

Studies in
Rural Finance

Economics and Sociology
Occasional Paper No. 1468

SMALL-FARMER CREDIT VIA AGROINDUSTRY: THE CASE OF
THE DOMINICAN REPUBLIC

by

Jerry R. Ladman and Roberto Liz

June 1988

Agricultural Finance Program
Department of Agricultural Economics
and Rural Sociology
The Ohio State University
2120 Fyffe Road
Columbus, OH 43210

/

**WORKSHOP ON RURAL FINANCE
IN DEVELOPING COUNTRIES**

Sunday, June 12

- 3:00 p.m. Registration
- 7:00 p.m. Informal Reception

Monday, June 13

- 7:30 a.m. Breakfast
- 8:30 a.m. Introductions
- Welcome--Joe Havlicek
 --Richard Meyer
 --Claudio Gonzalez-Vega
 Introductions--All Participants

9:30 a.m.

SESSION I

- Paper 1. Dale W Adams, "Rotating Savings and Credit Associations in Bolivia"
- Paper 2. Douglas H. Graham, Nelson Aguilera, Michel Keita, and Kifle Negash, "Informal Finance in Rural Niger: Scope, Magnitudes and Organization"
- Discussants: Gary Christiansen, Cornell University
 Sabapathy Thilairajah, World Bank
 Tom Timberg, R.R. Nathan & Associates

12:15 p.m.

- Lunch -- Erhard Kropp, Gesellschaft für Technische Zusammenarbeit, "Characteristics of Financial Self-Help Groups and their Financial Instruments: Implications for their Linkage with Banks"

1:45 p.m.

SESSION II

- Paper 3. Carlos E. Cuevas, "Transaction Costs of Financial Intermediation in Developing Countries"
- Paper 4. Carlos E. Cuevas and Douglas H. Graham, "Development Finance in Rural Niger: Structural Deficiencies and Institutional Performance"
- Paper 5. Carlos E. Cuevas, "Transaction Costs of Borrowing and Credit Rationing in Developing Countries"

Discussants: Michael Carter, University of Wisconsin
Mario Masini, FINAFRICA
Robert Vogel, IMCC

5:00 p.m.

Adjourn

5:00 p.m.

Hospitality

7:00 p.m.

Dinner--Hotel

Tuesday, June 14

7:30 a.m.

Continental Breakfast

8:30 a.m.

SESSION III

- Paper 6. Richard L. Meyer, Baqui Khalily and Leroy Hushak, "Bank Branches and Rural Deposits: Evidence from Bangladesh"
- Paper 7. Aruna Srinivasan and Richard L. Meyer, "Costs of Intermediation in Rural Banking in Bangladesh"
- Paper 8. Arnaldo R. Camacho and Claudio Gonzalez-Vega, "The Impact of Regulation on the Structure and Performance of Financial Markets in Low Income Countries: The Case of Honduras"

Discussants: Hunt Howell, Inter-American Dev. Bank
Steve Pollard, Calif. State Univ.--L.A.
J.D. Von Pischke, World Bank

12:15 p.m. Lunch -- V. Bruce J. Tolentino, Executive Director, Agricultural Credit Policy Council, Philippines to speak on "The Political Economy of Agricultural Credit under the New Democratic System in the Philippines".

1:45 p.m. SESSION IV

Paper 9. Claudio Gonzalez-Vega and Luis Mesalles, "The Political Economy of Bank Nationalization: The Case of Costa Rica, 1948-1988"

Paper 10. Jerry R. Ladman and Roberto Liz, "Small Farmer Credit via Agro-Industry: The Case of the Dominican Republic"

Discussants: Compton Bourne, Univ. of West Indies
Edward Ray, OSU
Bruce Tolentino, ACPC, Philippines

4:00 p.m. Adjourn

4:30 p.m. Refreshments

8:00 p.m. Dinner--The Refectory Restaurant

Wednesday, June 15

7:00 a.m. Continental Breakfast

8:00 a.m. SESSION V

Paper 11. Jeffrey Poyo, "Deposit Mobilization and the Political Economy of Specialized Financial Institutions: The Case of the Dominican Republic"

Paper 12. Claudio Gonzalez-Vega, Archibaldo Vasquez, Jose A. Guerrero and Cameron Thraen, "The Demand for Deposit Services in the Rural Areas of the Dominican Republic"

Discussants: Paulo F.C. de Araujo, FEALQ
Peter Marion, WOCCU
James Zinser, Oberlin College

11:00 a.m. Summing Up. Claudio Gonzalez-Vega, OSU
Millard Long, World Bank

12:00 p.m. Adjourn. (Lunch on your own).

11

**Small-Farmer Credit Via Agroindustry:
The Case of the Dominican Republic**

by

Jerry R. Ladman and Roberto Liz

INTRODUCTION

A principal challenge for Third World countries is the development of more efficient processes in the food chain extending from the producer through agroindustry to the final consumer. In particular, there is an urgent need to create more favorable opportunities for small farmers to improve their economic and social positions by easing two fundamental constraints: inadequate product markets and insufficient production inputs.

Historically, many institutional arrangements to link the different entities in the food chain have developed. A common arrangement in less-developed countries is the middleman, a person who buys the farmer's product for resale in the wholesale or retail markets. Often, to ensure that the farmer delivers the product to him, the middleman will provide the grower with cash or in-kind credit for production and/or family consumption. This arrangement combines marketing and credit, and as such provides the farmer with a package of two services. The system has been highly criticized because it is alleged that the farmer is placed in a dependent position vis-a-vis the middleman and the latter's monopsonistic position allows him to take advantage of the farmer.

Another arrangement, common to export plantation crops, is where a food processing or marketing agribusiness firm, sometimes a multinational corporation, enters into contractual arrangements with farmers to purchase their product in exchange for credit and, perhaps, technological assistance. Again, note the farmer receives a

The authors are Professor of Economics and Director of the Center for Latin American Studies at Arizona State University and Director, Fundación de Crédito Educativo APEC, in the Dominican Republic, respectively.

This research was financed by the United States Agency for International Development through the Ohio State University Cooperative Agreement. The research results presented are those of the authors and do not necessarily reflect the views of the sponsoring agency.

The present paper draws heavily on a paper entitled "Small Farmer Credit Via Industry: The Case of the Dominican Republic," Proceedings of the 1987 Meetings of the Rocky Mountain Council for Latin American Studies, pp. 77-90.

package of services that includes at least marketing and credit and perhaps more. As with the middleman, the arrangement is criticized on dependency and monopsonistic grounds.

In order to get around these dependent-monopsonic arrangements as well as to improve the lot of small farmers, much rural development policy has been oriented to developing better product markets and providing independent sources of farm inputs, credit and technology. Institutional arrangements that have been employed include production and marketing cooperatives, development banks and credit programs, and agricultural extension services. Most often the public sector has been assigned these responsibilities. However, more recently, because of growing dissatisfaction with the efficiency of public-sector institutions, increased attention has been directed to ways that the private sector could be the provider.

This paper examines a private-sector small-farmer credit arrangement in the Dominican Republic--the bridge loan. Under this scheme, commercial banks extend credit to agribusiness processing or marketing firms in order that they may, in turn, provide production credit to farmers who will supply them with raw materials. In addition to cash credit, the firm may also provide in-kind inputs, and technical assistance. Therefore, the bridge loan is a package arrangement that always includes credit and marketing services, but may also provide the other components. The government has encouraged this activity by making Central Bank refinancing available to the commercial banks for bridge loans. Furthermore, the United States Agency for International Development (USAID) is considering making more bridge loan refinancing resources available to the Central Bank in an initiative to use private-sector banks and business firms as ways to provide production credit to small farmers.

The objectives of our research are: (a) to describe the structure of bridge-loan lending, (b) to determine its relative importance to the major agribusiness firms, (c) to judge its importance to the small farmer in terms of numbers served and improving access to credit, (d) to define the credit delivery system and measure transactions costs, and (e) to make a judgement about the value of the package of services provided compared to traditional isolated credit programs. The bridge loan arrangement is nothing more than a variation on the above-described, time-worn agribusiness financing arrangement. Therefore, in our analysis it is important to try to determine if the dependency/monopsony characteristics are present and, if so, whether or not they are detrimental to the interests of the small farmer.

Data for the study came from two sources: a census of agribusiness firms and a stratified sample survey of small-farmer borrowers. Unfortunately, the data from the farmer survey are not yet ready for analysis. They will be incorporated in the paper in a latter version and are expected to greatly enrich and enhance the

analysis. At this point, the paper is confined to an analysis of the data obtained in the census of agribusiness firms.

The paper is organized in three sections. First, the structure of bridge loans is described. Second, the Dominican experience is examined. Data from the census of agribusiness export firms is analyzed to see how firms use bridge loans and the associated package of marketing, credit and input services as a means to acquire raw materials. The firms relationships with small farmers and credit transactions costs are examined. At a later time, when farmer sample survey data are available, the views of participating farmers will be incorporated into the analysis. Third, tentative conclusions are drawn.

THE FUNDAMENTALS OF BRIDGE LOANS

By definition, a bridge loan is credit extended by a financial institution to an agribusiness firm, that markets and/or processes agricultural products, in order that the firm can onlend the funds to a number of farmers who agree to produce a product that will be sold to the firm at harvest. Thus, the firm serves as a "bridge" to carry production credit from the financial institution to the farmer producer. In this process the two constraints that the small farmer may face --markets and inputs-- are simultaneously eased. On the one hand the farmer has a guaranteed market for his production. On the other hand he has an important input, credit, that can be used to acquire productive resources. In other words, the firm enters into a contract with the farmer to provide him with a two-component package--market and credit--in exchange for the acquisitions of the product. The credit may be provided in cash so that it can be used by the farmer to obtain production inputs or to meet family living expenses. It may also be made available in the form of in-kind inputs, such as fertilizer, machinery services, etc. The firm may elect to provide technical assistance to the farmer. To the extent these components are added, the package takes on additional dimensions.

It should be noted that it is not necessary for there to be a bridge loan in order for the two constraints to be eased. For this to occur, it is sufficient to have the above-described contractual arrangement between the firm and the producer; or, for the firm to contract with a middleman to provide the firm with raw material, who will often get this product through marketing-credit arrangements with farmers. The financial institution gets into the act only when the firm needs to obtain outside financing to extend credit under these contractual arrangements.

For the bridge loan there are three necessary actors: the marketing or processing firm, the farmers who enter into contract with the firm to supply the agricultural products and the financial institution. It is possible that there is fourth actor, some type of refinancing facility, such as the central bank, to refinance the bridge loan credits made by the financial institutions to the firms.

The Firm

The firm is the central decision maker among the actors. It must initiate the process, establish contracts with farmers and seek the financing. There is a sequence of three interrelated elements.

The first element is the market. The firm will only enter into this arrangement if it believes that it can profitably place its raw or processed products in domestic and/or foreign markets.

The second element is the firm's decision about how it will acquire the agricultural product. There are basically four alternatives: produce the product itself on owned or rented land, purchase the product in the open market or from contracted middlemen, undertake production contracts with growers, or a combination of the three.

It is quite probable that the processing or marketing firm would prefer a vertical integration structure wherein it would use its own land and undertake production directly. However, it is unlikely that it would have sufficient land to produce the volume of product that the firm needs to operate on a profitable scale. In this case, it might decide to enter into contracts to obtain the additional product and/or purchase it in the market.

Contracts offer the firm several advantages compared to purchases in the market. First, under this arrangement the firm can plan on an expected supply of product. This may be very important to the firm and protect it against shortages. Second, if quality of product is important, as it is in many markets, the firm can exert quality control. To do this it might provide the grower with technical assistance and in-kind credit in the form of inputs to try to ensure that the delivered products meets the standards. Third, if timing of product delivery is important, as it might be with perishable products or for markets that are very season specific, the contract mechanism provides a means to control delivery dates by carefully planning the production cycle.

The firm also must incur costs under the contract mechanism. There are transactions costs in establishing the contract and in visiting the farms during the production cycle, particularly at harvest. The bridge loan incurs financial costs, although it is possible to recover these through charges to the farmer borrowers. Finally, there are the risk costs associated with loans to farmers that are not repaid.

In making its decision as to whether or not use farmer contacts and whether or not to use bridge loans, the firm will need to take account of all of the above factors and compare the contracting arrangement, with or without the bridge loan, with other alternatives.

The Farmer

The farmer's decision as to whether or not to accept a contract will depend on how he views the contractual arrangement vis-a-vis the alternatives. From his perspective the contract links the credit market and the product market. Although entering the contract may reduce his flexibility in either market he may decide it is in his favor to accept the contract because his combined net benefits exceed those that could gain by operating independently in the credit and product markets.¹

The Financial Institution

The financial institution will decide whether or not to make the bridge loan on the basis of usual lending criteria. The overriding factor will be the firm's collateral for the loan. This may be a problem. Many firms, especially those that are marketers and not processors, have a small amount of investment in plant and equipment. This limits the amount of collateral that the firm can offer directly. The firm could use guarantees of the borrower farmers. These possibilities usually are limited, however, because the participating farmers have little mortgageable property. The net effect is that some firms may encounter relatively low upper limits to the size of their bridge loan, a factor that limits the extent of their operations.

THE EXPERIENCE IN THE DOMINICAN REPUBLIC

This paper examines the use of bridge loans, in 1985, by agribusiness firms for three important agricultural products in the Dominican Republic: rice, coffee, and melon (cantaloupe). Bridge loans are important in the Dominican Republic. Land reform divided up the large estates, and has eliminated most of the possibilities for vertical integration. Therefore, most production is in the hands of relatively small farmers and bridge loans are one means to provide these producers with credit.

Data

The data utilized in this study come from a 1986 census of those agribusiness firms that, in total, accounted for at least 75 percent

¹Indeed, there is evidence in the literature that this is the case. See: Avishay Braverman and T.N., Srinivasan, "Credit and Sharecropping in Agrarian Societies," Journal of Development Economics, Vol. 9 (December 1981), pp. 289-312; Avishay Braverman and Joseph E. Stiglitz, "Sharecropping and the Interlinking of Agrarian Markets," The American Economic Review, Vol. 72, No. 4 (September 1982), pp. 695-715; and Pradiep K. Mitra, "A Theory of Interlinked Rural Transactions," Journal of Public Economics, Vol. 20 (1983), pp. 167-91.

of the domestic or export sales of each of the nine important Dominican agricultural products. The reported data are for the calendar year 1985. Because of space limitations, this paper is confined to presenting abbreviated results of the analysis for firms involved in three representative products: rice, a traditional product produced for the domestic market; coffee, a traditional product produced for export; and melon, a new product produced for export sale in the U.S. winter market.² In the census, there were 8 rice mills, 9 coffee exporters and a single exporter melon.

Sources of Primary Material for Agribusiness Firms

As shown in Table 1, agribusiness financing of farmer production was the most important means for the firms to obtain their primary material for the three products. In the case of the melon exporter, it was the only means. Purchases from intermediaries were also important for half of the rice millers and one-third of the coffee exporters. Only one-fourth of the rice firms ranked their own production as an important source, but two-thirds of the coffee firms considered it important.

Agribusiness Financing of Farmers

All firms provided financing to farmers. Their sources of funding are shown in Table 2. Most rice mills and coffee exporters used both their own funds and bridge loans. For the melon exporter, the only source was bridge loans. Bridge loan credits were obtained from private-sector commercial banks. Bridge loans are not a new phenomenon. Some 86 percent of the rice mills have used them for more than 10 years; for coffee exporters the figure was 57 percent; and the melon firm used them since it was established in 1981.

The data of Table 3 more clearly show the importance of the firms financing farmers. There were 1,000, 3,994 and 3,797 farmers with credit supplied by the melon, rice and coffee enterprises, respectively. For melon exporters, rice mills and coffee exporters, 100, 92, and 82 percent of the firms' purchases came from farmers who were financed.

The size of the firms within each product varied considerably. Four of the eight rice mills financed 100 or less farmers, but one mill financed 3,000 farmers. Likewise, four of the nine coffee firms financed 100 or fewer farmers, but one exporter lent to 835 farmers. The melon firm extended credit to 1,000 farmers.

Firms rated the importance of factors that encouraged them to finance farmers. All firms, save one rice mill, ranked financing as

²The other products are cocoa, milk, peanuts, sugar cane, tobacco and tomatoes. Data and analyses for all nine products will be presented in a forthcoming report.

very important or important to ensure a supply of primary materials. A large majority considered it a very important or important means of quality control. The melon exporter ranked financing as an important means to gain access to land and labor. These two factors were much less important for the coffee exporters and rice mills.

Most firms also financed some farmers indirectly through intermediaries. As shown in Table 4, the melon exporter did not purchase from intermediaries. However, some 62.5 and 33.7 percent of the rice mills and coffee exporters purchase primary materials from a number of intermediaries. Some of these firms, particularly the rice mills, have followed this practice for many years.

All of the firms that purchased primary materials from intermediaries extended financing to them. Both bank loans and the firms' own resources were important sources of funds for this credit. Typically, the firms gave intermediaries bulk cash advances against expected sales of the product. All coffee firms opined that the intermediaries used these funds to provide farmers with cash advances against the harvest. Two-thirds thought that they also provided in-kind food and household goods, and one-third said they provided farm inputs. In contrast, the rice mills reported that their intermediaries used the borrowed funds to provide farmers with not only cash advances and in-kind food and household products, but also three-fourths of them provided in-kind farm inputs.

Description of Financed Farmers

Farmers directly financed by firms mostly had relatively small-sized farms. This was particularly true for melons. As shown in Table 5, melon growers had average-sized farms of 25 tareas or less (there are 6 tareas per acre). They were exclusively land reform beneficiaries in Azua province. Except for one firm, rice growers were mostly small or medium-sized farmers located in the rich flatlands of the Cibao Valley. The several rice mills reported a wide range of average size farms. Coffee exporters dealt mostly with small and medium-sized growers that were located in the mountainous areas of the provinces of Azua, Barahora, Bani, La Vega, Mocha and Santiago. Relatively few rice or coffee growers were land reform beneficiaries, only 19.2 and 12.8 percent respectively; most were landowners, only a handful were renters.

Conditions and Terms of Credit

The firms provided operations credit, the term of which was pegged to the length of the crop cycle; 3-6 months for rice and melons and 7-12 months for coffee. The firms intended the credit to be used mostly for production purposes, but all firms included funds for family living expenses and/or family labor. Most firms made multiple loan disbursements that coincided with different stages of the production cycle. The several rice mills reported from 3 to 20 disbursements, coffee firms 1 to 20 and the melon exporter 15.

Disbursements were mostly made by check or cash. Only a few rice and coffee firms and the melon enterprise also disbursed in kind.

The firms reported that loan size was determined by number of tareas cultivated, production costs and previous credit experience. The average amount lent by the firms per tarea were \$RD350, \$RD124 and \$RD52, for melon, rice and coffee, respectively. The different amounts reflect both capital intensity of production and percent of production costs financed. The melon firm financed 100 percent of production costs, whereas the different rice and coffee enterprises financed from 25-100 percent and 10-100 percent of these costs, respectively. Rice mills and especially coffee firms were disposed to provide borrowers credit for special needs such as health emergencies, weddings and funerals.

There was considerable variation among firms with respect to their average interest rates. The melon exporter did not charge interest, annual rates for rice mills ranged from 12 to 30 percent, and coffee firms were either 12 or 24 percent.

All firms except the melon enterprise and four coffee exporters required one or more forms of collateral. Most common was the pledge of the harvest although about half of the rice and coffee firms used land titles. Three-fourths of the rice firms required cosigners.

Extensive technical assistance was always provided by the melon firm. In contrast, only 44 percent and 11 percent of the coffee and rice enterprises provided it along with credit.

Most firms expected the borrowers to sell them all of their production of the financed crop. The percentages were 100, 87.5 and 55.6 for melon, rice and coffee firms, respectively.

Credit Delivery Procedures

The procedures for credit delivery to borrowers from all of the firms appeared to be straight forward and simple. Loan applications were approved rapidly, in one week or less, except for two coffee and one rice firms. All enterprises required borrowers to sign a written loan contract, which was done in the office. The first disbursement was usually made at this time. Successive disbursements were also made at the office. An exception was the melon firm, which made all disbursements, often in-kind, at the farm site. With each disbursement, most firms asked borrowers to sign an IOU.

At harvest, the rice mills picked up the product at the farm site but all melon growers and most coffee growers were expected to deliver the product at the office. All rice and melon firms and two-thirds of the coffee firms furnish the transportation. Except for rice, the farmer usually is charged for this service.

All firms, except 3 coffee enterprises, canceled the farmers' credit when they delivered the harvested product to the firm; the amount owed was discounted from the value of the product. The difference typically was paid to the farmer by check or in cash, usually within a period of a week.

Marketing Aspects

Agribusiness credits to farmers are often criticized because the monopsonistic position of the enterprises could permit them to pay the farmer lower prices directly or, indirectly, by underweighing the product when it is sold. None of the firms reported, however, that they paid lower than market-level prices. Three-fourths of the rice mills and two-thirds of the coffee exporters indicated that they paid the farmers current market prices. The other one-third of the coffee firms said they paid higher prices. The melon firm and two rice mills reported that they paid the farmers a previously contracted price.

One-half of the rice mills and two-thirds of the coffee firms indicated that they would discount product prices. Impurities and excessive humidity were the most important reasons. The melon firm did not discount prices because it paid the contracted price. The incidence and magnitudes of the discounts appeared to be relatively low. In a normal crop year, the rice mills and coffee firms reported that the average percentage of farmers subjected to discounts was 18.7 and 33.3 percent, respectively. The average size of the discounts ranged from 2.7 to 11.3 percent and 5.3 to 17.5 percent for the two products, respectively.

The firms unanimously reported that the farmer was present at the time his product was weighed by the enterprise. This does not eliminate the possibilities of underweighing, but it does impose limits to the use of this practice by the firms.

CONCLUSIONS

Bridge loans from commercial banks, channeled to farmers through agribusiness firms were the most important means that Dominican rice millers, coffee exporters and a melon exporter employed to procure the primary materials for their firms. Under this system, farmers who received credit were expected to reciprocate by selling their harvest to the agribusiness enterprises. This arrangement was not new, most firms had practiced it for many years.

On a much smaller scale, the agribusinesses indirectly financed farm production by means of loans to marketing intermediaries. These middlemen would onlend the funds they received from the firms to farmers who agreed to sell them their harvest. Then the intermediaries would resell the product to the firm. In addition, some firms produced limited amounts of primary material on their own farms.

The long-established practice of bridge-loan credit, as well as its overwhelmingly relative importance to the firms as a supply of primary materials, attest to the viability of the system for the firms. Additional testimony is that the firms unanimously stated that they wanted to continue with bridge loans. Furthermore, most agribusiness enterprises considered the reciprocal linkages between farms and firms, that were forged by credit, were very important means to ensure reliable supplies of quality products.

The linkages made possible by credit provided the firms with a structure of quasi vertical integration, because, under the credit arrangement, the agribusinesses could obtain some degree of control over farm production. Moreover, the intermediary marketing function was absorbed by the firm. The degree of vertical integration was most pronounced in the melon enterprise. This firm tightly controlled farm production and marketing. Little was left to chance. Technicians gave directions to farmers as to when and how each stage of the production process was to be undertaken. In-kind agricultural chemicals and machinery services were delivered to the farm site. Product prices were predetermined by contractual agreement. In effect, the farmer was providing his land and family labor to the firm but the enterprise managed the production. The nature of the melon export market explains why this firm chose to exercise so much control, compared to enterprises involved with coffee and rice. Melons are very perishable and the time window for their sale in the U.S. winter market is narrow. Moreover, the product exported must be of a uniformly high quality. In contrast, rice and coffee are considerably less perishable and market quality standards are not so rigid. Thus, the firms involved in these products do not need to practice such extensive control. Consequently, for these two products, there was less technical assistance and fewer in-kind inputs. Because close control was not necessary, some of the rice and coffee firms extended credit to widely-dispersed clients whose farms were up to 100 kilometers from the firms' offices, whereas all of the 1,000 melon growers were concentrated within a 2 kilometer radius of the firm's facilities.

The firms reported that they believed the farmers were satisfied with the system.³ They indicated that with the bridge-loan credit, farmers should have had better access to credit, been able to use better technology, and raise family incomes. It would also appear that seasonal cash flow problems were alleviated. The simple credit delivery system suggests that the farmers obtained credit opportunely and borrower transactions costs were low. Loan interest rates were

³In a second stage of the research project, in May and June 1987 a stratified sample survey of 525 farmers who received bridge-loan credit from the census used agribusiness firms were interviewed. When the data from this survey are available there will be additional and more concrete information on farmer experiences with and attitudes about bridge loan credit.

not found to be high relative to bank rates. Of course, the monopsonistic relationship opened the door to the possibilities of the firm gaining advantage by offering lower prices, discounting prices on the basis of below-standard quality, or underweighing the product. The firms, however, did not appear to take excessive advantage of farmers in these ways. One reason may be that the firms are looking to a long-term relationship with their farmer clients.

By the same token, the farmers may have been willing to tolerate a few irregularities with the prices in order to maintain the collective benefits of the "production-marketing package" that the firm offers. The package includes a predictable line of production and/or family consumption credit with low transactions costs (including good prospects for loans for emergency needs such as sickness, funerals, etc.), a sure market outlet, and, perhaps, some technical assistance. In other words, the credit, product and technical services were interlinked and the rational farmer made his decision on credit use based on the total expected net benefits obtained from the package. He probably calculated that the sum of these benefits were higher than he could expect to gain by operating independently in the separate markets. An indicator of the success of the system is that 69.7 percent of the total firms reported an annual turnover of clients of less than 4 percent and another 18.2 percent showed a turnover of 5 to 10 percent.

Bridge loans appear to provide a structure for efficient and effective credit delivery. Commercial banks, and even the state Agricultural Bank, would not be willing to extend individual credits credit to many of the farmers served by bridge loans. Small bank loans are costly to make and administer, and risk is high because farmers often do not have adequate collateral. In contrast, with bridge loans, the bank makes one large loan and has the collateral pledged by the agribusiness enterprise to guard against risk. Moreover, because the firm protects its interests, it will try to ensure that the credit arrives to the farmer opportunely.

With these advantages, what have we learned through the study of the three products that sheds light on perspectives for expanding bridge loans in the Dominican Republic? Bridge-loans offer advantages for financing many more farmers than would be reached by a system of individual loans. The fact that these loans have been prevalent for many years, suggests that the current markets for credit to finance these products are in equilibrium. Therefore, future growth of bridge loans will be determined by domestic and foreign factors that shape the size of market for Dominican rice, coffee and melon products. There is room for optimism because the demand for rice will increase with domestic economic growth and there are favorable perspectives for diversifying and expanding agricultural exports, especially tropical fruits and vegetables. The firm's own projections are good indicators of the future; most expected their bridge loan credit operations to expand.

Table 1 - Importance of Sources of Firms' Primary Materials

	<u>Rice Mills</u>		<u>Coffee Exporters</u>		<u>Melon Exporters</u>	
	<u>Number</u>	<u>%</u>	<u>Number</u>	<u>%</u>	<u>Number</u>	<u>%</u>
Farmers with						
financing from firm						
Very important	5	62.5	8	88.9	1	100.0
Important	1	12.5	0	0.0	0	0.0
Not important	<u>2</u>	<u>25.0</u>	<u>1</u>	<u>11.1</u>	<u>0</u>	<u>0.0</u>
	8	100.0	9	100.0	1	100.0
Purchases from						
intermediaries						
Very important	2	25.0	3	33.3	0	0.0
Important	2	25.0	0	0.0	0	0.0
Not important	<u>4</u>	<u>50.0</u>	<u>6</u>	<u>66.7</u>	<u>1</u>	<u>100.0</u>
	8	100.0	9	100.0	1	100.0
Firm's own production						
Very important	0	0.0	5	55.6	0	0.0
Important	2	25.0	1	11.1	0	0.0
Not important	<u>6</u>	<u>75.0</u>	<u>3</u>	<u>33.3</u>	<u>1</u>	<u>100.0</u>
	8	100.0	9	100.0	1	100.0

Table 2 - Incidence of Firms Financing Farmers and Use of Bridge Loans, 1985

	<u>Rice Mills</u>		<u>Coffee Exporters</u>		<u>Melon Exporters</u>	
	<u>Number</u>	<u>%</u>	<u>Number</u>	<u>%</u>	<u>Number</u>	<u>%</u>
Number of firms	8	100.0	9	100.0	1	100.0
Number of firms extending financing to farmers	8	100.0	9	100.0	1	100.0
Sources of funds						
Firm's own funds	6	75.0	7	77.8	0	0.0
Bridge loans	7	87.5	7	77.8	1	100.0
Years firms have been using bridge loans	<u>Number</u>	<u>%</u>	<u>Number</u>	<u>%</u>	<u>Number</u>	<u>%</u>
1-2	0	0.0	1	14.3	0	0.0
3-5	0	0.0	0	0.0	1	100.0
6-10	1	14.3	2	28.6	0	0.0
11-20	3	42.9	3	42.9	0	0.0
More than 20	<u>3</u>	<u>42.9</u>	<u>1</u>	<u>14.3</u>	<u>0</u>	<u>0.0</u>
Total	7	100.0	7	100.0	1	100.0
Range age of firms						
Youngest	12		2		4	
Oldest	76		38		4	

Table 3 - Importance of Firm Financing of Farmers as Source of Primary Materials to Firms

	<u>Rice Mills</u>		<u>Coffee Exporters</u>		<u>Melon Exporters</u>	
Number of firms	8		9		1	
Total number of financed farmers	3,994		3,797		1,000	
Percent financed farmers of total farmers selling to firms	92.0		82.0		100.0	
Importance of reasons why firm offers financing	<u>Number</u>	<u>%</u>	<u>Number</u>	<u>%</u>	<u>Number</u>	<u>%</u>
Ensure supply of primary materials						
Very important	6	75.0	5	55.6	1	100.0
Important	1	12.5	4	44.4	0	0.0
Not important	<u>1</u>	<u>12.5</u>	<u>0</u>	<u>0.0</u>	<u>0</u>	<u>0.0</u>
	8	100.0	9	100.0	1	100.0
Access to land for production						
Very important	2	25.0	2	22.2	1	100.0
Important	1	12.5	3	33.3	0	0.0
Not important	<u>5</u>	<u>62.5</u>	<u>4</u>	<u>44.4</u>	<u>0</u>	<u>0.0</u>
	8	100.0	9	100.0	1	100.0
Access to labor						
Very important	1	12.5	3	33.3	0	0.0
Important	3	37.5	2	22.2	1	100.0
Not important	<u>4</u>	<u>50.0</u>	<u>4</u>	<u>44.4</u>	<u>0</u>	<u>0.0</u>
	8	100.0	9	100.0	1	100.0
Product quality control						
Very important	4	50.0	6	67.7	1	100.0
Important	0	0.0	2	22.2	0	0.0
Not important	<u>4</u>	<u>50.0</u>	<u>1</u>	<u>11.1</u>	<u>0</u>	<u>0.0</u>
	8	100.0	9	100.0	1	100.0

Table 4 - Importance of Intermediaries to Firms
as Source of Raw Materials

	<u>Rice Mills</u>		<u>Coffee Exporters</u>		<u>Melon Exporters</u>	
	<u>Number</u>	<u>%</u>	<u>Number</u>	<u>%</u>	<u>Number</u>	<u>%</u>
Number of firms that buy from intermediaries	5	62.5	3	33.3	0	0.0
Number of firms that extend financing to intermediaries	5	100.0	3	100.0	0	0.0
Average number of intermediaries per firm	8.7		20.3		0	0.0
Years firms have been buying from intermediaries	<u>Number</u>	<u>%</u>	<u>Number</u>	<u>%</u>	<u>Number</u>	<u>%</u>
1-2	0	0.0	1	33.3	0	0.0
3-5	0	0.0	1	33.3	0	0.0
6-10	0	0.0	0	0.0	0	0.0
11-20	2	40.0	0	0.0	0	0.0
More than 20	<u>3</u>	<u>60.0</u>	<u>1</u>	<u>33.3</u>	<u>0</u>	<u>0.0</u>
	5	100.0	3	100.0	0	0.0
Firm's sources of financing to extend credit to intermediaries	<u>Number</u>	<u>%</u>	<u>Number</u>	<u>%</u>	<u>Number</u>	<u>%</u>
Firm's own funds	5	100.0	2	67.7	0	0.0
Bank loans	4	80.0	3	100.0	0	0.0

**Table 5 - Characteristics of Farmers Receiving
Financing From Firms**

	<u>Rice Mills</u>		<u>Coffee Exporters</u>		<u>Melon Exporters</u>	
Total Tareas financed	256,500		56,515		17,000	
Distribution of average farm size (Tareas)						
	<u>Number</u>	<u>%</u>	<u>Number</u>	<u>%</u>	<u>Number</u>	<u>%</u>
0-25	1	14.3	0	0.0	1	100.0
26-100	3	42.9	7	87.8	0	0.0
101-200	2	28.6	1	11.1	0	0.0
201-500	0	0.0	1	11.1	0	0.0
More than 500	<u>1</u>	<u>14.3</u>	<u>0</u>	<u>0.0</u>	<u>0</u>	<u>0.0</u>
	7	100.0	9	100.0	1	100.0
Percent of financed farmers in reform sector (unweighted)						
	19.2		12.8		100.0	