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**Impact on Employment  
and Income of  
Investments  
In Export-Oriented,  
Non-Traditional  
Agribusinesses**

**An Examination of Six Investments  
Financed by the Latin American  
Agribusiness Development  
Corporation de Centroamerica  
(LAAD-CA)**

**Prepared for the Regional Office for Central American Programs, U.S.  
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## PREFACE

During the past 18 years, the Regional Office for Central American Programs (ROCAP) of the U.S. Agency for International Development has provided concessionary financing to the Latin American Agribusiness Development Corporation de Centroamerica (LAAD-CA) to stimulate the growth of private-sector agribusinesses. Although the primary rationale for such support has been the need of the Central American countries to diversify exports and increase foreign exchange earnings, it has generally been assumed that successful business ventures financed by LAAD-CA would generate significant levels of employment:<sup>1</sup>

. . . It is known that exports of non-traditional products, primarily fruits, vegetables, flowers, and ornamental plants, are generally labor intensive and often require decentralized production sources from smaller producers. Secondary benefits from these activities are expected to include higher levels of employment generated through production and processing and significant income increases for producers and laborers.

Numerous evaluations and studies of LAAD-CA and its program have been carried out during the past 15 years. None, however, has examined the effects on employment and income of investments financed by LAAD-CA. In early 1989, ROCAP/Guatemala contracted with Development Alternatives, Inc. (DAI) to conduct a study that would "gauge the impact on secondary income and employment generation of investments in non-traditional exports from Central America." Under the terms of reference for the study, DAI was to examine a selection of four to six case studies to provide information on (a) the impact on employment and income generation of new and expanded non-traditional export activities, and (b) linkages between exports and industries that service exports. In addition, DAI was asked to demonstrate a low-cost methodology for measuring impact on employment and income generation that could be replicated on a larger scale.

Field research for the study was carried out during a six-week period during February and March, 1989. The DAI team comprised John H. Magill, team leader; William E. Bolton, agricultural marketing specialist; Paul H. Dillon, anthropologist; and Amalia M. Alberti, research assistant. Six principal case studies were carried out during this period -- three in Guatemala and three in Costa Rica. In addition, information was gathered on three additional companies to illustrate unique or special relationships and impacts.

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<sup>1</sup> Statement of "Purpose and Background" from the Scope of Work.

The DAI team wishes to express its appreciation to the owners, directors, and staffs of the companies studied; without their generous cooperation this study would not have been possible. We would also like to thank the employees and temporary workers who were interviewed during the course of the study; their frank and helpful responses provided much useful information on the effect of the development activities financed by LAAD-CA. The conclusions and recommendations of the study are those of the authors and do not necessarily reflect the views of AID, ROCAP/Guatemala, LAAD-CA, or DAI.

**John H. Magill**  
**Team Leader**

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## **EXECUTIVE SUMMARY**

### **Background**

The Latin American Agribusiness Development Corporation de Centroamerica (LAAD-CA) is a subsidiary of the Latin American Agribusiness Development Corporation, S.A., a Panamanian company with headquarters in Coral Gables, Florida. LAAD-CA was established in 1971 to provide loan and investment capital to Central American businesses engaged in producing, processing, and exporting non-traditional agricultural and aquacultural products. It is responsible for lending activities in Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and Panama.

During the past 17 years, LAAD-CA has received four loans, totaling \$32 million from the U.S. Agency for International Development. With those funds, and with funds generated by capitalization provided by LAAD's corporate sponsors, LAAD-CA has made 219 loans, totaling \$72.2 million, to 185 firms. The most recent AID loan (596-T-024, for \$15 million) was authorized in 1986 to fund a projected \$18 million loan program.<sup>1</sup>

The emphasis on stimulating non-traditional, export-oriented agribusinesses in Central America has been traditionally justified on macroeconomic grounds: increased foreign exchange earnings, higher valued exports, and diversification and stability of national income. At the same time, it has generally been assumed that these investments create direct employment opportunities for low-paid agricultural and industrial workers, and significant backward and forward linkages between the assisted firm and providers of goods and services and between the assisted firms and downstream reprocessors, shippers, and marketers.

The purpose of this study has been to generate information that illustrates the impact on employment and income of a selected sample of agribusiness investments financed by LAAD-CA. The study examines (a) the creation of direct employment opportunities in the companies that have received LAAD-CA financing, and (b) the creation of secondary employment and income opportunities through linkages between these companies and providers of raw materials, goods, and services.

### **Major Hypotheses**

The study design focused on five specific employment and economic benefits that could be expected to result from the activities of firms that have benefitted from LAAD-CA financing: (a) temporary employment hired to carry out pre-production activities; (b) direct, long-term employment (both full-time and seasonal) within the firm itself; (c) secondary employment and income generated by the firms'

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<sup>1</sup> The remaining \$3 million was to be provided from LAAD-CA's internal resources.

purchases of agricultural raw materials from independent producers; (d) secondary employment and income generated by the firms' local purchases of goods and services; and (e) tertiary employment and income generated by the increased spending of employees and other beneficiaries.

## **Major Findings and Conclusions**

### **Impacts of Initial Investments**

Initial investment activities played an important role in four of the six principal case studies. In the other two, there were either no initial investments funded by the LAAD-CA loan or it was not possible to distinguish between pre-production and ongoing activities with the data available. The employment and income effects of initial investments were often difficult to separate from the effects of ongoing production activities, especially when the activities were similar. Initial investments involving infrastructure development were easier to identify.

Initial, pre-production activities financed by total investments of \$3.1 million in these four companies created between 371 and 425 person-years of short-term employment for 245 individuals. An average of one person-year of short-term employment was created for each \$7,300 to \$8,400 of investment in the company, ranging from a low of \$3,100 to a high of \$25,000 per person-year of work created.

The major factors that influenced the employment and income effects of initial investments were (a) the type of infrastructure development financed by the initial investments, (b) whether the initial investments finance land preparation, (c) the level of imported goods financed by the initial investments, and (d) the proportion of funds that is invested in working capital:

- The addition of infrastructure to land -- such as installation of irrigation systems and construction of trellises, live posts, and growing flats-- creates initial employment at a higher rate than constructing processing facilities.
- Initial investments that involve land clearing and preparation tend to be labor intensive and generate substantial short-term employment. While heavy land preparation activities -- such as leveling, plowing, tree removal, and road construction -- are undertaken with tractors and bulldozers and generate relatively little employment or income, other land preparation activities -- such as weeding, land clearing, and planting -- involve the employment of substantial short-term labor.
- Initial investments in infrastructure for crop production -- land clearing and planting -- tend to require few or no imports and, therefore, have a relatively large impact on the local, regional or national economies. In contrast, initial investments that require the installation of sophisticated equipment tend to involve a high level of expenditures on imported goods, and hire proportionately less labor.

- \* Investments involving working capital -- such as loans to an existing firm for purchases of agricultural raw materials -- generated little or no short-term initial employment.

Laborers involved in pre-production activities are often absorbed into the ongoing production activities of the company when the initial work involves activities directly related to the functions of the firm -- such as land clearing, planting, and caring for crops. When the initial work is substantially different from the activities of the firm -- such as construction of a fruit juice plant versus processing juice or installing boilers versus distilling essential oils -- initial labor does not get absorbed into the firm.

### **Long-term Direct Employment Benefits of Investments**

With only one exception, the LAAD-CA investments resulted in an increase in direct employment. In that one case, LAAD-CA's loan provided working capital for purchases of agricultural raw materials but did not support any increase in production or processing capacity.

Of the 3,600 direct jobs that were to be generated by the investments funded by the most recent LAAD-CA loan, the six firms studied had created 457 permanent jobs and more than 230 full-time job equivalents for regularly employed seasonal workers. Firms that had received 14.6 percent of the loan funds, or approximately 12.2 percent of the total \$18 million loan program therefore had generated 19 percent of the projected total number of new jobs. By the time the companies reach full production, more than 604 permanent jobs and 374 full-time job equivalents for regular seasonal workers will have been added.

The principal impact on employment generation of projects that cultivate non-traditional export-oriented crops is that they intensify rates of labor utilization. Two factors contribute to this increase in labor utilization. First, without exception, these projects involved a shift in land use from activities of low labor-intensity (such as cattle, sugar cane, or coffee) to those of high labor activities of intensity (such as ornamental flowers and vegetables). Thus, within a given area, these activities absorb greater amounts of labor and increase the overall wage bill. Second, only products of a high-quality can be successfully exported, and producing high quality products requires relatively large labor resources at all stages of the product cycle -- land preparation, planting, cultivation, harvesting, cleaning, sorting, packing, and processing.

Employment creation occurs primarily with the establishment of a new enterprise or significant expansion or diversification of an existing one. Once established, additional investments in an ongoing activity may increase labor utilization and efficiency, but seldom result in significant additional employment creation.

The number of jobs created was not directly related to the size of the investments, as large investments tended to involve capital-intensive construction or

sophisticated equipment. Although the total amount of the investment is not directly related to the amount of employment generated, several other factors appear to be related to increasing employment opportunities:

- Investments in projects that convert land from traditional agriculture to export-oriented production tend to generate substantial new direct employment; the need of export-oriented producers to have a constant supply of produce for the market tends to stimulate more continuous employment.
- Investments in projects that grow a product tend to create more direct employment per dollar of investment than those involved solely in processing or marketing products.
- Investments in projects that only market products tend to have a negligible impact on direct employment.
- Loans for working capital -- especially for the purchase of agricultural raw materials from small producers -- generate relatively little direct employment.

Producing for the export market tends to upgrade the labor pool. Since the companies require a relatively high-skilled worker, they pay attention to training, promoting, and retaining workers.

Workers employed in these companies tended to receive higher wages than those prevailing in firms involved in producing and marketing traditional products. Also, the companies studied tend to comply with labor laws, and pay wages and salaries on time.

#### **Secondary Employment Impacts of Investments: Purchases of Raw Materials**

Companies that purchase agricultural raw materials from independent suppliers or that provide access to export markets for small producers also play an important role both in stimulating and in sustaining employment opportunities.

Only three companies considered in the study (Frutas y Sabores, Comercial Tropical, and Agropecuario Balmoral) purchased raw materials from independent producers. The other six (La Melisa, Nispero Chiquito, La Meseta, American Flowers, Monte Norte, and Clemente Ros) did not. Three factors appeared to influence whether, and to what extent, a firm will purchase raw materials from independent producers:

- Orientation of the firm: companies engaged primarily in growing a crop will not purchase raw materials from others; companies engaged primarily in processing or marketing will.

- **Adequacy of supply:** when a firm is engaged in marketing a product but cannot produce sufficient product internally to achieve economic shipping quantities, it will tend to purchase raw materials from independent producers.
- **Ability to control quality:** to compete successfully in export markets, products must meet high quality standards. When quality control must be maintained in the field production stages, companies tend to produce their own raw materials. When quality can be maintained in the processing or selection stage, companies tend to purchase raw materials from independent suppliers.

The purchase of agricultural raw materials from independent producers did not appear to generate significant levels of new employment. These purchases did, however, appear to (a) decrease underemployment of existing labor on the farms of independent producers, (b) increase the rate of return to on-farm labor, (c) encourage agricultural diversification, and (d) increase income stability for independent producers.

There is often a temptation to view marketing intermediaries as exploiters of primary producers, but the existence of these intermediaries is essential for smaller producers to have an access to export markets. The importance of LAAD-CA loans for the purchase of raw materials is that these loans create or enhance market opportunities for both large and small producers. As a result, they play an important role in the reorientation of local farm practices toward exports and the intensification of labor utilization on local farms.

#### **Secondary Effects and Benefits: Purchases of Supplies and Services**

Expenditures for goods and services tended to fall into four categories: materials and supplies, maintenance services, transportation services, and utilities and taxes. Expenditures on utilities and taxes were small.

Local expenditures of the companies studied averaged between 10 and 66 percent of total investments in the company each year, and between 27 and 50 percent of annual sales. The investments, therefore, stimulate local economic development by generating a continuous demand for local goods and services.

Most purchases of materials and supplies were from companies that were located in urban areas and that serviced a broad client base. As a result, the effect of these purchases on specific businesses tended to be marginal, as volumes of purchases from LAAD-CA clients were low relative to the total sales volumes of the vendors. Purchases of goods and services from small, local vendors, especially in remote areas, had a more noticeable impact on their businesses.

When purchases of materials and supplies involved a large component of imported goods -- particularly agricultural chemicals and hardware -- the local impact of expenditures was reduced.

Perhaps the most visible effect of local expenditures was the stimulation of local transportation services. The need for timely, reliable transportation for several of the projects (notably La Meseta, Frutas y Sabores, and Comercial Tropical) has created a large demand for local transportation services and provided an entry for small, independent truckers and other transporters.

Although the direct impact of local purchases may appear small and difficult to measure when considered from the perspective of individual suppliers, LAAD-CA's clients do represent a growing demand for locally produced goods and services, and contribute to expanding the breadth of local economic activity. The effect of this demand should become even more apparent as the investments mature.

### **Secondary Impacts and Benefits: Impact on the Local Community**

It was often difficult to identify specific impacts of the individual companies on the communities in which they were located. In the case of enterprises located in urban areas, the effects of the plant itself cannot be distinguished in most cases from the general effects of urbanization. Even in many rural areas, such rapid transformation is taking place that it is difficult to attribute specific changes to activities in a particular firm.

There were, however, several instances in which substantial changes in local activities could be directly attributed to the projects. In Costa Rica, for example, the establishment of the tropical juice plant stimulated a large-scale change in cropping in the region as local farmers increased plantings of fruits that would be purchased by the company. In Guatemala, the development of an essential-oils farm and processing plant has stimulated an increase in agricultural wages in the area. The combined effects of two LAAD-CA-financed activities in east-central Guatemala have stimulated a rapid growth in small business, shops, and markets in a number of small remote towns.

Small food stands and vendors were among the first local businesses to emerge as a response to an increased concentration of workers. These were found in at least three of the cases studied. Another firm reported that itinerant vendors regularly appeared at the farm on paydays.

Most of the companies studied were relatively young. As the investments mature and the firms reach full employment and production levels, the concentrations of employees with wage income can be expected to generate more visible examples of local change.

### **Gender-related Issues**

The projects financed by LAAD-CA tended to generate substantial employment opportunities for women, with women occupying between 25 and 75 percent of the job positions in four of the six principal case studies. The two major factors contributing to the increase in employment opportunities for women appear to be the following:

- Growing acceptance of a role for women in the formal labor force in the two countries studied; and
- Producing for export requires considerable attention to quality and appearance, and female employees are preferred for many of the activities related to quality control -- picking, pruning, harvesting, sorting, and packaging -- because they tend to be more careful, accurate, and productive than men.

Most of the new positions created by the investments are low-level entry positions requiring little formal education or previous work experience.

Employment tends to fall into traditionally defined gender patterns. Men perform heavy-duty work, operate tractors and other equipment, fumigate, carry, and cultivate. Women are generally preferred for activities involving delicate tasks or tasks requiring careful handling -- such as handling seed beds, transplanting seedlings, picking and harvesting, grading and sorting, and packing. This situation does produce de-facto wage discrimination. Fumigators, equipment operators, and irrigation personnel earn premium pay, and these are occupations that are systematically closed to women. Even when men and women performed essentially similar tasks, women received a lower wage rate in some of the enterprises.

Most of the female agricultural field workers were young and single. According to both men and women interviewed in these enterprises, the custom in rural Costa Rica and Guatemala is for married women to take care of the home. As a result, married women quickly drop out of the labor market. The relatively short time women are in the labor force appears to limit their ability to rise to low- and mid-level supervisory positions; they do not accumulate the experience or seniority necessary to gain access to these positions. Urban-based processing and other semi-industrialized activities generate long-term employment opportunities for women, and married women are found more frequently among these groups.

#### **Recommendations**

Employment generation is not the sole objective of LAAD-CA investments. Since other studies and evaluations have considered issues of financial viability, impact on the financial viability of the local investments, and effectiveness in promoting export earnings, this study was limited to the employment and income benefits of the investments. All other factors being equal, to enhance the employment and income benefits of future investments, LAAD-CA and ROCAP should:

- Provide loans that support start-up or significant expansion of activities. These kinds of projects tended to create substantially more employment, both in short-term pre-production activities and in permanent positions, than projects involving relatively marginal expansion.

- Finance projects that involve both agricultural and processing activities. The combination of these activities in a single firm tended to increase the level of employment and the sophistication of skills required. Because of the structural differentiation of the work force in these operations, the opportunities for advancement within the company were greater.
- Finance activities that bring land into production. The shift from low-intensity non-export agriculture to high-intensity agriculture that is oriented toward exports creates a significant increase in demand for labor.
- Refrain, to the extent possible, from making working capital loans, especially for the purchase of agricultural raw materials. The characteristics of LAAD-CA's loans -- fixed term with a declining balance -- are not particularly well suited to the needs of a firm engaged in this kind of activity. Loans for the purchase of agriculture products also tended to generate little additional direct or indirect employment, although they did help sustain employment among independent producers.

**PART ONE**  
**INTRODUCTION AND BACKGROUND**

## I. INTRODUCTION

### Background

The Latin American Agribusiness Development Corporation (LAAD) is a Panamanian corporation that was established in 1970 to provide loan and investment capital to businesses engaged in processing and exporting non-traditional agricultural and aquacultural products. It was established by 12 leading agribusiness and financial corporations with a paid-in capital of \$2.4 million. The number of shareholders subsequently rose to 16, and paid-in capital to \$5.4 million. LAAD is represented in Central America by a wholly owned subsidiary corporation, LAAD de Centroamerica, S.A., or LAAD-CA, with offices in Guatemala and Costa Rica.<sup>1</sup>

Since 1971, LAAD-CA has received four loans totaling \$32 million from AID. During that same period it has made 219 loans, totaling \$72.2 million, to 185 different firms.

### Conceptual Approach

The emphasis on stimulating export-oriented agribusinesses in Central America has been traditionally justified on macroeconomic grounds: increased foreign exchange earnings, higher valued exports, and diversification and stability of national income. At the same time, it has generally been assumed that these investments also create (a) direct employment opportunities for low-paid agricultural and industrial workers and (b) significant backward and forward linkages between the assisted firm and providers of goods and services and between the assisted firms and down-stream processors, shippers, and marketers. The \$15 million loan provided to LAAD-CA in 1986, for example, was expected to result in:

. . . the creation of approximately 3,600 direct jobs related to agribusiness export development, and . . . [increased] . . . disposable incomes of agribusiness subborrowers, employees of subborrowers, small and medium size agricultural producers, and of firms and individuals indirectly involved in food processing operations, including transport sectors, post-harvest handling and marketing.<sup>2</sup>

The purpose of this study is to generate information that illustrates the impact on employment and income of a selected sample of agribusiness investments financed by LAAD-CA. The study examines the creation of direct employment opportunities in the companies that have received LAAD-CA financing. The study also analyzes the creation of secondary employment and income opportunities through linkages between these companies and providers of raw materials, goods, and services.

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<sup>1</sup> Other LAAD offices are located in Chile and the Dominican Republic.

<sup>2</sup> ROCAP, *Project Paper: Export Agribusiness Development/Promotion*. Loan Number 596-T-024. Page 7.

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The concept of a multiplier effect of an investment is well understood and documented in macroeconomic theory. A single investment results in additional expenditures because providers of goods and services receive income that they, in turn, spend on other goods and services. Depending on the velocity at which monies are respent, the overall impact of a single investment may be multiplied many times.

LAAD-CA investments have generally been assumed to have a similar effect. The investments result in the creation of employment opportunities, not only within the firms that have received the loans, but also (as a result of backward and forward economic linkages) among suppliers and downstream processors or handlers. Among the major relationships that have been hypothesized and the anticipated benefits that should result from the assisted firms' activities are:

1. **Initial Pre-production Activities.** The establishment or expansion of a business normally requires the short-term construction and equipping of the buildings utilized by the firm, preparation of land, and other pre-production activities. The labor and materials employed in the initial establishment or expansion of the firm resulting from LAAD-CA financing is at least a short-term benefit of the investment.
2. **Direct Long-term Employment.** The firm itself employs staff, on a full-time or part-time basis. This employment -- in the agricultural activity of growing the raw materials, in the processing and handling of the product, and in the administration of the firm -- and the income resulting from that employment are direct benefits of the investment.
3. **Secondary Employment and Income Generation.** The firms typically purchase a wide variety of goods and services from individuals and other firms, creating (or expanding) a market for those goods and services and generating employment and income opportunities. This secondary benefit includes employment generated by the purchase of agricultural products from independent producers, by the purchase of materials and supplies used by the firm, by the employment of outside services, by the hiring of transportation, and by the additional demand for downstream services in marketing, post-harvest handling, storage, and indirect processing. In addition, utilities and taxes paid by the firm benefit the local economy.
4. **Tertiary Employment and Income Generation.** Increased income for the direct employees of the firm and for suppliers of goods and services to the firm results in increased demand for other goods and services, generating employment and income opportunities for other individuals and businesses that sell to those markets.
5. **Other.** The establishment or expansion of a business can be expected to stimulate other forms of economic activities in the environs of the plant. These include urbanization, expansion of utilities and services, and tertiary business activities.

### **Major Assumptions**

Because of the case-study approach and limited time available, several principal assumptions were required at the onset of the study:

1. In most cases, it will be neither possible nor necessary to segregate the discrete contribution of the LAAD-CA portion of project financing on observed changes in employment and income. The project itself creates employment and income opportunities, and LAAD-CA's funding must, in most cases, be considered an integral part of the total project.
2. Unless there is specific evidence to the contrary, the investments will be assumed to have had no displacement effects on other national producers. Since all firms included in the study are exporters, this is a reasonable assumption.
3. Unless there is specific evidence to the contrary, the investments will be assumed to represent additional capital. While there are some problems with this assumption (for example, the investors might have been able to locate alternative sources of capital, or might have deferred alternative spending to finance the project), determination of "additionality" is beyond the scope and resources of the present study.
4. Except for the transfer of workers from pre-investment agricultural activities on the land to the new employment represented by the firms, increases in labor will be assumed to represent additional job opportunities. The absorption of surplus labor (whether unemployed or underemployed) into the firm being studied is assumed to result in job opportunities for others (to fill the vacated positions), and is therefore additional. This assumption will be qualified during the course of the study to test for alternative employment opportunities, the marginal benefit of the new employment, and non-income benefits.

## II. OVERVIEW OF LAAD-CA INVESTMENTS IN CENTRAL AMERICA

Since its inception in 1971, LAAD-CA has made 219 loans, totaling \$72.2 million to approximately 185 different firms.<sup>3</sup> According to audited financial statements, as of the end of its 1988 fiscal year LAAD-CA had an outstanding loan portfolio of \$23.3 million.<sup>4</sup>

LAAD-CA has received a total of \$32 million in funding from AID to lend to private sector agribusinesses, as follows:

1971	\$6.0 million
1975	5.0
1979-1981	6.0
1986	15.0
	-----
Total	\$32.0 million

The most recent AID loan to LAAD-CA (\$15 million, authorized in 1986) was to partially finance an \$18 million loan program, with the balance provided from LAAD-CA's own resources.

According to LAAD officials, commercial losses have averaged less than 0.5 percent of loans made. Most of its loan losses have resulted from political risk (especially the situation in Nicaragua) and the financial crisis affecting Central America since the early 1980s, which has resulted in numerous devaluations and the imposition of foreign currency and debt servicing restrictions. As of October 31, 1988, LAAD-CA's balance sheet maintained an allowance for possible losses of \$1.9 million (8.1 percent of the current portfolio).

### Geographic Distribution of LAAD-CA Loans

LAAD-CA has responsibility for seven Central American countries -- Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama. As can be seen in Table 1 below, its activities during the past 18 years have been heavily concentrated in Guatemala, Costa Rica, and Honduras, as projects in these three countries have received 86 percent of all LAAD-CA loans.

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<sup>3</sup> Data as of December 31, 1988.

<sup>4</sup> Audited financial statements as of October 31, 1988.

Table 1

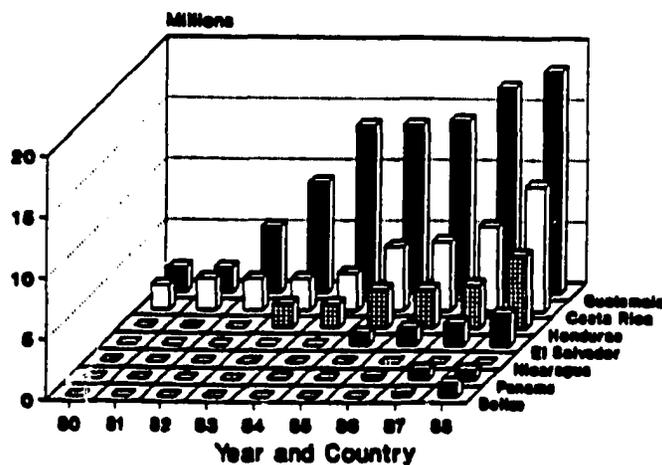
Distribution of LAAD-CA Loans, By Country  
1971 - 1989

Country	Number of Loans	Total Amount
Belize	4	1.2
Costa Rica	56	19.2
El Salvador	16	4.7
Guatemala	93	29.9
Honduras	35	13.4
Nicaragua	12	2.3
Panama	3	1.5
	219	72.2

Amounts in millions of U.S. dollars.

Several factors account for this distribution. Costa Rica and Guatemala have always had a strong demand for loan funds -- Costa Rica because it is a politically stable country that has attracted a large amount of outside investment, and Guatemala because of the size of its economy. El Salvador has presented a high risk during the past 10 years because of political instability. Responsibility for Panama and Belize was only recently transferred to LAAD-CA from another LAAD office; the total shown in Table 1, therefore, do not represent the amount of loans made to companies in those two countries, but only those made by LAAD-CA.

FIGURE 1  
CUMULATIVE LAAD-CA LOANS, 1980 to 1988

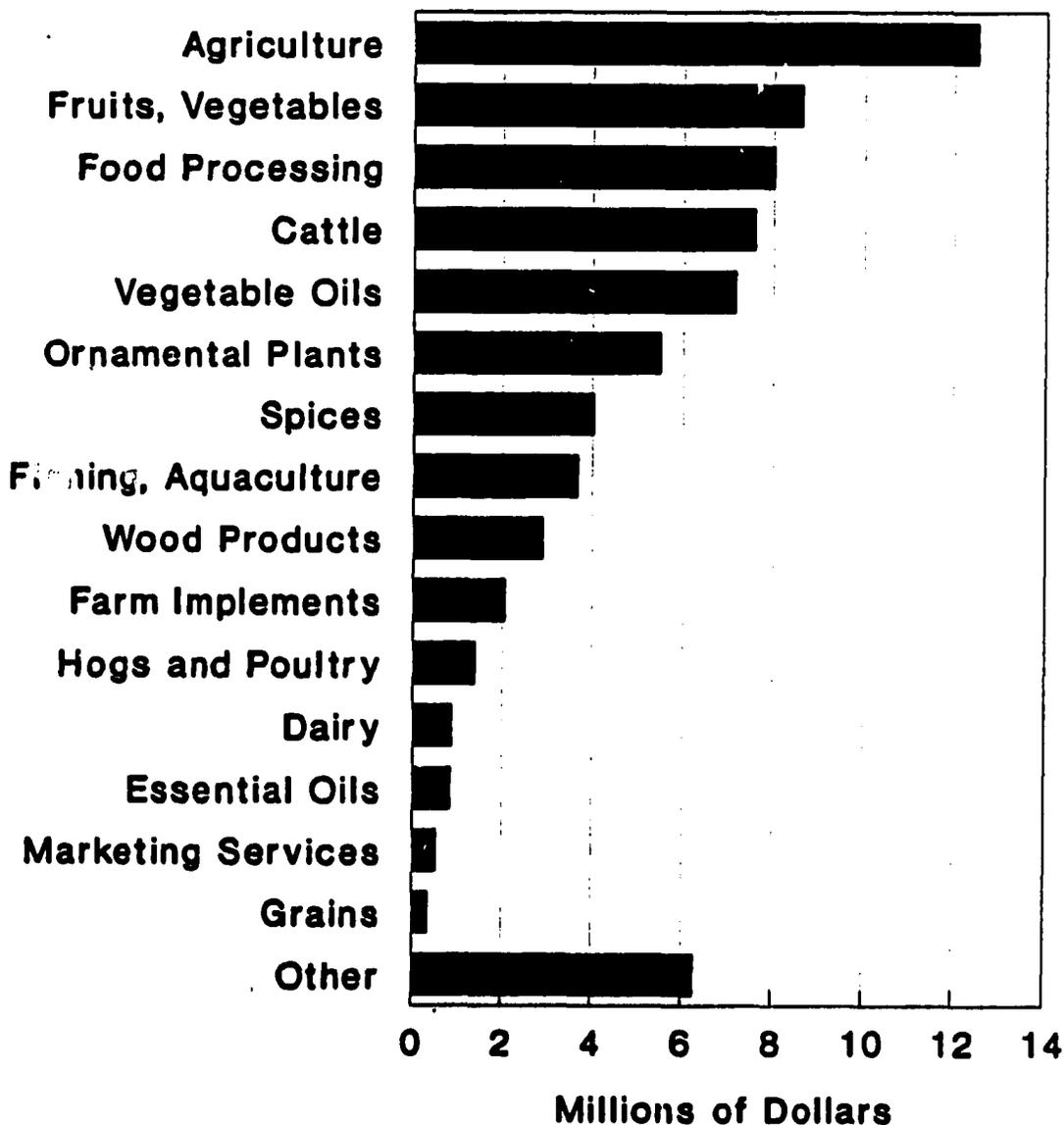


The pattern of lending has changed somewhat in recent years. During the early 1980s, lending was severely curtailed throughout the region due to political and financial risks. With the change in government in Nicaragua, a number of LAAD-CA loans became uncollectible and lending operation to companies in that country ceased. Recent political difficulties between the United States and Panama have also led to a curtailment of LAAD-CA financing in that country. Lending to Guatemala was substantially reduced during the mid-1980s because of foreign exchange problems and controls that threatened repayment on LAAD-CA's loans. Recent policy changes within the government have greatly increased both the potential and the demand for loan funds from the private sector. The influence of these factors on current lending can be seen in Figure 1.

### Types of Projects Financed

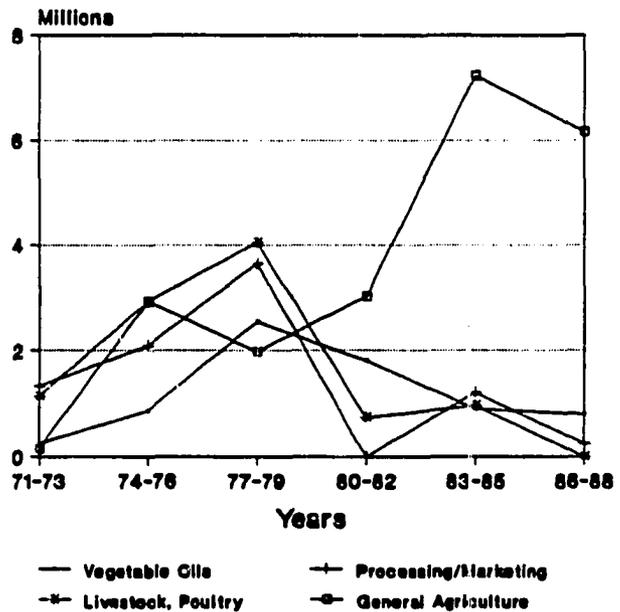
A description of LAAD-CA's loan portfolio in terms of the products financed is complicated because of the imprecision of LAAD-CA's classifications. As can be seen in Figure 2, general agriculture has received the largest amount of financing \$12.5 million, followed by fruits and vegetables (\$8.6 million), food processing (\$8 million), cattle (\$7.6 million), vegetable oils (\$7.1 million), ornamental plants (\$5.5 million), spices (\$4 million) and aquaculture (\$3.6 million). These products constituted 78.8 percent of LAAD-CA's lending activities in the region during the 1971 to 1989 period.

**Figure 2**  
**Distribution of LAAD-CA Loans**  
**(by Activity)**



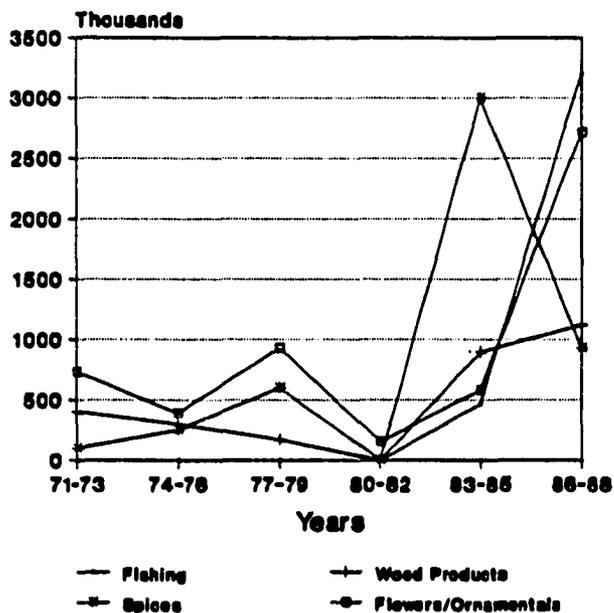
The totals, however, conceal a major trend in LAAD-CA lending. With the single exception of general agriculture, lending in what might be considered traditional agricultural activities has declined during the 1980s (see Figure 3). Loans for livestock, hogs, and poultry, for example, have declined from \$4 million in the 1977-1979 period to \$0 in the 1986-1988 period. Loans for vegetable oils have declined from \$2.55 million in 1977-1979 to \$800,000 in 1986-1988. Loans for processing and marketing have declined from \$3.6 million to \$250,000 in the same period.

FIGURE 3  
CHANGES IN ORIENTATION OF LAAD-CA LOANS  
(Traditional Products)



In contrast, loans for non-traditional, export-oriented activities have increased substantially (see Figure 4). Fishing and aquaculture, for example, received virtually no financing prior to 1980, but was one major activity financed (\$3.2 million) in 1986-1988. Wood products, spices, flowers, and ornamental plants have also received increasing attention during the past few years.

FIGURE 4  
CHANGES IN ORIENTATION OF LAAD-CA LOANS  
(Non-Traditional Products)



Since 1980 therefore, LAAD-CA's lending has been oriented less toward traditional local-market products and more toward products that are designed to compete in export markets. Even the category general agriculture is misleading because the trend in general agricultural projects is toward a more modern, non-traditional and export-oriented activity -- asparagus, Belgian endive, and ginger, for example, instead of crops grown for import substitution or local market consumption.

### III. DESCRIPTION OF THE CASE STUDIES

#### The Sample

Six firms were selected for the case studies -- three in Guatemala and three in Costa Rica. The criteria for selecting firms to be included in the sample were:

1. **Age of the Firm.** The sample contains a mix of younger and older firms. In some cases the LAAD-CA investments were instrumental in establishing the firm itself; in others, the LAAD-CA investment permitted a firm to expand or branch into new market areas.
2. **Accessibility.** The firms had to be located so that they could be reached within a reasonable amount of time and at a reasonable cost.
3. **Discrete Identity.** The scope and identity of the firm to be studied (as well as its suppliers) had to be sufficiently definable to permit description and analysis.
4. **Variety of Products.** The sample includes firms that are involved in a variety of products and marketing approaches.
5. **Significance of LAAD-CA Funds.** The sample includes firms for which the LAAD-CA loan represented a significant proportion of total capital invested in the business as well as firms for which the LAAD-CA investment represented only a minor portion of the total investment.
6. **Type of Activity.** The sample includes a selection of firms that are (a) "self-contained," in that they produce their own product, and (b) "open," in that they purchase product and raw materials from others.

In addition, all cases were drawn from LAAD's current loan portfolio, that is, investments funded by AID loan 596-T-024, which was approved in 1986. This approach ensured that the projects would be recent enough to discern the effects of the LAAD-CA financing. Based on these criteria, the firms selected were:

#### Guatemala

**Agropecuario Balmoral (AGROBAL)** -- A processor and exporter of essential oils.

**Comercial Tropical (COMTROP)** -- A processor and exporter of cardamon and dehydrated limes.

**La Meseta** -- A producer and exporter of fresh vegetables.

### Costa Rica

**La Melisa de Ojo de Agua -- A grower and exporter of ornamental plants.**

**Frutas y Sabores -- A processor and exporter of tropical fruit juices.**

**Nispero Chiquito -- A producer and exporter of black pepper.**

In addition these six companies, information was collected on three other firms: (a) Monte Norte, a Guatemalan company that has received a LAAD-CA loan to cultivate asparagus, which it markets through La Meseta; Clemente Ros, another Guatemalan company that has received a LAAD-CA loan to produce Belgian endive, which it markets through La Meseta; and American Flowers, a Costa Rican company that has been a LAAD-CA client for nearly 20 years. Data on these three firms are used only in the section on permanent employment and in the discussion of La Meseta's special relationships with independent producers.

### **Characteristics of the LAAD-CA Investments**

AID loan 596-T-024 provided \$15 million in new funding to LAAD-CA. Together with reflows from earlier loans and LAAD-CA's own funding, LAAD-CA has made 49 loans totalling \$16.1 million during 1986-1989. Loans to the six companies comprising the primary case studies amounted to \$2.2 million -- 14.7 percent of current AID funds available to LAAD-CA, and 13.7 percent of LAAD-CA's total disbursements in the period.

As can be seen in Table 2, the LAAD-CA loans made up between 14.8 and 57 percent of total investments in project-related activities. With the single exception of Comercial Tropical, the loans were used for infrastructure development, either in the initial establishment of a business activity or in the expansion of production or processing capabilities.

**Table 2**  
**LAAD-CA Loans and Total Costs of Related Investments**  
**for the Six Primary Cases**

Company	Amount of LAAD Loan	Total Investment	LAAD-CA Financed Activities
Agropecuario Balmoral	\$300,000	\$922,000	Land preparation and construct oil distillery
Comercial Tropical <sup>5</sup>	300,000 200,000	N/A N/A	Purchase cardamom Purchase limes
Frutas y Sabores <sup>6</sup>	250,000	1,500,000	Construct juice plant
La Melisa	200,000	350,000	Land preparation and infrastructure for ornamental plants
La Meseta <sup>7</sup>	800,000	1,600,000	Land preparation and infrastructure
Nispero Chiquito	150,000	325,000	Prepare land for pepper and cacao
	----- \$2,200,000	----- \$4,697,000	

Loans to companies representing the supplemental cases totalled \$260,000<sup>8</sup>, raising the total portfolio of projects considered to \$2.46 million (16.4 percent of AID funds available for LAAD-CA financing and 15.3 percent of the total amount of funds loaned by LAAD-CA during the 1986-1989 period). With the exception of

<sup>5</sup> Comercial Tropical purchased \$4.731 million of cardamom and \$216,700 of lime in 1988. LAAD-CA's loans, therefore, covered 92 percent of its lime purchases, but only 6.3 percent of its cardamom purchases, in 1988.

<sup>6</sup> Although the total investment in Frutas y Sabores was in excess of \$5 million, only \$1.5 million of this was related to the fruit-juice processing plant, which was the only activity of Frutas y Sabores supported by the LAAD-CA loan.

<sup>7</sup> Although total investments in La Meseta were approximately \$4.6 million, activities directly related to the LAAD-CA financing totalled \$1.6 million.

<sup>8</sup> No loan has been made to American Flowers during the 1986-1989 period.

American Flowers, these tended to be small projects. As can be seen in Table 3, LAAD-CA financing represented 50 percent of the investment in Monte Norte, and 52 percent of the investment in Clemente Ros.

Table 3

**LAAD-CA Loans and Total Costs of Related Investments  
for the Supplementary Cases**

Company	Amount of LAAD Loan	Total Investment	LAAD-CA Financed Activities
American Flowers <sup>9</sup>	\$1,037,500	\$7,000,000	Prepare farms for cut flower production
Clemente Ros	200,000	380,000	Construct growing racks and install refrigeration equipment for growing Belgian endive
Monte Norte	60,000	120,000	Prepare land for asparagus production
	----- \$1,297,500	----- \$7,500,000	

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<sup>9</sup> American Flowers has consistently reinvested profits in the business during the past 18 years.

**PART TWO**

**EMPLOYMENT AND INCOME BENEFITS OF LAAD-CA INVESTMENTS**

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## I. IMPACT OF INITIAL INVESTMENTS

Although primarily justified in terms of foreign exchange earnings and impact on national income, LAAD-CA investments have generally been assumed to have a positive effect on employment and income. In addition to the creation of employment opportunities within the firms that have received the loans, the loans can be expected to generate employment opportunities among suppliers, downstream processors or handlers, and local merchants, due to backward and forward economic linkages. The study design focused on five specific anticipated employment and economic benefits that should result from the activities of firms that have benefitted from LAAD-CA financing: (a) temporary employment hired to carry out pre-production activities; (b) direct, long-term employment (both full time and seasonal) within the firm itself; (c) secondary employment and income generated by the firms' purchases of agricultural raw materials from independent producers; (d) secondary employment and income generated by the firms' local purchases of goods and services; and (e) tertiary employment and income generated by the increased local spending of employees and other beneficiaries.

The following sections summarize the general findings of the study. Part Three of this report presents the details of the individual case studies.

Most of the companies receiving LAAD-CA loans used the funds to create or expand productive capacity. In a new company, these initial investments might include construction and equipping of a plant or preparation of land for cultivation. In an existing company, such expenditures might be for enlarging a plant, adding a new processing capability or new product line, or bringing new acreage under cultivation. Initial investments are distinguishable from the ongoing business of the company in that (a) the type of activities are generally different from the company's ongoing business (such as construction of a plant versus operating it, or preparation of land rather than growing the crop), and (b) they tend to fund activities that take place before the project begins to produce income.

Depending on the nature of the project, initial investments can vary considerably:

- The period of the initial investments can be relatively short, as in the case of passion fruit cultivation, or can extend over a number of years, as in the construction of a juice processing plant or the planting of tree crops;
- Some types of investments, such as loans for working capital, do not have an initial investment period; and
- In the case of certain products -- in particular, vegetable crops such as asparagus, tomatoes, onions, and green pepper -- it may be difficult to distinguish the period of initial investment from that of ongoing production, since similar activities tend to be repeated in each production cycle.

The importance of the initial investment activity is that it creates short-term employment opportunities, through the direct hiring of workers or through the contracting of services through specialized firms.

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### Initial Uses of Funds

With the single exception of Comercial Tropical, all of the projects studied did have clearly identifiable initial investment phases,<sup>1</sup> either in the establishment of permanent or semi-permanent crops (such as lime trees, cacao trees, or passion fruit plants), or in the construction of physical infrastructure associated with the production or processing of agricultural raw materials. In three cases -- La Meseta, Comercial Tropical, and Frutas y Sabores -- the initial or pre-production investment had been substantially completed at the time of the LAAD-CA loans. In these cases the LAAD-CA loans were used to complete initial activities (in Frutas y Sabores, LAAD-CA funds were important for completing construction and equipping the processing plant, for without the loan the plant would not have become operational), to expand activities (in La Meseta LAAD-CA funds were used to add cooling capacity and develop two additional farms), or for working capital (Comercial Tropical used the funds to purchase limes and cardamom from independent suppliers). In the other cases, the LAAD-CA loans financed a substantial portion of the initial development activities of the projects.

### Short-Term Employment Benefits

As can be seen in Table 4, below, initial activities generated substantial short-term employment. In the four companies for which data were available,<sup>2</sup> initial activities provided between 371 and 425 person-years of work for 245 workers.

Table 4

#### Person-Years of Short-Term Employment Generated by Initial Investment Activities

Company	Number of Employees	Person-Years of Work
Agropecuario Balmoral	175	250-300
Comercial Tropical	N/A	N/A
Frutas y Sabores	40	60
La Melisa	12	25-29
La Meseta*	N/A	N/A
Nispero Chiquito	18	36

\*La Meseta used regular employees for initial work.

<sup>1</sup> Comercial Tropical's loans were for purchasing cardamom and limes from independent producers, activities that required no expansion of plant or production capabilities on the part of the company.

<sup>2</sup> La Meseta used regular, full-time employees to carry out the work, while Comercial Tropical used LAAD-CA loan funds for working capital rather than "pre-production" activities.

The labor intensity of these short-term activities varied considerably, from a high of one person-year of work per \$3,352 worth of investment in the case of Agropecuario Balmoral, to a low of one person-year of work per \$25,000 in investment in the case of Frutas y Sabores.

### **Factors Influencing Short-term Employment Generation**

The major factors bearing on the employment and income effects of initial investments were (a) the type of infrastructure development financed by the initial investments, (b) whether or not the initial investments finance land preparation, and (c) the level of imported goods financed by the initial investments.

### **Labor Intensity of Infrastructure Development**

Initial investments that involve construction of plant or facilities tend to be labor intensive, although development of infrastructure related to growing crops creates more jobs per dollar of investment than construction of processing facilities. The tasks associated with the production of non-traditional crops (passion fruit, pepper, cacao, fresh vegetables and flowers) involve the construction and maintenance of specialized infrastructure -- such as trellises, living posts, permanent shade shelters, growing flats and irrigation systems -- all of which are labor-intensive activities. For example, constructing shade trellises, installing irrigation and preparing plant beds generated between 25 and 29 person years of short-term work in La Melisa, at an average cost of \$7,500 per person-year. Preparation of one acre of land for passion fruit by farmers planning to sell fruit to Frutas y Sabores, including the construction of trellises for the vines, required one person-month of labor, at an approximate cost of \$735, an annualized investment of \$8,880 per person-year.

In contrast, the construction of Frutas y Sabores juice processing plant cost \$1.6 million and generated 60 person-years of short-term work, or an investment of nearly \$27,000 per person-year of labor. Construction of Agropecuario Balmoral's essential oils distillery cost approximately \$150,000, and created eight months of employment for 12 persons. In this case, \$18,750 in total investment was required to create one person-year of short-term employment during the pre-production phase of the project.

The addition of infrastructure to land, therefore, creates initial employment at a higher rate than constructing processing facilities.

### **Land Preparation**

Initial investments that involve land clearing and preparation tend to be labor intensive, and generate substantial short-term employment. While such tasks as leveling, tree removal and disk harrowing are carried out by tractors or bulldozers and do not constitute key areas of employment generation, the specialized requirements and conditions of non-traditional crops tend to be more labor intensive. Pepper, for example, is planted on steeply inclined lands that must be prepared by

hand. Preparation of seedbeds for fresh vegetable cultivation requires considerable hand labor in the preparation of flats and soil conditioning. The preparation of plant beds for ornamental plants is likewise labor intensive.

### Level of Imports

Initial investments in crop production infrastructure -- land clearing and planting -- tend to require few or no imports and, therefore, have a relatively large impact on the local, regional or national economies. On the other hand, initial investments that require the installation of sophisticated equipment tend to involve a high level of expenditures on imported goods, and hire proportionately less labor.

Table 5

#### Imported Goods as a Percentage of the Initial Investments

Company	Imported Items	Percentage of Investment
La Melisa	Irrigation equipment and agricultural chemicals	25
Nispero Chiquito	Improved seeds and agricultural chemicals	5
Frutas y Sabores	Juice extracting and concentrating equipment	80
Agropecuaria Balmoral	A boiler	15
La Meseta	Cooling equipment	17

The Frutas y Sabores juice processing plant is the most extreme example of the higher levels of imported goods involved in constructing a technologically sophisticated plant. Direct imports comprised 60 percent of its initial investment, and between 60 and 80 percent of the goods purchased from Costa Rican businesses. La Melisa, Clemente Ros and Agropecuario Balmoral -- companies that utilize less sophisticated technologies for processing, refrigeration and special infrastructure for cultivation -- spent between 25 and 50 percent of their initial investments on imported goods.<sup>3</sup> The initial investments of loan recipients such as Nispero Chiquito and Monte Norte, producers of non-traditional crops that require no intermediate or high level industrial technology, had negligible expenditures on imported items.

<sup>3</sup> Agropecuario Balmoral is an important case in this context. Although it utilizes sophisticated measuring and processing equipment, these are manufactured by local metalworkers.

Although the proportion of initial investment spent on labor increased as the technological component decreased, the total level of expenditures in the local, regional and national markets was greater for projects that combine both production and processing components. Intermediate technological projects -- such as La Melisa, Agropecuario Balmoral and Clemente Ros -- appeared to generate the most significant demand for local goods and services. A precise measurement of this effect would require further investigation.

#### **Absorption of Temporary Workers into the Company's Regular Work Force**

The absorption of workers employed in pre-production activities into the company's regular work force appears to depend primarily on the degree of similarity between pre-production and production activities.

In those cases where the initial investment activities were similar to ongoing production activities, the workers employed in the initial investment period tended to be absorbed into the company's regular work force. Pre-production activities associated with fresh vegetables, flowers and ornamental plants, for example, required labor processes identical to those of the on-going production. There was little difference between pre-production and cyclical preparation of the soil, germination of seeds, planting, maintenance and harvesting. As a result, workers involved in pre-production activities in La Meseta, La Melisa, and Nispero Chiquito were absorbed into the regular workforce.

When the initial work was substantially different from the on-going activities of the firm, workers hired for the pre-production activities did not get absorbed into the firm. Skills required to construct the Frutas y Sabores juice processing plant-- welding, electrical and other construction trades -- were not appropriate skills for operating the plant. Likewise, the skills involved in constructing distilling and processing equipment for essential oils were different from those required for actually processing the oils. In both of these cases workers used in the pre-production activities were unlikely to be retained as permanent workers by the firm.<sup>4</sup>

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<sup>4</sup> During the course of constructing the plant, Frutas y Sabores did hire and train persons to operate the equipment. These workers participated in the construction phase and were, in fact, retained by the company when those activities were completed. Twenty-one construction workers were laid off, and were unlikely to be hired as operators on second or third shifts.

## II. LONG-TERM, DIRECT EMPLOYMENT IMPACT

Original projections for LAAD-CA loan 596-T-024 were that investments financed by the \$15.0 million in new funds would result in ". . . the creation of approximately 3,600 direct jobs related to agribusiness export development. . . ."<sup>5</sup>

The six companies that were the main focus of this study had received loans totalling \$2.2 million -- 14.7 percent of the AID funds available to LAAD-CA for the period, and 13.7 percent of the \$16.1 million in loans made during the period under study.

### Levels of Employment

#### Full-time Employees

With only one exception, LAAD-CA's loans resulted in an increase in full-time employment in the companies receiving the loans. The one exception was Comercial Tropical. Because the loans were used to finance purchases of raw materials from independent suppliers, using existing plant and equipment, they had no direct impact on employment. In fact, full-time employment declined in Comercial Tropical during the period of study, due to a decline in world market prices for cardamom, a "democratization" of cardamom processing, and increasing automation in Comercial Tropical's main facilities. The declining world price for cardamom had led to a temporary suspension of exports from Guatemala. Initial processing of cardamom--drying and sorting -- is increasingly performed by small dryer groups and independent agents, resulting in a shift in employment from Comercial Tropical to these entities. And, Comercial Tropical's installation of automated color sorting machines has reduced the need for hand labor in the sorting and grading process.

In the five remaining companies that formed the major focus of the study, the number of full-time jobs increased by 457, from 332 before receiving the LAAD-CA loans to 789 at the present time (see Table 6). Two of the other cases represented new firms that had no employees prior to receiving LAAD-CA funds; these increased their level of full-time employees from 0 to 26 during the period.<sup>6</sup>

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<sup>5</sup> ROCAP, *Project Paper: Export Agribusiness Development/Promotion*, Loan Number 596-T-024, page 7.

<sup>6</sup> American Flowers is not included in these totals because the large increase in employment -- which has taken place over an 18-year period and has been the result of six LAAD-CA loans and extensive capitalization by the owners -- would unduly bias the results.

**Table 6**

**Actual and Projected Employment of Full-Time Workers**

Company	Before LAAD-CA		Projected
	Loan	Current	
<b>The Principal Cases</b>			
Agropecuario Balmoral	62	145	200
Comercial Tropical	N/A	N/A	N/A
Frutas y Sabores	0	15	45
La Melisa	0	12	40
La Meseta	258	601	601
Nispero Chiquito	12	16	50
	-----	-----	-----
Subtotal	332	789	936
<b>The Supplementary Cases</b>			
American Flowers	50	550	550
Monte Norte	0	18	28
Clemente Ros	0	8	22
	-----	-----	-----
Subtotal	50	576	600

Most of the companies studied were relatively young. Two (La Melisa and Nispero Chiquito) had not begun to produce for export, while three others (Frutas y Sabores, Monte Norte and Clemente Ros) had only marketed initial shipments. Agropecuario Balmoral is still in a rapid growth phase, as it is in the process of opening a second major farm that will hire a large number of new workers. As can be seen in Table 6, the number of direct-hire, full-time employees will increase substantially as these firms mature. By that time full-time employment in the six principal firms can be expected to reach 936 (a total increase of 604 workers), while the total number of new workers added in Monte Norte and Clemente Ros will reach 50.

**Seasonal Workers**

Several of the companies generate strong demand for seasonal labor, especially for harvesting. Agropecuario Balmoral currently hires between 400 and 450 people for about 8 months each to harvest limes, lemon grass and citronella. The general manager of Nispero Chiquito estimates that, once cacao and pepper are under full production, 40 persons will be employed for about 6 months each year to assist in harvesting activities. La Melisa estimates that it will require approximately 240 person-months of temporary labor each year for harvesting ornamental plants.

Although Frutas y Sabores does not directly hire seasonal labor, it is stimulating a rapid expansion of tropical fruit cultivation that will require large amounts of seasonal labor. La Meseta avoids hiring temporary labor by maintaining two full-time, specialized harvesting crews that rotate from field to field.

By the time the firms reach levels of full production, they will have generated 457 new full-time job equivalents in seasonal work, as can be seen in Table 7 below:

Table 7

Actual and Projected Employment of Seasonal Workers  
(in annual full-time job equivalents)

Company	Before LAAD-CA		Projected
	Loan	Current	
----- The Principal Cases			
Agropecuario Balmoral	50	284	384
Comercial Tropical	N/A	N/A	N/A
Frutas y Sabores	N/A	N/A	N/A
La Melisa	0	0	20
La Meseta	0	0	0
Nispero Chiquito	0	0	20
	----	----	----
Subtotal	50	284	424
The Supplementary Cases			
American Flowers	0	0	0
Monte Norte	0	6	23
Clemente Ros	0	0	60
	----	----	----
Subtotal	0	6	83
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**Importance of LAAD-CA Financing**

Not all of the increases can be attributed solely to the LAAD-CA loans. The companies planned to expand, and the LAAD-CA loans facilitated that expansion, but even in the absence of LAAD-CA financing some expansion would have taken place. Of the companies studied, only La Melisa indicated that it probably would have abandoned the project if it had not been able to obtain financing from LAAD-CA. The others would have scaled back operations or delayed expansion.

**Wages and Other Benefits**

Most of the employment created by these investments is for entry-level agricultural field workers and processing plant employees. Wages tend to be at, or slightly above, minimum wage.

### **Increase in Total Wage Bill**

Most of the companies significantly increased annual expenditures for wages and benefits following the LAAD-CA loans. Agropecuario Balmoral's total expenditures for these items rose 254 percent, from \$121,000 in 1986 to \$307,000 in 1988. Nispero Chiquito's average monthly wage bill increased 29 percent, from \$1,175 to \$1,516, because of an expansion of its labor force due to the loan it received from LAAD-CA. La Meseta's total annual expenditures on wages and benefits increased 137 percent between 1986 and 1988, from \$198,000 to approximately \$470,000. La Melisa's current payroll for full-time employees of approximately \$30,000 per year is a direct result of the initiation of activities made possible by the loan it received from LAAD-CA.

Only two companies -- Frutas y Sabores and Comercial Tropical -- did not register increases in total wage and benefits expenses subsequent to LAAD-CA financing. Frutas y Sabores is in the process of completing construction activities, and has reduced the number of employees to the level it will sustain during its main shift production activities. Comercial Tropical has recently reduced its direct workforce by contracting more of the intermediate processing from independent agents and from the individual growers associations. Its present operations are such that direct employment is not affected by the volume of business it carries out.

### **Wage Rates**

Workers interviewed for the study cited higher wages than those available elsewhere as a major incentive for working in these firms. In Guatemala, all three of the companies studied pay wages that are substantially above minimum wage (about \$1.19 per day) and, in most cases, substantially above prevailing local wage rates. Agropecuario Balmoral, for example pays a starting wage of \$1.48 per task, and a fast worker can complete more than one task per day. Their employees reported wages that varied between \$1.85 and \$2.03 per day. Comercial Tropical paid a starting wage of \$1.48 per day, with possibilities for advancement related to length of service, quality of work and responsibility. Employees reported that their earnings before starting at Comercial Tropical had averaged about \$1.29 per day. La Meseta's field and plant employees reported average daily base wages of \$1.66 to \$2.03 per day. Work crews earn bonuses based on performance; each day two crews on each farm receive a small production bonus of about 4-5 percent of the basic wage.

In Costa Rica on-farm wages tended to be at the level of legislated minimum wage rates -- \$5.12 per day for regular employees and \$6.80 per day for workers engaged in fumigation and irrigation. Even so, Costa Rican workers reported high satisfaction with wage rates paid in the companies studied.

Other characteristics of the companies studied tend to increase effective wage rates relative to other local employers. First, the companies pay wages on time,

which means the workers receive the real value of their income.<sup>7</sup> Second, since the companies require a fairly sophisticated labor force, there are avenues for advancement within most of the companies. La Meseta, for example, has six levels of supervision within the organization: good workers are promoted within these categories. One worker in Agropecuario Balmoral was now making \$2.96 per day because of his performance. And in Frutas y Sabores, opportunity for advancement on the basis of merit complements the direct incentives of good pay, benefits and the opportunity to work in non-traditional employment. Third, the companies do pay required bonuses and benefits, including social security, thirteenth-month ("aguinaldo") and severance. All Guatemalan companies studied, for example, pay the "seventh-day" bonus, even though the work week is only five and a half days rather than a full six days.<sup>8</sup>

### **Other Benefits**

Workers in the companies studied enjoyed a number of other benefits that are generally not available to workers on traditional farms. Comercial Tropical provides housing and a clothing allowance for the administrator and a food allowance for its truck drivers. Workers at Nispero Chiquito indicated that labor relations and benefits -- especially job stability, their treatment by the foreman, and the company's attention to medical necessities -- were better than at previous jobs. At La Melisa, workers indicated that the company offered them greater job stability and more continuous work. Three families live on the farm in company-provided housing.

Agropecuario Balmoral offers a number of indirect benefits to its permanent employees. A school teacher was contracted by the company, and all school-age children of resident families attend daily classes. The children receive school materials such as texts, notebooks and pencils, at no expense to their families. At school the children also receive INCAPARINA, a protein supplement, paid for by Agropecuario Balmoral. Medical benefits include a medication dispensary for minor ailments. For more serious maladies, workers are given bus-fare to the nearest town with a resident doctor and per diem during the period of their visit. Finally, the company provides housing to the resident families.

All farm workers interviewed at Frutas y Sabores mentioned that their lives have improved since starting to work there, for several reasons: better wages, treatment and working conditions. The on-site farm manager was employed in February 1988 at 18,000 colones per month (US \$225) and is furnished a house plus other fringe benefits, such as bonuses, garden and part-time use of a pick-up truck.

Producing for the export market tends to upgrade the labor pool. Since the companies require a relatively high-skilled worker, they pay attention to training, promoting and retaining workers.

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<sup>7</sup> Many workers interviewed reported that other employers were usually late in meeting payrolls.

<sup>8</sup> Workers reported that other employees often used the half-day Saturday schedule as an excuse to deny the "seventh-day" bonus.

## **Factors Influencing Extent of Employment Generation**

### **Change in Intensity of Farming**

The primary employment generation impact of projects that cultivate non-traditional export oriented crops is that they intensify labor utilization rates. Factors contributing to this include:

- First, successful competition in export markets requires a high-quality product. Because labor is relatively inexpensive in both Guatemala and Costa Rica, the need to produce a high quality product for export is translated into a need for relatively large labor resources at all stages of the product cycle -- land preparation, planting, cultivation, harvesting, cleaning sorting, packing and processing.
- Second, in order to be profitable the company must be capable of producing a large quantity of product, and this usually entails a shift from low-intensity to high-intensity production. Without exception, the projects studied involved a shift in land use from low labor intensity activities (such as cattle raising, sugar or coffee) to high labor intensity activities (such as ornamental flowers and vegetables). Thus, within a given area, these activities absorb greater amounts of labor and increase the overall wage bill.
- Third, successful exporting requires a continuous supply of product. As a result, most of these firms stagger planting and harvesting to ensure a continuous level of production.<sup>9</sup> Unlike most traditional crops, which have distinct planting and harvesting periods, this type of agriculture generates a continuous demand for labor.

This study encountered many examples of this shift to higher labor utilization. Before Agropecuario Balmoral undertook its major farm project, for example, the land was held as a traditional, absentee-owned farm with paternalistic labor relations. Resident laborers were paid a minimal wage and given lands for cultivating corn. The intensity of exploitation was extremely low: of the farm's 1360 acres, only 25 to 35 were actively cultivated. Fifteen families lived on the farm to cut the grass, using only rudimentary production technology. Since Agropecuario Balmoral initiated the project with the help of the LAAD-CA loan, the intensity of both land and labor use has increased. At present, 425 acres are planted in citronella, 262 in lemon grass and 192 in key lime, and an additional 109 acres are planted in corn. The active workforce has increased from 50 to 285.

Lands currently used by La Meseta were formerly used for coffee, corn and mechanized wheat production -- all of which produced only one to one and a half crops per year and used very low levels of labor per acre of land. Most of the workers La Meseta hired had worked before as seasonal employees in the coffee or

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<sup>9</sup> Monte Norte, an asparagus farm in Guatemala was the only company that did not attempt to achieve a continuous harvest of product. This was due to a limited favorable market window for asparagus in the United States.

sugar harvest. Vegetable growing produces as much as 3.5 high-yielding crops per year, and requires constant attention. As a result, La Meseta's investments have created new labor opportunities in the area.

The land La Melisa is now developing was formerly used as an unimproved cattle pasture, sustaining no employment. La Melisa's shift to labor intensive production on the land has, therefore, resulted in a positive shift in labor demand in the area.

Nispero Chiquito's conversion of its land from extensive pasture to pepper and cacao, employing 16 persons represents a definite intensification of labor demand.

### **Size of Investment and Employment Generation**

The total amount of the investment is not directly related to the amount of employment generated. The relatively small investment in Agropecuario Balmoral, for example, had a significantly greater impact on employment creation than the larger investments in either Frutas y Sabores or La Meseta. On a job-per-dollar-of-investment basis, small labor-intensive activities tend to generate proportionately greater employment than large capital-intensive investments.

### **Other Factors**

Although the total amount of the investment is not directly related to the amount of employment generated, several other factors do appear to be related to increased employment opportunities:

- \* Employment creation occurs primarily with the establishment of a new enterprise or significant expansion/diversification of an existing one. Once established, additional investments in an on-going activity may increase labor efficiency, but seldom result in significant additional employment creation.
- \* Projects that bring land into export-oriented production tend to have the greatest direct employment impact;
- \* Projects involved in growing a product tend to create more direct employment per dollar of investment than those involved solely in processing or marketing it.
- \* Projects that only market products tend to have a negligible impact on direct employment.
- \* Projects that are involved only in processing or marketing tend to have relatively low direct employment benefits relative to the size of the investment.
- \* Projects owned by non-resident expatriates tend to generate less employment per dollar of investment than projects owned by either citizens of the countries or resident expatriates.

## Summary

With only one exception, the LAAD-CA investment, resulted in an increase in direct employment. In that one case LAAD-CA's loan provided working capital for purchases of agricultural raw materials, but did not support any increase in production or processing capacity.

Of the total of 3,600 direct jobs that were to be created by the most recent LAAD loan of \$15.0 million, the principal six firms studied during this evaluation, which had received 14.6 percent of the loan funds, had created 457 permanent jobs and more than 234 full-time job equivalents for regularly employed seasonal workers. This represents 19.1 percent of the projected total for the loan portfolio. By the time the companies reach full production, more than 604 permanent jobs and 310 full-time job equivalents for part time workers (representing 25 percent of the stated targets) will have been added by the companies. The original projections contained in the loan documentation were conservative.

### **III. SECONDARY EMPLOYMENT IMPACTS: PURCHASES OF RAW MATERIALS**

LAAD-CA's interest in supporting purchases of agricultural raw materials through its loans to selected businesses is based on the assumption that these purchases primarily affect small farmers. Since LAAD-CA cannot efficiently loan to small farmers directly, stimulating the purchase of products from them was seen as one way LAAD-CA's activities could, in fact, help small farmers. In addition, purchases of raw materials by companies receiving LAAD-CA financing was expected to generate employment and income opportunities that would not be reflected in data limited to direct employment within the companies themselves.

#### **Factors that Influence a Company's Decision to Purchase Raw Materials**

Six companies considered in this study (La Melisa, Nispero Chiquito, American Flowers, Monte Norte, La Meseta and Clemente Ros) buy no raw materials from independent producers. The other three (Frutas y Sabores, Comercial Tropical and Agropecuario Balmoral) do. Three factors -- the orientation of the company itself, the ability to obtain sufficient product and the ability to control quality -- appear to determine whether or not a company will purchase raw materials from outside suppliers.

#### **Orientation of the Company**

Some companies are organized to grow crops; others are organized primarily to process and market products. Companies that are dedicated to producing a crop will tend not to purchase products from other suppliers. Thus, La Melisa, Nispero Chiquito, Monte Norte, and Clemente Ros do not purchase agricultural raw materials. Frutas y Sabores, Comercial Tropical and Agropecuario Balmoral -- which are organized primarily to process and market manufactured or semi-manufactured products -- tend to purchase a substantial portion of their raw materials from independent suppliers.

#### **Adequacy of Supply**

The ability to obtain a sufficient volume of produce has several dimensions. First, the company must be able to obtain enough product to meet the demand of its international clients, especially when the company is operating under a contract to supply a set quantity. Second, shipping and transportation costs are an important constraint on profitability in an export-oriented business; the costs of shipping partial containers or of shipping small quantities by air quickly erodes profits. Third, maintaining the ability to produce a large quantity of produce increases both fixed costs and commercial risk, especially in unstable markets.

When local production the commodity is sufficient to ensure adequate supplies at reasonable costs, companies that are oriented primarily toward processing or

marketing do not engage in production of their own raw materials.<sup>10</sup> Comercial Tropical, for example, markets two products, limes and cardamom, both of which are produced in excess by independent producers. It buys sufficient limes to meet its market commitments during the peak harvest season, when lime prices are depressed on the local fresh fruit market. It is one of 17 purchasers of cardamom in the country, and its 13 percent share of the market is limited only by available funds and world market prices. There is no reason for Comercial Tropical to absorb the investment and commercial risks of producing limes and cardamom.

Frutas y Sabores is another example of a company that will rely primarily on purchased fruit to meet its production requirements. The area of Costa Rica in which it is located is rapidly developing citrus and other tropical fruit plantations. While Frutas y Sabores has a large citrus grove that will produce a sufficient quantity of fruit to operate its main production run, quantities to reach economic operating levels can be readily obtained from independent local suppliers. Hence it has limited the amount of land it will develop for internal production.

When a company that is oriented toward processing or marketing cannot obtain sufficient product from local producers, it will tend to develop its own land. Agropecuario Balmoral, for example, initiated its essential oil production and export company with no intention of producing raw materials. At the time the company bought partially refined lemon grass and citronella oils from 16 independent producers. A decline both in the number of suppliers and in the available quantity of raw materials forced the firm into undertaking its own cultivation of lemongrass, citronella and limes.

Companies that are oriented toward growing a crop or agricultural product will generally not purchase from independent growers, even if their own supply is not sufficient to export independently. Instead, they will market their product through larger volume brokers. This may reduce their potential profit margins, but is the only viable economic alternative short of becoming brokers themselves. Thus, Monte Norte, Clemente Ros and Nispero Chiquito all market through established brokers and do not purchase raw materials from independent suppliers.

La Meseta represents a hybrid situation. It is primarily organized to grow and market its own product. However, shipping costs require that it purchase at least some items from other suppliers in order to obtain sufficient product to maintain regular shipments of full containers.

### **Quality Control**

Exporting agricultural products requires strict quality control -- both in terms of appearance and in terms of meeting specific market requirements or constraints. The point at which this control can be exercised effectively appears to be one of the significant factors determining which companies buy from independent producers and which do not. The quality of fresh vegetables, for example, can only be controlled in cultivation. To meet the existing, international market standards for impeccable,

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<sup>10</sup> "Adequate" supply is defined as sufficient quantity to meet market commitments and participate effectively in international markets for the product.

pest-free and residue-free merchandise, each stage of production, from seed-germination to in-field packing, must be strictly controlled. Since the penalties for failing to meet these standards are high, none of the companies engaged in exporting or marketing such produce purchase from independent suppliers.

La Meseta represents an exception to this general rule. It is only able to maintain adequate quality control in the field, yet it needs more produce than it can grow internally to reach economically efficient shipping volumes. It maintains control by entering into joint ventures with a limited number of larger farmers. In these ventures La Meseta establishes production and quality standards, and usually provides contract management, supervision and labor to the venture.

When the quality control of the marketed product can be assured in other ways (such as sorting, grading or processing), the companies tend to purchase raw materials from independent producers. Comercial Tropical, for example, can ensure product quality through its own sorting and drying processes. Agropecuario Balmoral can maintain quality control and refine partially processed oils to required levels of purity and concentration in its own plant. Frutas y Sabores can control quality by sorting and testing for pesticide residues. All of these firms purchase raw materials from independent suppliers.

### **Summary**

As can be seen in Table 8, companies that are oriented toward producing do not purchase from independent suppliers. Companies oriented toward processing or marketing will purchase raw materials from independent suppliers to ensure an adequate supply of raw materials if they can maintain adequate quality control in the processing operation.

Table 8

**Orientation, Quality Control and Supply  
as Determinants of Raw Materials Purchasing**

Company	Company's Orientation	Point for Quality Control	Adequacy of Local Supply	Does Company Purchase
La Melisa	Produce	In field	N/A	No
La Meseta	Produce	In field	N/A	No
Nispero Chiquito	Produce	In field	N/A	No
American Flowers	Produce	In field	N/A	No
Monte Norte	Produce	In field	N/A	No
Clemente Ros	Produce	In field	N/A	No
Frutas y Sabores	Processing	Processing	Yes	Yes
Agropecuario Balmoral	Processing	Processing	No	Yes
Com. Tropical	Marketing	Processing	Yes	Yes

**Employment and Income Effects  
of Purchases of Agricultural Raw Materials**

Of the nine cases studied, only three -- Agropecuario Balmoral, Comercial Tropical and Frutas y Sabores -- were engaged in significant purchases of raw materials from independent suppliers.

Agropecuario Balmoral's purchases of semi-refined oils amounted to \$290,000 in 1988, and provided 44 percent of its total production. Based on data from its own production, these purchases supported some 250 permanent jobs. However, the declining number of Agropecuario Balmoral suppliers since 1984 indicates that new production of unrefined oils is unrelated to Agropecuario Balmoral's demand for raw materials. Strictly speaking, there has been no generation of additional employment as a result of Agropecuario Balmoral's purchases from independent producers, even though its purchases have helped maintain employment through the remaining suppliers.

Comercial Tropical purchased some \$4.7 million of cardamom from an estimated 3,000 independent farmers and \$216,700 of lime from 200 independent suppliers during its 1988 fiscal year. Cardamom production has generally been substituted for coffee. The labor requirements for these crops are not significantly different, so there has probably been no creation of new jobs. Small farmers reported that the cultivation of one tarea (approximately 441 square meters) requires about eight labor days per

year when the plants are producing. Small producers have as many as 3.5 acres planted in cardamom. A 3.5-acre cardamom field would absorb 306 days of labor per year, which requires the hiring of non-family laborers. Most farmers interviewed did report hiring workers even for the cultivation of smaller parcels. Although the crop is more labor intensive than corn, beans or other subsistence crops, it is not clear that it requires more labor than coffee or achiote, another commonly planted cash crop.

The formation of cardamom dryer groups among small producers has resulted in an increase in local employment. Green cardamom is highly perishable and brings low prices because its quality cannot be judged. An AID-funded loan program led to the installation of more than 80 small dryers, each of which has a capacity for 3,000 to 4,000 pounds per three-day drying period. Each acre of cardamom production generates about 3.5 days of work -- 1.75 days of work for each of two persons, the dryer and his assistant -- each year.

Comercial Tropical's total cardamom purchases in 1988 (1500 metric tons) can be estimated to have sustained the equivalent of 3,000 full time cardamom producers and 37.5 full time dryers.<sup>11</sup> The employment effect is diffused throughout a large segment of the rural population. By Comercial Tropical's estimates, 75 percent of its purchases are from small producers with less than 3.5 acres dedicated to cardamom.

Like cardamom, limes were already under cultivation when Comercial Tropical brought its dehydration and shipping facilities into operation. Farms in that particular region of Guatemala tended to produce only limes. With an average size of 2 to 7 acres, the farms had average yields of 13.4 to 18.6 metric tons per acre. Farmers sell about 75 percent of their production to Comercial Tropical and the rest on the fresh fruit market. Company records indicate that limes were purchased between 840 and 1120 metric tons of fresh lime from more than 300 producers.

Lime production in areas with irrigation is labor intensive, employing at least one full time worker, in addition to the owner, throughout the year. Two additional laborers are hired during the six-month harvest period. The total amount of labor required by Comercial Tropical's independent suppliers is equivalent to more than 400 full time jobs. Hired laborers are paid Q.5 per day.

Frutas y Sabores' market for passion fruit, the first of a number of non-traditional market lines it will be producing, has produced a strong response among farmers in the area around the juice plant. Owners of both large and small farms began to grow passion fruit in 1987 and 1988 because of the potential market for the product through Frutas y Sabores. This product has a great potential for increasing

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<sup>11</sup> One metric ton equals 2,200 pounds, thus Comercial Tropical purchased 33,000 hundred pounds (quintales) of dried cardamom. Five pounds of fresh cardamom are required to produce one pound of dry cardamom, which means that independent producers selling to Comercial Tropical produced a total of 165,000 hundred pounds of fresh cardamom. Cultivating and harvesting requires 4 days of labor for each 100 pounds of fresh cardamom, implying that some 660,000 person-days (or 3000 person-years) of labor were engaged in producing the cardamom purchased by Comercial Tropical. Drying this quantity of cardamom would require 4125 drying periods, or an additional 37.5 full-time job equivalents.

the number of jobs and income levels available in the area. One producer converted 22 of his 147 acres of land from sugar cane to passion fruit; passion fruit yielded an income of \$22,000 per acre, while sugar cane yielded only \$8,000 per acre. Another producer converted 10 percent of his land to passion fruit, but passion fruit represented 33 percent of his gross sales during the year.

The total number of additional jobs required for the production of passion fruit was estimated to be between one worker per every hectare to one worker per every six hectares. This variation is probably indicative of wide differences in cultivating practices, since farmers in the area have no experience with the crop and have received no technical assistance. Furthermore, information on the quantity of passion fruit purchased was not available in the Frutas y Sabores office. Hence, it is not possible to estimate the total income impact.

The economic impact of purchases of raw materials is influenced by a number of other factors, principally transportation costs and world price levels. In early 1989, for example, world cardamom prices fell to such a low level that returns to the farmer were below the combined production and transportation costs. Technical difficulties at the Frutas y Sabores plant forced the suspension of juice production and a drastic price reduction for the fresh fruit. The combined production and transportation costs did not justify the initial investments and the experience has left many farmers skeptical about the fruitfulness of continuing with the product.

In summary, it is difficult to demonstrate that purchases of raw materials from independent suppliers generates significant "new" employment. What it does appear to do is (a) sustain existing employment levels, (b) increase the rate of return to individual producers, thus increasing the value of labor, and (c) provide access to markets that would otherwise not be available to individual small producers.

#### **Other Impacts of Purchases**

Only in the case of Frutas y Sabores did activities financed by LAAD-CA loans have the direct impact of stimulating major changes in local production. In anticipation of demand in the Frutas y Sabores plant, more than 200 farmers in the surrounding area initiated passion fruit cultivation on land that they had previously used for other crops. In addition, landowners in the area are rapidly shifting from cattle and sugar cane production to citrus now that Frutas y Sabores provides a market. Frutas y Sabores also plans to purchase pineapple, mango, papaya and guava, and farmers near the plant are already planting pineapple in anticipation of selling to the company.

Increased demand for lemongrass and citronella oil due to Agropecuario Balmoral's expanded capacity did not stimulate increases in local production.<sup>12</sup> Lemon grass and citronella cannot be produced on a small scale and require immediate, on-farm processing. To achieve a production scale that justifies the operation and maintenance of on-farm distilleries, hundreds of acres of lemon grass or citronella are required. The field production and harvest must be tightly coordinated with the production of the distillery. Without a sufficiently large labor force, and a smooth and efficient administration of field and plant operations, the production of essential oils from these grasses is not feasible.

Comercial Tropical's purchases did not initiate new cardamom or lime production, but provided new or expanded market opportunities to existing growers. The most important benefits of Comercial Tropical's operation was the demand stability it provided and the fact that it purchased limes between May and November, when fresh fruit market prices are traditionally low. Thus, it provides a stable market at a reasonable price.

### Summary

The concern for quality control tends to mitigate against buying from independent producers, especially in fresh vegetables, where poor appearance or the presence of pests and pesticide residues can lead to rejection of the product. When the company has control over final quality in other ways (such as final processing, grading and sorting) there is a greater tendency to purchase from independent suppliers.

LAAD-CA loans destined to purchase raw materials from independent suppliers had little direct impact on increasing the total volume of purchases. The amount of funds available from LAAD-CA for this purpose tended to be very small relative to the total level of purchases, hence, the marginal impact was small.

Likewise, the purchase of agricultural raw materials from independent producers did not appear to stimulate employment or to increase the number of jobs among the independent suppliers. These purchases did, however, appear to (a) decrease underemployment of labor, (b) increase the rate of return to on-farm labor, (c) encourage agricultural diversification, and (d) increase income stability for independent producers.

While marketing intermediaries are often maligned, they provide an indispensable service in providing access to markets that would otherwise be inaccessible to small, independent producers. Monte Norte and Clemente Ros, for example, would not have been able to penetrate export markets in the absence of La Meseta's marketing

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<sup>12</sup> The world prices for lemon grass and citronella oils declined from \$3.70 per pound in 1984 to \$2.20 per pound in 1986, undoubtedly affecting production levels. However, the break-up of a large essential oils producers (APAESA) and the political aspects of agrarian reform on the traditional producer's farms seem to be more important in reducing the number of producers. World prices have increased since 1984 to a current level of \$6.50 per pound, but there has been no corresponding increase in the supply of unrefined oil from traditional south coast producers.

network. Few cardamom or lime producers would have access to Middle East markets in the absence of export brokers such as Comercial Tropical. Local producers of essential oils could not achieve the quality necessary to export effectively to export markets without Agropecuario Balmoral's processing facilities. While these operations may not have generated significant levels of new employment, the existence of effective marketing channels is important for the development of agricultural exports, the reorientation of local farm practices toward exports and the intensification of labor utilization on local farms.

#### IV. SECONDARY EMPLOYMENT IMPACTS: PURCHASES OF SUPPLIES AND SERVICES

In addition to direct labor costs and purchases of agricultural raw materials, the companies annually expend large sums in the local economy. These expenditures can be broken down into different categories:

Materials and	-- Including hardware, agricultural chemicals, Supplies seeds, fuels, packing materials, etc.
Services	-- Primarily repairs and construction
Transportation	-- Primarily trucking services for hauling products to processing plants or markets
Utilities	-- Including water, electricity, communications and other municipal services.
Taxes	-- Including value-added, social security, and other municipal and national taxes.

#### Magnitude of Expenditures

Because of the March 31 fiscal year for corporations in Guatemala, the most recent financial statements available from the companies were a year old at the time of the study. Data on local expenditures, therefore, are estimated for 1988 based on other information provided by the companies.

As can be seen in Table 9, the companies for which data are available contribute substantially to the local economy through the purchases of goods and services. Three ratios -- local expenditures to total investment, local expenditures to amount of LAAD-CA loan, and local expenditures to annual sales -- illustrate the magnitude of this contribution.

Annual local expenditures averaged between 4 and 66 percent of the total investment in the companies. Local purchases by La Melisa were the lowest and those by La Meseta the highest. Agropecuario Balmoral annually spent an amount equal to 38 percent of its total investment on local purchases, Frutas y Sabores 25 percent, and Comercial Tropical 15 percent.

Annual local expenditures also showed substantial leveraging of LAAD-CA loan funds. La Meseta, for example, spends 3.25 times the amount of the LAAD-CA loan in the local economy each year.<sup>13</sup> American Flowers has local expenditures amounting to almost two times the total of LAAD-CA loans that it has received each

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<sup>13</sup> Frutas y Sabores spent 5 times the amount of the LAAD-CA loan in local purchases during 1988, but is unlikely to sustain this level of spending now that the plant is in operation; most of the local purchases were related to the construction of the plant.

year. Agropecuario Balmoral spends an amount equal to the LAAD-CA loan in local purchases of goods and services each year, while Comercial Tropical's annual local expenditures average 40 percent of the LAAD-CA loans it has received.

**Table 9**  
**Local Expenditures**  
**(in US\$000)**

Company	Total Amount of Investment	Total Amount of LAAD Loan	Annual Sales	Annual Local Expenditures
La Meseta	3,925.0	800.0	3,000.0	2,600.0
Agropecuario Balmoral	850.0	300.0	1,200.0	321.1
Comercial Tropical	1,300.0	500.0	7,000.0	201.7
La Melisa	350.0	200.0	No Sales	15.0
Frutas y Sabores	5,000.0	250.0	No Sales*	1,250.0
Nispero Chiquito	325.0	150.0	No Sales	N.D.
American Flowers	-	1,086.0	7,500.0	2,000.0

Note: Frutas y Sabores had very limited sales in 1988, as production did not begin until the last quarter in the year.

Annual local expenditures as a percentage of annual sales varied between 2.8 percent in the case of Comercial Tropical, to 87 percent in the case of La Meseta. Agropecuario Balmoral and American Flowers each had annual local expenditures of about 27 percent of annual sales.

All three of these ratios indicate that the LAAD-CA investments support businesses that contribute to local economic development, providing a market for locally produced goods and services. These expenditures are significant on an annual basis, and represent an on-going stimulation of local business development.

#### **Materials and Supplies**

Hardware, equipment, machinery and construction materials comprised a major local expense during the initial development of the firms studied, especially when the initial investment funded construction of processing facilities or specialized production facilities. This was the case for Frutas y Sabores (construction of a juice processing plant), Agropecuario Balmoral (installation of additional distillation capacity), La Melisa (construction of nursery beds under shade) and, to a lesser extent, La Meseta (expansion of cooling facilities)

A large percentage of such expenditures were necessarily on imported items. At least 60 percent of Frutas y Sabores' initial construction expenditures were on imported juice processing equipment. La Meseta imported its hydrocooler,

Agropecuaria Balmoral imported two boilers, and La Melisa constructed its nurseries with imported posts and saran. Agropecuario Balmoral represented an interesting exception in that most of its distillation and processing equipment was manufactured locally.

Fertilizers and other agricultural chemicals comprise a large proportion of the on-going local expenses of the firms engaged in agricultural production. Again, these items usually include a large proportion of imported items. Some fertilizers and agricultural chemicals are imported in bulk and blended locally, but the value added by local labor is still limited. As a result, a significant percentage of these purchases did not have a direct impact on local economic conditions.

The purchases of imported items had little impact on local suppliers. Volumes tended to be low relative to the vendors' total volumes, and the gross margins resulting from these sales only a small percentage of their profits.

Likewise, purchases from large-scale industries tended to have little impact on their operations. Even though these purchases may represent a significant expenditure for the firm, they tended to represent only a small percentage of the vendor's business volume. The case of Cajas y Bolsas, a Guatemalan company that sells boxes to Comercial Tropical, is typical. Comercial Tropical buys more than 150,000 boxes annually from Cajas y Bolsas, yet this represents only 2 percent of the company's business in Guatemala. Cajas y Bolsas operates as a sales office for a firm that is headquartered in El Salvador. It has three salesmen and a few clerical personnel; these numbers are unlikely to be affected by either an increase or decrease in Comercial Tropical's orders. Sixty to seventy percent of the value of the sales is represented by the purchase price of the imported box itself, which has no effect on the Guatemalan economy. The plant in El Salvador would neither increase nor decrease employees if Comercial Tropical were to buy from another vendor.

Similarly, Agropecuario Balmoral's purchase of agricultural chemicals from a local vendor constituted two percent of that vendor's total business in the country, and 10 percent of the salesman's personal business volume. While some agricultural chemicals are imported in bulk and blended in Guatemala, the import component is at least 65 percent of total sales.

Nispero Chiquito's purchase of seedlings and plant propagation materials from a local grower, while relatively small, did contribute significantly to increasing that grower's total sales -- from \$6,000 per year in 1986 to over \$27,000 in 1988. The grower did not add employees as a result of the expanded business, but did benefit from the increased profitability of his business.

## **Services**

Local expenditures for services included transportation, maintenance and specialized labor.

### **Transportation**

The larger producers -- La Meseta, Comercial Tropical and Frutas y Sabores-- contract most transportation services from a limited number of large shipping and handling companies, including Seaboard Marine, Sealand and CCT. Comercial Tropical owns its own fleet of trucks, and contracts little outside transportation.

The need for timely, reliable transportation has created a demand for local transportation services, however, and provided an entry for a number of small, independent truckers. Frutas y Sabores, in particular, is stimulating a significant growth in small-scale trucking activities in Costa Rica. Independent truckers haul most of the fruit from local producers to the Frutas y Sabores plant -- a business that will grow substantially as the plant comes into full operation and production increases in the area. La Meseta regularly employs the services of six individual truckers to haul produce from the farm to La Meseta's cooling and packing plant. While Comercial Tropical handles its own transportation, and even offers transportation services to independent producers of cardamom and limes, most of the cardamom producers are in such remote areas that independent transporters haul the sacks by horses and mules to the nearest roads, where independent truckers transport it to local market towns. With transportation accounting for as much as 35 percent of the sale price of cardamom, the economic impact of cardamom purchases on providers of local transportation is highly significant.

### **Maintenance and Specialized Services**

The companies usually hired maintenance and specialized services from small, independent producers. "Talleres Victor," a family-owned business that manufactures and installs distilleries and boilers, and "Toneles Roosevelt", a supplier of reconditioned barrels, are excellent examples of the type of small business that is hired by the companies to carry out these tasks. Agropecuario Balmoral accounted for between 15 and 20 percent of these companies' annual sales. Carpenters, electricians, plumbers and other trades find periodic business opportunities with the new companies. These tend to be small accounts, and it was not possible within the time-frame of the study to document the extent to which business is generated by this demand for services.

### **Other**

There were a few examples of new businesses being established because of business provided by one of the case study firms. A bulldozer driver in Costa Rica had purchased his own bulldozer to go into business for himself, at least in part because of anticipated business from Nispero Chiquito. A freight forwarding company was established in Costa Rica to service American Flowers' shipping needs. At least two of the independent truckers servicing La Meseta entered business because of La

Meseta's need for trucking, and have since purchased additional vehicles to handle La Meseta's demand for transportation services. That there are not more examples of this is probably due to the recent establishment of most of the companies that were studied.

#### Summary

Although the direct impact of local purchases may appear small or insignificant when considered individually, the companies do represent a growing demand for locally produced goods and services, and contribute to expanding the breadth of economic activity. As the investments mature, the impact of this demand will become even more apparent.

Purchase of goods and services from small, local vendors tended to have a much larger impact on their businesses than purchases from large, or even multinational, companies.

## V. SECONDARY EFFECTS AND BENEFITS: IMPACT ON THE LOCAL COMMUNITY

It is often difficult to identify the impact of an individual enterprise on the broader community that it belongs to. This is especially true when the enterprises are relatively new and have not reach full production or maturity.

Operations located in urban areas -- as was the case for La Melisa, Comercial Tropical and, to a lesser extent, La Meseta -- have little visible or measurable impact on the local environment; the effects cannot be distinguished from the general effects of urbanization itself. La Melisa, for example, is located in a rapidly industrializing area between San Jose (the capital) and Alajuela (the airport). Large textile, battery and communications plants are located nearby, and numerous other smaller enterprises virtually surround the farm. The direct effect of La Melisa's concentration of 12 workers on a highly efficient farm is hardly noticeable in such a situation. Comercial Tropical's operations are located in major urban areas-- Guatemala City, Coban and El Progreso. Although the company employs (directly or indirectly) a relatively large number of employees in these locations, it is merely one company in an overall urban setting. The cardamom industry is a major factor in the economic life of Coban, and Comercial Tropical accounts for approximately 13 percent of that business, but the independent impact of Comercial Tropical's presence is not easily discernable. In Guatemala City a woman has opened a cafeteria that, because of its location, primarily serves employees of Comercial Tropical. La Meseta's cooling and packing plant is located at the busy intersection of two highways 25 kilometers west of Guatemala City. Its location was the result of the concentration of markets, service stations, restaurants and other services rather than a cause of it.

Even in rural areas there is often such a rapid transformation taking place that it is difficult to attribute specific changes to activities in a particular firm. Both Nispero Chiquito and Frutas y Sabores, for example, are located in a an area of Costa Rica that has and is undergoing a rapid transformation, first from virgin jungle to cattle and sugar cane, and now from cattle and sugar cane to citrus, vegetables and other crops. It is difficult to distinguish the impact of these firms from the general level of growth that is taking place in the area.

Nevertheless, there are several instances in which substantial changes in local activities can be directly attributed to project activities. The construction of the Frutas y Sabores tropical juice processing plant, in particular, has stimulated a large-scale change in cropping in the surrounding region of Costa Rica: the existence of an effective market for citrus and other tropical fruits has encouraged a large number of growers in the region to experiment with plantings of such crops. Agropecuario Balmoral has received complaints from neighboring land-owners that their wage scale is forcing up labor prices in the area.

The combined effects of cardamom activities, in part financed by LAAD-CA, and Agropecuario Balmoral's expansion in the Polochic valley in Guatemala have stimulated significant growth in several small towns along the road. Workers are drawn from the towns, and spend their incomes in the towns, stimulating the establishment and expansion of markets, shops and small-scale service businesses.

There are other examples of local changes that have been stimulated by the existence or expansion of the funded companies. Small food preparers and vendors are one of the first local businesses to emerge as a response to an increased concentration of workers. A small soda stand and pool hall opened across the road from Nispero Chiquito's farm. A roadside diner opened in Muelle next to the filling station that services Frutas y Sabores. Several small stands are located on the borders of La Meseta's holdings. Itinerant vendors regularly arrive at Agropecuario Balmoral's farms on pay days.

## VI. GENDER ISSUES

### Generation of Employment Opportunities

The projects funded by LAAD-CA loans generated substantial employment opportunities for women. More than 30 percent (181 of 601 total jobs) in La Meseta, for example, were filled by women. Six of 18 workers in both Clemente Ros and Monte Norte were women. Three of 12 workers in La Melisa were women, and women will occupy a large percentage of the new positions that are created as the company begins to export. As many as 80 women were hired for lime harvesting in Agropecuario Balmoral, and at least 400 of 538 total employees in Comercial Tropical were women. Only in Nispero Chiquito and Frutas y Sabores, both in Costa Rica, did women appear to be under-represented in the workforce.

Several factors appear to account for the increase in female employees in these firms. One is the growing acceptance of a role for women in the formal labor force; as one manager observed, while it had been customary for women to not work in agriculture, that was changing, with the result that many more women were seeking employment.

Another factor is the nature of cultivation for non-traditional agricultural products. Unlike traditional crops grown for local market consumption, crops grown for export require considerable attention to quality and appearance. Female employees are preferred for certain activities -- such as picking, pruning, harvesting, sorting and packing -- because they tend to be more careful, accurate and productive than men. As these are labor intensive activities, the proportion of women in the labor force in these companies can be expected to increase.

The jobs created by these businesses, for both men and women, tend to be entry level positions, best suited to persons without any previous formal work experience.

### Social Characteristics of Female Employees

Almost all of the women interviewed for the study, especially those working in some aspect of fruit or vegetable cultivation (such as care of nursery plants, transplanting, weeding and harvesting), were from landless or near-landless, non-agricultural households. All were from households with limited access to resources. Of those for whom information was available, none had completed primary school; the majority had only reached the second grade. These data suggest that the positions created provide employment opportunities for the more marginal segments of the urban and rural populations who might not otherwise be gainfully employed.

The large majority of women engaged in agricultural field work were young, in their late teens or early twenties. More than two-thirds of the women interviewed were single, and still living at home with their families. Those asked about their female coworkers said most of them were also single. Fruit harvesting was the exception, where most of the employees were married women, accompanied by children who participated in the picking and packing. Supervisors commented that

women were preferred for these jobs because they were careful not to damage the plants, trees, or fruit they were harvesting. These are generally short-term, relatively intensive and highly seasonal occupations that permit the family to earn substantial income without requiring full-time employment.

While field workers consisted almost entirely of younger single women, older women, (married and female heads of households) were found in sorting, packing, and other similar urban-located, semi-industrial or commercial activities.

### **Gender-related Distribution of Tasks and Wage Levels**

Employment tends to fall into traditionally-defined gender patterns. Without exception, men perform heavy duty work, operate tractors and other equipment, fumigate, carry and cultivate. Conversely, tasks requiring greater care (such as handling fragile produce), or manual dexterity (as in caring for and transplanting seedlings).

This does result in some wage discrimination. While all workers interviewed worked at (or slightly above) minimum wage, certain occupations, -- such fumigators, equipment operators and irrigation personnel -- earn premium pay. These are occupations that are systematically closed to women.

To the extent that can be determined from the information available, the fact that women play a recognized role in quality control has not been translated into any economic advantage for them. On at least two farms, men tended to receive higher wages, even though working together with women in the same crew. In others there appeared to be no wage differentiation, regardless of the type of work performed.

### **Opportunities for Advancement**

Women form a sizable portion of the workforce in the businesses studied. At the same time, relatively few women were found in supervisory or managerial positions in the companies studied, either within work groups or within the company hierarchy. Supervisors and management level personnel (apart from secretaries and clerks) were almost exclusively male. Unless we assume that virtually none of the women whose work requires refined skills and attention is capable of assuming a managerial or supervisory level position, we must conclude that other factors intervene to exclude women from advancement to those positions.

As already noted, the majority of these women, especially among field crews, are young and single. The common practice is for them to withdraw from the workforce once they get married.<sup>14</sup> Since they tend to stay with the firms for only a relatively short period of time, they do not accumulate the experience or seniority necessary to gain access to higher level positions.

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<sup>14</sup> The term "married" accepts a wide variety of cultural and legal practices in both countries.

"Cultural norms" play a strong role in conditioning the withdrawal of women from the labor force. In Costa Rica as well as the non-indigenous areas of Guatemala, the income-generating role is generally assigned to men. "Partnered" women are drawn into the workforce only as forced by absolute necessity. That need may result from the frequent absence or unreliability of male-generated income, from his abandoning the household, or from a predominance of industries in an area that prefer to hire women. In any case, a married woman's entry into the workforce is not viewed positively.

Since women generally expect and are expected to marry, cultural norms tend to work against promotions for women in their jobs. Cultural norms justify not investing in advancing women to supervisory or managerial positions even if only over other women. Again in accord with cultural norms, experience and ability are insufficient cause to place women in supervisory positions over men. The generally low educational level of these women further justifies this attitude.

### **The Impact of Local Laws on Employment Opportunities for Women**

In Costa Rica laws have been enacted to protect a woman's right to have a child, requiring that she receive four months' paid maternity leave without jeopardizing her job. Unfortunately, this law works as often against as for women, in that it significantly raises the cost of hiring women. One employer frankly explained that it was precisely because of that law that he preferred not to hire women at all. In Guatemala no comparable law exists to protect a woman's access to her job during her childbearing years.

### **Women-owned Businesses**

None of businesses covered in these case studies was owned by a woman. During the course of its history, LAAD-CA has made several business loans to women-owned businesses. No data on these firms were available for the study.

### **Summary**

Substantial employment opportunities for women have been created by businesses receiving LAAD-CA loans. This is particularly true of loans contributing to establishing new businesses, or to expanding presently existing businesses. The positions created tend to be of an entry level category, requiring relatively low skills and little formal education.

Much of the success of the newer nontraditional, export-oriented businesses is contingent upon their ability to deliver a higher quality product than that normally produced for a local market. Regardless of the product in question, women tend to be hired for those positions that exercise final quality control; they are they are generally considered to be more careful, and pay closer attention to details. Nevertheless, women are rarely found in management level positions, and routinely receive lower wages than men at the entry level.

The limitations faced by women are endemic to the system and in no way unique or more pronounced in businesses receiving LAAD-CA loans. To the contrary, several of the women interviewed voluntarily indicated satisfaction with their overall working conditions.<sup>15</sup> While three of the women interviewed had taken salary cuts to work with their current employers, each of these felt that the more regular work hours, job security and overtime pay, more than compensated for the reduction in the wage rate. Comments such as these speak rather highly of the concern reflected by the managerial and administrative staff for the general welfare of their workforce whether profit motivated or not. Members of the interviewing team likewise noted this attitude on the part of management.

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<sup>15</sup> Interviews were held in private, out of the hearing of co-workers and supervisors, so that it is unlikely that these responses were intended to favorably impress them.

**PART THREE**  
**INDIVIDUAL CASES**

## I. AGROPECUARIO BALMORAL, GUATEMALA

### Background

Agropecuário Balmoral, S.A. (AGROBAL) was established in 1982 to process and export cardamom oil. It is owned by two Guatemalan businessmen. Since 1982 the company has diversified, and is now engaged in the production, blending, processing and exporting of several essential oils, including cardamom, lemongrass, citronella and key lime oils. Guatemala is one of the leading producers of these oils, and AGROBAL, although a small company, is now one of the world's largest producers of high quality oils.

AGROBAL initially intended to purchase all of its raw materials from existing producers. Instability in supply, however, led to a decision to establish its own farms. It now owns a large farm near the town of Sepur in the Polochic River valley in East central Guatemala, where it raises key limes, citronella and lemon grass, and has recently purchased a second farm near the port town of Puerto Barrios that will also be used to grow these crops. First-stage processing facilities are (or will be) located on each of these farms.<sup>1</sup> The company has its headquarters, laboratory, final refining operations and export office in Guatemala City.

The company does buy cardamom seeds and processed oils from a variety of independent growers. In 1986, for example, AGROBAL purchased 94 percent of its lemon grass oil, 55 percent of its citronella oil and 35 percent of its lime oil from such producers. All of the cardamom used in production of cardamom oil is purchased from small-scale independent producers.

### Description of the LAAD-CA Investment

LAAD-CA has loaned a total of \$300,000 to AGROBAL. An initial loan for \$230,000 was approved in early 1987 to help the company expand and modernize agricultural operations and construct a new essential oils distillery at its main farm near Sepur. An additional \$70,000 was approved in 1988 to permit the company to expand purchases of raw materials from small producers and to increase the acreage of lemon grass, citronella and lime tree cultivation on its new farm near Puerto Barrios.

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<sup>1</sup> Processing facilities are already operational at the Sepur farm, and are currently being installed on the farm at Puerto Barrios.

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In addition to the LAAD-CA loans, the owners have invested \$400,000 in the operation and obtained other loans totalling \$222,000.<sup>2</sup> Investments in the company, therefore, have been \$922,000, with LAAD-CA financing representing 33 percent of the total.

### **Employment and Income Benefits**

#### **Initial Investments**

The first LAAD-CA loan to AGROBAL was used to put their main farm and essential oils distilling installation near Sepur into production. Approximately 65 percent of the initial loan (\$150,000) was used to expand the acreage of lemon grass, citronella and key lime production. At the present time the company is producing citronella on 425<sup>3</sup> acres, lemon grass on 262 acres, and key lime on 192 acres. Small areas of new products, such as pachouli and ylang ylang, are coming into production. Construction of the new distillery cost another \$150,000, with the LAAD-CA loan providing approximately \$80,000 and owner-contributed capital the rest.

Land preparation required the employment of large numbers of agricultural laborers drawn from throughout the Polochic Valley. When AGROBAL acquired Sepur, the farm was a traditional Guatemalan absentee-owned farm with a resident labor force of 15 colono<sup>4</sup> families. To prepare the land for cultivation of lemongrass, citronella and limes, the number of resident families was increased to 45. In addition, AGROBAL employed two types of temporary laborers: contract work groups, called cuadrillas, and individuals from villages throughout the valley, called voluntarios, who presented themselves at the farm looking for work. Of the total expenditures for expanding the planted area of the farm, labor costs constituted \$130,000, or 85 percent. The remainder (\$20,000) was spent on agricultural inputs, including seeds, fertilizers and herbicides. AGROBAL estimates that between 250 and 300 person-years of work were employed in the pre-production stage of the project, although many of these were also engaged in on-going farm cultivation activities in addition to initial land preparation.

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<sup>2</sup> AGROBAL recently obtained a loan from a special line of credit available through the Central Bank for installation of the essential oils distillery at the Puerto Barrios farm.

<sup>3</sup> This figure does not include areas coming into production.

<sup>4</sup> Colonos are landless peasants who are given, as one of the benefits of employment on an hacienda or plantation, the right to live on the hacienda's land and raise garden crops on a small plot of land.

Most of the expenditures for the construction of the essential oils distillery at the Sepur farm were also local. Of the total cost of \$150,000, nationally produced components, including labor involved in manufacturing the components, accounted for \$128,000, or 85 percent of the total. Most of the smaller boilers, vats and distilling equipment were produced in Guatemala. The only imported item was the large plant boiler, which was purchased second-hand in Mexico for \$22,000. Labor involved in the actual construction and assembly of the plant was drawn from the ranks of new colonos and other local workers.

The new colonos and many of the temporary workers employed in land preparation have evolved into permanent employees of the company -- some as full-time workers, others as regular temporary employees.

### Direct Employment

When AGROBAL acquired the Sepur farm in 1986, the number of colono families was immediately increased from 15 to 45. This figure grew to 57 after the first LAAD-CA loan. Due to the fact that the colono families constitute a small community on the farm itself, the growth in the population of this group is restricted by the land area available for housing and subsistence crops that is given as one component of the colonos' total benefits as employees of the farm.

Table 10

#### Permanent Employment at the Sepur Farm Before and After First LAAD-CA Loan

	1986		1988	
	Men	Women	Men	Women
Field Workers	48	0	57	0
Plant Workers	1	0	50	0
Administrative	2	0	7	0
Managerial/ Professional	2	0	10	0
<b>Total</b>	<b>53</b>	<b>0</b>	<b>124</b>	<b>0</b>

Source: Cesar Vetorazzi, Sepur Administrator

While these represent a substantial increase in full-time employment, the most significant employment increase is the number of workers who are hired as members of contract work groups, and those who are contracted as individuals. The contract work groups, organized by independent labor contractors, are recruited from regional towns -- such as Teleman, El Stor and Coban -- to work for one-month periods. Sometimes they are contracted immediately for another one-month period. At other

times of the year there may be a one- to three-week layoff between work assignments. Workers who are contracted individually normally work for two weeks, after which they return to their nearby villages to tend their own corn and bean fields. After spending seven or eight days in their own villages, they return to Sepur for another two-week work contract.

Although these are temporary employees, the work is steady and the total number working at any given time is stable throughout the year. In 1986 this temporary, rotating labor force numbered around 50 persons. In 1988 it had increased eight times, to between 400 and 450 workers. Contract work groups accounted for 300 to 350 persons and voluntarios for 50 to 60. On average, these workers are employed between 65 and 75 percent of the time.

AGROBAL's primary requirement for seasonal workers is associated with the key lime harvest. For this AGROBAL hires about 100 workers, all of whom are women, most of whom are accompanied by their children.

As a result of the expanded labor demand, AGROBAL's total wage bill has grown proportionately. Between December 1986 and December 1988 total expenditures on wages, advances and food supplements increased 254 percent, from \$121,121 to \$307,301.

When AGROBAL undertook the Sepur project, the farm was an abandoned, traditional absentee-owned farm with paternalistic labor relations. Colonos were paid a minimal wage and given lands for cultivating corn. The intensity of land utilization was low: of the farm's 1,360 acres, only 25 to 35 were planted in citronella grass, the rest was idle land. Only 15 colono families lived on the farm to cut the grass, employing unsophisticated production.

The intensity of land and labor use has increased substantially since AGROBAL purchased the farm. At present, 425 acres are planted in citronella, 262 in lemon grass and 192 in key lime. An additional 109 acres are planted in maize. The farm has a differentiated labor structure divided between plant workers, field workers, administration and security personnel. Field workers are assigned to specific crops and activities, as can be seen in Table 11, below.

Table 11

## Labor Utilization, by Product

Labor Category	Product			
	Citronella	Lemon Grass	Key Lime	Other
Colono	18	17	16	6
Contract	180	140	80*	5
Individuals	18	14	10	8
Totals	216	171	106	19

\* All women

The transition from an abandoned, semi-feudal agrarian enterprise to a modernized farm has presented AGROBAL with problems that are not yet entirely resolved. Major labor shortages plagued the company during the first years it operated the farm. Wages had to be significantly increased above standard levels and even this measure was not sufficient to guarantee an adequate labor force. Minor labor shortages have been encountered at key periods during the year and could become a critical bottleneck as production is expanded.

Another problem arose when the firm attempted to eliminate the practice of giving maize-growing plots to the colono. This initiative was met with strong resistance from the resident families and the company was forced to continue the traditional practice. Recently they have attempted an intermediary procedure: selling maize to colonos at a sub-market price in exchange for relinquishing the maize plots.

Another problem that has come up in the transformation from the traditional patron-peon labor relation to a more modern administrator-employee relation concerns the role of the farm administrator in the resolution of conflicts between colono families. AGROBAL does not consider this traditional role to be appropriate. However, the lack of effective community level dispute resolution mechanisms has had repercussions on the utilization of women in the labor force.

Increased expenditures on direct employment are also due to qualitatively improved working conditions, in comparison with the previous situation at Sepur and the current conditions on other farms in the Polochic Valley. Field worker wages of \$1.48 per task are 30 cents higher than the official minimum wage. Fast workers can complete more than one task per day, with workers that were interviewed reporting incomes that varied between \$1.85 and \$2.03 per day. At one time the company paid \$1.85 for the first task and \$2.60 for the second in an effort to stimulate worker production. There are additional possibilities for increasing income on the basis of demonstrated work capacity: in a seven-month period with the company, one plant worker reported having raised his daily income from \$1.48 to \$2.96.

In addition to the higher wages, AGROBAL offers a number of indirect benefits to its permanent employees. A school teacher was contracted in 1988 for \$1,093 per year. All school age children of colono families attend daily classes. The children receive school materials such as texts, notebooks and pencils, at no expense to their families. Children attending school also receive daily protein supplements, paid for by AGROBAL; in 1988 the company spent \$2,398 on this product.<sup>5</sup>

Medical benefits include a medication dispensary for minor ailments. For more serious maladies, workers are given bus-fare to the nearest town with a resident doctor, and perdiems during the period of their visit. In at least two cases, AGROBAL flew seriously ill employees to Guatemala City and paid for their hospital care. The company has also constructed field latrines in an effort to improve sanitation practices among its resident employees. Finally, the company provides housing to the colono families. At present, the housing consists of the traditional, oval-shaped, thatched roof, stick huts, some in place when it took over the farm. As part of its overall program of social welfare for the resident families, AGROBAL is planning to construct pre-fabricated block housing for all employees. The housing will have indoor plumbing.

#### **Indirect Employment through Purchases of Raw Materials**

AGROBAL originally planned to purchase all of its raw materials from independent producers. In 1984 it bought 380 barrels of lemon grass oil from 16 producers in the southern coastal region of Guatemala. In 1988, only five producers remained active. These five sold 181 barrels to the company, 46.9 percent of the lemon grass oil purchased from all suppliers. The total value of calendar year 1988 purchases amounted to \$292,252.

Each of the five south coast suppliers have between 350 and 600 acres in lemon grass and citronella. Lemon grass production occupies 60 percent of the area, citronella the other 40 percent. Before 1986, the present suppliers had an average of 80 to 90 part-time and full-time employees. By 1988 this had increased to between 100 and 150 at each of the farms. The average farm income from these products was \$58,400 in 1988.

Some of AGROBAL's suppliers sold their lands to the Guatemalan government under pressure from the agrarian reform program. These lands were converted into cooperatives. On one converted farm, with 340 acres of lemon grass, production of lemon grass oil declined from 55 drums in 1984, when it was still in privately owned, to only 10.3 drums in 1987, after it had been converted to a cooperative. More than 200 families, drawn from different areas throughout Guatemala, were initially settled on the 816-acre farm, but after six months 180 of these families had abandoned the cooperative. AGROBAL offered technical and other assistance to the cooperative, but it was not accepted.

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<sup>5</sup> Studies conducted by medical personnel indicated a high incidence of malnutrition, leading AGROBAL to offer the protein supplements to workers and their families.

Cardamom is purchased from a variable number of independent small growers in the neighborhood of the Sepur farm. As this number varies from season to season, it is not possible to specify employment or income impacts.

AGROBAL has made numerous attempts to stimulate the declining production of lemon grass and citronella in the southern coastal region. It provides its suppliers with improved seed varieties, fertilizers, mechanical equipment (including mechanical oil separators), technical assistance, advances against projected deliveries, transportation from the supplier farms to the Guatemala City refining plant, and the barrels used for packing and shipping the essential oils. The primary advantage the AGROBAL provides is its ability to refine oils to specific market standards, thus increasing the exportability and value of the product. According to AGROBAL's owners, "excellent relationships are maintained with all independent suppliers."

#### **Indirect Employment through Purchases of Goods and Services**

AGROBAL's local purchases of goods and services are primarily for agricultural chemicals (insecticides, herbicides, and fertilizers), barrels for shipping essential oils, and the construction and maintenance of its distilling plants. Three companies supplying these items reported total sales of \$41,852 to AGROBAL in 1988.

Agribodegas Cia., a local supplier of agricultural chemicals, had the largest volume of business, with total sales of \$31,481 in 1988. At least 75 percent of the total sales represents the cost of imported items. AGROBAL's purchases represented 2 percent of Agribodegas' total sales, and about 10 percent of the sales representative's annual business.

"Talleres Victor," a small family business, constructs and maintains AGROBAL's boilers, cookers, condensers and vats. The firm is well known in Guatemala for boiler construction and had worked with members of AGROBAL's management when they were associated with another firm. In 1988 they provided maintenance services worth between \$3,700 and \$5,500. They currently are preparing to construct the boiler at AGROBAL's new facility in Puerto Barrios. AGROBAL's business accounts for approximately 15 percent of their gross annual sales. Talleres Victor does not import any materials itself. The contracting companies, such as AGROBAL, provide motors, gauges and other imported items. The firm did not employ its own laborers in constructing AGROBAL's plants, as construction workers were drawn from the full-time workers living on the farms. This company has also constructed specialized equipment for AGROBAL, substituting locally designed and manufactured products for more expensive, imported ones.

A small business that has benefited greatly from its business with AGROBAL is "Toneles Roosevelt," a supplier of barrels for packaging and shipping essential oils. This small firm purchases used shipping barrels and cleans them. According to the owner, AGROBAL provides an important contribution to his firm in two senses: (1) AGROBAL accounts for about 20 percent of its total sales, and (2) AGROBAL's demand for barrels is high when the demand of other clients is low, thus stabilizing the overall demand level for his product. Toneles Roosevelt's overall sales have

increased from \$14,814 in 1984 to \$29,630 in 1988, in part due to AGROBAL's business.<sup>6</sup> The firm currently employs two full-time workers, with total annual wages of approximately \$6,667.

In summary, AGROBAL does have a small, but direct impact on employment and income generation due to its purchases from suppliers. This is more evident in the case of small-scale businesses such as Talleres Victor and Toneles Roosevelt than for larger companies such as Agribodegas. More importantly however, is the stimulus it has given to national manufacturers; its distilling and refining operations have been built and equipped using Guatemalan materials and labor.

### **Other Indirect Impacts**

Although the Sepur farm is located several hours from the nearest towns, Teleman and El Stor, its influence in these small market centers is strong. The continual need for a labor force has driven the company to contract labor from throughout the region. Residents in the neighboring towns find a constant source of temporary work as voluntarios. A shopkeeper in Teleman said, "Sepur, sure we know about it, everybody from around here goes down there to work." Teleman is also the first link in the cardamom marketing chain for the communities in the mountains on either side of the Polochic Valley. The combined effects of the two economic activities has converted Teleman into a bustling place, especially on market days.

On the farm itself, several colono families have started small stores in their houses, selling soft drinks, crackers and other items. The farm administrator informed us that merchants show up in the camp on pay day, bringing such industrial wares as wrist watches, domestic goods, hardware, radios and other goods.

### **Employment and Income Opportunities for Women**

As the key lime plantations are extended and come into full production, there will be an increasing demand for women laborers. Women are preferred for lime harvesting because they are faster than men and are considered to be more gentle with the lime trees. At present 80 women are employed during the months of lime harvest.

An attempt was made to use the female members of the resident colono families in the 1988 lime harvest but difficulties were encountered when the women who did not want to work began to cause problems for those who did. The outcome of the conflict was the refusal of all colono women to participate in the harvest. As a result the women who now work in the harvest are drawn from villages in the surrounding areas.

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<sup>6</sup> The owner explained that sales had not increased as much as might otherwise be expected because he was investing less effort in attempting to secure new clients now that he was supplying barrels for AGROBAL.

In an effort to reduce conflict, the farm administrator and overseer have begun attempts to organize the women to collaborate together. One major activity is that the women are organized in groups to prepare and distribute the school children's protein supplement.

### **Summary and Conclusions**

AGROBAL's investment in the Sepur farm has generated major employment and income opportunities in the Polochic valley. Approximately 250 full time and 200 temporary jobs have been generated by activities on the farms. Increased employment will result from current efforts to develop the new farm at Puerto Barrios. Awareness of the farm's demand for labor extends to the nearest market town, Teleman, where merchants stated that, "everybody goes down there to work."

The key to the creation of employment at Sepur is the combination of the essential oils processing plant with extensive farm production. Without this plant, neither lemon grass, citronella nor key limes would represent profitable crops. On traditional Guatemalan cane, coffee and cattle plantations, the production of essential oils constituted a way to absorb idle resident labor. Changes in Guatemala's overall agrarian structure, both economic and political, have led to the decline of the traditional plantations. Correspondingly, the production of the unrefined essential oils has dropped during the last five years.

The declining production of unrefined oils forced AGROBAL to go into the direct production of its own raw materials, a role that it had not originally seen for itself. The company soon discovered that the most important bottleneck in its operation was labor supply. AGROBAL has emerged as the country's number one producer and is still only operating at half its capacity due to the difficulties of purchasing sufficient supplies of unrefined oil, on one hand, and securing a large enough labor force to produce its own raw materials, on the other. AGROBAL creates more jobs than can be filled.

AGROBAL has, however, encountered serious problems in its role as owner and administrator of the farm. The traditional patron-colono labor relations are foreign to AGROBAL administrator's concept of their responsibilities to their workers. The traditional patron was not only an employer but also the basis of local level government. AGROBAL assumes responsibilities for the social welfare of its workers but does not feel responsible for the day-to-day management of social conflict and harmony. The problem does not appear to be so serious as to undermine the venture, but it is a persistent difficulty.

Conflicts between women are also endemic. The lack of an effective conflict resolution mechanism among the colono families, a mechanism traditionally assumed by the farm owner or administrator, exacerbates the women's situation on the farm. Nevertheless, the company has begun efforts to organize the women and to find solutions to the chronic inter-household conflicts.

AGROBAL's concern for the health and well-being of its workers, the education of school age children and the levels of living are exemplary.

## II. COMERCIAL TROPICAL, GUATEMALA

### Background

Comercial Tropical, S.A. (COMTROP) is one of five subsidiary corporations of Inversiones Tropicales, S.A. It is a single-family business that was established in 1978 to export cardamom, black pepper and dehydrated lime to the Middle East.

COMTROP does not grow its own agricultural raw materials, but relies on purchases from independent producers. Cardamom is purchased from several major intermediaries, more than 80 cooperatives, and numerous small and large farms, many of which have their own dryers. In all, several thousand individual cardamom producers are affected by COMTROP's purchases, and limes are purchased from approximately 300 growers. Most of these producers are small farmers with average holdings of 2.5 acres.

COMTROP has its main headquarters near the airport in Guatemala City. In these facilities are its principal cardamom sorting, grading, packing and shipping operations. In addition to these facilities, COMTROP owns and operates several purchasing and processing offices throughout the country, principally in Coban, Alta Verapaz and Suchitepequez for cardamom, and in El Progreso for lime. COMTROP also owns and operates its own fleet of trucks.

### Description of the LAAD-CA Investment

COMTROP currently has total assets of \$926,000 and paid-in capital of \$481,000. These figures understate the true amount of owner equity, however, as assets have not been revalued since the 1985 devaluation of the Quetzal.<sup>7</sup>

LAAD-CA has made two loans -- one in 1986 for \$300,000 and one in 1988 for \$200,000 -- to COMTROP. Because COMTROP's processing and packaging operations were already in operation at the time of the LAAD-CA loans, no expansion of plant or processing capacity was supported by the LAAD-CA investments. Both of the loans, therefore, were for working capital: the first for purchasing cardamom from small producers, the second to purchase (also from small growers) fresh lime fruit for dehydrating and exporting as a spice.

The principal financing need of a company such as COMTROP is for working capital to purchase raw materials, which it then processes and exports. This requires a special type of financing -- in particular, flexible open-end lines of credit that can be drawn down as needed when product becomes available. The type of financing LAAD-CA offers -- fixed term loans with a declining balance -- is not particularly well suited to this type of operation. COMTROP finances most of its working capital through its own earnings and through bank financing of inventories.

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<sup>7</sup> In 1985 the Guatemala Quetzal was devalued from 1 to 2.7 Quetzales per dollar. Revaluing assets would yield total assets of approximately \$2.5 million and paid-in capital of \$1.3 million).

COMTROP annually purchases about \$5.5 million in agricultural raw materials. LAAD-CA's financing, therefore, covered about 9 percent<sup>8</sup> of the annual working capital requirements of the organization. This percentage will decline as the fixed-term loans are amortized.

### Analysis of Employment Impacts

COMTROP operates as a broker of cardamom and limes in a highly competitive market. There are 21 registered cardamom brokers in the country, of which 17 are active. Four of these handle 62 percent of all cardamom exports. COMTROP is the fourth largest, with approximately 13 percent of the market. Lime markets are less well developed, with most sales to local fresh fruit markets. Prices vary seasonally, from a high a \$35.00 per hundred-pounds<sup>9</sup> to a low of \$2.00 per hundred pounds during the season of peak lime harvest. COMTROP is perhaps the only large purchaser of limes during the peak harvest season.

COMTROP purchases all of the agricultural products that it processes and markets; it neither owns nor operates producing farms. Also, COMTROP's processing facilities were in operation before the firm received its LAAD-CA loans. Since the LAAD-CA loans were not used to develop or expand production operations, or to construct or expand processing facilities, they did not have the impact of generating additional employment within COMTROP's operations.<sup>10</sup> Employment and other economic benefits resulting from these particular loans, therefore, are primarily those accruing to independent suppliers that have sold produce, goods and services to the company.

### Direct Employment

COMTROP has a central warehouse and cardamom processing plant at its main headquarters in Guatemala City, and operates a lime dehydrating plant in the town of El Progreso and a cardamom selection plant in the town of and Coban. Seventeen independent brokers located throughout the country act as COMTROP agents for the purchasing of cardamom.

Direct employment in COMTROP has actually declined, from 538 persons at the time it received its first LAAD-CA loan to less than 400 at the time of the study. During the same period overall wages declined from \$811,700 to \$523,000, and personnel benefits from \$261,000 to \$167,000.

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<sup>8</sup> A portion of the loans has already been repaid.

<sup>9</sup> The unit of measurement for lime sales is the quintal, which is equivalent to 100 pounds.

<sup>10</sup> In fact, direct employment in COMTROP actually declined during the past two years, due to factors unrelated to the LAAD-CA loans.

The decline was due to a number of factors, none of which were related to the LAAD-CA loans. The major factor was that, during the latter part of 1988 and early 1989, world cardamom prices dropped to such low levels that Guatemalan exporters placed a voluntary ban on exports, reducing COMTROP's need for sorters and graders. A second factor is that preliminary sorting and drying activities are increasingly performed by independent agents, cardamom cooperatives and even individual producers, again reducing COMTROP's need for full-time employees. Finally, COMTROP has recently automated preliminary sorting operations in its Guatemala facilities.

The El Progreso lime dehydrating facility functions principally between the months of May, when limes begin to be bought from local producers, and March, when the last batches of dehydrated lime are graded and bagged for shipping. During the months of full operation 54 full-time male workers are employed. Of these workers, only the administrator, clerk and watchmen are employed twelve months per year; field workers are employed for a maximum of eleven months and are not remunerated for the months they do not work. There are four drying fields at the facility. When in use, each field requires a ten-person, full time work group.

Ten workers interviewed at the El Progreso facility in mid-March 1989 were the only group of field workers still active. All of them were born and lived within one hour's walk of the workplace. Prior to coming to COMTROP only four of these workers had been employed full time; six had been employed part-time as agricultural workers in the area, with average wages of \$1.30 per day.

Table 12

## Employment at El Progreso

Category	Number	Monthly Salary
Administrator	1	\$271*
Clerk	1	74
Field Foremen	2	78
Field Workers	40	54
Truck Drivers	3	93+
Truck Assistant	3	n/a
Watchmen	4	59
Warehousemen	7	78

\* Includes imputed value of housing, food and clothing.

+ Does not include imputed value of housing and food

Source: COMTROP.

Table 12 summarizes the wage structure at the El Progreso facility. The administrator and the truck drivers receive housing and an allowance for food in addition to their wages. The administrator also receives an allowance for clothing.

The basic work week is Monday through Friday and half-day Saturday. However, the workers reported working seven days a week during the period between May and October. An overtime rate of 4 cents per hour is paid. Another direct monetary benefit is that the company pays the traditional "thirteenth month" bonus, to all workers, even though most do not work a full twelve months.

The worker's wages were about 19 cents per day higher than at their previous jobs. Whereas these wage rates permitted single males to enjoy some spending money, heads of family -- seven of the ten persons interviewed -- stated that their incomes were insufficient to meet basic necessities. Even so, these employees preferred employment at the dehydration facility to the jobs they previously held. In addition to the slightly higher wages and monetary benefits, they cited job security as the principal factor for their preference. All expressed satisfaction with overall labor relations at the workplace.

#### **Indirect Employment through Purchases of Raw Materials**

Between 1986 and 1988 COMTROP increased its level of purchases of both lime and cardamom from independent producers. Cardamom purchases increased during this period from \$3.1 to \$4.7 million per year, while lime purchases increased from \$144,000 to \$216,000 per year.

#### **Lime Purchases**

The primary impact of COMTROP's activities in the area of El Progreso is the constant and secure market it offers for lime production during the period when fresh fruit market prices are depressed (May - November). Growers rarely keep records of their production or sales, but COMTROP data for 1988 indicate that it purchased 140 metric tons of limes from more than 300 growers.

Seven independent lime producers were interviewed; five in Las Ovejas and two in Palo Amontonado. Farm sizes varied between two and seven acres. All of the farms were dedicated exclusively to producing limes. Approximately 75 percent of their production is sold to COMTROP during the period between May and November. Between December and April the limes are sold to the fresh fruit market in Guatemala City.

The growers interviewed like to sell to COMTROP because the company provides its own transportation, pays cash upon receipt, and accepts produce that cannot be sold in the fresh fruit market.

The level of employment sustained by lime purchases depends on the presence or absence of irrigation. The principal activities of pruning, spraying, cleaning, fertilizing and harvesting require a minimum of 70 days of labor per acre per year. Growers in Palo Amontonado, who have access to an irrigation canal, employ about 160 days of labor per acre per year. Harvesting requires another worker for each acre. The daily wage is \$1.85 per day. The total amount of labor required by COMTROP's independent suppliers is equivalent to more than 400 full time jobs.

### Cardamom Purchases

COMTROP itself has purchased cardamom since 1985, and currently buys about 12 percent of the total product commercialized in Guatemala. During 1988 it purchased cardamom from 20 cooperatives (with a total of more than 1,500 members), and several hundred independent producers.

Fresh cardamom is called cereza; after drying it is known as pergamino. COMTROP's Guatemala City processing plant receives and grades only pergamino, buying from agents in Alta Verapaz and other parts of the country who convert cereza purchased from independent producers into pergamino before forwarding it to COMTROP's Guatemala City plant. These agents also purchase pergamino from independent growers who own their own dryers.

Cardamom growers range from small farmers who grow cardamom as a cash crop on subsistence-oriented farms to large growers whose farms are dedicated entirely to cash crops. Increasingly, both types of direct producers are drying their own cereza before selling it to COMTROP. The larger farmers own their own dryers. During the past few years the smaller farmers have formed production groups and purchased dryers with the help of an AID-financed loan program.<sup>11</sup> COMTROP's agent in COBAN purchases approximately 25 percent of his supply from larger producers and 75 percent from the small farmer production groups.

Small farmers are usually members of communities with diversified farm production. Corn and beans are the typical subsistence crops, while cardamom, achiote and coffee constitute the basic cash crops. Cardamom supplanted coffee as a principal cash crop about five years ago when world cardamom prices were at record highs. Prices as high as \$250 per hundred pounds were being paid for cereza. Currently prices for cereza have fallen to \$24 per hundred pounds. The fall in fresh cardamom's sales price has been an important factor influencing the formation of dryer groups among small farmers.

No individual, small farmers sell cardamom directly to COMTROP. If a producer is not a member of a dryer group, the product will be commercialized through the local market system. As many as four intermediaries function between a producer in a remote area of Alta Verapaz and the Coban warehouses.

Since receiving the LAAD-CA loan for cardamom purchases, COMTROP has increased its purchases from community-level dryer groups. The representative for more than 80 small dryer groups, Amada Sauced Garcia, has engaged in direct negotiations with COMTROP in Guatemala City concerning the volumes and prices of the sales. Cardamom growers stated that one advantage of selling to COMTROP is its fixed price policy, which has maintained a base price even with the decline in world market prices.

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<sup>11</sup> The increase in local drying has contributed to COMTROP's reduction in staff.

### **Indirect Employment through Purchases of Goods and Services**

Because COMTROP acts as a marketing intermediary, it has relatively few local expenses for goods and services. In 1988, for example, COMTROP spent only \$202,000 on inputs other than raw materials, compared to total sales of nearly \$7.0 million. The most significant expenditures were for shipping cartons (\$84,900) and plastic bags (\$33,250). Other major expenses consisted of fuel and maintenance for the company's trucks.

COMTROP's direct purchases have not had a discernable effect on employment in the suppliers' firms. COMTROP's purchases from Cajas y Bolsas, S.A., the manufacturer of COMTROP's shipping cartons, account for only 4.2 percent of that company's \$2 million in annual sales. Furthermore, Cajas y Bolsas' main manufacturing plant is in El Salvador, so that 47 percent of the cost of the boxes is made up of imported items.

### **Other Indirect Impacts**

The cardamom industry has important backward linkages at the local level. The market towns in Alta Verapaz (where COMTROP maintains an important presence through its local agent) are dynamic towns that depend greatly on the commercialization of cardamom. Merchants and restaurant owners acknowledged that their business levels are highest during the cardamom harvest periods. While it is difficult to isolate the effects of Comercial Tropical's activities on the local economy -- due to the fact that it is only one of a number of cardamom brokers and only has a 13 percent market share -- it certainly contributes to the stimulation of local businesses in the area. The cardamom industry, including COMTROP, has had its most notable impact on two types of businesses: local transporters of cardamom and manufacturers of cardamom dryers.

Cardamom is produced in a wide area across central Guatemala. Most of the producers live in areas so remote from the principal purchasing centers that transportation of the raw cardamom to markets is a major problem, and a major business. There are no estimates of the number of individuals who make at least part of their living transporting cardamom, but it is large. If there is no road to a community, the product is transported by horse, mule or boat to the nearest road terminus at a price of about \$1.11 per hundred pound sack. Transportation by truck to the nearest market town costs as much as \$1.85 per hundred pounds, and, if no cardamom broker is located in that town, transportation to Coban may cost an additional \$1.85 per hundred pounds. At the current price of \$24.00 per hundred pounds for cereza, the cost of transportation can amount to as much as 20 percent of the sales price. Transporting cardamom, therefore, sustains a large number of people.

Value added in the cardamom industry comes initially from converting cereza into pergamino. Although initially performed by the large brokers, this activity is suitable for small-scale enterprises. As a result, numerous groups have formed dryers groups and purchased small drying machines. These are all manufactured locally, and have the effect of generating local employment. One small agricultural machinery factory in Coban, for example, employed as many as 18 workers in the construction of dryers when cardamom prices were high, although the continuing decline in

cardamom prices had forced him to reduce his staff to 11. Several agricultural machinery manufacturers in the Coban area derive a substantial portion of their income from the manufacturing of cardamom dryers.

### **Employment and Income Opportunities for Women**

The dehydrated lime processing creates no job opportunities for women. Women are used in lime harvesting in some areas but this practice has nothing to do with the specific activity of producing dehydrated limes for export.

The manual selection and grading processes of the cardamom industry provides significant employment opportunities for women. The rate of unemployment is higher among men than women in the Coban area, for example, precisely because of the intensity of female employment in the cardamom industry. In 1989 COMTROP's agent in Coban employed 300 women selectors, but only 23 men.

A total of eight women were interviewed at COMTROP's selection facilities in Guatemala City and Coban. Three of the women had previously worked in other cardamom plants. Several had worked as domestic servants or store clerks. Women often bring their daughters to work in the plant with them. The two youngest women interviewed had begun to work when they were five and six years old. Three of the four women have a total of six relatives working in the plant. A visit throughout the large room where the selectors worked revealed numerous groups of very young girls. Unlike most field work situations, cardamom sorting and grading employed numerous married women with children.

All cardamom selectors are paid by the volume of work performed. During the 1987-1988 season this rate was 7.4 cents per pound. Due to the sharp decline in world prices for cardamom, the rate for the 1988-1989 season had been reduced to 5.5 cents per pound. The women reported average monthly earnings of approximately \$36.00, but there is a great deal of variation and several reported earning as much as \$2.20 per day.

The selectors only work during the harvest season between October and May. There is no provision for off-season work, and all reported that they returned to their homes during the months from June to September. The employment is flexible in that women who do not come to work on any day are simply not paid, but can return to work without penalties. The standard seventh-day payment is determined bi-weekly: total earnings for the two weeks are divided by seven, and this amount is added to the bi-weekly checks. The company also pays the required 2.5 percent social security contributions.<sup>12</sup>

Although cardamom selection provides an enormous market for female labor, it offers only limited possibilities for advancement. Plant-level supervisory jobs tend to be filled by males. Women often begin working as a selector at six years of age and

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<sup>12</sup> According to the women interviewed, they rarely receive social security benefits because these are only available for serious work-related accidents. Since the cardamom selectors are unlikely to suffer such accidents, they seldom receive health-related services.

work for twenty years or more, and women with higher levels of seniority function as supervisors for younger women, who work as selectors. The selectors work without extensive supervision, however, so there are few supervisory positions to aspire to.

### Summary and Conclusions

Because COMTROP acts as a broker rather than producer of cardamom and dehydrated lime, and because all of its facilities were established prior to disbursement of the LAAD-CA loans, the loans have not resulted in the generation of new employment within COMTROP itself. Nevertheless, activities financed with loan funds -- cardamom and dehydrated lime purchases by the company -- have had significant, direct and indirect employment and income effects.

One of the major benefits of COMTROP's entry into the lime market is that it has raised the floor price for peak-season limes from as low as \$1.00 to approximately \$3.50 per hundred pounds. By creating a new market for a traditional product, COMTROP significantly increased on-farm income to lime growers. In addition, irrigated lime production creates a high demand for year round labor.

The same is true for cardamom. Cardamom production generates a good income for small, independent producers under normal circumstances.<sup>13</sup> Furthermore, cardamom production has important backward linkages, in that it stimulates local cottage industries for drying and pre-sorting, and creates markets for locally manufactured dryers.

The additional funds available for the purchase and processing of cardamom and limes have undoubtedly resulted in income for both the producers of these products and the intermediaries or agents who process them. Competition among brokers generally results in higher prices for the farmers. At the same time, it is not clear that the purchases covered by the LAAD-CA funds comprised a net addition to total purchases for either limes or cardamom. In the case of cardamom, especially, the number of firms competing for the market is large, and purchases not made by COMTROP would probably have been covered by other brokers.

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<sup>13</sup> World prices for cardamom fell to such a low level in 1989 that Guatemalan brokers suspended shipments in an attempt to force prices higher.

## II. FRUTAS Y SABORES, COSTA RICA

### Background

Frutas y Sabores, S.A. was established in 1984 for the purpose of growing and processing tropical fruits for export to the U.S. juice market. The principal owners are four non-resident U.S. citizens; a resident U.S. citizen owns a minority share in the company and, at present, acts as general manager.

The company owns a large farm (1,800 acres) near the border of Nicaragua, and is just completing construction of a processing plant facility on 17 acres of land near Muelle, a town in Alajuela province about 90 miles north of San Jose. The farm is planted in citrus and passion fruit. The processing plant will have the capability of processing concentrated citrus, passion fruit, mango, pineapple and other tropical juices. Citrus juices will constitute approximately 50 percent of the firm's exports.

The processing plant is not yet in full production. Limited purchases of both citrus and passion fruit in 1988, but the plant encountered problems of insufficient water and had to suspend operations in January 1989. A new well was drilled, and testing of the new water supply was scheduled for the week of March 13-17, 1989, with production to resume the following week.

Frutas y Sabores plans to purchase most of the tropical fruit it processes from independent producers. Fruit grown on Frutas y Sabores' own farm will only be able to supply a limited portion of the volume needed for the plant to operate efficiently.

### Description of the LAAD-CA Investment

Construction of the juice extraction plant was the culmination of an eight-year development effort with a total cost of more than \$5.0 million. Owners of the company invested approximately \$4.5 million in equity and \$125,000 in loan funds from other sources. Most of these funds (\$3.7 million) were used to purchase and develop the 1,800 acre farm. At the time Frutas y Sabores requested \$500,000 in financing from LAAD-CA, the company had expended \$1.0 million on constructing the fruit juice processing plant, and had exhausted available sources of funding.

LAAD-CA agreed to co-finance the \$500,000 loan with COFISA, an AID-financed industrial development bank in Costa Rica, with LAAD-CA contributing \$250,000 for completing the construction and equipping of the tropical juice processing plant. COFISA funds were used for equipment purchases (\$150,000) and working capital (\$100,000). Neither LAAD-CA nor COFISA funds were used to finance land development or crop production, as this work had been completed prior to the loan request. Thus, the relevant "project" for purposes of this case study is the juice extraction plant rather than Frutas y Sabores' farm operations.<sup>14</sup>

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<sup>14</sup> Total investments in Frutas y Sabores, including the farm and plant, were \$5.1 million. Of this, approximately \$1.5 million was spent in constructing and equipping the plant, and the remaining \$3.6 million was invested in the farm operations. LAAD-CA's participation amounted to 4.9 percent of the total investment, and 16.7 percent of the plant itself.

Combined LAAD-CA and COFISA financing amounted to approximately 10 percent of the total investment (including land purchase and development), with LAAD-CA's portion amounting to 5 percent. However, LAAD-CA and COFISA funding comprised 27 percent of the total construction costs of the plant itself, and were instrumental in bringing the plant into production.

In the absence of LAAD-CA funding the owners would have sought funding from other (primarily U.S.) sources, although it is equally likely that they would have liquidated their interests in the venture. The company had been negotiating with national banks for over two years, but had only been able to obtain small amounts of short-term credit due to the excessive bureaucracy and conservatism of the Costa Rican banking system. The primary advantages of LAAD-CA funding were that it was able to respond quickly to the company's needs, without excessive bureaucracy or paperwork. But, as the owners of Frutas y Sabores acknowledge, "The funds were spent so fast we hardly knew we had received anything. It wasn't nearly as much as we needed, and the restrictions were excessive for the amount of funding we received."

### **Employment and Income Benefits**

#### **Initial Investments**

Most of the development and construction work on the fruit processing plant was completed by the time the LAAD-CA loan was approved. However, since the purpose of the LAAD-CA loan was to complete construction of the plant, the significant employment effects of the pre-production period will be discussed.

Plant construction cost \$1.5 million, of which about 60 percent represented expenditures for equipment and materials imported directly by the company. The remaining \$600,000 represented local expenditures, including labor costs, purchases of materials from local suppliers, and some technical services (principally well drilling). A substantial portion of the purchases from local suppliers was imported goods handled by medium-scale businesses in the regional capital, Ciudad Quesada.

The development phase of processing plant created employment for 40 skilled and semi-skilled workers during the course of one and one-half years, or approximately 60 person-years of work. With plant construction in its final phases, the labor force is now down to 19 plant workers, approximately 15 of which will be retained as full-time employees.

Wage levels paid at the plant were significantly greater than those paid elsewhere in the area. Five workers interviewed in the plant reported an average hourly wage of 98 cents, compared to an average of only 53 cents per hour in their previous jobs. Minimum wage (65 cents per hour) was paid only to a small percentage of newly hired employees, and workers who had been hired at this wage

level reported that they soon received raises as they developed greater knowledge of their job duties at the plant. The plant floor manager received \$1.50 per hour.

One of the principal impacts of the plant's construction was that it created special opportunities for a limited number of young persons with technical and semi-technical skills who had previously been able to find jobs as unskilled agricultural laborers. Of the five persons interviewed in the plant, three had been working on farms before being hired. One had been working in construction. Two of the five had attended technical schools, but had found no market for their skills before plant construction began. All of the plant workers interviewed expressed satisfaction with the type of work they were performing and in the new skills they have learned, and the opportunity to undertake qualitatively different work compensated for any dissatisfaction with starting wage levels.

Contracted services, such as well drilling, supported a modest number of work days in the contracted firms.

### **Direct Employment**

The LAAD-CA loan was used for final plant implementation. During this period the labor force was being reduced from a maximum of 40 temporary employees to the projected 15 full-time permanent plant operators for the main production shift. Under full production the plant intends to operate on three shifts, which will require a minimum of 45 workers. Four part-time workers will also be required to grade fruit received from independent suppliers. Thus, projected labor demand varies with the plant's phases of operation.

In addition to the full-time positions in the plant itself, the operation employs five administrative staff members and one laboratory technician to test for pesticide residues and maintain quality controls.

Worker satisfaction with the working conditions is excellent. Wage scales tend to be higher than in agriculture and other local firms. The firm pays all worker benefits -- including social security, longevity and 13th month -- and began to pay overtime in January 1989. At the current time, opportunity for advancement on the basis of merit complements the direct incentives of good pay, benefits and the opportunity to work in non-traditional employment. Workers interviewed in the plant indicated that their income was used to support basic household expenses, purchase clothing, provide for children's schooling and, in three cases, to build savings in a local credit union. Two of the respondents had invested in their own small local businesses.

Although the LAAD-CA loan was not used to support Frutas y Sabores' farm operations, the overall project has had a noticeable impact on on-farm labor. The on-site farm manager was employed in February 1988 at \$225 per month and is furnished a house and other fringe benefits, including bonuses, garden and part-time use of a pick-up truck. At his previous location, also as a farm manager, his salary was \$179 per month with fewer fringe benefits and no house.

Other farm employees interviewed were general farm workers working in weed control, fumigation, fence repair and other jobs in passion fruit and orange groves.

The average daily wage was 65 cents per hour, with a nine-hour work day. They worked five and a half days, and earned pay for a full seven days, resulting in a basic weekly wage of approximately \$38.50. Required benefits add between 42 and 48 percent to the basic wage rate.

All farm workers interviewed mentioned that since they started with Frutas y Sabores farm their life has improved. The reasons given for this improvement included better wages, treatment and working conditions.

#### **Indirect Employment through Purchases of Raw Materials**

The establishment of the Frutas y Sabores juice processing plant has stimulated agricultural growth and diversification in the region. While the plant was under construction, more than 200 local producers began experimenting with raising passion fruit for sale to the plant. Other farms in the area began shifting from sugar cane and cattle to citrus in anticipation of the plant's construction. The prospective availability of an effective market for such produce was essential for this activity.

Even though the plant is not yet in full production, it has begun to purchase from numerous independent growers in the region. During the last four months of 1988 more than 200 farmers sold passion fruit to the plant, and another 66 farmers supplied oranges and other citrus fruit.

The plant initially bought passion fruit at 27 cents per kilogram. Water shortages resulting from an inadequate well forced the plant to shut down in January 1989. Being unable to process more fruit, the manager lowered the price to 15.4 cents per kilogram. The price drop was intended to discourage independent producers from selling to Frutas y Sabores and force them to find other markets. The price drop occurred at the peak of the harvest season. Some producers had taken out bank loans to start up passion fruit production. The net effect has been to discourage some farmers from further experimenting with passion fruit, but it is as yet too early to determine the long-term impact of the radical price drop.

Frutas y Sabores' demand for passion fruit from independent producers has stimulated production on a broad range of farm sizes. Table 13 presents data on farm size, extension of passion fruit cultivation, yield and sales to Frutas y Sabores for seven farmers in the immediate area of the plant. Of the seven, five entered into production with the specific intent of selling to Frutas y Sabores.<sup>15</sup>

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<sup>15</sup> In this particular area of Costa Rica, 25 acre farms are considered small, 160 acres constitutes a medium farm, and above 246 acres a large one.

Table 13

**Characteristics of Seven Passion Fruit Producers**

Farm Size (acres)	Passion Fruit (acres)	Total Product (kilograms)	Sales (dollars)
726.6	24.6	n/a	2,564
458.5	44.3	40,000	8,718
147.6	22.1	6,800	6,410
49.2	2.5	1,000	154
34.4	7.4	9,000	1,615
18.5	.6	1,600	244
9.8	3.7	n/a	n/a

Source: Direct interviews with producers.

In spite of the marked decline in prices, the cultivation of passion fruit demonstrated itself to be potentially more profitable than other products available to small farmers in the area. One producer had converted 22 of his 150 acres of sugar cane production to the new product. His gross income from the passion fruit was \$6,410, compared to \$12,820 from the much larger sugar cane plantings. Another producer, with 458 total acres (44.3 in passion fruit) received 33 percent of his gross farm sales income from passion fruit sales to Frutas y Sabores.<sup>16</sup>

Start-up costs for passion fruit production was estimated to be between \$1,300 and \$1,900 per acre. Thus, the potential profitability of the product will take several years to realize for most farmers in the area.

The wide variations in yields and total sales are primarily due to the general lack of technical knowledge concerning passion fruit production and the Frutas y Sabores price drop. Two producers were selling the fruit on the local fresh fruit market before Frutas y Sabores began purchases. Their plantations had produced for seven months in 1988. Those who planted with the intention to sell to Frutas y Sabores alone sold only during the four months of plant operation.

Smaller farms that depended on family labor and hired few full or part-time laborers did not hire additional workers when starting up passion fruit production. But the maintenance and harvesting of the crop is more labor-intensive than other products grown in the region. Producers with more than three acres reported the need to hire one additional worker for each 5 to 10 acres planted in passion fruit. The small sample size and differences in production practices probably account for the divergence in the labor figures.

<sup>16</sup> The "other" income generating products varied from farm to farm. Larger producers tended to plant only market crops, such as sugar cane, citrus and cacao. Smaller producers tended to have diversified, subsistence-oriented farms with an emphasis on dairy production.

Independent producers cited the stability of demand for passion fruit to be one of the key factors inducing them to begin cultivating the product.

There was no indication of farmers' diversifying or opening new lands for the production of guava, papaya, mango or other fruits for sale to the Frutas y Sabores juice factory, although that might occur in time.

#### **Indirect Employment through Purchases of Goods and Services**

In the two years since beginning to construct its plant, Frutas y Sabores has spent nearly \$2.0 million in the local economy.<sup>17</sup> These expenditures have been divided between wages and goods and services bought both in the region and in San Jose.

During this period, Frutas y Sabores has been an important client for several businesses in Ciudad Quesada, a nearby regional market center, comprising between 2 and 7 percent the businesses' yearly sales. Their purchases have been most significant for the electrical supply company, "Electro Boyco S.A." Frutas y Sabores began doing business with this firm as soon as they started plant construction. Frutas y Sabores accounted for \$10,000 of the supply company's total sales of approximately \$102,500 in 1988. The manager stated that his volume of sales had increased due to the Frutas y Sabores expenditures, enabling him to increase inventory.

Another business for which Frutas y Sabores purchases have been important is the building materials company, "Constructores San Carleno." Between June 1988 and March 1989, this business made \$15,100 in sales to Frutas y Sabores. The specific goods included construction wood, plumbing materials and other hardware. The amount spent by Frutas y Sabores represented only 2.5 percent of the company's total sales, but the manager stressed that Frutas y Sabores's purchases had enabled him to expand product lines. At least partially due to Frutas y Sabores' purchases, total sales have increased from \$385,000 to \$577,000 per year during the past two years.

A third example of businesses benefited by Frutas y Sabores expenditures in the region is the hardware store, "Ferreteria Rojas y Rodriguez." This company sells tools to Frutas y Sabores. The manager stated that his company does between \$9,000 and \$10,000 worth of business with Frutas y Sabores each year, with Frutas y Sabores purchases representing about 3 percent of his total sales in 1988.

All managers interviewed cited Frutas y Sabores' steady demand for materials as an important factor in their recent growth. While the increase in sales due to Frutas y Sabores purchases has not been large enough, in and of itself, to generate new employment in any of these companies, it has contributed to the overall growth and viability of the companies. Many of the goods purchased are imported items-- equipment and tools from industrialized countries -- so that the actual impact of the Frutas y Sabores expenditures on the local and regional economy is limited to the

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<sup>17</sup> Part of this expenditure has been related to development activities on the citrus farm.

commercial profit the businesses derive from the sales. This varies between 20 and 30 percent of gross sales.

Frutas y Sabores expenditures in the immediate region constitute less than half of the total expenditures it has made in Costa Rica, as the larger percentage of its business is carried on with firms in San Jose. A partial list of payments to suppliers for February 1989 showed only \$1,700 (of a total \$4,210) going to businesses in Alajuela province.

The plant implementation period has been a time of cash outflow. When the plant is finally completed, the level of purchases at the regional and national levels will decrease greatly. The funds needed to purchase materials for normal plant operation -- barrels for packing and shipping juice concentrates and plastic bags-- will be rather limited. The impact on local businesses, therefore, can be expected to decline in the future.

### **Other Indirect Impacts**

Since the plant has been in operation for only four months and has not yet reached full operational capacity, it is difficult to project its long-term impact on local businesses. Several types of changes, however, can already be seen in the area.

First, and most important, the activities of the juice extracting and concentrating plant is stimulating a significant growth in independent trucking activities in the region. Individual truck owners are actively engaged in transporting fruits to the plant. Some of these act as intermediaries, purchasing fruit on the farm and selling it to the plant. Others are contracted by the growers to transport produce to market.

Second, minor commercial development has been undertaken at the crossroads nearest the plant since Frutas y Sabores began construction. A service station and small restaurant opened in 1988 and a commercial building with space for several shops is now being constructed. While these developments cannot be attributed exclusively to the Frutas y Sabores plant, workers from the plant and the company itself are major clients of these businesses. There is clearly a dynamic growth in this, at least partially due to the wages paid during the construction of the Frutas y Sabores plant, the brief period of purchases from local suppliers of passion fruit and the on-going business of the company.

### **Employment and Income Opportunities for Women**

Frutas y Sabores employs two full-time, female administrative assistants and a female laboratory technician. Four women will be hired to grade the fruit during one stage of the processing activities. Beyond this, the company does not offer substantial employment opportunities for women.

Company management has mixed perceptions on the merits or problems of hiring women. On one hand, the acting plant manager considers employing women to be a problem due to the fact that they receive four months of paid maternity leave under

Costa Rican social security laws, thus increasing the cost of employing women to a point that it becomes uneconomical. On the other, he feels that women are more conscientious workers than men and more concerned about "doing the job right." Likewise he feels that women are more educated than men since the men drop out of school at an earlier age to look for work. Since women will not constitute an important group in the plant, there is little direct impact on women's employment. The plant's indirect impact on the family should be positive insofar as it provides steady, relatively well-paid employment opportunities for semi-technical and technical workers in an area of the country that offers few opportunities of this type.

### **Other**

Sustainability is a potential issue with this project. A competing juice plant, partially owned by one of Frutas y Sabores' original stockholders, has just been completed only 5 miles from Frutas y Sabores. This plant is much larger than Frutas y Sabores, and will provide strong competition.

Administration procedures also appear to be very weak in the organization. Records on purchases, for example, were poor or non-existent. This could be improved with the hiring of a full-time plant administrator.

Plant by-products -- orange and pineapple rinds, passion fruit husks and other discards -- represent a potentially important secondary investments opportunity. At present these by-products are merely being dumped on land around the plant, which is not only a potential health hazard as a breeding ground for flies and other insect disease vectors, but also a patent waste of an important resource. These products are often used for mixed animal feed, and the area around the plant contains numerous small dairy farms. The firm has considered selling the unprocessed fruit rinds and husks, but has not considered the possibility of a complementary mixed dairy feed plant. Such a complementary productive facility would undoubtedly create additional jobs and greater revenues for the company itself, as well as allowing some intensification of dairy production in the area.

### **Summary and Conclusions**

Activities supported by the LAAD-CA investment -- that is, construction and operation of a tropical juice processing plant -- had the effect of creating 60 person-years of short-term employment and 25 full-time permanent jobs. These activities involved a total investment of \$1.5 million, of which 16.7 percent was financed by the LAAD-CA loan of \$250,000. When the plant is in full production it is expected to employ three shifts of 15 workers each, plus one four-person crew for grading and sorting fruit prior to production.

Two significant employment impacts of the Frutas y Sabores project have been (1) the diversification of labor demand through its employment of technical and semi-technical workers and (2) the creation of an important market for non-traditional and potentially profitable crops that can be provided by local farmers. The latter is already having the effect of stimulating passion fruit production on local farms of all sizes, which should, in turn, stimulate an increasing demand for farm labor in the region.

#### **IV. LA MELISA DE OJO DE AGUA, COSTA RICA**

##### **Background**

The ornamental plant business has become a major growth industry during the past twenty years. Spurred by increases for live house and office plants in both the U.S. and Europe, Colombia, Mexico, and the countries of Central America and the Caribbean have all entered the business of growing and supplying plant propagating materials. Costa Rica is now the largest world exporter of ornamental plants, with at least ten major firms and hundreds of small producers are now engaged in this activity.

La Melisa de Ojo de Agua was established in 1986 to cultivate and export ornamental plants, with primary markets in Europe (Holland and West Germany) and the United States. The company is entirely owned by one family: the husband owns 70 percent of the stock and acts as operating manager; his wife owns 30 percent of the stock, and is the secretary-treasurer of the corporation. It has not yet begun to export, as all production has been dedicated to increasing its inventory of plant stock. At the present time the company has developed 16.3 acres of seed beds and mother plant areas. By the end of 1989, when exports are scheduled to begin, the company should have 500,000 producing plants on 20 acres of land. In full production, the company plans to have nearly 32 acres dedicated to ornamental plants.

In addition to La Melisa, the owners have three other farms in the area that are dedicated to growing tomatoes, onions and green pepper for export. They also own two warehouses, and are part owners of two other companies involved in ornamental plants and exporting.

##### **Description of the LAAD-CA Investment**

LAAD-CA loaned La Melisa \$200,000 in 1988 to help it expand its acreage of nursery plantings. With the loan and owner-supplied capital, La Melisa invested approximately \$350,000 in developing its operations. Most of this has gone to land preparation, establishment of infrastructure on the nursery (erection of posts and permanent shade, and installation of both gravity-fed and pumped irrigation systems), seeds and planting materials, and agricultural chemicals. Thus, the LAAD-CA loan represents about 57 percent of the firm's total initial investment.

La Melisa's owner reports that he had to suspend operations in 1988 because of a lack of capital to complete development of the plant nursery. Although he had applied for credit in other local financial institutions, delays and increasing costs had seriously jeopardized his ability to continue. The LAAD-CA loan, therefore, was a critical factor in allowing him to continue; without the loan he would have had to significantly curtail the size (and potential viability) of the company, or abandon it altogether.

## **Employment and Income Benefits**

### **Initial Investments**

La Melisa invested a total of approximately \$200,000 in pre-production activities during the 1986 to 1989 period, including land preparation, construction of shaded growing areas and installation of irrigation systems. Approximately 50 percent of this total initial investment was spent on imported items, which included saran, cables, irrigation equipment, fertilizers and agricultural chemicals. Although these were purchased from local suppliers, the impact on the local economy was limited as the imported cost of the items constituted between 75 and 80 percent of the expenditures.

The company estimates that another 30 to 35 percent of the loan funds (\$60,000 to \$70,000) was spent on direct labor costs, as land preparation for seed beds and nursery stock is very labor intensive. With an average daily wage of \$7.32<sup>18</sup>, pre-production expenses supported 25-29 person/years of work -- or an average of 8 full-time workers per year during the development phase. Workers who assisted in the development phase have been incorporated as full-time employees of the company.

### **Direct Employment**

La Melisa is a new company that has not yet begun to market a product. Prior to 1986 it employed no workers at all. At the present time it employs 12 full-time workers -- nine men and three women. The company intends to continue developing an additional 17.2 acres of land for nursery stock. When the operation is in full production La Melisa estimates that it will employ a total of 40-45 full-time and 20 half-time workers.

In addition to the on-farm workers the company hires a part-time technical advisor, and shares a secretary with one of the owners' other enterprises.

Although the LAAD-CA loan was not made until 1988, two years after La Melisa commenced operation, it has been a critical element in bringing the project into production. Development had ceased in 1988 due to a lack of capital, and the owner was facing a decision on whether or not to abandon the effort. Thus, the LAAD-CA loan directly contributed to developing the firm's capacity to hire its current and projected work force.

La Melisa's current payroll for its full-time employees is approximately \$30,000 per year, and is expected to increase to \$100,000 per year by the time the nursery is

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<sup>18</sup> The minimum hourly wage in Costa Rica was 65 cents at the time this study was conducted, with social security and other benefits raising the average daily labor cost to \$7.32.

in full operation. Part-time workers are expected to earn an additional \$30,000 per year, for a total projected annual wage bill of \$130,000.

The land La Melisa is now developing was formerly used as an unimproved cattle pasture, providing no employment. La Melisa's shift to labor intensive production on the land has, therefore, resulted in a positive shift in labor demand in the area.

This shift from low technology agriculture to relatively high technology production has had other impacts as well. Because of the nature of its product La Melisa requires a relatively high-skilled work force, both in cultivation and handling. Most of the workers employed by the company were previously employed in low-skilled general farm occupations, and are learning skills in irrigation, intensive farming, plant care and handling.

Workers in the company expressed satisfaction with their working conditions and wages. Four of the six workers interviewed<sup>19</sup> reported that their incomes had increased from an average of \$5.74 on their previous jobs to \$7.73 per day at La Melisa.<sup>20</sup> Five of the six reported that the company offered them greater job stability and more continuous work.

Three of the families live on the farm in company-provided housing.

#### **Indirect Employment through Purchases of Raw Materials**

La Melisa does not now, and does not plan in the future to, purchase raw materials from independent suppliers.

#### **Indirect Employment through Purchases of Goods and Services**

La Melisa purchases very little from local suppliers. Once the initial purchases of saran, cable and posts is completed, ongoing expenses will be confined largely to agricultural chemicals and packaging materials. Total purchases of materials and supplies in 1988 amounted to only \$7,000. The company also spent about \$2,000 on repair and other services. Electricity, water and other bills average \$400 per month, for a total annual expenditure of \$4,800. Projected future expenditures are equally low; the company will have a relatively limited impact on secondary employment.

La Melisa plans to market through an associated company, Expo Rica International, that handles the marketing of onions, tomatoes and peppers for the owner's other company. These exports could constitute a significant new business line for Expo Rica, and could eventually stimulate increased employment in that company.

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<sup>19</sup> One of the other two had no previous work experience.

<sup>20</sup> Both figures include social security and other benefits.

### **Other Indirect Impacts**

The relative newness and smallness of the company limit any visible impact that it might have on the local environment. La Melisa is located in a rapidly urbanizing area that is subject to many larger influences. Major factories, new businesses and residential housing construction will overshadow any changes that might be due to the growth of La Melisa.

### **Employment and Income Opportunities for Women**

At the present time the company employs three women (of a total full-time workforce of 12), primarily for transplanting, harvesting and packing. As in other cases, women are preferred for these activities because they tend to be more careful and concerned about quality and appearance. Since success in the ornamental plant business depends heavily on the quality and appearance of the product, the company plans to substantially increase the number of female employees once it begins to export.

While women have the same employment rights as men, and could perform most tasks, they are not permitted to fumigate or operate tractors. These activities command a pay premium, with the result that women employees are confined to employment categories that work at the lowest wage rates. Men working in these activities receive the same pay, but have a better opportunity to advance to jobs that receive premium wages.

According to the owner there tends to be a high turnover of female employees. Without exception, female employees who have worked for the company have been young and single. Since local custom discourages outside employment for married women, they tend to quit after a relatively short time in the firm.

### **Other**

La Melisa appears to have excellent prospects for long-term, sustainable success. Management was exceptionally strong. The company has well-developed vertical linkages through its associated marketing company. The management is also well experienced in export marketing.

### **Summary and Conclusions**

La Melisa exemplifies a small, labor intensive activity that provides significant levels of employment relative to the total investment. Indirect benefits tend to be limited because the firm is small and largely self-sufficient, purchasing raw materials from independent suppliers and requiring only limited supplies and support services.

The principal employment impact of the firm has been through the transfer of a relatively low labor-intensive property into a highly labor-intensive activity. In doing so it has increased labor demand in the area. Since it is involved in a product that requires careful cultivation practices, and operates in a market that demands high quality products, La Melisa requires labor that is significantly better trained than labor engaged in traditional agricultural activities. Training workers should help to increase labor skills and value. The company should also provide an increasing employment opportunity for women.

## V. LA MESETA, GUATEMALA

### Background

La Meseta, S.A. was established about 15 years ago to produce and sell vegetables in the local market. With the advent of the Caribbean Basin Initiative, the company was reorganized to focus on exporting fresh vegetables to the U.S. market. Products that cannot be exported (that are not of export quality) are sold on the local market.<sup>21</sup>

La Meseta owns a 36.5 acre farm near Guatemala City, leases two farms totaling 64.8 acres and has joint ventures with two others totaling 125.2 acres. Until recently it contracted production from another company, but that company lost its lease and is now looking for an alternate site. La Meseta provides all farms with a pool of essential services -- procedures and standards, plant propagation and seedlings, land preparation, pest control, harvesting, cooling, packing and shipping.

The company's major products -- celery, lettuce and cauliflower -- are destined to the export market. Broccoli, brussel sprouts, snow peas and onions are under development. In addition, La Meseta acts as a processor and exporter, on a commission basis, for growers of high-value specialty products such as asparagus, Belgian endive and ginger. Although the project description anticipated that La Meseta would purchase a substantial quantity of produce from small-scale local producers, it does not currently do so.

The key resources in fresh vegetable marketing are a cooling plant (necessary to quickly lower the temperature of the produce to maintain freshness), well-developed transportation systems and established markets. La Meseta has successfully developed all three resources. It has sufficient cooling capacity to handle its projected production levels for the next several years. By specializing in high-volume, low-margin produce, it has been able to schedule full shipping containers on a regular basis, avoiding the high costs of partial containers or air freight shipments. And its brand name commands respect as high-quality produce among U.S. brokers.

### Description of the LAAD-CA Investment

La Meseta was reorganized in 1985, with additional investors and an initial capitalization of \$3.0 million. LAAD-CA has granted two loans of \$400,000 each to La Meseta, and the company has borrowed another \$600-800,000 in short-term funds from local sources. Only \$125,000 remains outstanding on the local, short-term loans. Thus, LAAD-CA's financing amounted to approximately 18 percent of the company's total investment, and about 20 percent of its current capitalization.

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<sup>21</sup> The term "local" includes neighboring countries, primarily El Salvador and Mexico. Some produce is also sold to Honduras, Costa Rica and Nicaragua.

LAAD-CA's first loan, granted in April 1987, was to finance fixed assets, agricultural inputs, and raw material purchases to bring an additional 88 acres of land into production and increase seed bed areas. The second loan, granted in October 1987, was used to purchase additional cooling and processing equipment and to fund increased raw material purchases from contract growers. La Meseta invested approximately \$1.6 million in these activities.

La Meseta's owners consider the LAAD-CA loans to have been critical for the company's success. In 1987 the company was operating on a very small scale, with only 48 full-time employees<sup>22</sup> and one vacuum cooler. At one point during the year that cooler broke down, and the company lost 30 trailer loads of produce. The LAAD-CA loan helped to stabilize the company -- expanding cooling facilities and land area under production so that it could begin to operate at an economic level.

### **Employment and Income Benefits**

#### **Initial Investments**

At the time of the first LAAD-CA loan, La Meseta had invested approximately \$3.8 million in developing its farms and cooling plant. Since that time it has invested another \$1.6 million, \$800,000 of which represents the two LAAD-CA loans of \$400,000 each. The first loan was used to purchase a seco. 1 cooler and computer system, and to prepare some 30 acres of land for production. The second loan was used to develop a new 34-acre farm.

Imported items -- the hydrocooler, computer, fertilizers, agricultural chemicals and irrigation equipment -- comprised 50 to 60 percent of the initial expenses during this period. Locally produced boxes and other packing materials absorbed another 15 to 20 percent of the initial funds. Of the total initial expenditures of \$1.6 million, therefore, between \$640,00 and \$800,000 represents expenditures in the local economy.

Land preparation involved both heavy machinery and substantial labor, but La Meseta used its regular workforce rather than resort to contracting or hiring short-term employees. Staff was increased, but because of the on-going production activities associated with the farms rather than because of the short-term requirements of land preparation. As a result, it is difficult to determine the short-term labor impacts of the initial investments.

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<sup>22</sup> This figure is at variance with the 500 employees reported in LAAD-CA's project description.

## Direct Employment

At the time of the initial LAAD-CA loan in early 1986, La Meseta employed approximately 280 persons, and operated active farms with 138 total acres.<sup>23</sup> By the time of this study, total acreage had increased to 224, and the company employed a total of 601 workers.<sup>24</sup> Thus, during the past three years La Meseta has increased the area under production by 86 acres (62 percent) and the number of employees by 321 (114.6 percent).

Because La Meseta's production is geared to ensuring a continuous supply of fresh produce for the U.S. market, its workers are hired full-time; it employs no seasonal or temporary workers. Harvesting crews, for example, rotate from farm to farm according to production schedules, while each farm maintains a steady level of production workers for transplanting, weeding, fertilizing, fumigating and irrigation.

	<u>Men</u>	<u>Women</u>
Administrative Personnel	51	12
Processing Plant	24	13
On-farm Production	224	109
Harvesting crews	103	47
Miscellaneous (guards, messengers etc.)	18	0
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	420	181

Total wages paid by La Meseta increased 255 percent between 1986 and 1989, from approximately \$290,370 to more than \$741,000 per year.

The fresh vegetable business requires a skilled, disciplined work force. On the major farms La Meseta has six levels of promotion -- three levels of foremen, chief foreman, assistant farm chief and farm chief -- with corresponding higher salary levels. Competent workers can advance upward through the system. There were no women in supervisory positions on any of the farms visited, though women did act as work group leaders in the packing facility.

Of the workers interviewed, most had previously been landless peasants who had worked as day laborers on local farms, or in other rural-oriented occupations, such

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<sup>23</sup> Data in initial loan documentation mistakenly reported that 300 acres of land were under production, and that this would be expanded to approximately 1,000 acres of cultivated land by 1990. La Meseta is constantly looking for new joint venture partners, but it appears unlikely that total acreage will exceed 300 acres by 1990.

<sup>24</sup> Employment totals include employees of the contract firm that is now attempting to locate a new farm to lease. Although workers on the joint venture farms are not officially employees of La Meseta, La Meseta does maintain all personnel records for the joint ventures. Thus, these employees are included in the totals.

as well-drilling. All were from relatively close distances, although La Meseta has had difficulty in attracting sufficient workers from the immediate area of the farms. In some cases it has had to provide regular transportation to bring workers from other (relatively nearby) villages to the farms. In addition, the company has recently had to increase wages in order to retain workers. The farms and cooling plant are located in a rapidly industrializing area, and there is a high demand for workers in other businesses and newly established industrial plants.

One of the major contributions to increasing employment and income opportunities has been the increased intensity of labor utilization on farm land owned, leased or managed by the company. Prior to the initiation of intensive vegetable cultivation, these farm lands were used for coffee, corn and mechanized wheat production -- all of which produced between 1 and 1.5 crops per year, using few workers per acre of land. Most of the workers hired by La Meseta had been previously employed as seasonal workers in coffee or sugar harvesting. Vegetable growing produces as many as 3.5 high-yielding harvests per year, and requires the constant attention of large numbers of workers. As a result, La Meseta's investments have created new labor opportunities in the area.

LAAD-CA's loans were obviously not responsible for all of the employment impacts of La Meseta's activities, as they amounted to approximately 20 percent of the company's total current investment. Moreover, 61 percent of the farm area under cultivation had already been developed, and at least 50 percent of its cooling capacity had been installed, by the time of the initial LAAD-CA loan. Nevertheless, the company's management acknowledges that LAAD-CA support was crucial for expanding the land area under cultivation and in developing the cooling capacity necessary to sustain intensive production on its existing lands. The loans were important both for maintaining existing levels of farm labor on producing farms and for creating the additional employment opportunities on new farm acreage observed during the past three years.

#### **Indirect Employment through Purchases of Raw Materials**

La Meseta is a complex business organization. It directly produces its primary export products -- celery, lettuce and artichoke -- and does not purchase any of these products from independent suppliers. At the same time, it is involved in a variety of mixed ventures<sup>26</sup> with independent companies. Finally, it acts as a commissioned broker for a series of other vendors of specialized agricultural products.

La Meseta's activities as a broker and partner are defined by the requirements of its export operations. To market fresh vegetables in the U.S., La Meseta must be able to maintain rigid quality controls over the appearance of the product, the presence of pests and the existence of pesticide residues. Poor appearance may result in reduced prices and partial rejection of the product by the buyer. Failure to meet exacting pest and pesticide standards, however, can result in rejection of an

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<sup>26</sup> Including joint ventures, leased farms and contract production.

entire shipment and a virtual ban on the company's shipments to the United States. Because a single batch of unacceptable product can lead to the quarantine of an entire shipment, and because quality control can only be maintained during the cultivation of the product, La Meseta does not purchase any of its regular produce from independent suppliers.

On the other hand, La Meseta cannot produce a sufficient quantity of produce on its own farms to reduce shipping costs to an economically profitable level. Its solution has been to enter into a variety of joint ventures and contract farming arrangements with other individuals to produce specified products that meet the company's standards. In these arrangements, La Meseta provides management supervision and often contract labor to ensure that quality standards are maintained. Employment generated by these arrangements are covered in the section on direct employment.

In no case can these independent suppliers be considered small farmers. One is a large coffee grower located near Antigua who is diversifying his production from coffee to other cash crops. A second is a large commercial farm operated by a Swiss company that recently shifted production on part of its land from mechanized corn cultivation to fresh vegetables.

At the same time, because La Meseta normally has excess capacity in its cooling plant and shipping containers, it acts as a broker for a limited number of low-volume producers of high-quality, high-value products. Several of these -- Monte Norte, Clemente Ros and Rhizomas<sup>26</sup> -- have themselves received LAAD-CA loans. Monte Norte is developing asparagus for export to the U.S. market. Clemente Ros is a new company that is engaged in the production of Belgian endive; La Meseta owns a 33 percent share of the company. Rhizomas is a locally owned ginger plantation. None of these three companies can produce enough product to justify independent shipments, and must depend on the services of a broker, such as La Meseta.

Although there are numerous brokers operating in Guatemala, La Meseta offers special services that other brokers cannot. In the case of Clemente Ros, La Meseta provides the seed beds and farm labor for growing the Belgian endive root stock. In all three cases its cooling facilities are essential for successful marketing. Thus, the existence of an effective marketing intermediary has been essential to the initial viability of these other firms.

#### **Indirect Employment through Purchases of Goods and Services**

La Meseta annually spends about \$2.8 million in the local economy on the purchase of goods and services, of which approximately \$1.8 million represents the cost of international transportation and imported goods (primarily agricultural chemicals). This is divided as follows:<sup>27</sup>

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<sup>26</sup> Monte Norte and Clemente Ros are discussed in greater detail in a later section.

<sup>27</sup> Data for fiscal year ending in April 1988.

International transportation	\$850,000
Local transportation	150,000
Boxes and bags	630,000
Agricultural chemicals	741,000
Utilities	185,000
Fuels	74,000
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Total	\$2,756,000

La Meseta's major annual expense item, international transportation, is a service purchased from large multinational shipping companies -- Seaboard Marine, Sealand and CCT -- for container-load shipments of vegetables to the U.S. Most of this represents expenses that are paid to the international carriers and handlers, very little is actually spent in local economy. Although La Meseta is a large customer, these are very large organizations, and La Meseta's business represents only a very small percentage of their annual transactions in Guatemala.

Approximately 25 percent of the cost of agricultural chemicals remains in Guatemala; the rest constitutes the imported costs of the chemicals. Purchases of boxes and bags are primarily local expenses, as La Meseta usually purchases from local manufacturers. These are large companies, and while La Meseta purchases significant quantities of these items, its purchases represent a small percentage of the vendors' business.

While the previous expenditures have been with large companies, La Meseta's operations have had an impact on several small businesses, particularly local transportation services. Even though it owns its own delivery trucks, for example, La Meseta relies heavily on local truckers for much of its farm-to-market transportation. Six independent truckers regularly haul produce from the field to La Meseta's cooling and packing plant. Three others are engaged in purchasing and delivering natural fertilizers to the farms. And still another is engaged full time in supplying the Clemente Ros plant.

La Meseta's operations, therefore, have stimulated the establishment of several small businesses engaged in hauling produce from the farms to the La Meseta pre-cooling plant in San Lucas Sacatepequez. Two of the truck owners have purchased additional trucks (1 each) and employed an additional driver to handle La Meseta's activities.

In addition, a company has recently been formed to haul fresh produce overland from Guatemala to Houston and Los Angeles via Mexico, in competition with the traditional "sea-land" and air cargo operations. While La Meseta's operations are not large enough to have been the sole factor in the decision to form the company, La Meseta's business has been important for its initial success.

Data available at the time of the study<sup>28</sup> indicate that La Meseta is returning about \$1.0 million to the national economy each year in the form of local purchases of goods and services. This represented 41 percent of gross sales<sup>29</sup>, and 21 percent of total investment. Future year expenditures in the local economy should remain at approximately the same levels.

### **Other Indirect Impacts**

La Meseta's operations are located in a densely settled area of the country. As a result, it is difficult to ascribe the existence of local businesses, infrastructure or services to the existence or expansion of the firm. According to the manager a small restaurant next to the cooling and packing facility was established primarily to serve workers in the plant. And, there were numerous small food stalls on side roads leading into La Meseta farms.

### **Employment and Income Opportunities for Women**

Of the 601 employees of La Meseta, 181 (30 percent) are women. With relatively few exceptions -- a limited number of clerks, secretaries and other office personnel -- most of the women are employed as agricultural production, harvesting and packaging laborers. Employment patterns in agricultural production activities follow traditional gender lines: men handle the heavier and more dangerous jobs of cultivating, fumigating, irrigation and hauling produce; women are employed in maintaining seed beds, transplanting, harvesting, sorting, grading and packing. As in other companies, women were preferred for these activities because they were more careful, accurate and quality conscious.

Nearly all of the female employees working in the fields are single, and few have been with the company for more than two years. Local cultural tradition is that once a woman marries she leaves the labor market to raise a family. Married men interviewed on the farms uniformly responded that their wives did not work. As a result, women seldom accumulate seniority or achieve supervisory positions. There were no women in supervisory or "group leader" positions in any of the field crews, for example, and only two women in the packing crews acted as coordinators. As a result, female employees tend to lack opportunities for advancement or wage increases.

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<sup>28</sup> Fiscal year 1988-1989 data are not yet available.

<sup>29</sup> La Meseta operated at a substantial loss during the reporting period. During the 1988-1989 period it reached the breakeven point in sales, and expects to operate at a small profit during the 1989-1990 period.

### **Summary and Conclusions**

**La Meseta is a highly labor-intensive operation that has significantly expanded employment opportunities in the region in which it operates.**

**Because the quality of the produce (both appearance and taste) is critical to success in selling to export markets, La Meseta requires a skilled labor force that can assure the quality of its produce. This provides substantial opportunity for women, in particular, and requires the constant training and upgrading of its workers. Promotion is possible through several levels of supervisory positions. Because it operates in an area that is undergoing rapid urbanization, there is an increasing competition for labor from other employers, which La Meseta has had to address by providing transportation from nearby villages and increasing wages.**

**La Meseta's activities as broker and shipper for independent companies has made it possible for them to gain access to U.S. markets at a reasonable cost.**

## VI. NISPERO CHIQUITO, COSTA RICA

### Background

Nispero Chiquito, S.A. was established in 1985 to grow, process and export citrus (primarily oranges), cacao and black pepper. It is owned by four non-resident U.S. investors. A resident ex-patriot American is employed as general manager, and serves as Secretary of the corporation.<sup>30</sup>

Nispero Chiquito owns and operates two farms -- one of 132 acres and one of 210 acres -- in northern Costa Rica. Although both farms were initially planted in citrus, the owners are attempting to diversify into cacao and pepper to take advantage of favorable market projections for both commodities. As of early 1988 the company had planted a total of 140 acres of citrus trees, 36 acres of cacao and 10 acres of pepper. With loan funds provided by LAAD-CA the company is completing plantings of an additional 10 acres of pepper and 24 acres of cacao.<sup>31</sup>

Although black pepper and cacao are not normally considered "non-traditional" exports, Costa Rica is a net importer of both products. Cacao production was interrupted in the early 1980's by a fungus disease that reduced production from a high of 10,000 metric tons to less than 3,000 tons. Current cacao production is only of average quality, and volumes are small. Black pepper is not grown in substantial quantity in the country.

As a new company, Nispero Chiquito has not yet begun to market a product. Its first harvests in pepper and cacao are projected for 1990 and 1991.

### Description of the LAAD-CA Investment

In early 1988 Nispero Chiquito requested a loan of \$150,000 from LAAD-CA to help the company diversify by developing 60 acres of cacao and 20 acres of black pepper. At that time the owners had invested approximately \$150,000 in the business, primarily in the establishment of citrus orchards. The company owned one farm, and was in the process of negotiating the purchase of a second.<sup>32</sup> The LAAD-CA loan was to be used to develop additional acreage of pepper and cacao, and for constructing drying and processing facilities, as follows:

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<sup>30</sup> Although an officer of the corporation, this individual owns no stock in the company.

<sup>31</sup> Because the LAAD-CA financing did not provide funding for any citrus cultivation on Nispero Chiquito, and because all initial investments in citrus had occurred prior to disbursements of the LAAD-CA loan, the case study covers only activities related to cacao and pepper production.

<sup>32</sup> An additional \$50,000 in owner equity was contributed during 1988 and early 1989.

Construction of drying/processing facilities	\$ 25,000
Planting 10 acres of black pepper	25,000
Planting 25 acres of cacao	12,500
Pre-production costs on 20 acres of pepper	20,000
Pre-production costs on 60 acres of cacao	67,500
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	\$150,000

At the time of this study most of the land clearing, preparation and planting had been completed. Construction of the drying and processing facilities was scheduled for later in 1989.

### Employment and Income Impacts

#### Initial Investments

A total of \$200,000 has been invested in land preparation, purchase of plants, planting and maintenance activities since 1988. These pre-production investments had a major short-term employment and economic impact.

The pre-construction period required an intensive use of labor, employing 18 full-time laborers during the clearing and planting period. Of these, 12 have been retained as permanent employees. All of the laborers, both those who worked in the preparation activities and those who are still employed on the farms, were residents of the immediate area who had been engaged in part-time sugar harvest and logging operations prior to working with Nispero Chiquito. The company paid the minimum wage rate to the workers engaged in the preparation and planting activities. Including work related to citrus grove preparation, this employment lasted from late 1986 through early 1989, so that the total initial investment of \$350,000 created approximately 45 person-years of work on the farms. Of this, at least 18 person-years of work can be directly attributed to LAAD-CA financing, and approximately 36 person-years of work to combined cacao and pepper activities.

A limited amount of services were contracted from individual suppliers. One bulldozer was used for clearing land, constructing on-farm roads and some plowing and disk-harrowing. The owner-operator of the bulldozer lives in a neighboring town, and had made the decision to purchase his bulldozer on the basis of work commitments in the local area -- primarily from Nispero Chiquito. One small, farm-size tractor operator was also contracted for disk-harrowing and other land preparation work.

Nispero Chiquito spent approximately \$30,000 on materials -- cacao trees, pepper plants, the "living posts" on which the pepper plants grow, pesticides, herbicides and fertilizers -- during this period. All of these were acquired from local suppliers; most were purchased from established small businesses in Ciudad Quesada, a regional market town. The company itself did not directly import any materials, and the

imported component of materials was less than \$10,000. As a result, most of these expenditures stimulated local business growth.

### **Long-term Direct Employment**

Current cacao and pepper operations on the farm present a constant demand for twelve permanent farm workers and seven non-farm personnel, in addition to those employed by the firm for citrus cultivation. One full-time person is needed to undertake the maintenance activities for each four to five acres of pepper, and one worker is required for each twelve to fifteen acres of cacao. One supervisor oversees the work of the eight farmhands. The seven non-farm employees are administrative and technical personnel.

Prior to Nispero Chiquito's development of citrus, cacao and pepper, the land had been used for low intensive cattle grazing. As the general manager stated, "You probably couldn't attribute one full-time job to the land as it was used before." Thus, the current employment of twelve permanent farm workers represents a definite intensification of labor demand.

Both crops require labor intensive maintenance, as weeding and pest control cannot be mechanized. As a result, the project is expected to generate substantial full-time employment relative to the amount of the initial investment. By 1991 the company expects to require a full-time employment equivalent of at least 20 permanent jobs for on-going maintenance activities.

In addition, once cacao and pepper production is underway there will be a strong demand for regular and seasonal harvest laborers. Pepper is harvested year-round, while cacao has two general harvest periods of several months' duration. The general manager estimates that 40 persons will be employed for harvesting by December 1989. These workers will be required for an average of at least nine months of each year. When the farm is under full production, therefore, it should be sustaining regular, full-time employment for around 50 people.

The firm's average, monthly wage bill for the period of April 1987 through February 1988 was \$1,200. After receiving the loan, the average wage bill from March 1988 to September 1988 was \$1,547. This represents a 28.9 percent increase in the wage bill that can be attributed to the expansion of labor force. As mentioned above, many of Nispero Chiquito's workers were shifted from citrus production to work on the preparation and maintenance of the cacao and pepper. The expansion of total wages, therefore, can be attributed directly to expansion of activities due to the LAAD-CA loan.

Six Nispero Chiquito employees, all agricultural laborers, were interviewed. The sample included two women and four men. Only one of these had been hired after the LAAD-CA loan was disbursed. The other five were shifted from work in Nispero Chiquito's citrus production to preparation and planting activities for pepper and cacao. Three of the persons interviewed were unemployed or only partially employed prior to being hired.

The workers' base wage, around 65 cents per hour, is slightly higher than prevailing farm wages in the area. Four of the persons interviewed indicated higher wages and greater income as the major incentive for working with Nispero Chiquito. The foreman receives \$60.00 per week, an average of \$1.20 per hour. He is also provided with housing on the farm and use of a company pick-up truck. The company also provides housing for one other worker, who serves as a watchman, and his family. Workers applying agricultural chemicals using portable back-pack sprayers earn a bonus of 22 cents per hour, for a total hourly wage of approximately 87 cents. Women accompanied by their children can earn as much as \$16.00 per day during the harvest period. While regular employees are paid full social security benefits and other bonuses, temporary contract harvesters do not receive such benefits. Benefits, taxes and bonuses typically average between 42 and 48 percent of base pay in Costa Rica.

Four workers indicated that the labor relations and benefits were better than they had experienced at previous jobs. As a whole, the Nispero Chiquito employees mentioned job stability, good treatment by the foreman, the company's attention to medical necessities, and the work with cacao and pepper itself as factors lending to their feelings of contentment with the present jobs. Other benefits mentioned were the Christmas bonus and above-average wages.

#### **Indirect Employment through Purchases of Raw Materials**

Nispero Chiquito presently does not purchase either pepper or cacao from independent producers; hence, there has been no indirect stimulation of production and employment on other farms. Since Nispero Chiquito can market both coffee and pepper through established brokers there is little incentive for it to attempt to market directly, which would require purchasing local product from other producers in order to reach economic market quantities.

#### **Indirect Employment through Purchases of Materials, Supplies and Services**

Nispero Chiquito purchases very little in the way of supplies, materials and services from the local economy.

Cacao seedlings and pepper plants comprised the major materials purchased by the farm during the 1988 period. These were bought from a local firm, *Especies Tropicales del Caribe*<sup>33</sup>, which provides orange root stock, cacao plants and pepper plants to local farmers. When *Especies Tropicales* began to sell to Nispero Chiquito its average annual sales were approximately \$6,000. In 1987, largely due to business with Nispero Chiquito, sales climbed to \$13,500, and in 1988, when LAAD-CA funds began to be used for the expansion of pepper and cacao production, *Especies Tropicales'* total sales reached \$27,000. Thus, activities financed by the loan had a direct, positive impact on this business. The increased sales did not stimulate

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<sup>33</sup> *Especies Tropicales* is owned by Nispero Chiquito's general manager.

increased employment, however, as *Especies Tropicales* is a family operated business that employs only one outside nursery worker.

As mentioned earlier, total purchase of agricultural chemicals and fertilizers is expected to average about \$20,000 per year. Most of this will be spent locally, in either Ciudad Quesada, the regional market center, or even in San Jose. While this will contribute to increasing the overall volume of economic activity in the area, it is so small relative to the total expenditures in the region that the effects would be difficult to isolate.

The most important service that has been contracted in the local area to date was a bulldozer and bulldozer operator. Between June 1987 and September 1988, Nispero Chiquito spent \$5,400 leveling, tree and log removal and construction of on-farm roads. The work with Nispero Chiquito enabled the owner to obtain a local credit for purchase of the bulldozer, and made his personal business more viable. He had previously he had worked for others local employers, hauling logs for local lumber mills and logging operations. His projected work with the firm will last until the end of the 1989 dry season.

#### **Other Indirect Impacts**

It is impossible to determine the indirect impacts on services and urban functions that will result from Nispero Chiquito's pepper and cacao operations once these are in production. The increased concentration of full-time employed workers will certainly stimulate some small business activity in the immediate area. One small soft drink stand, game room and convenience store has been built across the road from Nispero Chiquito's southern farm. Workers from the Nispero Chiquito and other farms in the area frequent this family owned business after work to socialize, play pool and buy consumer goods.

#### **Employment and Income Opportunities for Women**

Four of the 19 direct, permanent employees of Nispero Chiquito are women. Three of these are employed as general laborers and undertake light construction tasks, such as painting and assisting carpenters, in addition of chores in the fields. The fourth is employed as an administrative assistant. The women who work directly on the farm earn 65 cents per hour, or \$31.00 per week. This wage is identical to that of men working in similar positions.

Whereas the maintenance of the cacao and pepper groves are considered suitable for men because of the "heaviness" of the work, women are generally preferred for pruning and harvesting. Women are generally considered to be faster and more careful workers than men, and more gentle in handling the trees. Once Nispero Chiquito is fully in production, the need for a continuous harvest effort should generate substantial employment opportunities for women in the area; a majority of the new positions will be filled by women.

## **Summary and Conclusions**

Conclusions concerning the impact of the LAAD-CA loan to Nispero Chiquito must be restricted to the pre-production stage, since the farm has not yet begun to market. Pepper production should begin in 1990 and cacao production in 1991.

The project has created a small increase in demand for labor through the intensification of the use of labor on land that was previously used as extensive, unimproved pastures. Previously underutilized or abandoned lands are now, due to strong management, intensively cultivated. The preparation and planting periods generated as much as 45 person-years of work for 18 workers. Twelve permanent jobs have been created where none existed before.

The specific work with pepper and cacao is attractive to agricultural wage workers in the area as an alternative to temporary work in coffee, citrus and sugar cane. Once production and marketing activities begin, the employment effect should be considerable, as regular temporary employees will be required for harvesting and processing the pepper and cacao. Many of the new positions will provide employment opportunities for women. At full production the company is expected to maintain a full-time staff of at least 20 workers, and provide another 40 workers with regular employment for at least 9 months a year.

Nispero Chiquito has good relations with its workers and the level of job satisfaction is high.

Employment and income impacts will be limited to those directly employed by Nispero Chiquito. There will be little, if any, purchase of outside raw materials from independent suppliers, and the company contemplates only limited on-going purchases of agricultural chemicals and supplies. As a result, little or no indirect generation of employment should be expected as a result of Nispero Chiquito's activities.

## VII. AMERICAN FLOWERS, MONTE NORTE AND CLEMENTE ROS

In addition to the six case studies examined in detail for this study, information was collected on three additional firms because they provided special insights into the impacts of LAAD-CA investments in the region. Two of the firms -- Monte Norte and Clemente Ros -- had relationships with La Meseta that were important for understanding the full impact of LAAD-CA's investments in that company. The other, American Flowers, was one of LAAD-CA's first loan customers in Central America, and exemplifies the long-term impacts of an extended involvement with a single company. While these were not developed as complete case studies because of time and resource limitations, the following descriptions summarize the more salient aspects of each.

### American Flowers

American Flowers is a Costa Rican company that was established in 1965 by an American expatriate who had settled in Costa Rica. It was the recipient of one of LAAD-CA's earliest loans in 1971, and has received 5 additional loans during the past 18 years. The six loans have totaled \$1,037,500. Each loan was used to finance the establishment of a new farm or other business activity.

At the time of LAAD's initial loan, the company had \$50,000 in owner-invested capital, employed fewer than 50 full-time workers, and was in serious financial problems. It had exhausted available personal resources, and had been unable to secure local financing. LAAD-CA loans have been used to expand operations. Today the company operates five farms and has annual sales of between \$6.0 and \$7.0 million. Although American Flowers has not revalued its assets to account for recent devaluations in the colon, total assets are conservatively estimated at more than \$7.0 million.

American Flowers currently employs more than 550 workers, all of whom are full-time employees. Only rarely does the company employ seasonal or temporary workers. Its annual wage bill is approximately \$1.0 million, or between 14 and 17 percent of annual sales.

The company has a strong impact on the local economy, with average annual local expenditures of \$5.2 million. In 1988, for example, purchases of materials and supplies were \$2.0 million, of which \$1.0 million represented the costs of imported items (primarily agricultural chemicals and hardware). Transportation costs in 1988 were \$1.1 million, all of which represented local purchases, as air transportation of cut flowers to the U.S. is contracted through LACSA, the Costa Rican national

airline.<sup>34</sup> Repairs and maintenance cost \$100,000, and utilities were \$250,000. Other expenses, including salaries and taxes, totalled \$1.77 million. Thus, American Flowers' expenditures in the local economy average between 60 and 70 percent of its annual sales.

Three other ornamental and cut flower businesses have been established by former American Flowers employees who gained their experience through working with American Flowers. In addition, the company was instrumental in the establishment of a freight forwarding service. These spin-off operations employ more than 200 workers.

As in the six case studies described earlier, most of the land occupied by American flower was formerly used for low-intensity agriculture -- cattle raising in particular. As a result, American Flowers' activities represent a direct increase in labor utilization and the creation of a significant number of jobs.

### Monte Norte

Monte Norte is a new Guatemalan company that was established in 1987 to cultivate and export asparagus. It is owned by two brothers who are both agronomists and have had previous experience in agribusinesses in Guatemala.

Monte Norte received a LAAD-CA loan of \$60,000 in March 1988 to help it develop 71.4 acres of asparagus production on leased land near Guatemala City. The owners also invested \$60,000 in the business. According to the owners, LAAD-CA financing was essential to the firm's development; without the loan they would have had to delay or abandon the project.

As of March 1989 the company had approximately 42.5 acres of land under production, and employed 18 full-time workers. Of the eighteen employees, six were women. One of women acted as crew chief for the work group engaged in growing new planting materials.

During a shortened harvest season in late 1988 and early 1989 (due to the fact that asparagus requires two to three years to mature and their first-year production was limited) the company employed 40 seasonal laborers. At maturity the firm expects to hire 28 full-time workers and provide seasonal labor for up to 70 workers during the four-month harvest season.

The farm leased by Monte Norte is located in a rapidly industrializing area south of Guatemala City. The owners were holding the land for speculative purposes, and had leased about half of it for corn and other low-intensity agricultural activities. No more than 5 full-time jobs were sustained by these activities. Monte Norte's activities, therefore, have contributed to increasing labor demand in the area.

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<sup>34</sup> Majority ownership in LACSA has recently been purchased by a Japanese company.

Monte Norte markets its product through La Meseta, paying a brokerage commission. La Meseta handles all cooling, shipping and marketing, charging a 15 percent commission plus charges for specific services. Although other marketing alternatives are available, and Monte Norte is seeking ways to reduce intermediary costs, marketing through La Meseta has recognized advantages. For example, growers marketing through other intermediaries have yet to be paid for produce marketed during the November 1988 to January 1989 cycle, while La Meseta paid promptly. Research conducted by Monte Norte indicates that La Meseta obtained fair prices for the product. La Meseta's established marketing contacts and effective handling and shipping capabilities have clearly helped Monte Norte in the short run.

### **Clemente Ros**

Clemente Ros is a Guatemalan company dedicated to the cultivation and export of Belgian endive. Majority ownership is in the hands of an expatriate Spaniard who has lived in Guatemala for more than 30 years. La Meseta has a 33 percent ownership interest in the company.

LAAD-CA's loan of \$200,000 was granted in 1988 to assist the company in establishing its production facilities. The owners invested an additional \$380,000 in the business. To date the company has only utilized \$150,000 of the loan in the construction of growing flats, installment of air conditioning equipment, purchase of boxes and containers for transporting and storing root stock, and for seeds and fertilizers for producing its initial supply of root stock.

Production of Belgian endive requires the growth of root stock in open-air fields for a period of approximately five months. The root stock is harvested and transferred to shallow, hydroponic flats in a dark, cooled room. Twenty-five days later the crop is harvested, packaged and exported; the root stock is discarded.

The company operates a 51-acre leased farm near Chimaltenango (about one and a half hours from Guatemala City), employing eight full-time workers. In addition, it leases land from La Meseta on several farms in the Antigua area, rotating its crop with La Meseta's production and utilizing La Meseta's regular work crews for planting, cultivating and harvesting. Root stock is planted weekly in one acre plots to ensure a continuous supply of product.

In full production, each 1.7 acres of root stock planting generates 75 days of work. The company hopes to bring about 150 acres into root-stock production over the next few years, which would sustain a total of 22 full-time field workers. In addition, harvesting the root stock is very labor intensive, requiring about 30 persons to harvest a half-acre of land. These harvesting crews can be rotated among the fields, but at full production two crews will be needed on a continuous basis.

The company's operations have had a positive impact on the intensity of labor utilization. The farm land rented by the company itself was previously used for corn production, employing only a few part-time workers. The company rents space in an abandoned mushroom plant, providing direct jobs for 18 persons (6 women and 12 men) in a location that had provided no employment for the past five years.

There is an opportunity for secondary industry development associated with the Clemente Ros operation. The root of Belgian endive can be used either to produce chicory, or to feed to livestock. At the present time the root stock is merely discarded.

Clemente Ros depends heavily on La Meseta, and the existence of La Meseta was important for the early viability of this company. Much of the root stock is grown on La Meseta properties, cultivated and harvested by trained La Meseta employees. Boxing materials are purchased from one of La Meseta's associated companies (Cajas y Empaques). La Meseta provides access to transportation and marketing outlets. At some point Clemente Ros will undoubtedly take over some of these functions internally, but at the present time the relationship is mutually beneficial.

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**APPENDIX A**  
**ACRONYMS AND TERMS**

**APPENDIX A**  
**ACRONYMS AND TERMS**

- AGROBAL** -- Agropecuario Balmoral
- COMTROP** -- Comercial Tropical
- DAI** -- Development Alternatives, Inc.
- LAAD** -- Latin American Agribusiness Development Corporation
- LAAD-CA** -- Latin American Agribusiness Development Corporation de  
Centroamerica
- ROCAP** -- Regional Office for Central American Programs of the U.S. Agency  
for International Development

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**APPENDIX B**  
**PERSONS INTERVIEWED**

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**APPENDIX B**  
**PERSONS INTERVIEWED**

**ROCAP**

Mr. Ron Curtis, Regional Agricultural Development Officer  
Mr. Tom Miller, Program Officer

**LAAD-CA**

Mr. Thomas Mooney  
Mr. Hunter Martin

**Chemonics**

Mr. John Guy Smith

**Officials of Private Companies**

Javier Tessari, Agropecuario Balmoral  
Federico Lehnhoff, Agropecuario Balmoral  
Cesar Vektorassi, Agropecuario Balmoral  
Peter Amaya A., Agribodegas  
Isais Cabrera, Toneles Roosevelt  
Sabina Arana, Toneles Roosevelt  
Victor Arana, Talleres Victor  
Cesar Arana, Talleres Victor  
Alberto Yarhi, La Meseta  
Julio Sandoval, La Meseta  
Raul Castaneda, La Meseta  
Myron Cordon, Monte Negro  
Samuel Cordon, Monte Negro  
Juan Jose Carlos, Comercial Tropical  
Jorge Carlos, Comercial Tropical  
Walter R. Munoz, Cajas y Bolsas  
James Livergood, Nispero Chiquito  
Marvin Daughtrey, Frutas y Sabores  
James Reimer, Frutas y Sabores  
Milton Castillo, La Melisa de Ojo de Agua  
Jesus A. Salas, Expo Rica International  
Mike Thomas, American Flowers  
Michael Thomas, American Flowers  
Santiago San Miguel, Clemente Ros