makes the subject so interesting from the perspective of public policy. This is where something happens that goes beyond the outcomes for the actors directly involved in these processes.

B. Rural lag

I have already mentioned the starting point for this discussion: my concern with the rural lag in processes of financial deepening. This lag is revealed by the low proportion of the rural populations with access to these services (by a limited *breadth of outreach*). The lag is also revealed by the narrow range of services offered (by a limited *variety of outreach*) and by the low quality of the available services, because what traditional financial intermediaries are offering is ill suited to the demands and circumstances of producers and other rural clients. The lag is also evident in the high, often prohibitive, costs of the services for all participants in these markets, after considering both the transaction costs and the prices that emerge in them. The lag is particularly visible in the limited sustainability of the organizations themselves. They tend to be fragile and cannot create an image of permanence. As a result, their contracts have little credibility.

This **rural lag** exists partly because of faulty public policies and, even more so, because taking financial services out to the rural areas is very difficult, for reasons found on both the demand side and the supply side of the market. On the demand side, problems arise (i) because of the limited ability to repay of producers, if their crops are not profitable enough or are excessively risky, (ii) because of the high transaction costs that everyone needs to bear and that are common in our fragmented countries, and (iii) because it is so difficult for potential borrowers to persuade lenders that they are in fact creditworthy. The latter difficulty is reflected in the high cost of sending a signal that says, "I am creditworthy." In addition, where a sound culture of repayment is missing, there is the additional problem of unwillingness to repay. As a result, no legitimate demand for credit can be said to exist.

The supply side presents the well-known problems of: (i) information, (ii) creating incentives to repay loans, and (iii) enforcing credit contracts. All this is compounded by the covariance of the proceeds from agricultural undertakings, a critical element, because these covariant results lie outside the control of the lending financial intermediary or the borrower. Indeed, with innovations and the development of their lending technologies, lenders can meet the challenges of information, incentives and contracts, in order to address *idiosyncratic* risks. However, the covariance that lies at the heart of *systemic* risk is a function of whatever nature decides, and responding to catastrophic events is very difficult.

I should clarify one point before I go on. The problems of development I mentioned at the beginning and the challenges of taking financial deepening into the rural areas that I am emphasizing now are complex issues, with many dimensions. They encounter a full array of barriers and difficulties, both interconnected and interdependent. It is important to recognize this. As was said this morning, we are navigating on a sea of diversity where it makes no sense to look for simple recipes.




Given the initial conditions of Central America, determined by geography, a multi-dimensional complex of agricultural and environmental circumstances, and history, it is essential to find an approach suited to each country's experience with certain types of agriculture and to the

consequences of social and cultural structures that cause each case to be unlike any other. Much of what I say consists of basic principles that can be generalized and transferred from one setting to another. Even so, at the end of the day, it is only in each unique location that real lessons can be learned. That is, **learning** is always a local undertaking, and each local setting is unique. Certain general principles can be observed, but they need to be adapted to each specific circumstance.

C. Value chains and financial intermediation

So there is no one answer. There is no one answer for expanding the outreach of rural financial markets and incorporating the poorest and most neglected producers, those who have been on the margins for so long, into the frontier of financial services. There is no one answer, so perhaps there are several possibilities, and in some of them, agricultural value chains would play a meaningful role. The question I would like to answer is: What is the role of value chains in these processes of rural financial deepening? I will introduce this topic by asking three questions, which at the same time are the three faces of a three-sided coin (see Table 3.1).

Table 3.1
Role of agricultural value chains in processes of rural financial deepening.
Three questions

QUESTION		NATURE OF THE QUESTION
How much does the lag in rural financial deepening restrict participation in modern agricultural value chains?		Barriers to entry
How much does participation in modern agricultural value chains improve access to financial services?		Creating and expanding access
How much does strengthening modern agricultural value chains improve the coverage of financial brokers?		Facilitating intermediation

SOURCE: Claudio González-Vega, Seminar presentation.

The first question is: How much do this lag in rural financial deepening and the failure to develop new markets for financial intermediation condemn small- and medium-scale farmers to remain in isolation? Does the lack of access to financial services bar them from participating in modern agricultural value chains? This question asks whether the undeveloped condition of financial intermediation stands as a barrier to entry into modern value chains. Ultimately, it is a matter of democratizing chains. Who can enter, and who cannot? What does finance have to do with the ability to enter the chain?

The second question is: By participating in a modern chain, how does a particular producer gain improved access to financial services? Is participation in the chain a springboard for expanding access to financial services? This question is about individual producers becoming creditworthy and gaining expanded access to financial services.

The third question is the one I find most interesting, in complementing what Shwedel and Chalmers have already said. We are talking about strengthening the chains, modernizing the chains, and linking them to domestic and international markets. Will this process of modernization through chains eventually facilitate **completion** of the task of deepening rural financial intermediation? How can the chains hasten financial deepening, even beyond providing some of the participants with access to credit? This is more than the simple challenge of financing a particular producer, whether this farmer or that. The real question is: How does the presence and strengthening of chains change the financial system, how does it make the system better? What is the impact on financial intermediation, in a broad sense?

In what context does all this take place? These questions mostly target agriculture in the tropics. One of the most difficult challenges we face in our classrooms in Columbus, Ohio is to get our students to understand what agriculture is like in the tropics. In these countries that are so green, that are overgrown with every kind of plant, both crops and weeds, where everything is so luxuriant and exuberant, agriculture is a terribly difficult enterprise. The same conditions of heat and humidity engender every possible problem of fungus and pest infestation, insect attack and soil erosion. So this is our point of departure: obtaining high yields in the tropics requires Herculean efforts, and the results are highly uncertain and risky.

In an agricultural sector that faces overwhelming challenges, it is worthwhile to consider the interconnections among actors that make it possible to identify and manage more successfully the resulting risks. When producers, chains and financial intermediaries interact with one another, they create and strengthen the types of tools needed to offset inherent risks or manage them better. This paves the way to the kinds of riskier but more productive investments that will improve rural incomes and lead the transition to modern agriculture.

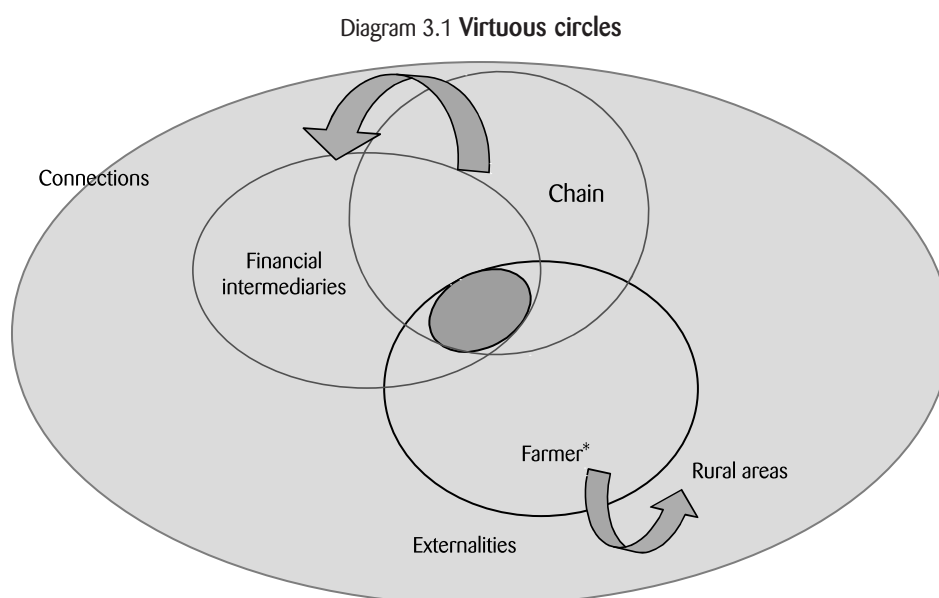
D. Externalities and virtuous circles

These interconnections themselves generate a series of virtuous circles. First, when producers join a modern chain, they enter a virtuous circle of contractual relationships that increasingly provides them with better opportunities to improve their welfare, as Chalmers explained in Chapter 2, based on our joint work. But that is not all. Second, interconnections among the participants also generate a virtuous circle for the chain itself. Ultimately, the chain becomes more competitive as its links, or incoming producers, gain strength. As the chain acquires more successful producers, better able to manage risk and increase their investments, the chains themselves begin to expand their horizons. Third, there is also a virtuous circle for financial intermediation. The creation of clients through the

presence of a chain facilitates transactions, reduces the costs of financial intermediation, and improves earnings for the intermediaries. This allows these intermediaries to generate greater economies of scale and scope and, as a result, they begin to offer better services both to members of the chain and to their neighbors. Fourth, the combination of these advantages –better opportunities for producers, more competitiveness for the chains, and greater financial deepening– improves the allocation of resources in a country and promotes economic growth in rural areas, expanding markets and creating new opportunities. All this, in a great mesh of interlocked virtuous circles, contributes to rapid, participatory and sustainable economic growth.

Diagram 3.1 illustrates the interaction among these virtuous circles. The broad outer circle consists of all rural participants, whether farmers or non-farmers. As **modernity** breaks out in rural areas, a variety of mechanisms are triggered in the chains, which gradually attract more and more small-scale and medium-scale producers. When they enter the modern chain, they gain the opportunity to become “star producers.” This means they possess some special attribute, a particular endowment of valuable production factors (initiative, experience, discipline). Their credentials improve through the contractual relationship that brings them into the chain (information, technical assistance, guaranteed market). As star producers, they take their place on the locomotive that carries them toward higher levels of productivity, income and welfare.

Other producers lack such credentials or face serious barriers to entry for joining the chain. Not all small-scale producers can climb onto the locomotive at the beginning; but even though many remain outside, those who are modernizing begin to generate very strong externalities that exert a positive influence on everyone around them. Their neighbors watch them modernizing, imitate them, and try to adopt similar changes to improve their own lives.



SOURCE: Claudio González-Vega, Seminar presentation.

Some of these changes require investments (irrigation, greenhouses) whose high cost may exceed the farmer's current income levels. This is one of several possible **barriers to entry**. Under these circumstances, farmers need to wait a long time before they can save up enough money to make the investments required for joining the chain. Indeed, if they have access to deposit accounts, they can accumulate what they need at a lower cost and be ready to take the leap sooner. If they have access to investment credit, they can overcome this barrier to entry much more quickly. Other circumstances (lack of knowledge or of entrepreneurial skills, for example) also become barriers to entry, and these barriers cannot be removed with a loan. So credit is not a cure-all.

Financial intermediaries usually have little outreach in the rural areas. Here too, the chain has a role to play. Just as star producers who participate in the chain generate externalities beneficial to their neighbors, in terms of increased productivity and greater market participation, the chain also creates externalities for the development of the financial system. Stronger chains attract better financial intermediation; these externalities then multiply and are transmitted to the rest of the economy, promoting economic development in other sectors. When this happens, inner circles begin to expand. More and more rural producers participate in the chain, and a growing proportion of producers, both participants and non-participants in the chain, gain access to financial services. The empty space between the large outer circle and the smaller inner circles, which represents nonparticipation in markets, contracts.

The lower circle in the diagram represents the virtuous circle for individual producers, identified in the study I conducted with Chalmers, Quirós and Rodríguez Meza, as Chalmers described this morning (Chapter 2). This virtuous circle is barely one cog in the machinery of virtuous circles. At the hub is the place where producers, chains and financial intermediaries can connect through contracts, alliances and partnerships. When this intersection occurs, the number of star producers in the rural population grows, competitiveness increases, chains become larger, and financial intermediation deepens. Productivity, chains and intermediation combine forces to promote economic growth.

E. Modern chains

Clearly, not just any chain can accomplish so much. These are chains with peculiar characteristics, which could be described as a new kind of modern chain. Supermarket chains are an extreme example of this new style –fast-growing chains that are tremendously dynamic. Supermarket food sales in Central America have grown several times faster than the population itself, several times faster than income growth, and much more than food sales in general. This means supermarket chains are rapidly expanding their share of the market.

Dynamic growth produces two results. First, it provides many producers with the opportunity to climb onto the locomotive of modernization. In the second place, it means that, in terms of the financial market, this has clearly become a **deficit sector**. A chain that develops around the supermarkets is a sector that needs to draw funds from other sectors of the economy into the entire chain. It needs to

attract large quantities of resources from other parts of the economy, because it is one of the most dynamic sectors.

Supermarkets possess three unique features. First, they use modern product handling processes and expect their suppliers to meet high (private) quality standards.

Second, they handle an extremely wide array of products. This means producers not only can modernize, but they can also diversify. They cease to be a simple rice grower selling to the local mill, or a sugar-cane farmer selling to the sugar plant. Instead, as supermarket suppliers, they can dabble in a full range of product possibilities. I as a farmer have many more options for deciding how much I want to diversify for reasons of risk, or how much I want to specialize to maximize the return on my comparative advantages. I can decide how much flexibility I want to leverage so that, without losing my contract with the supermarket, I can change my product mix, because consumer demand is no longer what it was, or because people now want pears instead of apples.

Third, being a supplier to the supermarket chain creates stability and offsets the impact of seasonal sales, which restrict liquidity and make it so difficult to smooth consumption in farm households. It means sustained sales over the course of the entire year, week after week, 52 weeks a year, seven days a week, 24 hours a day.

So the question is: What is happening with these modern chains, such as supermarket chains and nontraditional export chains? What keeps small-scale producers from entering these chains? It is easy to see that supermarket chains are part of globalization. They are part of “supermarketization,” as retail markets are transformed in response to increasingly stringent consumer demands for cost, quality, diversity, convenience and an enjoyable shopping experience. Many of these were already discussed this morning by Ken Shwedel (Chapter 1) and are part of the response to increased competition. Do not be fooled into thinking that, just because there are few chains and these market segments are highly concentrated, the **rivalry** between these competitors is insignificant. Quite the contrary, competition is fierce, and no business can stand up to it without all the elements of quality control that Jorge Cavallini will certainly tell you about, including size, color and appearance (packaging), safety and wholesomeness (traceability), and consistent supply (Chapter 4).

To respond to consumer demands, the supermarket, in fierce rivalry with its competitors, needs to create product consolidation mechanisms that can guarantee certain conditions. These mechanisms are usually institutional buyers, a consolidation center that enters into **contracts**, both explicit and implicit, with small-scale and medium-sized farmers who are its suppliers. It centralizes the collection of bulk products, as we will see in the case of Hortifruti in Central America, and it creates export platforms that are very promising. More and more every day, these institutional buyers develop private quality standards that producers are expected to meet.

F. The traditional approach and a new vision

How can we interpret such a situation? This is where I begin to depart from the views of my colleagues, at least some of them. Let me exaggerate a bit to help you understand the difference, because I want to distinguish between traditional agriculture and its determinants and, by contrast, the promise of modern agriculture. In the former case, we have a corn producer who uses traditional farming methods and takes the resulting corn crop to a wholesale market or warehouse, or who works with an informal broker of spot transactions. There is a classic response to the challenges of financing for such producers. If the farmers belong to a traditional chain, credit transactions are facilitated by linking the credit contract to other dimensions of the chain relationship (*interlinked contract*), such as product buying, input supply or lender-provided technical assistance for farmers.

So, the **traditional view** of the role of the value chain in farmer financing is the notion of facilitation: a contract links one participant in the chain to another participant in the same chain. It all takes place inside the chain.

I propose a **new vision**. It is not a new paradigm or model; it is simply a way to understand what is happening in some parts of the world at this time. The new vision arises from the realization that, in modern agriculture, it is not the interlinked contract that serves as the most promising source of credit. Instead, the very existence of a contract between chain and producer –a contract that makes no provisions for credit– in itself improves the farmer’s creditworthiness in the eyes of actual financial intermediaries. This is what creates the virtuous circles and externalities that we have been talking about.

Table 3.2
Two moments, two responses

PROBLEM	TRADITIONAL RESPONSE	NEW RESPONSE
Contract	The contract creates interconnections (interlinking) that facilitate the granting of credit.	The existence of a contract improves creditworthiness.
Cash flow	The flows of funds take place inside the agri-chain.	The flows of funds come from outside the chain, by means of financial intermediation.
Net cash flow	Net flows of funds for the chain are zero-sum (but the game is positive-sum).	Net flows of funds for the chain are positive-sum (and the game is positive-sum for society).
Impact of interlinking	The interlinking of the farmer to the chain creates a direct impact on access to credit.	The interlinking of the farmer to the chain creates an indirect and potentially powerful impact on access to credit.

SOURCE: Claudio González-Vega, Seminar presentation.

Under the traditional view, funds flow inside the chain, from supplier to producer or from buyer to producer, in the form of advances and such. The new vision calls for **external** flows, or outside funds entering the chain mostly by means of institutionalized financial intermediation mechanisms. Because this arrangement strengthens financial intermediaries, they are able to begin offering a broader spectrum of financial services in the rural areas.

Under traditional mechanisms, net flows of funds are zero-sum for the chain as a whole, because the funds that buyers advance to producers leave the hands of the buyers, who lose liquidity at that point. If buyers obtain funds from outside the chain, they need to pledge collateral (their inventory is usually unacceptable as collateral) and quickly exhaust their borrowing capacity. As a result, they lose potential liquidity. Of course, the interaction between buyer and producer is still a positive-sum game in terms of welfare, because both gain from the transaction; nevertheless, they are sharing liquidity. At some point, the buyer transfers liquidity to the producer, for a time, and later the producer is expected to return it. The chain as a whole has not gained liquidity. Simply put, available liquidity is redistributed among the links of the chain.

Under the new vision I am introducing, net flows of funds are **positive-sum**. This means that available working (collateralizable) assets remain inside the chain, while additional funds flow in from the outside, thanks to the existence of contracts. This increases the total supply of available flows for the chain. Contracts, in and of themselves, become an intangible security, which replaces traditional forms of collateral. They become a facilitator of transactions, increasing the total supply of credit for the chain. Of course, the game between producer and consolidator and the game between producer and financier are positive-sum games, from the perspective of welfare. Each one of the players –and society as a whole– enjoy greater welfare because resource allocation improves when resources are transferred from traditional agriculture to modern agriculture. The transfer generates countless externalities that favor many other sectors as well. In short, thanks to the use of this intangible asset (the contract) in improving financial deepening, national output increases. It is a positive-sum game for society.

Under the traditional model, farmers who link into a chain gain direct access to credit from another link in the chain. Under this new vision, the farmers who link into a chain gain indirect access to credit through a financial intermediary. The potential impact is equally powerful, whether access to credit is direct or indirect.

Under the traditional model, much of the direct impact derives from information advantages: buyers know the market, they know the sector, and they know that farmers will not want to disappoint them because there are only a few buyers available. Another dimension of the direct impact derives from incentive advantages: both producer and buyer protect their long-term relationship because it is better than the alternative of working with unknown buyers. Another source of direct impact is associated with contract enforcement. Indeed, in many situations, buyers can retain loan payments before paying farmers for their products. Another advantage is that it produces **economies of scope**

for both parties, as it provides a basis for providing other products and services, such as technical assistance (since both are interested in improving the likelihood of success for the crop). These direct impacts are usually associated, nevertheless, with a specific product or crop.

G. Creditworthiness

All this stands in contrast to the new vision, where the impact is **indirect**. Here, it is the dimensions of the contract itself that determine the producer's creditworthiness. That is, the terms and conditions of the contract in some sense create creditworthiness, where it did not previously exist, or increase and improve latent creditworthiness that may have existed already.

What exactly is creditworthiness? Naturally, there is a **core** creditworthiness, based on the objective evaluation of the ability or willingness to repay of the applicant, as a result of the actual conditions of the particular producer. Although it is based on concrete circumstances, it is not readily visible and the lender can observe it only imperfectly. If information were not so costly, anyone could see it; but even though it is objective and true and thus it generates a legitimate demand for credit, it is only dimly visible. It is opaque, as if hidden. This core creditworthiness, this fundamental ability and willingness to repay is there, behind a veil that needs to be removed.

Core creditworthiness depends, first, on **ability to repay**. This ability is determined by the opportunities, diligence and behavior of each producer, all of which have an impact on profitability and the idiosyncratic risk of the producer's actions. It also depends on the vagaries of nature, on whether it rained or did not rain, which in turn determine the farmer's exposure to systemic risk. The farmer's ability to repay depends on his or her tangible and intangible wealth, and the resulting ability to use assets for paying debts, and even on the household's access to other sources of liquidity, such as remittances.

The second factor, **willingness to repay**, depends on the basic honesty of the borrowers, on their desire to protect their reputation (or credit history) and, above all, on their incentives to nurture and preserve a long-term relationship with the lender. These incentives are traditionally rooted in a basic fear of losing the asset pledged as collateral. In the case of microfinance and the new technologies for evaluating creditworthiness, they also rest on the value of relationships between participants in the financial transaction (this value, in turn, depends on the quality of service and the prospects that the relationship will endure).

It is clear that the incentive to repay is always highly correlated with the client's desire to preserve a relationship with the financial intermediary. This new vision suggests that the **value of the relationship** with the institutional consolidator (buyer), as in the case of Hortifruti, can play the same role. Producers want to make a good impression on buyers, because they value the relationship. In turn, potential lenders recognize the existence of this incentive and feel safer about offering credit to a

producer who is linked to a chain in this fashion. As Mark Wenner says (Chapter 2), lenders find themselves with a wider comfort zone and are more willing to lend.

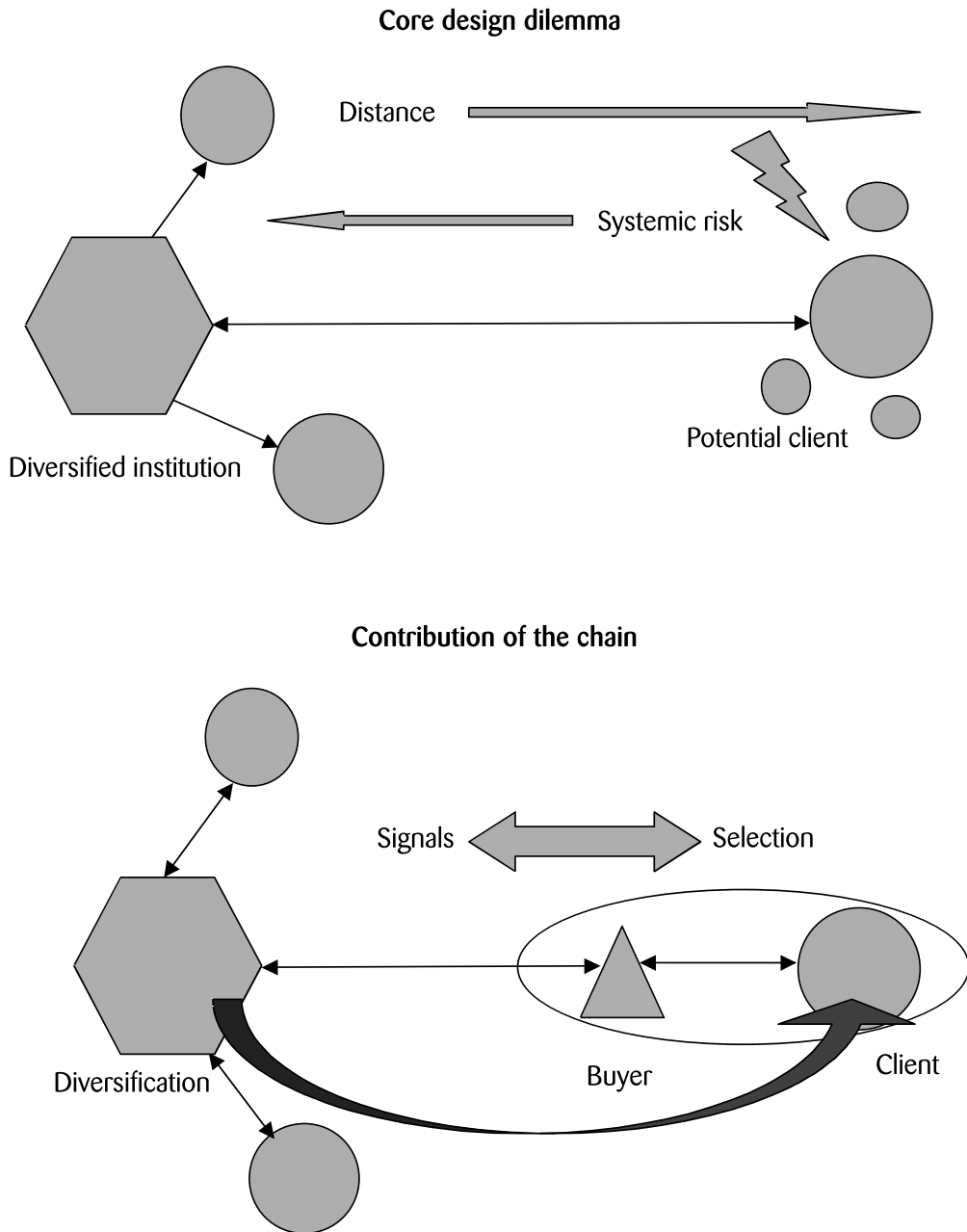
However, simply possessing a core creditworthiness is not enough, because of the veiled nature of the available information. If lenders cannot see the core creditworthiness, it does not really exist. No one is creditworthy until certified as such by someone else. Even if you know perfectly well that you are willing and able to repay, someone else has to see this in order for you to be considered a potential borrower. You have to find a willing lender.

Judging creditworthiness from the outside requires a subjective **assessment**. Even though it is subjective, such an assessment is based on the components of the lending technology and on the ability of this technology to select borrowers (*screening*), to predict who will repay and who will not repay, to know when to lend and when not to, to watch closely what the borrowers are doing with the money (*monitoring*), to figure out how much to lend and design a repayment plan and other conditions (*contract design*), to make sure the borrower is able to fulfill the conditions, and to take care of everything else that needs to be done until the money has been finally collected in case of arrears (*contract enforcement*). The ability of the lender to perceive core creditworthiness depends on the quality of the available lending technology.

This means that core creditworthiness needs to be **recognized** by the lender, a result that can be very costly to accomplish. Potential borrowers can help unveil their creditworthiness, making it more visible, by issuing certain signals. With this process of **revelation**, the creation of creditworthiness becomes a joint endeavor by borrower and lender. Starting with a basic condition, the lender learns to recognize the signs of creditworthiness, while the borrower finds ways to demonstrate them (*recognized and revealed creditworthiness*).

Both parties to the contract have **incentives** to take part in this process of creating creditworthiness if there is potential for a long-term relationship, because old clients are the best clients, easier to recognize than unknown newcomers. Both parties to the contract have incentives to invest in the sunk cost of getting to know each other and share risks. In summary, creditworthiness is created and transactions take place in the presence of a good business project with a high likelihood of success (core creditworthiness), visible to the lender (recognized creditworthiness), and that the borrower is able to demonstrate (revealed creditworthiness).

Diagram 3.2 Design of a rural finance system



SOURCE: Claudio González-Vega, Seminar presentation.

H. Information and systemic risk: proximity and diversification

This leads me to a brief digression, about the central dilemma in designing a rural finance system. It is a question that Isabel Cruz correctly asked this morning: So how do we design it? The task of designing a system for rural intermediation brings out the conflict between two different forces. On the one side are the advantages of **proximity**, of knowing, being there, seeing, and building trust. In

other words, creating creditworthiness is more affordable at shorter distances. A shorter distance is key in a reduction of the costs of lending and borrowing. As we draw closer to the client, whether geographically or as a sector of economic activity, the process of lending becomes easier and cheaper, due to the advantages of information and the strength of incentives. At the same time, however, as our client base becomes more local or more concentrated in a given sector, our credit portfolio becomes more vulnerable to **systemic risk**.

The phenomenon of systemic risk means that the income and repayment capacity of the whole group of borrowers can be jointly devastated by a local pest infestation, a flood, or declining prices for a product in which the community is highly specialized. At the local level, there is no possibility whatsoever of diversifying this risk. So, how do we design a rural finance system? If we draw closer to our borrowers, we improve our proximity but expose ourselves to greater systemic risk, as seen in the top part of Diagram 3.2. If we move farther away, our view of the potential borrower dims behind the thickening veil that blocks our diversified institution's visibility. However, distancing ourselves, we are able to diversify operations and dissipate the covariance between outcomes. This is a real challenge in designing the system, and although there are a number of possible solutions, none of them is perfect. There is no one right answer.

The solution we will consider here calls for a **third party**. This third party is the institutional buyer, such as a consolidation center for the supermarket chain. Such a third party can play either one of two different roles for improving the supply of rural credit. First, under the traditional perspective, the bank grants a loan to the institutional buyer, who then extends an advance (loan) to the producer (as Wenner describes in Chapter 2). That is, the institutional buyer becomes a *retailer* of loans for the bank, which operates as a *wholesaler*. This allows the bank to bring down its transactions costs, by limiting itself to one transaction only, and it curtail its risks, by drawing on the collateral of the institutional buyer, including both tangible and intangible assets. Presumably, the institutional buyer incurs lower costs for selecting borrowers because it has the advantages of information about the sector and the activity, and through the interlinking, it is in a position to induce incentives to repay. This is the traditional view of how various links of the chain can become involved in financing agriculture.

Nevertheless, this traditional vision has a fundamental weakness. Both buyer and producer are in the same incidence zone of systemic risk. If coffee prices should plummet, for example, everyone in the sector is in trouble at the same time –coffee growers, traditional buyers who work locally, and the cooperative that processes the crop. It is because of this close correlation that financial intermediation cannot develop well at this stage, based exclusively on the relationship between these two players. The only possible solution is diversification, which in turn means that the lender who finances the farmer needs to be an intermediary with transactions in other places where results are not covariant. The solution is a diversified portfolio.

The institutional buyer has a second role to play, under the new perspective outlined here. The bank (a diversified intermediary) lends directly to the producer. In any direct connection between lender

and borrower, the opacity of information continues to be a problem. However, the new arrangement successfully thins the veil because the bank lends to the producer *by virtue of the fact that* the institutional buyer has performed a pre-screening and has identified star producers. In gauging creditworthiness, the bank does not limit its focus exclusively on the producer, but it attaches extra importance to the signal that emerges from the farmer's participation in the chain. In its risk assessment, the bank examines relationships in the chain, as Shwedel explained in Chapter 1.

In other words, the bank closely observes the behavior of the institutional buyer (as in the case of Hortifruti) and, based on this behavior, infers information about the farmer's creditworthiness. This second design is based on a form of **delegated screening** of borrowers, in which the explicit or implicit contract linking the institutional buyer to the producer is the **signal** that tells the bank: go ahead and lend, because this is a good prospect. The bank has confirmation of the farmer's ability and willingness to repay based on the institutional buyer's need to work with efficient, responsible producers. Institutional buyers need star producers, and they will never select farmers who are unable to fulfill their contracts. These farmers do not want to fall through, they value the relationships they have built with the buyer, and they will always honor their contracts. They have every intention of repaying.

If we take the traditional view of the role of value chains in financing producers (especially the role of supermarkets), we would expect the supermarket to serve as the source of credit for its suppliers, using either its own resources or bank loans. Governments and donors adopting this approach would find ways to build the supermarket's borrowing capacity and thus strengthen this relationship.

Under the new vision, farmers hold explicit or implicit contracts with the supermarket chain, and with these contracts, they are able to acquire their own credit standing with other financial intermediaries, from outside the chain (see the lower part of Diagram 3.2). Governments and donors accepting this second approach would focus their energy on strengthening the relationship between farmers and their institutional buyers (by supporting the supply of non-financial services, for example) and, in the second place, on developing institutional financial intermediation. Stronger financial intermediation, in turn, would produce countless additional advantages beyond increasing the supply of other financial services. It could offer benefits that the supermarket chain cannot because it has neither the funds nor the comparative advantages nor the opportunities to diversify its credit portfolio.

I. Long-term relationships

This process produces networks of **compatible incentives**. Contracts between producer-suppliers and institutional buyers are a complex web of commitments, and both parties invest in them for the long term. The process entails two-way exchanges of information. The institutional buyer provides producers with the knowledge they need to adopt required methods and meet quality standards. At the same time, the institutional buyer acquires information about the farmers and can judge whether they possess the qualities to become star producers. The two parties also make reciprocal investments in physical capital. Farmers invest in irrigation or greenhouses, with the expectation of a

guaranteed market, while institutional buyers invest in storage facilities located near the producers, with the expectation of a guaranteed supply.

Producer investments are particularly risky; if things go badly, the household's access to uninterrupted consumption could be jeopardized (*consumption smoothing*). Very often, small or medium-sized producers are reluctant to make such investments. Farmers are conservative people, even more than banks, and they do not want to innovate without certain assurances. It helps to have an assured market; but if they can use the financial system to manage their precautionary reserves (deposits or remittances) or to take out emergency loans, they will be more willing to get involved in a modern chain, generating externalities and feeding virtuous circles.

Institutional buyers face the same problem as any lender: they have access only to **asymmetric information**. Which farmers may become star producers? Which ones will come through? This is why buyers need to incur searching costs, screening costs and monitoring costs. They invest in attempts to retain good producers and find ways to multiply transactions with those who qualify for their preferred list. Buyers are willing to do this work and incur these costs because they do not like to be always seeking, with imperfect information, and because if farmers fail to come through and do not work out, they need to find someone else, with equal or greater uncertainty, and on and on.

This is why institutional buyers prefer to build **stable relationships**. The exercise is difficult because, in the search process, buyers are looking for information on attributes that are not directly observable. It is not a question of farm size, or how many children the farmer has, or how educated his wife may be. It is more a matter of initiative, responsibility, skills, discipline, good attitude, experience, motivation to change, responsiveness, leadership and creativity. These qualities are not easy to see. These features cannot be plugged into a **credit scoring** formula, because they are not quantifiable. Such attributes are poorly correlated to the scale of production, so they open the door for small- and medium-scale producers who wish to take the leap.

This kind of assessment is very difficult for a lender who is far away. Institutional buyers, such as Hortifruti, cannot get out of it –they need to perform this kind of screening in order to develop a preferred list of suppliers and guarantee a steady flow of products that will meet consumer expectations. Once they do this, however, the way is open for lenders willing to trust such institutional buyers as Hortifruti. The banks can come in and say, “Hmm. Hortifruti is buying from this producer; it buys from Juan, but not from Pedro. Juan must have certain qualities, certain intangible and not easily observable attributes, which not only make him a good supplier for Hortifruti, but would also make him a good repayer.” This is what I call **delegated screening**.

Even those producers who possess all the right attributes may not be able to take risks (see the bottom part of Diagram 3.2) without financial intermediation. Access to financial intermediaries is what allows farmers to manage their precautionary and speculative reserves and to receive remittances that boost their working capital or cushion them from emergencies. In order for producers with the right qualities to make the leap, they need to invest in physical capital. If the capital they need includes significant

indivisible components, they will need investment credit. This type of credit can be obtained only from an institutional financial intermediary. Farmers are unlikely to receive it from other actors in the same chain.

The institutional buyers are supermarket chains, the Hortifruti's of this world, seeking information to build their lists. They create their own lists and they try to retain their producers. Because they are unwilling to lose people from their lists, they offer technical assistance and advice and pass along market information. All this serves as a signal for the delegated screening process, whereby the financial intermediary lets Hortifruti do the choosing, and then finances the selected star producers. In the absence of this process, other farmers or producers who have not been able to enter the chain need to find some other way to finance their own entry.

Financing entry with the farmer's own equity can pose real problems, under certain circumstances. Self-financing draws on accumulated savings (facilitated by the existence of convenient and safe deposit facilities) and intrafamily transfers (facilitated by remittance mechanisms). In cases of high risk, entry depends on having access to instruments that will cushion the effect of adverse events. In cases of high investment levels, the barrier to entry is the lack of access to long-term credit. Other financial services, including deposits, remittances and liquidity management, can be very helpful in all these tasks. One of the great strengths of the new approach over traditional methods is that it holds out the possibility of improving the supply of such services by strengthening financial intermediation.

J. The environment matters

The study of Hortifruti took us to Nicaragua and Honduras, and we traveled all through Costa Rica, from La Irma to Talamanca. We ourselves had made a selection of producers from the list of Hortifruti suppliers, and we visited their farms to verify our hunch. We started with the hypothesis that the supermarket chain was a source of credit. Was this hypothesis borne out? No, it was not. Supermarkets do not practice an institutional policy of financing farmers. Sometimes, in exceptional cases when there is no other choice, they advance a few inputs, but this is unusual.

Our sample did not produce a single farmer who had been financed by Hortifruti itself. Why not? Because the chain was growing. The mother company, Corporación de Supermercados Unidos, of which Hortifruti is only one part, needed all the money it could find to build its new stores and meet other expenses. A dynamic chain faces heavy internal needs for liquidity. The more dynamic it is, the less surplus liquidity it has available for lending money to other participants in the same chain. Besides, the supermarket corporation is caught up in a complex competitive process, and its comparative advantages lie in marketing, not in financing.

The new perspective (our alternative hypothesis) suggests that suppliers of the supermarket chain can improve their creditworthiness by entering into contractual relationships with the institutional buyer. These contractual linkages entail many dimensions that help counteract risks faced by potential

lenders. Market risk is lessened by the guaranteed volume of sales obtained through the relationship with the institutional buyer. This same relationship serves as a brake on price risk and, because guaranteed sales to the supermarket chain are continuous all year long, it also protects the farmer from losses of liquidity. Thanks to a staggered planting and sales program, based on instructions from the institutional buyer, farmers have liquidity throughout the year. With technical assistance, market information, and other non-financial services offered by the supermarket chain, farmers are able to mitigate productivity risks, environmental risks and quality problems that could lead to product rejection, while at the same time broadening their horizons, increasing investment and promoting innovation.

We found promising evidence in support of this hypothesis in Central America, and especially in Costa Rica. Although the exercise was not systematic enough for us to assert conclusively that the alternative hypothesis always holds, we did find that the relationship between the producer and the supermarket chain has contributed to make farmers more creditworthy. This morning we heard some of the bankers agree with the view that implicit contracts make such transactions possible.

I will briefly outline some of our findings. The most surprising discovery when we went out to interview Hortifruti suppliers was how very heterogeneous they were and that their most important distinguishing features were not easily visible. For example, producer size is relatively unimportant. In Costa Rica, the average plot size for Hortifruti suppliers was nine hectares. This is not a huge producer anywhere in the world, and others were even smaller. We found farmers who owned no land at all, but met their Hortifruti commitments on rented property. Even lacking land, they were able to find financial intermediaries willing to give them loans on the strength of nothing more than rented property and a contract. They did not need any land as collateral; a verbal contract with Hortifruti was enough to make them creditworthy.

Naturally, producer associations are a great help. For example, on the Talamanca indigenous reserve, we were amazed to see how farmers had changed their crops, improved their methods and the quality of production, specialized in what they did well and at the same time diversified to satisfy the bottomless Hortifruti market. The type of financial technology used in lending to associations is sufficient for managing the amounts of credit involved. The maximum loan size that these Costa Rican farmers had carried at some point in their lives averaged US \$16,000 from banks, cooperatives, or whoever else was financing them.

The study found fewer farmers with access to financing in Honduras and Nicaragua, for a combination of reasons. For one thing, consumers in those countries are not yet so demanding; for another, the farmers are less prepared to modernize. In addition, transaction costs are too high, and most of all, financial systems are very different. In Honduras, in particular, political interference in the financial system had made it very unattractive for banks to stay in the rural sector and finance agricultural credit. Debt forgiveness had created very negative demonstration effects, as Tiffen has already explained (Chapter 2). Thus, differences in the initial conditions in each country have an impact on the degree to which this second approach can be implemented.

In conclusion, there are many approaches for expanding the supply of financial services in the rural areas, and this is only one of them. It is not the universal solution for all farmers; it will work only for those who are prepared and can enter the chain. As Mark Wenner said this morning (Chapter 2), non-financial barriers can be more insurmountable than not having access to credit, but for those who are prepared, not having credit can be a serious obstacle.

Even if many of the small- and medium-scale producers remain outside this arrangement, the externalities it produces benefit everyone, including those who are just beginning to imitate modern practices because, as financial services expand, other farmers gain access to them. When financial entities go after just a few producers, they begin to take an interest in market segments that they had never served before.

However, all this requires implicit and explicit cooperation between the chain and the bank. It may be enough simply to issue reliable signals, or even enter into an explicit partnership in which both sides share risks, as Jorge Cavallini will illustrate with the alliance between *Banco de San José* and Hortifruti (Chapter 4). Thank you very much.

4

MODELS OF AGRICULTURAL VALUE CHAIN FINANCING

*Jorge Cavallini, Carlos Melosevich, Célamo Soto,
Juan Arrieta, Raúl Romero and Rubén Chávez*

This chapter covers a wide range of agricultural value chain operations in a variety of Latin American countries. It includes many different kinds of businesses (producers, processors, shippers, distributors) that serve as examples of different financing models. The presenters are representatives of the businesses themselves. They describe the background of their companies, how they fit into one or more agricultural value chains and how these chains have become a channel for delivering financial services to other participants or for facilitating access to financing.

A. Hortifruti

Jorge Cavallini

This section will begin with a brief description of the company, followed by an explanation of the Tierra Fértil program. It will close with examples of financing models, lessons learned and conclusions that the company has drawn from applying the model.

1. Background of the company

A formal partnership was created in early 2006, linking together Costa Rica's Grupo Uribe, Guatemala's Paiz group and Wal-Mart. The result was a company called Wal-Mart Centroamérica, with a total of 335 stores, US \$1.8 billion in sales, 20,000 associates and over 7,000 suppliers, 70 percent of which are micro-, small- and medium-scale businesses. Wal-Mart Centroamérica has two major divisions: the supermarket or retail business and the agroindustrial development business, consisting of Hortifruti and a number of meat suppliers and private brand companies, whose mission is to guarantee the retailer a regular supply of fresh produce.

When Hortifruti began operations in the 1970s, the market was just beginning to develop. At that time, it seized on produce as a key factor to differentiate it from other chains. Consumers were seeking

variety and a stable supply and expected the products they ate in their homes to be nutritionally wholesome and safe and to meet standards of quality and hygiene.

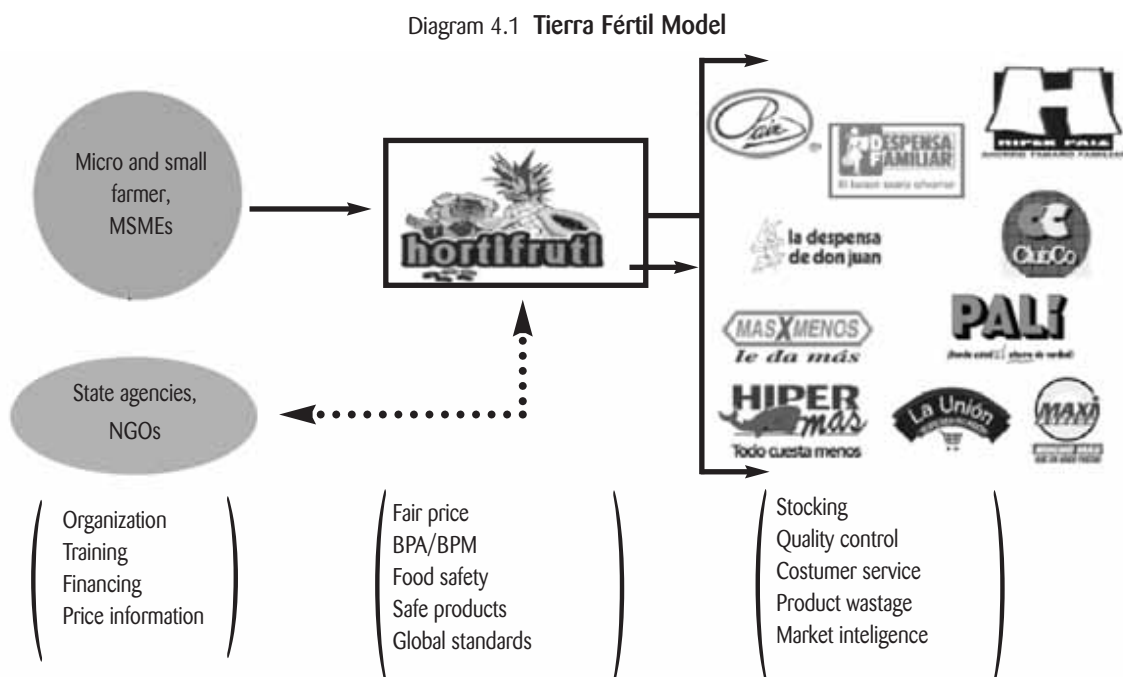
Farming practices for the fresh produce department were progressing very slowly in those days. The sector was highly fragmented. Any farmers planted fruits or vegetables wherever they felt like it, and technical levels in the chain were very low. There was much product wastage, logistics were non-existent, food safety was unheard of and products could not be traced. All this caused serious quality problems and led to crop loss for farmers, while retailers often found themselves unable to provide the kind of produce selection that supermarkets need.

2. Tierra Fértil Program

The purpose of the *Tierra Fértil* Program is to provide technical support and guarantee a fair market at fair prices for small- and medium-scale farmers in Central America. Hortifruti travels to each country to perform a study of the marketing chain in effect, especially for fruits and vegetables. Based on the profile of the country and the type of product involved –grains, vegetables or fruits– it then decides whether to support the first link in the chain, which is the farmer. If the type of product and the economic conditions are favorable, the company also seeks out processors to do all the work of sorting, washing, packaging and in some cases, distribution.

Once a structure has been studied for beginning operations in that country, the *Tierra Fértil* Program can be set up, as seen in Diagram 4.1. On the right side of the diagram are all the trademarks and supermarket formats that the group has in Central America. These are the stores that Hortifruti supplies with fruits, vegetables and grains every day of the week, every week of the year from 8:00 until sometimes midnight, during which time no store shelves must ever be empty. Hortifruti needs to go out and find nearly 300 farm products from micro- and small-scale farmers. In order to train these farmers, it depends on government agencies and nongovernmental organizations (NGOs) in each country.

The model was first tried in Costa Rica around 30 years ago and has produced admirable results in Nicaragua and Honduras. Other supermarket chains depend on intermediaries to bring in whatever they have. While supermarkets are unable to control all the variables that are listed in the lower part of the diagram, Hortifruti controls them through the *Tierra Fértil* Program. The supermarket takes care of stocking its shelves, monitoring product quality on the shelves, and serving consumers who enter the store. It manages any product wastage caused by shoppers and has something very important: backward market information.



SOURCE: Jorge Cavallini, Seminar presentation.

Hortifruti focuses exclusively on generating a fair price for farmers: training them, through NGOs and government agencies, in all aspects of good agricultural practices, good manufacturing practices, food safety with consistent clean production, protecting the environment and especially, making sure they meet global production standards. This is necessary if the farmers hope to take the next step: entering the Central American regional market and subsequently, moving into the European and North American markets. The NGOs focus on organizing farmers, training them, seeking financing and, very importantly, keeping them informed of current market prices.

The program focuses exclusively on small- and medium-scale farmers, working in many cases with farmer associations. It has 1,633 suppliers in Costa Rica, 550 in Nicaragua and 350 in Honduras. Farmers are given quality standards for fruits and vegetables, with full specifications for size, shape, color, flavor, ripeness and hygiene.

It is very important for farmers to identify with today's consumer demands for food safety and to share stockholder concerns for worker safety and environmental protection. This is why Hortifruti maintains a risk department that passes along these consumer demands to the entire agricultural chain, both Hortifruti points of sale and to farmers. As part of this process, products can now be traced with the use of a bar code indicating the production area it came from, the name of the farmer who delivered it and the day it was harvested.

3. Marketing and finance models

This section outlines three marketing and finance models, and general financial features of each one are summarized in Table 4.1. The first applies to marketing and bank financing of rice in Costa Rica. Program objectives are: (i) Guarantee Hortifruti a higher share of “shortfall” quotas granted by the Corporación Nacional Arrocería; this government commodity broker uses a quota system to manage undersupply of rice, and any company that wants access to duty-free imported rice must also supply a stipulated amount of locally grown rice. (ii) Increase the supply of locally grown rice to meet growing demand by supermarket chains that are experiencing rapid expansion. (iii) Support small- and medium-scale producers as part of the program’s emphasis on socially responsible businesses.

The format is simple: it begins with a grain supply department –the fields of farmers in all the rice and bean producing areas of Costa Rica. It also includes an array of allied industries that industrialize, process, clean and package. Then there is Hortifruti that manages the product by virtual means. Without ever touching the grain, it provides operational logistics, manages labor, nutritional and environmental risks, and once the product is in the supermarket, performs marketing and sales services.

Table 4.1
Hortifruti financing models

BANK FINANCING FOR RICE GROWERS	NON-BANK FINANCING FOR RICE AND BEAN GROWERS	NON-BANK FINANCING FOR RICE AND BEAN PROCESSORS
1. Hortifruti. Guarantees purchase of crop through contract with BAC San José.	1. Hortifruti. Finances farmer using company resources (30% of production cost); guarantees purchase of crop under contract; charges no interest (pays advance on purchase of the crop).	1. Hortifruti. Advances payment against future delivery of processed goods; buys industrial equipment or raw material.
2. BAC San José. Finances 60% of production costs; requires no collateral pledge; requires crop insurance policy.	2. Supply houses. Deliver inputs to farmer (agrochemicals, seeds, smaller equipment).	2. Processor. Pays loan gradually by processing products; signed contract with Hortifruti provides access to credit; guaranteed stable, long-term commercial relationship.
3. Processor. Pays farmer’s debt to the bank and supply houses, with part of the value of the crop.	3. Farmer. Signs pledge to deliver crop.	
4. Supply houses. Finances 35% of production cost, via inputs.	4. Working capital and inputs. Delivered to the farmer based on advance payment for crop.	
5. Farmer. Signs pledge to deliver crop to rice mill; becomes creditworthy with BAC San José.		

SOURCE: Jorge Cavallini, Seminar presentation.

Five different parties are involved in financing rice growers, as seen in column one of Table 4.1. (i) Hortifruti guarantees that it will buy the crop under a contract it signs with a private bank, BAC San José. (ii) BAC San José finances 60 percent of production costs; it requires no collateral and asks only for a crop insurance policy. (iii) The processing plant pays the farmer's debt to the bank and pays the supply houses as part of the price of the crop. (iv) The supply houses finance 35 percent of the cost of the crop in the form of inputs. (iv) Finally, the farmer signs a commitment to deliver the crop to the mill and builds a credit history with the bank once the debt is fully paid.

The second column shows a non-bank financing program for rice and bean growers. In order to meet its local quota, Hortifruti draws on its own resources to finance rice farmers, covering 30 percent of the cost of the crop, interest free, in coordination with supply houses that finance 35 percent of the crop by providing inputs. The farmer signs a pledge to deliver the crop and receives inputs as they are needed.

There is also a non-bank financing program for processing plants. This model has been used only rarely. On occasion Hortifruti has wanted to try new packaging or adopt innovative systems to differentiate the product, requiring equipment from other countries. In such cases, it has used its own capital to finance equipment imports for the processing plant. In one case, the processor gradually paid off the loan with assembly operations and has now imported two more machines with its own funds, thanks to this system. Even so, financing for rice and bean processors typically comes from banks; in such cases, Hortifruti's only participation is to sign a contract for assembly with the processing plant. The plant takes the contract to the bank, and the bank, based on this contract, provides short- or long-term financing.

In Nicaragua, financing is obtained through various NGOs that provide farmers with support in the form of inputs, technical assistance and credit. The farmer's obligation is to have at least 1.5 hectares of farmland, to live on the farm and to have an access road. The program receives support from USAID, which finances an NGO to provide technical support. Additional assistance comes through a project of the University of Michigan. Similar arrangements have been set up in Honduras, with the Covelo Foundation and with a state bank, the Banco Nacional de Desarrollo Agrícola.

4. Conclusions and challenges

Based on its experiences with linkages and financing, Hortifruti is convinced that this model is a dynamic agent capable of promoting and facilitating social change in the agricultural sector of Central America. Other lessons learned:

- Micro- and small-scale producers can be financed efficiently through transparent partnerships between stakeholders with a shared interest; this requires clear quality standards, and farmers need to understand what is expected of them beforehand, and not after their crops are already half-grown.

- The role of private businesses in an agri-chain should be to develop non-traditional mechanisms for providing fast, direct financing to these micro- and small-scale businesses.

Hortifruti and the Tierra Fértil Program face the following challenges:

- To create payment capacity for those small- and medium-scale farm producers who are not yet creditworthy; training is important, and the government, the NGO and Hortifruti need to work together.
- To incorporate more producers in the countries of the region into the Hortifruti business model.
- To foster the concept of sustainability in production models used by small-scale farmers; this will counteract the fragility that is usually their lot, transforming them into true agricultural entrepreneurs who grow stronger every day.
- Today, when the agenda in the region is dominated by the customs union and the free-trade agreement between Central America, the Dominican Republic and the United States, it is essential to eliminate barriers to regional trade. Costa Rica should be serving a market, not of only 4.5 million people, but of 35 million.

It is also important to consolidate multisectoral partnerships through international cooperation agencies such as USAID and an array of international organizations and academic and research institutions.

B. INDACO

Carlos Melosevich

The presentation on INDACO is divided into three parts. The first summarizes the background and growth of the company and the scope of its activities. This is followed by a discussion of several value chains, especially for cacao and peanuts. It closes with a case study of Credinka, a regulated financial institution owned by the agricultural consortium.

1. History of the company

INDACO, or Industria Alimentaria La Convención, was founded in 1994 as a business initiative of Cáritas, an outreach organization of the Roman Catholic Church. The partners are a consortium of public and private institutions interested in furthering agroindustry development in the region. Stockholders of note include the Provincial Municipality of La Convención, an association of cacao farmers (Aprocav) and the Mateo Pumacahua cooperative of coffee growers.

INDACO is involved in seven broad areas of activity: (i) It has a dairy processing plant. (ii) It has a plant to process concentrated food products used in local government food aid programs. As part of this project, it introduced such products as soybeans and corn into the production habits of local farmers.

This is the second-largest processing plant of its kind in Perú. (iii) It has a plant to produce nutritionally balanced animal feeds, the only one of its kind in Perú, that manufactures fortified concentrates for the agricultural industry of the region. (iv) It has a plant for processed meat products in partnership with another large group in the province, a federation of cooperatives called COPLA, and also with the provincial municipality. (v) It has a poultry plant with 35,000 birds. (vi) It has a peanut processing plant. (vii) Finally, unlike Hortifruti that works in strategic alliance with a bank, INDACO owns a financial company, a rural savings and loan association (or CRAC) called Credinka.

The INDACO area of influence is La Convención Province, the chief supplier of tropical crops for both local and regional markets. The most important product is coffee, and the local federation of coffee cooperatives is the world's fourth largest producer of organic coffees. The area is also one of the few places in the world that produce and process fine cacao. La Convención is home to around 16,000 small-scale farmers working on family plots and producing several different crops simultaneously.

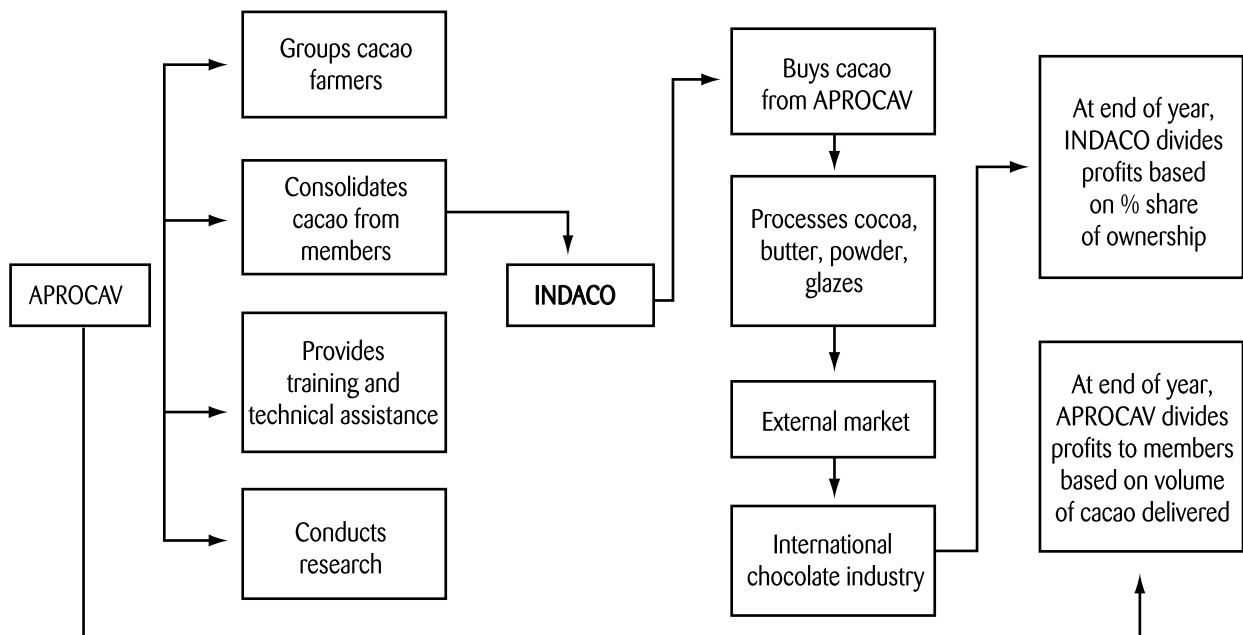
2. Value chains for cacao, peanuts, soybeans and corn

Small-scale cacao producers in La Convención know how to produce. With their experience and their knowledge of cacao production, they offer great potential. They have enough production capacity on their farms to fill large orders of coffee, cacao, annatto, peanuts, soybeans and corn. Their geographic and climatic conditions are excellent for high-quality production.

Even so, farmers in La Convención face many interrelated problems that have prevented them from producing and marketing their crops profitably and competitively. (i) Marketing and production are very disorganized because of the structure of marketing in the region. Small-scale producers have no incentive to combine their efforts and organize wholesale harvesting, storage and sales operations. (ii) Productivity levels are very low. (iii) Market information is difficult to obtain. (iv) Finally, farmers lack access to higher-value markets where they would be able to capitalize on the high quality of their crops and sell processed products in a more demanding market niche.

The chains are very different in cases where INDACO is involved. Diagram 4.2 shows the value chain for cacao, with the participation of INDACO. Aprocav, majority shareholder of INDACO, is made up of 3500 members who are cacao farmers. This organization consolidates the crop, lends technical assistance and sells the harvest to INDACO, which process it into cocoa butter, cocoa powder and glazes. INDACO's largest project, the cocoa plant, embodies an investment of over US \$1.5 million and was built with support from the Inter-American Development Bank.

Diagram 4.2 Cocoa value chain with participation by INDACO



SOURCE: Carlos Melosevich, Seminar presentation.

The situation is similar for peanuts. Ecomusa is a community enterprise that buys and consolidates the crop from its members, native peanut producers. Its services are similar to those of Apropiad –training, technical assistance and research. The bulk peanuts are transferred to INDACO to be processed and marketed.

All the farmers, including members of Procad and Ecomusa, plant a little bit of everything on their plots: coffee, cacao, peanuts, soybeans and corn. All soybean and corn production is sent to INDACO to be processed in the feed plant.

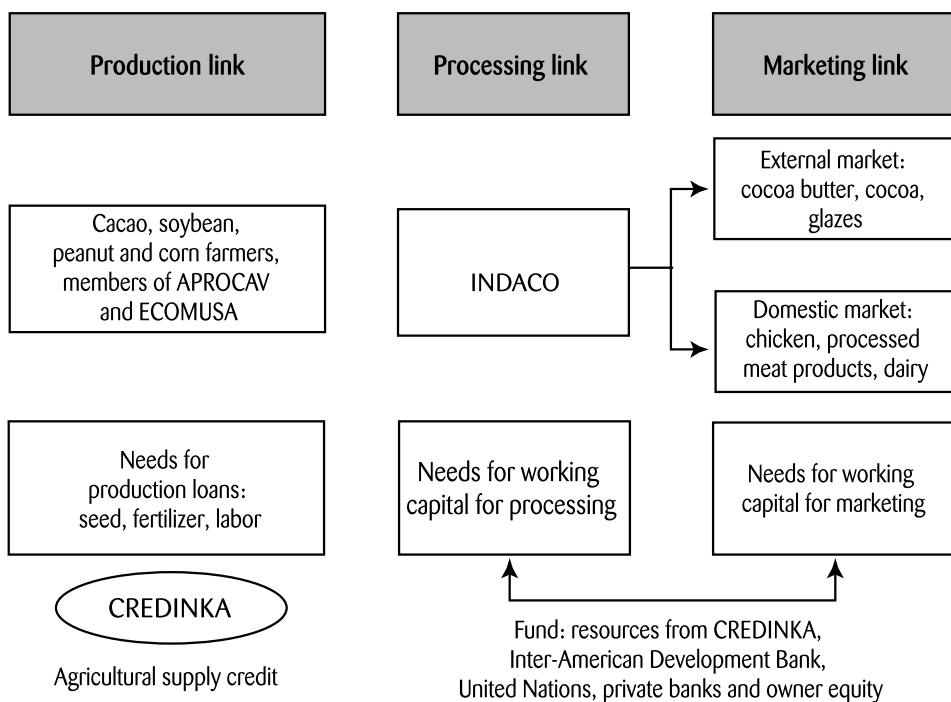
3. Credinka

Credinka is a rural savings and loan association (CRAC) founded in 1994 by the federation of coffee cooperatives. After two or three years, INDACO and Aprocav joined the savings and loan and today are the second largest group of shareholders.

The savings and loan is under the supervision of the Superintendence of Banks and is a member of Perú's formal financial system. It has equity worth approximately US \$2 million, making it the fifth largest of the 12 CRACs in Perú. It has four offices, 82 employees, more than US \$11 million in deposits and nearly US \$14 million in loans.

Credinka provides agricultural supply loans of up to US \$3,000 for farmers who are members of producer associations. Specifically, in order to receive their credit, farmers must be members of Aprocav or Ecomusa and have the backing of either of these institutions (see Diagram 4.3).

Diagram 4.3 Credinka: Production, processing and marketing links



SOURCE: Carlos Melosevich, Seminar presentation.

Loans are guaranteed by the farmers’ sponsoring institutions and are regulated by means of a report that is prepared and submitted by the technical personnel of the different associations, stipulating the amount to be lent. In order to obtain their loan guarantee, farmers must sign a contract with the association, pledging to sell the entire cacao, soybean, peanut and corn crop in exchange for an above-market price that pays a premium for production quality.

Aprocav and Ecomusa sell the crops to INDACO to be processed and marketed. Finally, the associations repay Credinka for the loans to farmers, and the balance is deposited directly in the farmers’ account with the rural savings and loan.

For processing and marketing, INDACO has set up a fund with resources from Credinka, the United Nations, the Inter-American Development Bank, private banks and its own equity.

C. Dos Pinos Dairy Cooperative

Célamo Soto

This section will examine the role played by the cooperative *Cooperativa de Productores de Leche Dos Pinos* (Dos Pinos) in financing agricultural value chains. It is divided into two parts. The first summarizes the growth of the company, while the second introduces its financial services, some of them provided by certified financial intermediaries with support from the cooperative, and others offered directly by Dos Pinos.

1. Background

Cooperativa de Productores de Leche Dos Pinos was founded in 1947. Its three original objectives are still valid today: (i) to provide dairy farmers with their own sales outlet that pays a fair price for their milk; (ii) to give them ownership in the supply house where they buy the inputs they need for their farms, and (iii) to promote industrial and commercial development in Costa Rica.

The cooperative's first activity was production and distribution of feed concentrates. Dairy production per se began in 1951 with the processing and sale of 400 bottles of milk daily. Today the cooperative produces one million liters every day and has achieved sales of around US \$300 million per year. Of this total, 80 percent is sold on the local market, and the remaining 20 percent is exported to the rest of Central America and to México, the United States and the Caribbean. Per-capita milk consumption in Costa Rica is the third highest in Latin America (233 liters), far higher than its neighbors in Central America. This means that growth opportunities abound in this region.

As its name suggests, the company was created as a cooperative. The highest governing body is the Assembly of Members that appoints an Administrative Board, which in turn appoints the CEO. Dos Pinos has seven separate departments, two of which are of particular interest for the purposes of this seminar: the Department of Member Services and the Finance Department. Both are involved in providing financial support for small-scale producers and members in general.

This company is fully staffed by Costa Ricans, and company equity is entirely local. All technology, all technicians, all workers and all producers are Costa Rican. It is a strictly national undertaking that has brought great progress to agrarian development in this country.

The cooperative has 1,300 member producers, 530 member workers and 3,000 employees in Costa Rica and abroad. Most member producers are small farmers: 61 percent deliver up to 500 liters of milk per day. Only five percent of the members could be considered large farms, producing over 2,000 liters of milk every day.

2. Financial support

The company provides farmers with everything they need to produce, including animal feed, equipment and chilling tanks. It also provides direct and indirect financing (see Table 4.2).

Much of the financing for members is supplied by the producers themselves and by the workers through their contributions and savings. This offers a number of advantages because there is no need to seek resources from financial markets. Dos Pinos has access to funds from the cooperative sector, international sources and the local financial sector, but because it can rely on its own equity, it is able to select the best conditions on the market.

Table 4.2

Dos Pinos direct and indirect financial services

Direct financing

1. Dos Pinos Card

- Revolving line of credit
- Purchases from Dos Pinos agricultural, veterinary and service centers; national and international medium of exchange
- Maximum credit limit depends on each producer's payment capacity and capital contributions: 22.5% of subscribed and paid-in capital for internal expenditures and 2.5% for purchases from companies outside the cooperative
- Financing plans for purchases from companies outside Dos Pinos with timetables and annual interest rates according to client preferences: from one week (0%) to 99 weeks (24%)
- Weekly statements
- Automatic payments deducted from settlement of milk payments

2. Special Financing

- Amount: depends on credit record
 - Working capital: two years for purchase of inputs and supplies
 - Investment: five years for purchase of chilling tanks, certificates of paid-in capital, milking equipment and animals
 - Share of investment: 100% if equipment is purchased from the cooperative
-

Indirect financing

- Provides information on services available in the formal financial system
 - Collects weekly payments deducted from settlement of milk deliveries
 - Fund transfer to producer account
-

SOURCE: Célmo Soto, Seminar presentation.

The company has two direct financing services: a credit card and loans. The credit card was set up with two objectives. First, members can use it in the company's 18 farm and veterinary stores. This provides not only an efficient service, but also allows for greater control, less paperwork and lower costs as transactions are performed online. In the second place, members can use the card to shop in other stores for services or products not available in the Dos Pinos stores.

The farmer loan program finances working capital and infrastructure investments, such as storage facilities, equipment and chilling tanks. As seen in Table 4.2, this special financing is offered with payment schedules ranging from two to five years.

The Finance Department sets guidelines for granting credit to members, including such features as payment schedules, credit limits, payment for milk deliveries, interest rates and credit record. The Finance Department stipulates the levels of authority for approval of loans and is responsible for program administration, oversight and collections. It has access to daily information updates on the status of loans granted by the cooperative.

When members seek indirect financing, financial institutions attach special importance to the cooperative's collection programs. Dos Pinos pays its members on a weekly basis and withholds loan amortizations or other payments when there is a direct contractual relationship between cooperative members and finance institutions.

The cooperative also has a system for demand deposits and fixed-term deposits. It has three of its own offices for this purpose and also relies on the national banking system's network of branch offices.

It has invested a great deal of effort in technology and in managing communication and information resources. As a result, its credit monitoring and oversight operations are very efficient. Dos Pinos also has a call center that provides fast answers to questions on credit and deposit operations.

D. Agromantaro

Juan Arrieta

This section describes a company that is part of the value chain for export artichokes. Over the past five years it has seen major development, and today it is attracting the attention of many farmers in the traditional export regions of Perú and in the highlands. I will describe the history of the company, background information on agriculture in the Peruvian highlands, the artichoke chain and the characteristics of the international markets in which it operates. Finally, I will discuss a financing program under the development financing agency, Corporación Financiera de Desarrollo.

1. History of the company

The company Agroindustrias del Mantaro (Agromantaro) is located in the central highlands of Perú and started operations in April, 2005. It processes fruits and vegetables for export to international markets. It holds contracts with local farmers for raw material supply and technical assistance and operates a continuous production line of artichoke hearts and bottoms. The processing plant is located at 3,250 m above sea level in a region stricken by high levels of poverty. Production areas can be found throughout the Mantaro, Tarma and Huánuco Valleys. The packing plant is located about six or seven hours by truck from El Callao port.

The company was created and gained its first few years of experience at a time when conditions were quite favorable for Perú's export sector. Over the past five years, Peruvian exports have been growing strongly, especially in mining, but also in agriculture. Among other things, this is the result of a heavy emphasis on product diversification over the past 10 years. The most important products are coffee, asparagus and artichokes. Artichoke exports have already hit nearly US \$40 million, with sales expected to double over the next three years.

2. Agriculture in the Peruvian highlands

The Peruvian Highlands, home to Agromantaro artichoke suppliers, is an agricultural region characterized by:

- Fragmented production, with farm plots less than one hectare in size
- Traditional products for the local subsistence market
- No access to modern technology
- Low levels of productivity
- No access to financing
- Low income levels

Why did the Agromantaro entrepreneurs ever go to such a place? The region has a competitive advantage: a favorable climate that yields good crops for much of the year and gives plantations a longer useful life.

3. International markets

What kinds of international market conditions face a company such as Agromantaro, which operates in a region of extreme poverty? This question casts light on the two extremes of agroindustrial export businesses:

- *Cash rich time poor.* This is the typical quality of European and US consumers: they have enough money, but never enough time.
- Volume. They require large volumes.
- Sophisticated and demanding. They want variety, quality, wholesomeness and food safety.

How can an exporter meet these demands of international markets, working with a supply base where agricultural practices are impoverished?

4. Artichoke value chain

Highland producers deliver their products to Agromantaro for processing, and buyers deliver the final product to international markets. All this requires **strategic alliances** where backward linkages are critical for product supply, and forward linkages are essential to meet demand.

Agromantaro practices what it has dubbed the “CLIP strategy,” a concept that is helpful for understanding an agroindustrial export project. CLIP stands for: **C**ommercialization or marketing, **L**ogistics, **I**ndustrialization and **P**roduction. The four elements need to proceed in this same order, never the reverse. This flies in the face of the general Latin American practice whereby project analysis begins with production.

The people of Agromantaro, after starting off with an analysis of the market, then decided to create a strategic alliance with two other companies –a multinational and a Peruvian operation with links to local producers and Spain-based marketers. The multinational company provided technical support for developing a line that had already been tested against all the food safety conditions demanded by sophisticated consumers.

European shoppers go to the supermarket to purchase a product whose actual agricultural value is only 20 percent of the final price, as can be seen in Diagram 4.4 for the artichoke value chain. Much attention focuses on how to solve the problem of the 20 percent, but any analysis of the business of food product marketing needs to focus instead on the final 100 percent. Strategic alliances are useful for consolidating all these stages. The traditional view of export businesses was that all responsibility ended FOB, at the shipping port. That was before. Today, responsibility ends on the consumer’s table.

Table 4.3
Share pertaining to economic agents
in the artichoke value chain

AGENT	PRODUCT VALUE AT THE END OF EACH PROCESS (PERCENT)
Farmer	20.8
Processor	38.5
Logistics/distribution/marketing	61.5
Consumer	100.0

SOURCE: Juan Arrieta, Seminar presentation.

Logistics are very important, especially with oil prices expected to reach US \$100 per barrel. Ignoring this when planning a business based on an agricultural value chain is a recipe for trouble. The same is true for distribution and final marketing. Note that 62 percent of the shelf price paid by the consumer goes into logistics, distribution and marketing, which includes advertising and sales. This is because the final goal, what the Americans have accurately dubbed a **share of the consumer's stomach**, cannot be won without a battle, and the same thing is happening everywhere. You may not always know who your direct or indirect market rivals are, but you do know that you need stay on top of consumer preferences.

Going back to the 20 percent of value that goes into raw material supply: What has Agromantaro done? It works in decentralized production zones in a region where climatic conditions favor this crop. It holds strategic alliances with farmers and NGOs that provide technical assistance, including TechnoServe and the PRAS project under USAID, as Anita Campion explains in Chapter 6. It also has alliances with financial institutions such as the development finance agency, Corporación Financiera de Desarrollo (COFIDE).

5. Sources of financing

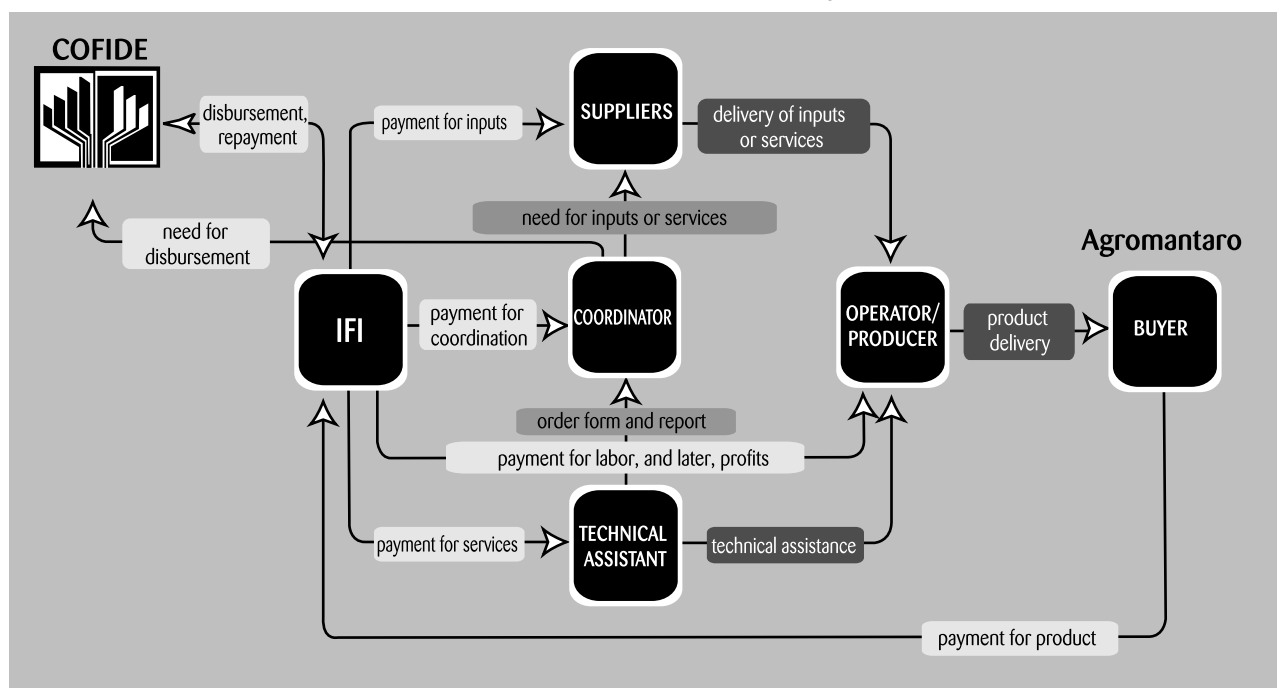
Sources of financing for participants in the artichoke value chain vary by type of stakeholder:

- Logistics/distribution/marketing
 - Suppliers
 - International banking system, factoring
 - Shareholders
- Processor
 - Suppliers
 - Local banking system, factoring
 - Shareholders

- Farmer
 - Input suppliers
 - COFIDE
 - Rural savings and loans

The Corporación Financiera de Desarrollo offers an intriguing product to farmers, known as the Structured Financial Product (PFE) illustrated in Diagram 4.4.

Diagram 4.4 COFIDE. Structured financial product



SOURCE: Juan Arrieta, Seminar presentation.

The diagram illustrates the process of the Structured Financial Product, which is the mainstay used by Agromantaro to guarantee its supply of raw materials. The boxes labeled “coordinator” and “technical assistance” are critical for the development of these activities. The product is channeled through a first-tier financial entity that provides a comprehensive solution to financing needs in the value chain. It covers input suppliers, technical assistance, coordinators, the buyer (Agromantaro) and, of course, farm producers.

The company could never have posted its current growth rates without the sources of financing available under this PFE and other similar programs. At present it works with three consolidation centers, 450 hectares of land, 250 small farmers or contracts to administer, raw material purchases of up to 7,000 metric tons, equivalent to US \$2 million, and an annual FOB production value of US \$9.6

million. If Agromantaro hopes to meet the goals set forth in its business plan for 2006-2011, it will need to double today's finished production values to US \$20 million, and this cannot be done without much more financing.

E. Bounty Fresh

Raúl Romero

This section will examine the experience of Chestnut Hill Farms, a division of Bounty Fresh that markets fruits and vegetables. It will examine the company's experience with agricultural value chains and demonstrate how important it is for marketers to consider their risk exposure. It will also offer suggestions for better farmer financing.

1. Background

Chestnut Hill Farms markets, and in some cases produces, asparagus, mangoes, melons and pineapples from Arizona, Brazil, California, Costa Rica, Ecuador, Guatemala, Honduras, Perú and Puerto Rico.

Its customers are supermarket chains in the United States. Over the past four or five years, the company has also been selling to the fresh processed fruits and vegetables sector and supermarket chains in Europe, as well as wholesalers.

Its main objective is to add value to production, packaging and marketing. The company handles four trademarks, including "Perfect Melon" and "Perfect Pineapple." Consumers are given a "satisfaction or your money back" guarantee. This helps remove the company from the mass market of generic products, or **commodities**.

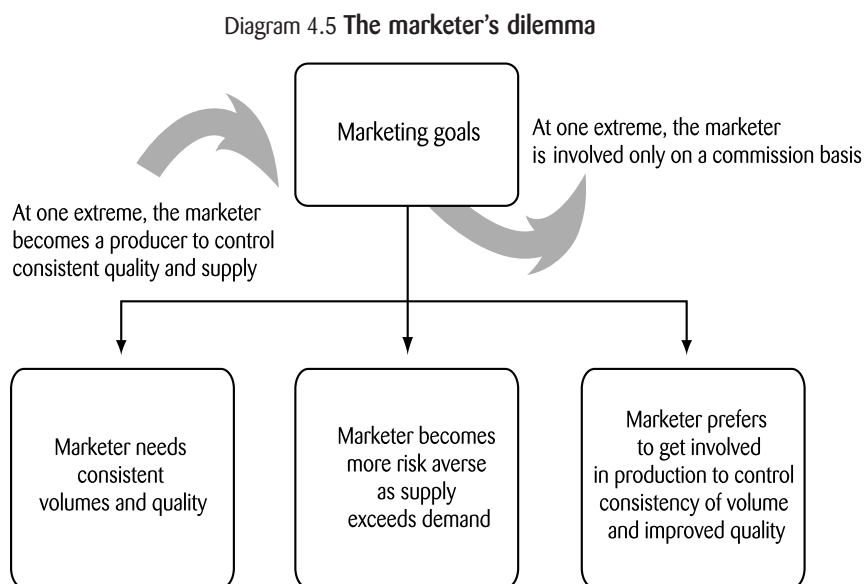
The overall United States market offers a clear picture of the outlook for Chestnut Hill Farms. It has grown by 12 percent since 2000, and imports now account for 16 percent of the vegetable market and 44 percent of the fruit market. The total value of imported fruits and vegetables in 2004 was US \$8.3 billion.

2. Risks

How can anyone survive for so long in this business? New threats crop up every day, including risks associated with agricultural variables, climate, market demand, and more. In simple terms, Chestnut Hill Farms sees production and market risks as two opposing forces. When production risk is high because of bad weather that undermines volume, market risk is extremely low because prices rise.

When the weather is good and production risk is low, it becomes clear that no producer is an island. All the farmers in the region have the same good weather and produce a bumper harvest. If one farmer has a good May pineapple crop, everyone else has it too, so that when production risk is low, market risk is extremely high.

Diagram 4.5 gives a summary of the marketer's dilemma. At one end, on the left side of the diagram, marketers become producers as well and can control product consistency, quality, wholesomeness and safety.



SOURCE: Raúl Romero, Seminar presentation.

Marketers at the other end prefer to stick with marketing only, earning their commissions and operating in the spot market. Chestnut Hill Farms did not choose this path. Because of its client base, the company found itself with the need to demand consistent volume and a high-quality, durable product over a longer portion of the year, and therefore had to become partially involved in the agricultural operation.

3. Financing

As Vice President of Costa Rica Kevin Casas said in the opening ceremony of this seminar, the commercial banking sector supports low-risk sectors, but agriculture is a high-risk proposition. So what did the company have to do? It had to do a little bit of everything, and most of all, it had to get very involved in financing some of the crops. As a result, in one of the four products it markets, it has succeeded in developing a production chain that is solid from the very beginning. The specific case of pineapple in Costa Rica began five years ago, when exports were running around one or two

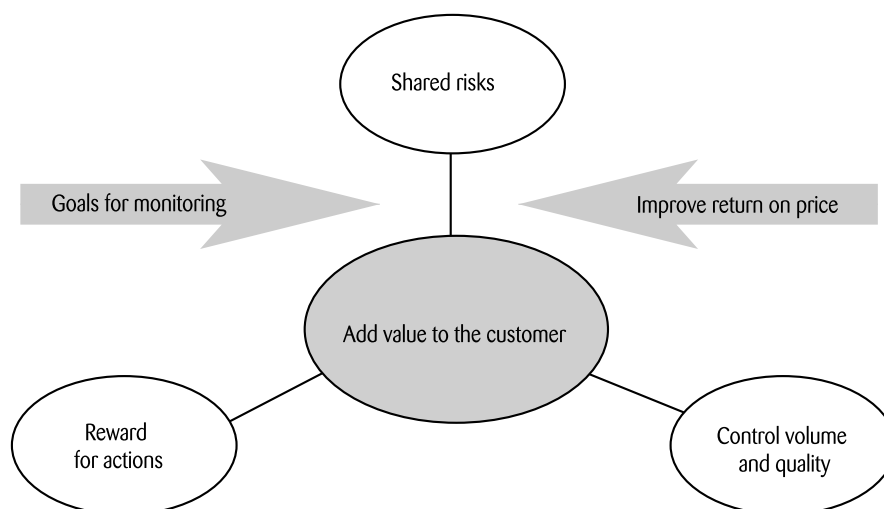
containers per week; by last week, it had risen to 70 containers. Another reason why the company achieved this kind of growth was that it was in the right market at the right time. There was no overproduction, and in general, both production and market risks were low.

The company also gives financial advances. A budget is drawn up before planting begins, and the money is disbursed gradually as planting progresses. Funds are delivered against shipping documents, once products have arrived safely.

Chestnut Hill Farms also provides agricultural inputs and participates in investments in equipment, infrastructure and materials. Each different case requires a separate analysis. All these relationships need to be transparent, as we have already said so many times in this seminar. This is the signal that banks are looking for. Chestnut Hill Farms is not a financial entity, but it has learned to read signals about where it can and should take risks with the farmers.

Looking to the future, competition is becoming more and more global. Anyone who wants to continue in this business needs to find financing structures to keep growing. Faced with the financing gap, marketers have needed to get involved, but financial structures will have to change in the future, perhaps as suggested in Diagram 4.6.

Diagram 4.6 **New financing structures**



SOURCE: Raúl Romero, Seminar presentation.

Under this model, marketer and producer work together and share risks and benefits. Much has already been said in this seminar about the age of globalization and how possible margins of error have been reduced to a minimum. In order to be successful, more attention needs to focus on production, logistics and marketing requirements. It is also useful to adopt a “niche” approach to markets and ask: What can this company do better than the others that are already established in the business?

Competition is now global. Many more countries are competing for the same business at the same time, and seasonality is a thing of the past. With all these considerations, it is now more important than ever to have a sound financial structure.

F UNIPRO

Rubén Chávez

The Unión Agrícola Regional de Productores de Maíz Amarillo así como de Otros Granos y Semillas (UNIPRO, or regional agricultural union of producers of yellow corn and other grains and seeds) is located in the very arid state of Chihuahua, northern México. This presentation will summarize its development and explain its role as a “para-finance” agent.

1. Background

UNIPRO is nearly five years old. It was set up in late 2001 in response to marketing problems that arose with the disappearance of CONASUPO, a federal government-owned marketing company that bought corn for around US \$200 a ton until it was eliminated 10 or 12 years ago. With the closing of CONASUPO, local farmers found themselves competing head-to-head with foreign producers, and overnight, prices plummeted by half to US \$100 a ton. Many local producers were squeezed out of the market entirely.

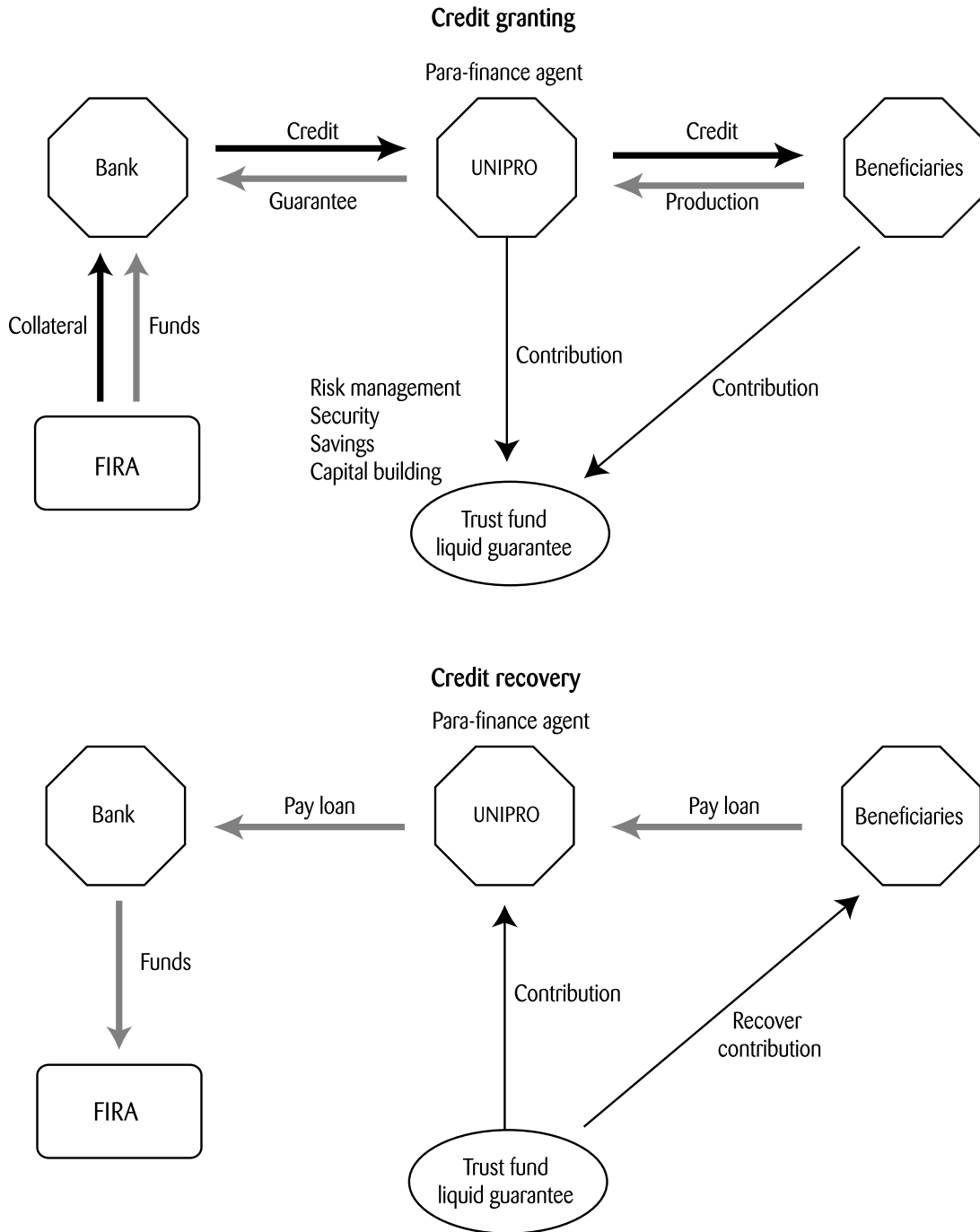
UNIPRO is a union of four associations of corn farmers. It groups together 1,340 member farmers who produce an average of 300,000 tons of corn per year using pump irrigation on around 36,000 hectares of farmland. The Union has access to 300,000 tons of storage capacity, 65,000 tons in its own storehouses and the rest in storage facilities it rents from members. It has two railroad spurs for shipments, which is critically important because its main clients are from 600 to 1,200 km away. If crops were trucked to market, UNIPRO would simply disappear from the scene.

2. Para-finance

In 2002, UNIPRO began serving as a “para-finance” agent. This term was coined by FIRA, a second-tier development bank oriented toward the rural sector, that works with UNIPRO in this program. An agent can be either an individual or a corporation. It provides access to bank credit for a group of beneficiaries with which it has established mercantile relations or a partnership under conditions of transparency.

The purpose of this model is to support small- and medium-scale producers whose particular characteristics bar them from obtaining bank credit. The natural and commercial relationships in the union provide a number of advantages for strengthening the development of value network alliances. Diagram 4.7 illustrates the operation of a para-finance agent.

Diagram 4.7 Basic para-finance operating model



SOURCE: Rubén Chávez, Seminar presentation.

There are several possible kinds of para-finance agents:

- Industrial processors. This arrangement applies to sugar mills, flour mills, tobacco processors and cotton spinners.
- Agribusinesses. These are the agro-industries, suppliers of agricultural inputs, machinery, equipment and the like.
- Service companies. These could be unions or associations such as UNIPRO.
- NGOs and savings and loan associations.

How does the model work? First, UNIPRO contacts FIRA to negotiate a line of credit. It then contacts the bank that will disburse the money. FIRA signs over to the bank the resources it will be lending to the para-finance agent. The bank then dispenses the money and UNIPRO distributes it to the beneficiaries.

FIRA gives the bank a guarantee and charges the costs to UNIPRO. In addition, a group of members of UNIPRO, the Board of Directors, put up their family equity as a guarantee for the money. They are also required to set up a trust fund with contributions from the farmer and the organization, for an amount equivalent to 30% of the total credit as a liquid guarantee. Finally, the bank carries around 30% of the risk of the operation.

When the producer repays the loan, UNIPRO pays the bank and the bank returns the money to FIRA. The trust fund returns the Union's contribution, and the Union returns the amount paid in by producers. In addition to financing programs operated through FIRA, UNIPRO has also worked with various first-tier commercial banks, including Banamex, Bancomer, Banorte and HSBC.