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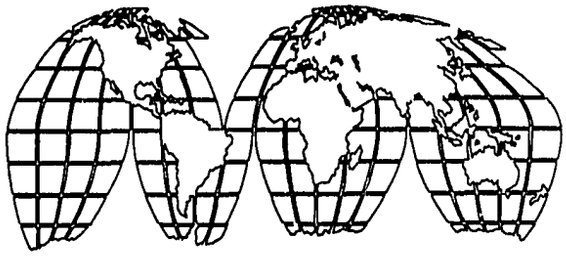

Agribusiness Assessment:
Guatemala Case Study

April 1994

U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT

AGRIBUSINESS ASSESSMENT

GUATEMALA CASE STUDY

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Table of Contents

List of Charts and Tables iii

Findings, Conclusions and Lessons Learned iv

Introduction 1

I. Economic Overview and Intervention Strategies 2
- A. Economic Context 2
  - 1. The Export Crisis 3
  - 2. The Guatemalan Labor Market and Income Distribution 3
- B. USAID/Guatemala's Approach 7
  - 1. Overview 7
  - 2. USAID Projects 7
  - 3. Intervention Strategies and Rationale 9
  - 4. Appropriateness of the Strategy for the Policy Environment 10
  - 5. Consistency of Project Activities with Strategies 11
  - 6. Appropriateness of Project Targeting 11

II. Project Performance and Outputs 12
- A. Nontraditional Agricultural Exports 12
- B. Project Target Achievement 15
- C. Appropriateness of Project Targets 23
- D. Factors Explaining Project Performance 23
- E. The Problem with Cooperatives 24

III. Economic Impacts 26
- A. Employment Effects of Agribusiness Projects 30
- B. Project Impact on Use of Services and Inputs 33
- C. Contribution to the Growth of New Agribusinesses 33
- D. Project Benefits to Existing Agribusinesses 34
- E. Impacts on Public Policies and Regulations 38

IV. Social Impacts and Issues 39
- A. Impact on Disparities in Access to Resources 39
  - 1. Income Distribution 39
  - 2. Land Access and Small-Farmer Differentiation 44
  - 3. The Treadmill 46
- B. Effects on Women 47
  - 1. Employment 47
  - 2. Other Effects on Women 49

C. Environmental Issues 51
1. Pesticides 51
2. Land Degradation 52

V. Links to U.S. Agribusiness 53
A. Linkages to U.S. Firms 53
B. Problems Encountered by U.S. Agribusiness Firms 53

VI. Cost Effectiveness of the Projects 54
A. Per Unit Cost of Employment Generated by Agribusiness 54
B. Cost and Impact of Direct and Indirect Technical Assistance 55
C. Cost Benefit Analysis of the Projects 55
1. Foreign Exchange Earnings 56
2. Income to Poor People 56
3. Possible Refinements to the Analysis 59

VII. Sustainability 61
A. Sustainability of Public Sector Capabilities 61
B. Sustainability of Intermediary Organizations 62
C. Financial Viability of Agribusiness Firms Supported by Projects 63

Annex 1. Cooperative Case Histories

Bibliography

Tables and Charts

Charts

Chart I.1	Real Per Capita GDP, 1970-92	4
Chart I.2	Annual Real Per Capita GDP Change	4
Chart I.3	Guatemala Traditional Exports, 1960-92	5
Chart II.1	Guatemalan NTAE Exports to U.S., metric tons	14
Chart II.2	Unemployment Rates, 1980-92	17
Chart VI.1	Economic Rate of Return to AID Assistance	58

Tables

Table I.1	Guatemala Agribusiness Projects Studied	8
Table I.2	USAID Funding by Type of Activity	10
Table II.1	Guatemalan Exports to U.S. of NTAE	13
Table II.2	Employment in Nontraditional Exports	18
Table III.1	Comparative Labor Requirements, Alternative Crops	28
Table II.2	Sources of Raw Materials, Guatemalan Agribusiness Firms	29
Table III.3	Impact of Nontraditional Export Sector	31
Table III.4	Activities Leading to Firm Success	36
Table III.5	Total Sales, by Type of Firm	37
Table III.6	Sales Per Firm, by Type	37
Table III.7	Number of Firms by Size Class	37
Table IV.1	Small Farmer Share of Income Generated	41
Table IV.2	Distribution of Income Generated by NTAE	42
Table IV.3	Wage Rates in Surveyed Agribusiness Firms	43
Table IV.4	Land Distribution in Guatemalan Highlands	45
Table IV.5	Employment in Surveyed Firms	48
Table VI.1	Cost-Benefit Calculation for Foreign Exchange	57

FINDINGS, CONCLUSIONS AND LESSONS LEARNED

Findings and Conclusions -- Sector Level

1. The USAID goal of promoting rapid growth of nontraditional agricultural exports (NTAE) in Guatemala has been highly successful. The NTAE agribusiness sector is vibrant and dynamic, and offers very promising prospects for continued growth. USAID's input to the sector was very important to its rapid growth.

2. Assuming continued sound macroeconomic and sectoral policies, there seems little doubt that the growth of agribusiness exports will continue. Its development is now sustainable and not dependent on USAID support -- though USAID support would both increase the rate of growth and the benefits accruing to poor Guatemalans.

3. Small farmers, including women, have benefitted substantially from NTAE. Altogether, the NTAE expansion has generated about $115 million in income for the bottom 25% of Guatemala's income distribution. The share of this group in the income generated from NTAEs is about 20% of the total, dramatically higher than their 3% share of Guatemala's GNP. Perhaps 35,000 new jobs have been created as a result of NTAE expansion, with men and women having equal shares. More important, many of the new crops are grown best by very small producers. This has given substantial entrepreneurial income to small farmers, and enabled thousands of small farm families to move out of extreme poverty. Where the growth has been most rapid and concentrated, rural wages are considerably higher than those in other parts of the country.

4. There are still numerous problems facing the sector: mistrust and inadequate contracting arrangements among producers, processors and foreign buyers; pesticide issues; instability and growing pains in foreign markets; technology questions. Pesticide residuals in particular pose some threat to small producers, for exporters will naturally prefer limiting their purchases of raw materials to a few larger farmers whose pesticide practices can be monitored more easily. We expect small farmers largely to meet this challenge, but continued attention by USAID is warranted.

5. Numerous questions have been raised about the impact of Guatemalan NTAE on environmental degradation, pesticide use, and the well-being of small farmer producers. These are serious issues deserving continued monitoring. Many agribusiness firms are taking steps to deal with these issues. On the whole, our review of the evidence suggests that the impacts of NTAE in all three areas are more likely to be favorable than unfavorable, at least in comparison to alterative scenarios that exclude NTAE.

Findings and Conclusions -- Project Level

1. USAID's initial approach (Small Farmer Marketing), involving creating regional wholesale markets in three highland areas managed by cooperatives and with substantial public sector input, was largely a failure. These efforts were designed to reduce the impact of intermediaries and increase the value added captured by the co-ops. Only one market was built, in Patzicia, and it never met expectations. The theoretical conception of the project was flawed, reflecting lack of understanding of the **business** of agricultural marketing.

2. Subsequent efforts (Agribusiness Development and Cooperative Strengthening) were more effective, but still suffered from the limitations of the strategic approach. Cooperatives with relatively unsophisticated membership and management were encouraged to enter directly into exporting. Exporting of perishable products requires extensive knowledge, excellent communication and information exchange with foreign buyers and markets, ability to make and meet product quality and delivery commitments, ability to evaluate the quality of foreign buyers or brokers. In retrospect, this was far too much to expect from many of the cooperatives. Many cooperative enterprises and their members encountered severe financial problems as a result.

3. Assistance to the Nontraditional Exporters' Guild and for larger growers and processors through PROEXAG enabled the mission to support an "agribusiness systems" approach. Such support seems to have paid substantial dividends in export growth, employment and income generation in the highlands.

4. The challenge in this area that the strategy needs to come to terms with is that of linking groups of small farmers with profit-making agribusinesses. The latter possess the sophistication and risk-taking ability that has the potential to benefit small farmers. The issue is how to assure that the benefits of USAID support accrue to the farmers, and do not simply substitute for technical assistance and credit efforts of the agribusinesses.

5. USAID/funded technical assistance was extremely valuable in some cases. Both PROEXAG and the WOCCU teams created benefits for Guatemala and for USAID's target group that were surely a multiple of their cost. At the same time, some of USAID's technical assistance was useless or worse. It is clear that the **quality** of USAID technical assistance is fundamental to its success, particularly in complex and difficult areas like perishable NTAE. Selection of the best providers is thus a very important function for USAID professionals. Even if they attempt to do so, however, USAID contracting procedures may well interfere with USAID's capacity to do so. In one case, awarding of a project management contract was delayed for two years because of an appeal by an unsuccessful bidder.

Lessons Learned

1. The most effective mechanism for promoting agribusiness in Guatemala has been creation of intermediaries that can help the agribusiness sector develop as a system. The Non-Traditional Exporters' Guild and PROEXAG have both played critical roles in this regard, by providing the knowledge needed by firms operating in the sector. By creating opportunities for a large number of interdependent firms, this has helped create a NTAE sector that is strong and dynamic. An assistance approach that focused on helping specific individual firms would have achieved fewer results.

2. The agribusiness sector is a dynamic collection of economic activities, and USAID project designers should not attempt to forecast or decide the structure or functions of the individual firms that make it up. Rather, development of the sector is a process of discovery, where experimentation by firms with alternative arrangements (e.g., contract farming, vertical integration) is the best means for establishing a vibrant, competitive sector.

3. NTAE crops differ markedly in the share of income generated that accrues to poor people, though all were "pro-poor" in that poor people received a higher share of income generated than their existing share of Guatemalan GNP. USAID project designers should make a more conscious effort to consider such distributional elements in future project designs.

4. Contract farming, where processors provide growers with credit and technical assistance in exchange for delivery at harvest at a fixed price, has considerable potential for raising incomes of small farmers. In many cases, a USAID emphasis on promoting cooperatives that were linked to processors by contract mechanisms would have been superior to cooperative ownership of processing facilities.

Issues for the Future -- USAID/Guatemala

1. Some problems, particularly pesticide use, may limit future access by smaller farmers to the opportunities in the sector. Many processors want to make greater use of their own land or that of larger growers to minimize risks. They are likely to make only limited progress in this direction, and we expect small farmers to continue to have substantial opportunities for increased production of NTAE and for increased earnings. Nevertheless, some of the smaller farmers may be left behind without donor or Guatemalan Government involvement in technology dissemination.

2. Cooperatives or other types of farmer associations can play a key role in dissemination of improved technology for production and pesticide use. There may be an important role for USAID in supporting technical assistance in this critical area.

3. Farmer groups and cooperatives may need technical assistance and help in working out arrangements with private-sector firms, both to increase the number and the value to the

farmers of such arrangements.

Issue for the Future -- USAID

1. An examination of USAID policy regarding cooperatives is warranted. Cooperatives can clearly play an important role in mobilizing the rural poor and in creating new economic opportunities for them. The credit union movement and some individual NTAE cooperatives were successful in Guatemala, but USAID pushed cooperatives into areas for which they were not well suited. Significant losses to both cooperative members and to the Guatemalan economy resulted. USAID needs to draw on its experience with cooperatives to better define when this mechanism is appropriate and when it is not.

INTRODUCTION

Purpose of the Assessment

Guatemala is one of seven case studies of USAID experience with the promotion of agribusiness development. The basic purpose of the assessment is to determine whether USAID investment has yielded sufficient benefits to justify its continuation. Beyond this, the assessment seeks to understand what factors have been associated with more successful approaches to agribusiness development, and what the impacts of alternative approaches have been on particular USAID target groups -- rural poor and women.

The Guatemala Case

The Guatemala case study reviewed four USAID projects aimed either at increased production and marketing of nontraditional crops or at agricultural cooperative development. Because of interrelations among these projects and with other projects and programs of USAID/Guatemala, however, an "agribusiness strategy," though not explicitly developed by the mission, is nevertheless implicit in much of USAID activity in Guatemala during the entire 1978-92 period. This strategy involved three elements: increased production and productivity by small, largely indigenous, farmers in the Guatemalan highlands through technical assistance, credit, mini-irrigation programs and development of new crops; improvements in marketing through establishment of infrastructure and promotion of agricultural cooperatives; and promotion of policies and institutions related to exporting.

Approach

The approach taken in the case included a desk study in Washington of project papers, evaluations and other documents relevant to USAID's agribusiness activities. Interviews were also conducted in Washington with a number of former USAID/Guatemala officials. This study laid the basis for the in-country work in Guatemala, carried out between September 22 and October 15, 1993. In Guatemala, the team interviewed 15 privately-owned agribusiness firms and 10 Cooperatives, as well as USAID/Guatemala staff and representatives of several other agencies and institutions active in this area. In addition, four Guatemalan interviewers carried out more extensive questionnaire responses from 50 processors and cooperatives and from 40 farmers producing crops for agribusinesses.

The effort was focused primarily on the agribusiness sector where USAID was working -- horticultural production in the central and western highlands. This sector has developed as a significant exporter only during the past decade. A substantial agribusiness sector supporting traditional agricultural exports (coffee, cotton, beef, sugar and bananas) has long existed, and newer sectors (tobacco, cardamom, and sesame) have gradually developed in recent years. The USAID activities being reviewed also promoted growth of a number of these non-horticultural crops, including coffee grown by small producers and tobacco and sesame. To focus the effort on the core concern of the strategy, however, the effects of

USAID activities on non-horticultural products has been excluded from the study.

The study was also informed by the considerable literature on Guatemalan development, both in the economic literature and in the other social sciences. Anthropological studies, particularly of one highlands Indian village economy studied carefully by Sol Tax in the 1930s and later by Hinshaw in the 1960s, also provided some useful perspectives[1]. The Tax study documents the involvement of Indian communities in horticulture, coffee and the traditional crops of corn and beans a half-century ago. It is clear that, at least in this community, the trade-offs between traditional and export crops were incorporated into agricultural practices long before the most recent agro-export focus. Indians were aware of the risks in horticulture, and tended to diversify their production between the traditional crops and production for the market. Even in that period, the village was dependent upon purchases of corn and beans to supplement own production. The earnings from horticulture, however, were sufficiently favorable that farmers believed that "it did not pay" to produce corn and beans on the best land in the river bottom. Corn was grown on the steeper slopes of the hillsides, where horticulture was not possible for lack of irrigation.

This paper provides the basic findings from the Guatemala case. A background paper, "Guatemala Portfolio Agribusiness Assessment," provides a more detailed review of the portfolio. The background paper was prepared prior to the country visit, and drew upon project papers and evaluations of the four projects studied to provide additional information on specific outputs, problems and activities under each of the four project studied.

I. ECONOMIC OVERVIEW AND INTERVENTION STRATEGIES

A. Economic Context

Two aspects of Guatemala's economic environment are important for this assessment: trends in the overall economy, particularly in relation to export earnings; and trends in the labor market for unskilled workers. In addition to the macroeconomic context, the characteristics and evolution of labor supply and demand are very important for poor people in the country. Low-income workers have labor time as their principal economic asset, and consequently the value of labor is important in determining their incomes as well as the distribution of income in the country.

Guatemala experienced two decades of relatively steady growth during 1960-80, with per capita GNP rising by more than 50%. Guatemalan economic policies had maintained

[1]See Tax (1946) and Hinshaw (1975).

macroeconomic stability throughout this period. The government sector was very small, and conservative monetary policies held rates of inflation below those of the industrial countries. Except for high import tariffs associated with Guatemala's membership in the Central American Common Market, its macroeconomic policies were very sound by orthodox standards. This stability disappeared early in the period examined by this report. Per capita GDP peaked in 1980, and fell sharply during 1981-86. Recovery since 1986 has been only partial (see Charts I.1 and I.2). Per capita GDP in 1992 was $950, or 20% percent below the 1980 peak.

1. The Export Crisis

While internal political turmoil has played a role in this decline, a severe decline in prices for Guatemala's traditional exports has been an important factor in forcing retrenchment and in imposing lower living standards. The 1960-80 period had been one of favorable, and generally rising, prices for Guatemala's five traditional exports -- coffee, bananas, sugar, beef and cotton. These five products accounted for more than 70% of exports outside the Central American region in 1980. After 1980, prices of these products collapsed, and have yet to recover. For the most important of these, coffee, world prices in 1993 were the lowest in real terms in the last half-century. Chart I.3 summarizes the impact of the commodity price fall by comparing actual export earnings for 1960-92 (the line), with the earnings that would have accrued if real prices throughout the period were stable at the 1960-80 average (the bars). As the chart indicates, actual 1992 earnings were $528 million. At 1960-80 prices, they would have been $1,466 million. In addition to the collapse of world markets for its traditional exports, the Central American market -- where Guatemala was the largest exporter of manufactured goods -- also declined drastically as a result of economic and political developments in the region.

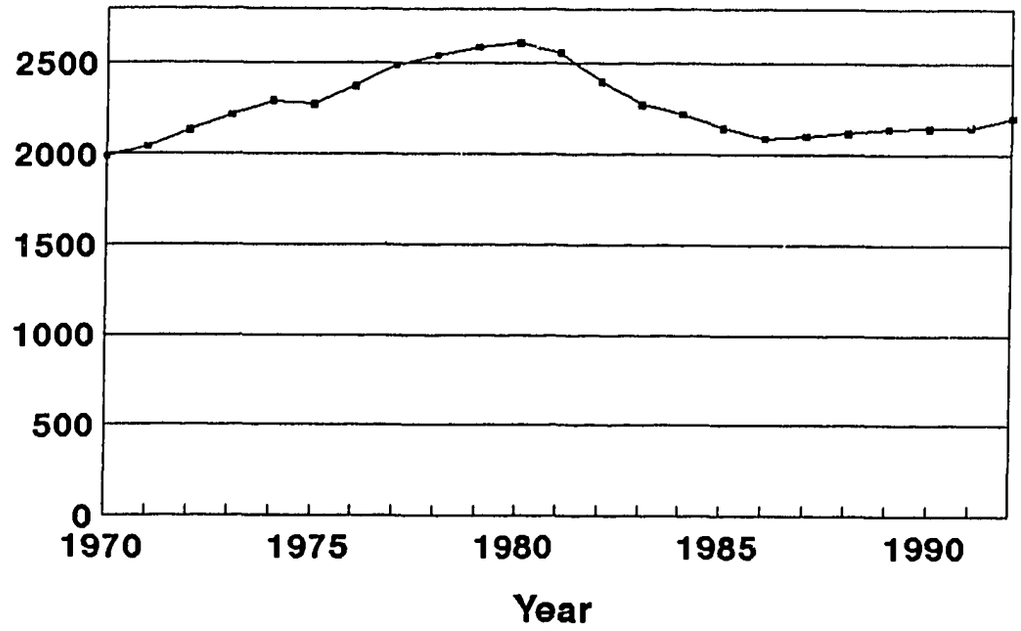
This loss of foreign exchange earning power due to commodity price declines and regional calamity was felt throughout the economy. Given Guatemala's dependence on international trade, the country entered a period of serious economic decline, as can be seen by comparing GDP performance during 1980-85 on Chart I.2 with the real value of exports shown in Chart I.3 for the same period.

2. The Guatemalan Labor Market and Income Distribution

Guatemala has always had a highly-skewed distribution of income. The historical roots for this have been in the extreme disparity in land ownership in Guatemala's largely rural society, with large landowners having very high incomes based on production of traditional export crops of coffee, sugar, beef and cotton, and large numbers of very small, largely Indian, farmers producing mainly basic grains, and supplementing their incomes by working on large farms. In the case of another traditional crop, bananas, production was largely on plantations owned by a multinational corporation. Relatively low levels of

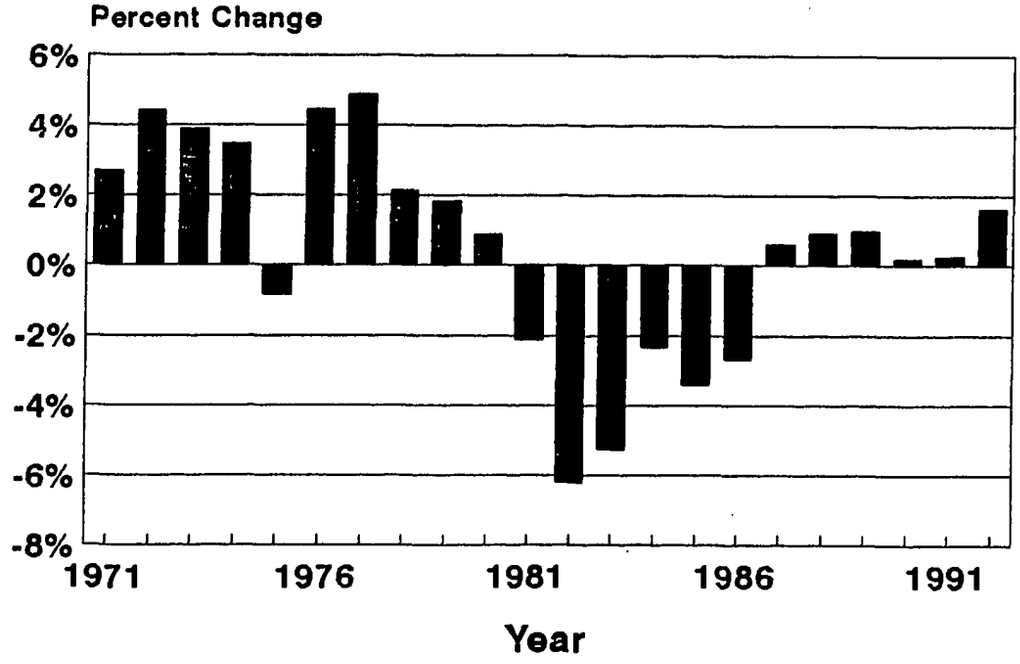
Chart I.1 and I.2

Per Capita Real GDP, 1970-92
Guatemala



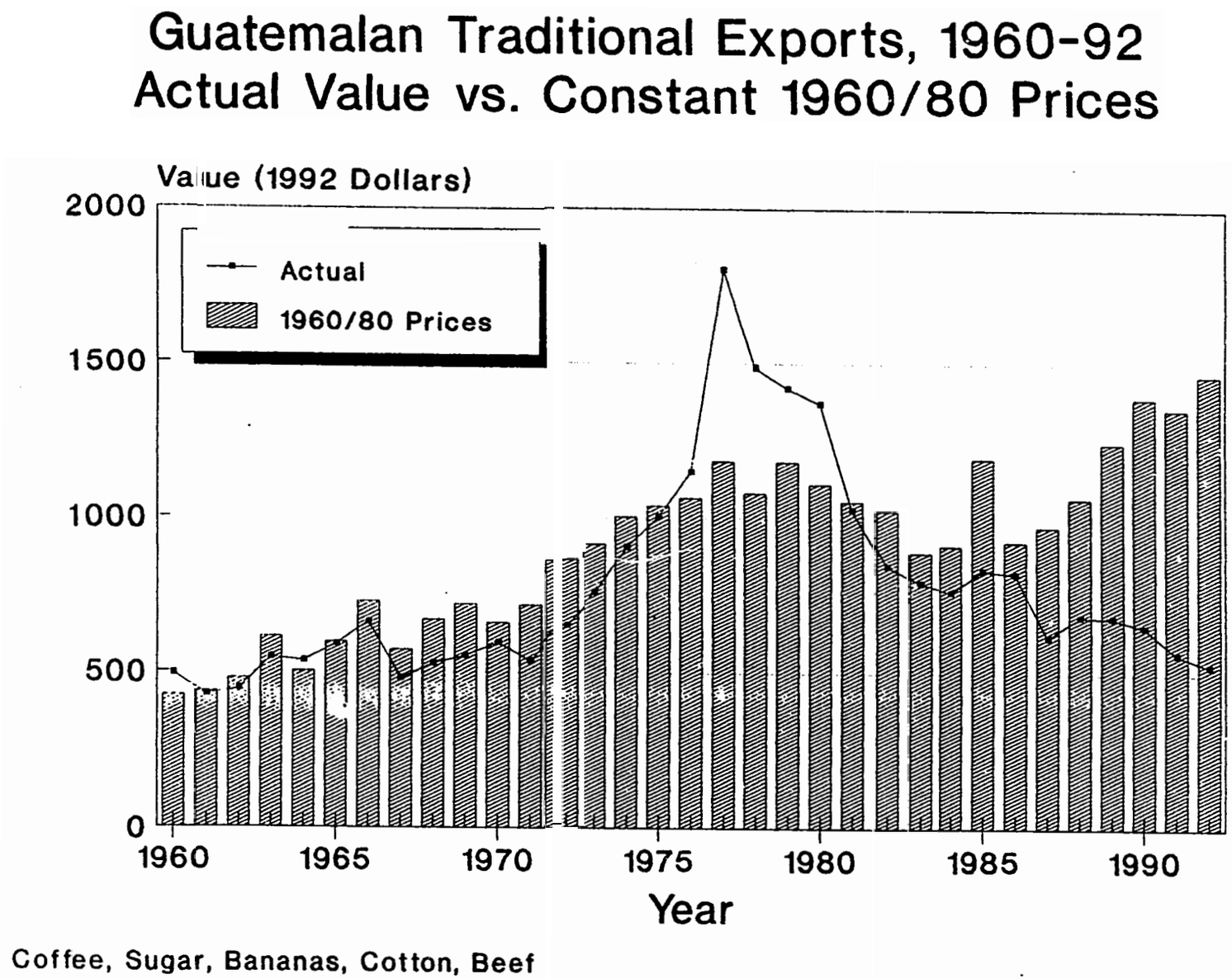
Data from World Bank

Annual Real Per Capita GDP Change
Guatemala, 1971-1992



Data from World Bank

Chart I-3


Guatemalan Traditional Exports, 1960-92
Actual Value vs. Constant 1960/80 Prices
Value (1992 Dollars)
2000
1500
1000
500
0
Actual
1960/80 Prices
1960
1965
1970
1975
1980
1985
1990
Year
Coffee, Sugar, Bananas, Cotton, Beef

education and slow growth of urban employment have reinforced this inequality. Beyond the asset question, however, there has been an extreme skewing of earnings. Educated and skilled workers receive incomes of the same order of magnitude of such workers in more advanced countries, while unskilled workers earn as little as $1 per day.

The orthodox model of economic development assumes that manufacturing and other urban employment opportunities will draw workers from rural areas. Even where rural poverty and lack of access to land are widespread, the growth in urban jobs will gradually pull the surplus workers off the land. As the rural surplus disappears, so will low-productivity rural work. In Guatemala, this has not happened. Employment in manufacturing has grown very slowly in comparison to growth in the labor force. The share of the Guatemalan labor force in the industrial sector grew only from 12% in 1950 to 13% in 1980 (PREALC, 1985).

An important factor here is the continued rapid growth of Guatemala's population. Compared to Latin America generally, Guatemala is much more rural (60% vs. 33%), and has a much higher population growth rate (2.9% vs. 2.2%). Guatemala is much earlier in the "demographic transition" than most of Latin America. Infant mortality rates have fallen substantially over the past several decades, but fertility has fallen only modestly. The result is a rapidly growing labor force, which will continue to grow by about 3% per year during the next two decades.

A number of economic studies of the Guatemalan labor market have concluded that the market does function well (Terrell, 1989, Funkhouser, 1993). In other words, workers are paid in relation to their productivity. The problem stems from low labor productivity. Exploitation of workers, although a frequent occurrence, does not explain the low wages. Small farmers have traditionally migrated seasonally from the highlands to coastal areas to harvest sugar, cotton and coffee. The willingness to migrate reflects the productivity of these farmers on their own plots. If earnings from migrant labor are less than they could produce by applying their labor to their own land, or that of others in the district, they will remain.[2] During the 19th and first part of the 20th century, Guatemalan law enforced compulsory migration of Indian workers to the lowlands. John Swetman (1989) has shown that the need for compulsion came from the low wage paid for harvesting traditional crops. The justification given at the time for compulsory labor was that highlands Indians were not interested in earning higher incomes. Compulsory labor was officially abolished in 1944, but apparently had not been important for a decade or so before that.

The majority of highlands farmers have traditionally grown corn and beans. A substantial fraction of small farmers continue to rely on corn and bean production for a large

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[2]Again, some migration may reflect exploitative relationships. Fries (1989) notes that recruiters for coastal farms have traditionally given advance payments to highlands farmers with temporary financial hardships in exchange for a commitment to migrate.

proportion of their income. Consequently, it is the productivity of farmers in these crops that is the standard for small-farmer incomes. Schweigert (1993) has shown that wage trends in the Coastal harvests track with the productivity of corn production in the highlands. He concludes that real wages in Coastal harvests have been essentially constant between the 1960s and 1988, at a level "that corresponds to the stagnant labor productivity of subsistence agriculture in the highlands." In this view, then, the only means for raising wages in Coastal crops is to raise productivity in the highlands.[3]

Promotion of production of NTAE crops by small farmers in the highlands directly addresses the low productivity of these producers, encouraging higher productivity per unit of land and increasing the labor input per unit of output. At the same time, increases in NTAE serve to relieve the balance of payments constraint. Consequently, NTAE addresses the two key economic constraints facing Guatemala: the foreign exchange scarcity arising from the collapse of the traditional export sector; and the extremely skewed income distribution afflicting indigenous rural producers.

B. USAID/Guatemala's Approach

1. Overview

The CDIE agribusiness review included Guatemala primarily because of the considerable success that country had achieved since 1985 in increasing its non-traditional agricultural exports (NTAE). The question arises to what extent USAID contributed to the NTAE gains. Several other factors served to set the stage. These included the abatement of political violence, improvements in macroeconomic policy and advances in transportation services available to Guatemalans. These surely helped, but USAID also provided substantial direct investment in NTAE development. This included more than $70 million in agricultural development support for the highlands during the 15-year period from the late 1970s to the early 1990s. Much of assistance was provided under umbrella projects with an array of support activities. Overall the assistance was directed toward improving the comparative advantage of the highlands region for producing horticultural crops and in providing value-added activities in marketing and processing these crops.

In addition to the question of overall impact on economic growth of USAID's agribusiness activities in Guatemala, the study attempts to make a particular focus on the rural poor in the Guatemalan highlands, where most of the USAID activity took place. Have the rural poor benefitted from these activities? If so, to what extent?

2. *USAID Projects*

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[3]The team heard anecdotal evidence that real wages for seasonal migrants to the coastal areas are now rising, as greater employment opportunities in the highlands reduce the incentive for migration. However, no hard evidence on this point was available.

The USAID program of agribusiness-related activities is summarized in Table 1.1. below. It provides an overview of USAID's projects which comprised the components for agribusiness development and NTAE expansion.

Table I.1

USAID Agribusiness Projects Studied

PROJECT	YEAR		AMOUNT ($ Million)
Small Farmer Marketing	'77-86		$ 4.2
Agribusiness Development	'84-92		$13.5
Co-op Strengthening I & II	'86-94		$15.5
Highlands Agricultural Development (HAD)			$37.0
Phase I	'83-88	($15.0)	
Phase II	'88-94	($15.0)	
Phase III	'89-94	($ 7.0)	
TOTAL			$70.2

The USAID support had three distinct orientations. First, the assistance was directed primarily toward the Guatemalan highlands or altiplano. This region has a population which is primarily Indian and historically has had the largest percentage of the poorest Guatemalans. It is in an area whose inhabitants are small-scale farmers devoted in the past to subsistence production of corn and beans. Their incomes have traditionally been supplemented by seasonal migrations to the Pacific Coast to work on coffee and sugar cane harvests or cattle farms.

The second orientation was that it focused on crop diversification. Early on USAID sought to provide farmers in the highlands with alternatives to the traditional small-farmer crops of corn and beans. Horticultural crops were actively promoted. USAID assistance included penetration roads to improve producer access to markets and irrigation systems and technical assistance to enhance farmers' capability in producing horticultural crops.

The third direction which the USAID program emphasized was support for agricultural cooperatives as the preferred means for marketing the diversified production. It was clear that crop diversification would require attention to marketing given the

perishability of horticultural crops. USAID promoted the development and strengthening of producer co-ops to perform the key agribusiness functions, such as, storage, handling processing and packaging of the new crops. A considerable amount of technical and financial resources were directed to improve agricultural cooperative operations and management capability.

3. Intervention Strategies and Rationale

The agribusiness assessment design identified four potential types of strategy to promote the sector: 1) organizational and institutional strengthening; 2) enterprise development; 3) intermediation for market development; and 4) privatization of parastatals. All of the first three types of intervention were present in Guatemala, though varying from project to project. The early emphasis was on the second strategy, particularly through direct assistance to agricultural cooperatives. Later projects eliminated the focus on specific enterprises, and focused on the less direct approaches of the first and third strategies. One of the projects studied, however, also contained a major rural infrastructure element that does not fit neatly into any of the four categories, though it contributed importantly to the growth of agribusiness. Table I.2 summarizes the USAID assistance by type of activity supported.

In broad terms, the rationale was clearly articulated in project documents and consistent throughout the period under study. The mission goal was to raise the incomes of small farmers in the Guatemalan highlands. The vehicle for achieving this goal was to change the output of small farmers from traditional crops of corn and beans to higher-value, more labor- and land-intensive crops. The mission designed an array of activities -- agricultural research and extension, marketing, credit, cooperative development, mini-irrigation -- to support this transformation. Over the 15-year period of implementation, the basic goal remained the same.

The particular interventions implemented to achieve the goal did evolve over time, reflecting the lessons learned from implementation experience. Most notably, the first project was aimed primarily at increased horticultural production for the domestic market. Later, the emphasis shifted increasingly toward horticulture for export. This shift toward emphasis on exports appears to have been driven by considerations of market absorption. At least by 1980, the Mission had concluded that the absorptive capacity of Guatemalan urban markets was limited and that Central America was a questionable export market. One study for the mission showed that emphasis on production of vegetables for the domestic market could well harm small farmers because of the limited size of the market. Greater production would lower consumer prices significantly because of the relatively inelastic demand. Farmers would receive less income as volume increased. For the world market, however, Guatemalan production was insignificant, and any projected increase in production could be

absorbed without any reduction in price to the Guatemalan producers.[4]

Table I.2

AID Funding by Type of Activity

Type of Activity		Amount ($ million)	
Institutional Strengthening			15
Technical Assistance		12	
Agricultural Research		3	
Enterprise Development			31
Loans to Agribusinesses		9	
Assistance to Cooperatives		22	
Credit	(5)		
Technical Assistance	(11)		
Commodities, Other	(5)		
Marketing Support for Exporters' Guild			4
Infrastructure			20
Rural Roads		5	
Mini-Irrigation		7	
Soil Conservation		7	
Reforestation		1	
Total			70

4. *Appropriateness of the Strategy for the Policy Environment*

For most of the period, Guatemala's macroeconomic policy environment has been relatively favorable. Until the early 1980s, the country had maintained a stable fixed

[4]By the early 1990s, the assumption that Guatemala was an insignificant producer was no longer true, particularly for snowpeas. Guatemala supplies more than half of U.S. consumption of snowpeas. Prices have generally held up, however, as Guatemala has displaced Mexican production in the U.S. snowpea market, and consumption seems to have grown with the availability of the product.

exchange rate to the dollar, with very conservative monetary and fiscal policy used as a tool to prevent inflation. Guatemalan inflation remained at or below U.S. levels. In the early 1980s, however, very large external shocks, due to sharp falls in the prices of Guatemalan exports and the collapse of its trading partners in Central America, led to a period of macroeconomic instability. The government failed to undertake the dramatic tightening of money supply that would have been needed to prevent inflation, the exchange rate became overvalued, and a variety of stopgap measures were used to paper over imbalances. The democratically-elected government that came to office in 1986 broadly restored macroeconomic balance.

5. Consistency of Project Activities with Strategies

The projects studied included a wide range of activities, which might be grouped into three types: farm-level activities and rural infrastructure; promotion of cooperatives as marketing intermediaries; and general agribusiness-related promotion. All of these activities were clearly linked to mission objectives. As discussed below, however, some of the activities were not effective in achieving the objectives, particularly in the earlier stages of project activity. Over time, the fit between project activities and the real assistance needs for NTAE became increasingly close.

6. Appropriateness of Project Targeting

The **beneficiaries** targeted in project activities were both appropriate and consistently kept in mind during the period. The activities, however, sometimes suffered from misconceptions about how best to benefit the beneficiaries. As discussed in later sections of this paper, the preponderant emphasis on cooperatives as the best vehicle for marketing agricultural products, and of a hierarchy of cooperative institutions from base cooperatives to federations, proved to be questionable in the Guatemalan context.

USAID's gradual retreat from its preponderant support of agricultural cooperatives as marketing vehicles resulted from frustration resulting from the failure of this approach to yield the expected benefits. Losses by some cooperatives and the considerable success of small farmers in working outside the cooperative structure led USAID gradually to drastically reduce assistance to the agricultural co-ops. By the end of the period, USAID support for cooperatives was primarily in the area of credit unions, oriented toward helping individual investment efforts in rural communities. This effort has been very successful. The less-effective support for agricultural co-ops was largely abandoned.

USAID's shift away from agricultural co-ops was toward a broader focus on private businesses including processors and exporters. The agricultural co-ops for the most part were not able to develop the managerial and technical skills needed to successfully penetrate and secure export markets. Success was contingent upon developing timely information channels, close coordination with importers and transporters, and careful attention to quality. The agricultural co-ops did not acquire these capabilities. A more eclectic approach was

developed, emphasizing less the structure of the agribusiness enterprises than tools for success of agribusiness firms, of whatever structure might evolve. An important component of this effort was the promotion of agricultural export trade associations which concentrated on linking U.S. importers and private agribusiness and exporters in Guatemala, and links between these marketing elements and the small producers. Trade fairs and a wide range of business support activities were undertaken, with substantial benefits to the small farmers who were the intended beneficiaries of USAID support, but also to well-educated Guatemalan entrepreneurs who established and ran agribusiness firms, who were not.

II. Project Performance and Outputs

A. Nontraditional Agricultural Exports

Over the period, the USAID strategy increasingly emphasized exports as a major goal of its agribusiness promotion. The Small Farmer Marketing Project focused mainly on local urban markets. With the failure of its principal intervention, a regional wholesale buying center in the highlands and the start of the decline of Guatemalan economy, the export emphasis became predominant. The effort was expected to substantially increase Guatemalan nontraditional exports. In so doing, it was expected to create a substantial amount of employment in the export sector. In general, the trends conform to USAID expectations.

Guatemalan began to export significant amounts of horticultural products outside of Central America after 1975. Table II.1 shows exports to the United States, the primary external market. Exports in 1975 included $0.4 million in horticultural products, and $2 million in ornamental plants and seeds. Between 1975 and 1978, when the first project considered here began, horticultural exports had risen to $2.7 million. Much of this increase was produced by a single firm, ALCOSA, which exported frozen broccoli, cauliflower and okra. ALCOSA had been established with the help of an USAID loan to the Latin American Agribusiness Development Corporation. It was sold in 1975 by the Guatemalan owner to Hanover Foods, an American company. Since 1978, Guatemalan horticultural exports to the United States have continued to rise rapidly, reaching $59 million in 1992. Chart II.1 shows the trend in exports to the United States in volume terms. The trend in exports to other markets outside Central America is not available, but these have been estimated at about 25% of exports to the United States. Overall exports of NTAE outside Central America in 1992 are thus estimated to be $105 million, including $80 million in fruits and vegetables, and $25 million in flowers, ornamental plants and seeds.

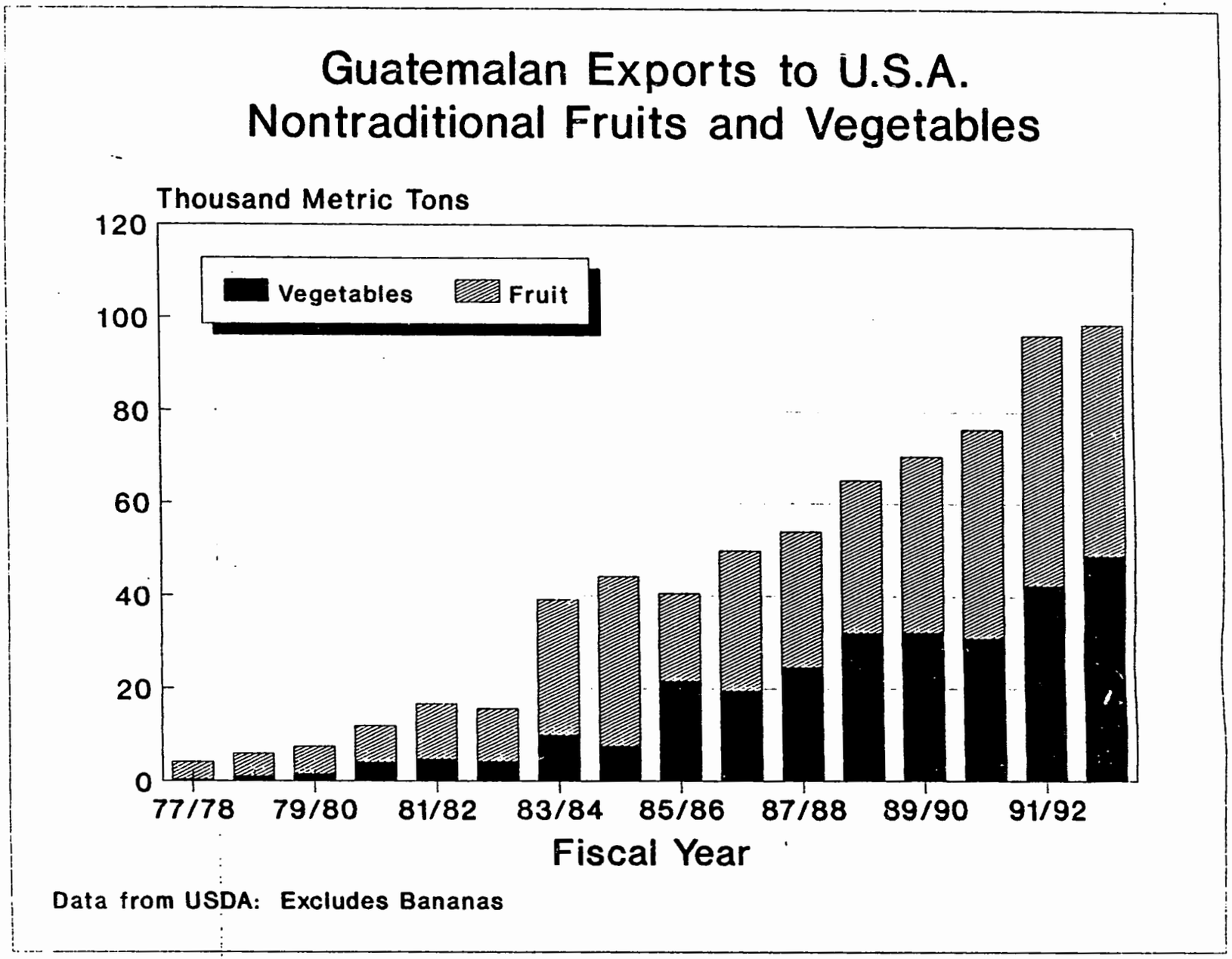
The composition of horticultural exports has changed over time. In the early 1980s, melon exports grew rapidly and became the leading sector. The leading melon exporting firm was headed by a former USAID employee from the Regional Office for Central America. Subsequently, the fastest growth shifted to vegetables. Snowpeas, broccoli and

Table II.1
Guatemalan Exports to U.S.
Nontraditional Agricultural Products
(Million $)

Year	Total	Vegetables	Fruit	Plants, Seeds Flowers
1975	3.7	0.2	0.2	3.2
1976	4.9	0.8	0.2	3.9
1977	6.3	1.8	0.2	4.3
1978	7.0	2.5	0.2	4.3
1979	9.0	3.6	0.5	4.9
1980	12.0	4.6	0.9	6.5
1981	15.3	5.9	2.1	7.3
1982	18.0	9.1	1.9	7.0
1983	16.2	8.4	1.7	6.1
1984	21.2	11.4	1.9	7.9
1985	22.0	12.4	2.7	6.9
1986	29.6	13.4	8.1	8.1
1987	36.5	19.5	7.8	9.2
1988	37.6	18.5	9.6	9.5
1989	47.9	25.1	12.9	9.9
1990	54.1	29.8	13.6	10.7
1991	61.7	36.4	14.1	11.2
1992	75.2	39.4	19.2	16.6
1993e	74.0	38.0	20.0	16.0

Source: U.S. Department of Commerce

Chart II.1


Guatemalan Exports to U.S.A.
Nontraditional Fruits and Vegetables
Thousand Metric Tons
120
100
80
60
40
20
0
Vegetables
Fruit
77/78
79/80
81/82
83/84
85/86
87/88
89/90
91/92
Fiscal Year
Data from USDA: Excludes Bananas

cauliflower are now the largest, followed by a range of other products,including brussels sprouts, okra, minivegetables, French beans, strawberries and raspberries.

The growth in the Guatemalan labor force requires in the mid-1990s an additional 80,000 jobs per year to be created to prevent deterioration of the labor market, with a consequent fall in real wages. The general deterioration of the economy during 1981-86 was accompanied by a both a substantial increase in unemployment and a decline in real wages. Unemployment peaked in 1986 at 14%, and fell steadily in subsequent years as the economy recovered (Chart II.2). Real wages also began to rise in 1992 and 1993.

The major source of job creation during the recovery was related to development of nontraditional exports. Table II.2 shows nontraditional-export related job creation during the 1980s, according to the Nontraditional Exporters' Guild. The horticultural employment growth tracks broadly with calculations made by the assessment team, as discussed in Section III. As indicated by the table, export-related jobs rose by more than 100,000 between 1990 and 1992, with horticultural products alone accounting for 46,000 jobs. (It should be noted that the Guild has used a wider definition of nontraditional exports, including products such as sesame seeds and tobacco that are excluded from this study.)

Thus, the overall trends in the relevant variables are very positive. Both exports and employment in the relevant sectors expanded rapidly during the period of USAID involvement. The next section examines project targets and performance for linkage to these overall trends.

B. Project target achievement

Each of the four projects established a series of output and purpose-level targets. Achievement of targets varied widely. In each case, variations in achievement were related to overall project performance. This section summarizes the main features of performance. The background paper "Guatemala Portfolio Agribusiness Assessment" includes a listing of performance against the individual targets.

1. **Small Farmer Marketing**. This project failed in most respects. The intent was to establish a set of regional buying centers with cooling and grading facilities that would stimulate increased small-farmer production by lowering the costs of marketing horticultural products. The buying centers were to be managed by CECOMERCA, a cooperative entity to be owned by the two major coop federations and by participating farmers. The targets were clearly spelled out, but the means to achieve them were miscalculated. Instead of lowering the costs of the marketing function, the establishment of the buying center at Patzicia (the first of three such stations planned, but the only one constructed) increased the costs of marketing. Both CECOMERCA's high costs and limited management capabilities led to inability to either market domestically at a profit or to export. Although 2,000 farmers had signed statements indicating a desire to become members of CECOMERCA by buying a share costing $10, fewer than fifty actually subscribed. This contrasted sharply with the

Chart II.2

Unemployment Rates, 1980-92

Guatemala

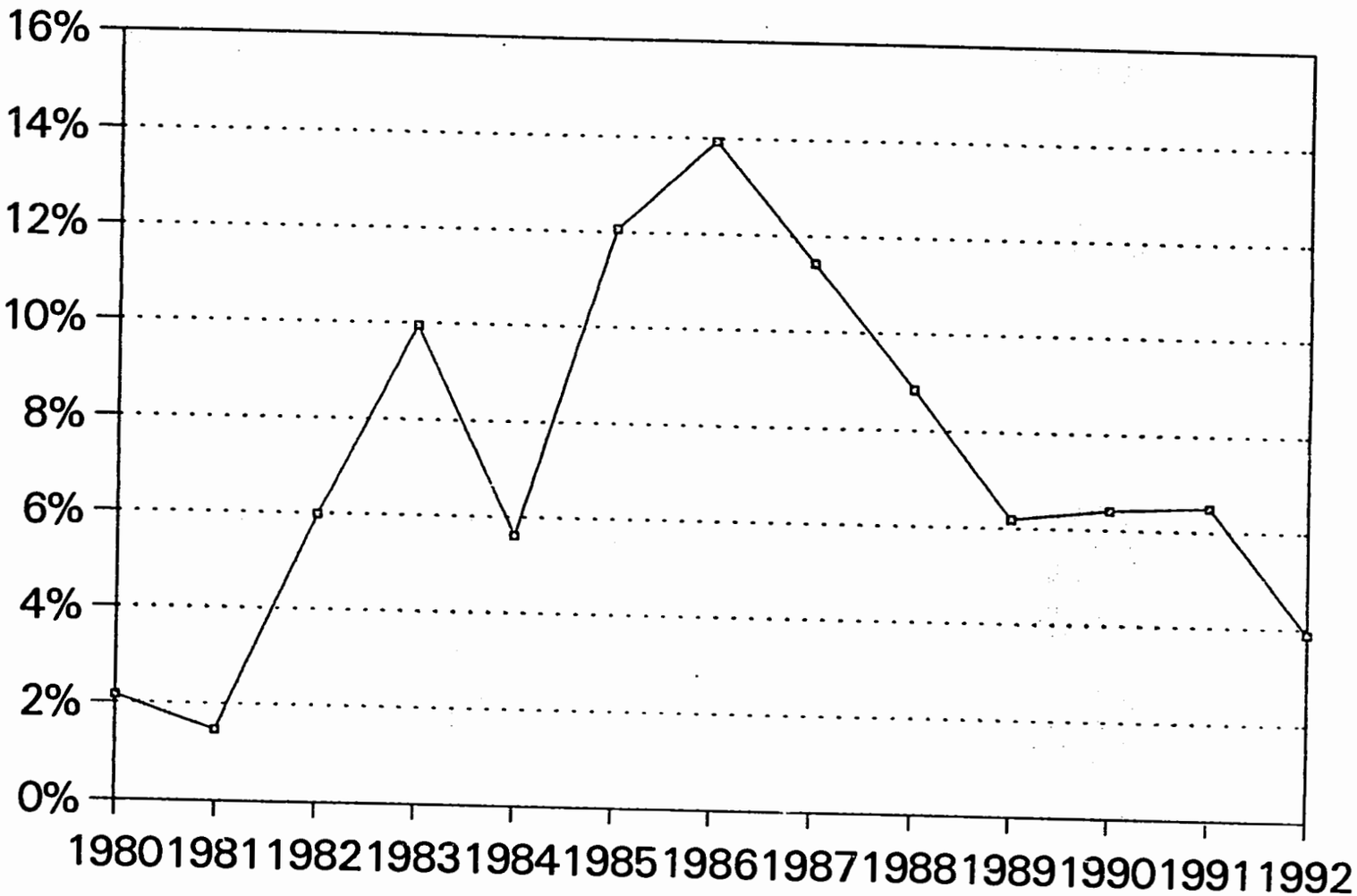


Table II.2

Employment in Nontraditional exports

Sector	Number of Firms			Number of Employees ('000)		
	1980	1990	1992	1980	1990	1992
Fresh Fruit	0	15	50	0	6	20
Vegetables	na	30	45	na	40	65
Frozen Products	1	7	8	4	20	21
Seafood	4	15	26	0.8	3	12
Flowers, Plants	22	46	58	5	20	27.5
Handicrafts	na	na	93	na	na	9
Wood Products	5	20	57	4	10	25
Maquila	5	200	500	5	45	70
Total	37	333	837	18.8	144	249.5

Source: GUATPROEX, Interviews with exporters and Gremial staff.

10,000 projected in the project paper. Throughout the 1980s, the Patzicia facility remained an unused "white elephant," for which USAID periodically financed feasibility studies to find some use. Its status was unchanged at the time of the team's visit in 1993.

Why did this project fail?[5] One possibility might be poor planning. Yet the preparation of the Small Farmer Marketing project included at least 12 design elements,[6] as follows:

1. Collection of statistical data and description of supply and demand for each of 28 products to be marketed by CECOMERCA, including: volumes of exports and imports, production and consumption through 1980, quantities processed and lost during movement.

2. Determination of farm prices, typical input requirements and farm budgets for each commodity.

3. Analysis of prices paid in the Guatemala City terminal market, with average for each month during four years.

4. Projected import demand by the five Central American countries for each of 28 commodities.

5. Analysis of geographic distribution, harvest seasons and numbers of farmers growing these crops.

6. Calculation of marketing margins at each link in chain and determination of earnings of farmers, wholesalers and retailers.

7. Interviews with 2,500 farmers who are members of three co-ops, as a cross-check on other data.

8. Selective interviews with individuals and small groups of producers at 20 locations in highlands to determine attitudes toward project goals, and to obtain information on marketing problems and how to overcome them.

9. Interviews with fruit and vegetable processing plant managers.

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[5]In the broader context of AID effectiveness in Guatemala since 1978, the term "failure" could be substituted by "learning experience." There seems little doubt that this failure led to improved conceptualization and design that helped produce more successful approaches in later years.

[6]Adapted from Research Triangle Institute (1980).

10. Observation of transactions in the Guatemala City terminal market, supermarkets, neighborhood markets, and wholesale markets in Solola, Quetzaltenango, and San Francisco El Alto.

11. Extensive discussions during a two-day seminar with cooperative leaders regarding the kind of institution that would best meet the biggest marketing problems.

12. Determination of the type and kind of physical facilities required and identification of equipment needs, staffing and managerial requirements.

The project did meet unforeseen external circumstances. The most notable were the collapse of Central American markets for Guatemalan horticulture resulting from economic and political turmoil in the region, and serious problems due to guerrilla activities and military repression in the Guatemalan highlands that were expected to provide products for the buying center. These external factors contributed to the failure, but the primary problem was internal, namely that Guatemala had an "ineffective pricing mechanism and a wasteful marketing system. It is expected that spoilage will be substantially reduced."[7] In looking at the existing structure, the mission saw a chaotic, inefficient system that could easily be improved by creation of a "modern marketing system."

The project paper estimated that the intervention would raise prices to farmers by 10% and lower product losses by 20%, creating an ample margin for CECOMERCA's impact. These assumptions were severely questioned by another study commissioned by USAID/Guatemala in 1980, when the Patzicia facility was under construction,[8] which concluded that the marketing chain worked extremely efficiently, that product losses were quite low, and that marketing margins were not excessive. This indeed proved to be the case after CECOMERCA opened its doors. It purchased about $1 million in product the first year (about one-fifth of the projected level), most of it from non-members of the cooperative, but had great difficulty even covering its product cost in the sales price, let alone its processing costs. Limited export sales also added to losses. Staffing problems and poor quality of the external technical assistance contributed to the difficulties, as did the lack of direct marketing experience by CECOMERCA staff. For example, a year after starting operations, CECOMERCA was opening at 8:00 am, two hours later than its competitors, and after the peak buying time.

Overall, it is hard to avoid the conclusion that USAID suffered from hubris regarding the inefficiency of the marketing structure and the ease with which it could be "modernized." This belief that the marketing structure was inefficient was combined with suspicion, common in Guatemala, of agricultural marketing intermediaries -- pejoratively called

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[7]Small Farmer Marketing Project Paper, page 71.

[8]Research Triangle Institute, 1980.

"coyotes" in Guatemala -- by both small farmers and USAID. A common worldview in the Guatemalan highlands assumes that wealth is the result of theft or greed[9]. There are sound historical roots for this worldview in the Guatemalan context, as the last four centuries given abundant evidence of wealth accumulation from both sources. This worldview is limiting, however, in that it excludes the possibility of mutual gain by both parties to a transaction. It leaves cheating the producers as the only explanation of prosperity for agricultural marketing intermediaries or agro-processors. The only remedy in this view is for producers to take control of marketing themselves. The effort to assure that producers were not cheated by middlemen or processors, by encouraging groups of producers to enter into processing and direct exporting, continued to be an important feature of USAID assistance into the mid-1980s.

2. Highlands Agricultural Development (HAD). The HAD Project began as an infrastructure project intended to promote increased agricultural production in the highlands. It included construction and maintenance of access roads, a pilot reforestation program, and the construction of small-scale irrigation and soil conservation systems. It was later amended to add a substantial marketing component, implemented primarily through the Nontraditional Exporters' Guild. Except for the Guild portion, all elements were administered by their respective government ministries and agencies. The first amendment extended the coverage area from a limited portion of the highlands to virtually all of the highlands. Phase II of the project was an attempt to consolidate the agricultural portfolio of the Mission into relatively few projects for ease of management, but at the same time recognizing the need to approach the sector on a system-wide basis. This amendment was designed to introduce the concept of crop diversification for commercial agriculture by highlighting the interplay between production and marketing, and gearing production systems to respond to market opportunities. HAD II incorporated the activities of the Small Farmer Diversification Project and HAD I. It was directed at those farmers in the highlands who have the potential to successfully enter the market system. Beneficiaries were also identified as small- and medium-sized commercial enterprises that could benefit from improved infrastructure and market options. Phase III of the project was primarily environmental, addressing both soil conservation issues in the highlands, and pesticide contamination and agro-chemical management concerns.

The project represented an important evolution toward a more sophisticated view of agricultural marketing problems. It sought to improve on-farm production capabilities, but also to deal with the marketing side by supporting general conditions, such as better access to marketing information and elimination of institutional obstacles to movement of product into export markets, that were available to agribusiness firms of all types. The Nontraditional Exporters' Guild played a critical role in these latter areas. The USAID support helped establish the Guild as a competent, effective institution playing a key role in the development of the sector. In part, this resulted from the Guild's ability to provide technical information

[9]Goldin (1992), p. 104.

to firms. The Guild also, however, was an important forum for exchange of information among Guatemalan businessmen, for joint efforts to improve the conditions facing exporters in specific sectors, and for expanding contacts between foreign buyers and Guatemalan producers. The Guild's membership grew from 55 members in 1982 to nearly 1,000 in 1993.

The existence of the Guild and PROEXAG gave the mission, and Guatemala, considerable flexibility to respond to problems in the agribusiness sector as they were identified. Experts could be brought to bear on specific problems as they arose, and the NTAE sector was increasingly viewed as a system. Under this "systems approach," the HAD project has gradually taken on additional activities, including issues concerning technology adaptation of marketable products to the highland farmer's environment, training in produce marketing, and pest management and control of pesticide residuals. The output targets for this project were generally met. More than 300 mini-irrigation projects were completed, access road and watershed management targets were exceeded, and the number of farmers who began participating in NTAE exports appears to have exceeded the project target of 15,000 by a considerable margin.

3. **Agribusiness Development.** The project's three main components included lending to agribusiness firms, support for cooperatives, and establishment of a variety of information and support services for exporters through the Nontraditional Exporters' Guild. Targets in general were well thought out and identified with respect to all three areas. However, execution was uneven. The finance component made a number of successful loans to firms, though rigid specification of interest rates to be charged and management problems at the Government Agricultural Bank (BANDESA) made implementation slow. At least in the early days of the project, a gap of eight months between initial loan application and ultimate approval was common. One firm interviewed said that it lost an entire crop year waiting to go forward with the project.

The cooperative development element met greater problems. The lack of a host-country coordination institution for the projected extensive technical assistance appears to have been a serious problem. CLUSA was selected to provide assistance, but numerous problems and long delays in fielding and coordinating the team emerged. The project paper indicated that 20 cooperatives were to receive assistance. This was reduced to 10 by the cooperative agreement with CLUSA, the entity selected to implement the assistance. This lower target proved ambitious, and the number to be helped was reduced at project mid-term from ten to six. Actually, only three were assisted directly to a significant extent. Ultimately, some of the expected outputs from this project were folded into the Cooperative Strengthening project.

The biggest problem with the targets of the project was the extent of assistance required by each cooperative. It was expected that over a three- to four-year period of intensive technical assistance, the cooperatives would be able to function efficiently on their own without further assistance. Self-sufficient management was difficult to obtain. Perhaps

the major reason for this failure was lodged in the misconception at the beginning that there were many small-farmer cooperatives producing fruits and vegetables for export that were mature organizations needing only occasional advice and guidance. There was also an implicit assumption that the cooperative members were producing, or could produce with little additional effort, product of exportable quality at costs that would yield profits. Moreover, there was an assumption that marketing infrastructure (transport, storage, cooling, as well as export procedural aspects) would not present a serious problem. This was not the case. Much of this had to be developed during the project.

The Nontraditional Exporters' Guild element was the most successful element, reaching most of its targets. It developed a market information and agribusiness linkage system, became heavily involved in investment and market promotion, and conducted a host of training programs. The Guild also was instrumental in several policy studies and lobbying activities for its members to improve the policies supporting non-traditional exports.

4. Cooperative Strengthening. This project was aimed at strengthening the cooperative movement in Guatemala by assisting the cooperative federations. Project implementation was carried out through FENACOAC, the country's principal credit union federation. FENACOAC then channeled resources and technical assistance to six other federations, five of which were agricultural. The cooperative members of these agricultural federations were agribusinesses. However, the initial focus of the assistance was financial -- designed to improve the financial management of their credit functions, and recapitalize their resource base. This approach was quite successful for credit unions, but largely unsuccessful for the agricultural cooperatives. In part, the results appear to come from the different challenges and capabilities of the base cooperatives in each sector. Credit unions deal in a single, non-perishable, commodity -- money -- for which effective management and financial controls can be designed, and for which relatively well-defined training programs can be established.[10] The agricultural federations, on the other hand, dealt with a much more diverse set of challenges, and the base cooperatives varied much more widely in goals, purposes, and capabilities.

The second phase of the project shifted the focus to improving and sustaining cooperative services to members among the primary cooperatives, but expanded to include independent cooperatives and farmer associations. Services included input supply, credit, processing, marketing and technical assistance. This shift resulted from the evaluations of the first phase of the project and the evaluation of the Agribusiness Development Project's cooperative development component. Assistance was provided to the agricultural cooperatives on production, processing technologies, marketing searches and link-ups, adaptive research on new alternative crops and processes, and general management. Some of the cooperatives received subsidies for staff payments.

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[10]Another factor may be the relative sophistication of credit union members, who are largely middle class.

The quality of the assistance from WOCCU, which is comprised of COLAC (Confederacion Latinamericana de Cooperativas de Ahorro y Credito), ACDI (American Cooperative Development Institute) and NCBA (National Cooperative Business Association), has been regarded as excellent.

C. Appropriateness of Project Targets

It does not appear that the macroeconomic policy setting, the stage of Guatemala's development, and the adequacy of resources were significant constraints to achieving desirable project outcomes. The policy environment was generally favorable, and both human and financial resources available to the Mission were extremely large relative to most USAID missions. The fundamental issues relating to the realism of the targets were conceptual. As discussed below, shortfalls emerged in large part because the conception of the complexity and uncertainties relating to NTAE was simplistic. It assumed that more was known about how to achieve a successful marketing outcome than was indeed known.

D. Factors Explaining Project Performance

The primary factor that seems associated with the far greater success of the later agribusiness interventions was the focus on **indirect** support for agribusiness firms instead of **direct** promotion of individual firms. Alternatively, the shift might be described as changing from a top-down to a bottom-up approach. The early activities sought to decide the specific institutions and modalities that were to be used as vehicles. The Patzicia regional collection center was the most extreme example of this approach. The USAID designers thought they could decide how to design an efficient market arrangement. They were mistaken. Similarly, they believed that promotion of the cooperative federations would lead later to strong effective cooperatives at the base level. This also was mistaken.

The support for the Nontraditional Exporters' Guild was the decisive step in creating a dynamic NTAE export sector. The existence of PROEXAG -- a regional project based in Guatemala that provided technical assistance for NTAE -- was an important reinforcement to the Guild. Neither institution attempted to decide on or control the structure that was evolving in the industry, but both provided useful information and assistance to firms that were individually attempting to grow. The level of technical expertise and agricultural marketing experience and sophistication available from PROEXAG was extremely high -- perhaps an order of magnitude better than that provided under other projects. The Guild, by providing a forum for exchange of information, also was able to identify general weaknesses in the Guatemalan policy and institutional environment, and subsequently to press for improvements with the government. Altogether, the Guild seems to have been a crucial catalyst for the rapid growth of the NTAE sector. The information exchange, pressures for policy and institutional reforms, and collaboration among firms appears to have been synergistic. The synergy extended also to the USAID investments in mini-irrigation and technology development in the countryside. Without the increasingly sophisticated and capable firms entering into exporting, the increased production potential in the countryside

would not have been realized. Without the rural investment, the new firms would not have been able to obtain the raw materials for continued growth.

E. The Problem with Cooperatives

USAID Guatemala emphasized cooperatives heavily in its strategy. The primary reason seems to have been a belief that cooperatives were the best means for assuring that most of the benefits of agribusiness development accrued to the USAID target group. There was an underlying suspicion of private agribusiness in much of the project documentation, as well as negative references to middlemen, or coyotes, in general.

This preference was not justified by results in the horticultural sector.[11] Overall, cooperatives have done far less well than private firms in Guatemalan agribusiness, despite the high level of USAID support. The last five years have been a period of extremely rapid growth for many private firms. Clearly, the conditions were favorable for success, so the relatively poor performance of the cooperatives is troubling. Annex A provides case histories of six of the cooperatives studied, which describes the variety of experiences.

While most cooperatives did poorly, several did quite well. Cuatro Pinos in particular has been highly successful. Its success undoubtedly owes much to the extensive technical assistance it received, particularly from the Swiss, but co-ops that have failed, like Rincon Grande, also had substantial technical assistance over an extended period.

Two other characteristics of Cuatro Pinos may have contributed to this outcome. First, the cooperative began by supplying raw material to a processor, rather than by attempting to process and export itself. The cooperative graded the product for the processor, learning a great deal about quality control and other aspects of the business during these years. The cooperative appears to have exerted an unusual amount of discipline among its members, so that quality standards were inculcated into the production techniques of the growers. It was from this base of quality production that the cooperative gradually began to develop other arrangements for marketing its product, including direct exporting. Cuatro Pinos was simply much more experienced, and better prepared than other cooperatives when it began to process.

Second, Cuatro Pinos, like Magdalena and most of the other successful NTAE exporters, did not belong to a federation. One might speculate that this permitted a more pragmatic and task-oriented approach to the role of the cooperative in assisting its members. At least some of the federated cooperatives appeared overly consumed by the cooperative **mystique**, and unable to focus clearly on how to create economic value for their members.

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[11]Cooperatives in non-perishable products appear to be doing better. Six coffee co-ops interviewed for the study had doubled their coffee processing over the past three years.

In any event, the relatively poor performance of cooperatives in general raises the question about the possibility of generic weaknesses of using this form of enterprise for NTAE. Two weaknesses in particular stand out.

1. Lack of Flexibility, Sophistication and Quick Response. The perishable agricultural product market places great demands on processors and producers for timely decisions. Cooperatives, because of their democratic principles and the need to achieve consensus, may have difficulty responding to changing situations. Participatory decisionmaking is valuable in generating a sense of shared purpose, but it lags behind the individual entrepreneur in speed of decision or unity of purpose.

2. Agency Costs. One principal difference between the two forms is that most Guatemalan agribusinesses are operated by the owners. In most cases, the team interviewed the owner. Cooperatives (along with subsidiaries of foreign enterprises) on the other hand are managed by **agents** -- representatives of the owners. Economists have recently given considerable attention to the problems of enterprises that stem from the fact that the agent may serve his own interests more than those of the enterprise. The manager of an enterprise may make decisions that favor his interests at the expense of the enterprise. Oversight by the owners is the necessary counterweight to such self-serving behavior, and large enterprises typically use audit, financial controls and policy reviews to limit it. Such controls are extremely difficult for co-ops of relatively unsophisticated members.

Claims that coop managers do business on the side or cheat the cooperative merits some consideration are frequent, and the team heard such stories from a number of cooperatives. It may be that corrupt people aspire to the position. This may be true in some cases, but members and outside observers like USAID advisors are likely to weed most such people out. There is another, less harsh, possibility.

Given the extreme difficulty of the task that USAID has set for the cooperatives in the perishable NTAE business, a good manager is indispensable. He (we found no cases where the manager was a she) must be flexible, sophisticated enough to deal with brokers, transport companies, and a wide variety of other actors with good judgment about which are reliable and which are not. He must deal with a changing board of directors, catering to whims and ignorance on the part of some members. The latter may be the most likely to make clear to the manager that he serves at their sufferance. If the manager is extremely good, he will achieve benefits for the membership that will go unrecognized. Some "wheeling and dealing" which is essential in that business simply cannot be explained to people with little understanding of the complexity of the business. Indeed, the manager may sometimes have to misrepresent the situation to the membership in order to gain acquiescence for an action that is almost sure to be in the cooperative's interest.

Thus, over time, the manager is likely to see himself as the indispensable element of the coop's success, producing results **in spite of** the board of directors. Yet he considers himself very poorly paid for this effort, and occasionally subjected to slights by people who

should be grateful. At this point, the manager may begin to believe that he has a right to put something aside. He may believe that the cooperative has been exploiting him, and that some self-dealing is just recompense for his contribution. This may also help explain why some successful cooperatives have a priest or other altruistic outsider. It is not simply that the priest watches the manager, but that he may also provide moral support to the manager because he better recognizes the manager's true contribution.

III. Economic Impacts

As noted above, Guatemalan exports of horticultural products have risen dramatically -- from $2.7 million in 1978 to $80 million in 1992. Plants, flowers and flower seeds add another $25 million per year. While this growth is impressive, such products still represent only about 15% of Guatemalan agricultural exports. Moreover, numerous researchers have questioned how much the growth of agricultural exports benefits poor people in rural areas.[12] There are several reasons, however, for believing that developments of horticultural exports are more beneficial to small farmers than previous export-oriented agricultural production. In most cases, the indigenous population participated in traditional export agriculture as unskilled labor -- coffee, banana and cotton pickers, cane cutters. The latter three are technologically plantation crops, so there is little that a farm worker in the sector could learn from harvesting the production of others that could be applicable on his own farm. Moreover, much work in these crops requires migration from the highlands to the costal areas where much of their production occurs. An estimated 500,000 people have historically migrated seasonally from the highlands to the coast to supplement their incomes by harvesting traditional crops. Coffee differs somewhat from the others in that it can be grown on small farms, but the major use for temporary labor -- harvesting -- does not develop particularly useful skills.

There are three modalities by which incomes will be affected by development of a new crop or a new technology for producing an existing crop. First, the labor intensity of the crop will affect labor income. If the new product or technique is more labor-intensive, incomes of farm workers will rise due to the increased demand for labor. This effect occurs irrespective of the distribution of land ownership. Table III.1 shows the labor requirements per hectare for a variety of crops grown in Guatemala. The new horticultural products require far more labor inputs than the traditional small-farmer crops of corn and beans.

Second, the incomes of farmers as entrepreneurs will be affected. If the crop is more profitable than the previous product, land-owning farmers will reap additional profits, in proportion to the amount of land that they shift to the new approach.

Third, a new approach will affect the value of agricultural land suitable to the crop.

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[12]See, for example, Bulmer-Thomas (1990).

Table

Chart III-1

Comparative Labor Requirements Alternative Crops in Guatemala

Crop	Labor Days Per Hectare
Corn	58
Beans	61
Broccoli	197
Cauliflower	276
Snowpeas	663
Melons	172
Okra	488
Carnations	340

Source: Banco de Guatemala, "Costos Estimados de Produccion de los Principales Productos Agricolas, Temporada 1990-91," August 1991

If suitable land is limited, land values may rise sharply; if the technique can be used widely, land values will be little affected.

The first of these factors will affect the rural poor in the area generally; the last two have a positive impact only on landowners. The third may have an adverse effect on farmers growing traditional crops, particularly if they have relied on rented land. The rise in land prices and land rents may reduce their net income from farming unless they shift production towards higher-value crops. To assess the impact of these factors on small farmers, both participants and non-participants, the team reviewed the available information on these issues in Guatemala. Discussion of the distributional consequences of these factors is given in Section IV. For the present, it is enough to note that major differences exist in export crops with respect to efficient scale of production. If large-scale production is the most efficient, small farmers will benefit only from employment opportunities. The general characteristics of the three main types of NTAE are as follows:

Melons. Melons in Guatemala have gradually become a large-farmer crop. While some relatively small farmers engaged in melon production through cooperatives in the early 1980s, they experienced losses and withdrew. Overall melon production, however, has continued to grow steadily -- from 4,000 tons in 1982 to 45,000 tons in 1992 -- as a result of establishment and expansion of large, capital- and knowledge-intensive firms. These firms integrate production and exporting (and in some cases, distribution in the United States.) Discussions with producers and former producers suggested that melons require both high technology and close links between production and foreign distribution.

Snowpeas, Broccoli, and Cauliflower. The production of these crops takes place largely on very small farms -- typically less than 0.5 hectares. For snowpeas, 90% of Guatemalan production is on small farms, while somewhat lower proportions of the other two crops are grown by small farmers. ALCOSA made the initial effort in the late 1970s to grow broccoli and cauliflower for export, first on a large ALCOSA-owned farm, and then by large contract growers.[13] Because experience showed that costs were too high and quality too low, these approaches were abandoned in favor of contract purchase from large numbers of small farmers. Processors interviewed usually complained of the difficulties -- technical assistance costs, pesticide concerns, acquisition costs -- resulting from reliance on a small number of larger growers. Nevertheless, while expressing a preference for internal production or for reliance on a smaller number of large producers, none of the processors had plans for undertaking self-production. Some were making efforts to reduce the number of small out-growers, but these appeared limited and relatively unimportant.

Seeds, Flowers and Plants. These are the most labor-intensive of all the agro-export products, with as much as 100 full-time workers per hectare. Nevertheless, they are also highly technology- and capital-intensive. Production appears only to take place in enterprises

[13]The early ALCOSA experience is described in Kusterer (1981).

with sophisticated management.

Clearly, the vegetable exports are of greatest value to poor Guatemalan producers. Small farmers are the primary producers of a number of these crops, so their relationship to agro-processors with whom they work is different than in other crops where they work as laborers. The farmers receive technical assistance, credit for inputs, and a market for the product. Their relationship to the processor is much closer to one of equality, as the processor cannot profit without convincing the farmer to take largely independent action. The growth in the number of processors and in the number of NTAE crops provides the farmer with some bargaining power vis a vis the processor. Contractual arrangements between farmers and processor are still in a state of flux and development.

Table III.2 shows the arrangements used to obtain raw materials by the 22 privately-owned processors or exporters of NTAE products interviewed for this study. Vegetable processors generally purchased at least part of their raw materials from independent producers. Of the 14 vegetable exporters, seven grew nothing and used only purchased product from growers, one only processed captive product, and six both produced and purchased. The one exporter of only self-produced vegetables specialized in organic products. Generally firms that did both relied on purchasing for the majority of their raw material. Melon exporters and exporters of seeds, flowers and ornamental plants, on the other hand, largely grew their own product.

For vegetable processors that purchased raw materials, contracting with farmers was the most common arrangement for obtaining product, used by 11 of the 13 firms. Purchases in markets, in the field and at the plant were also each used by three or four firms to obtain product. All of the eleven contract purchasers provided inputs to farmers, usually including seed, fertilizer, pesticides, and packing materials, but sometimes including machinery and assistance with harvesting.

Table III.2

Sources of Raw Materials
Numbers of Guatemalan Agribusiness Firms

	Type of Product Exported			
Means for Acquiring Product	Vegetables	Melons	Seeds/Plants	Total
Purchase Only	7	0	0	7
Purchase/Produce	6	1	0	7
Produce Only	1	4	3	8
Total	14	5	3	22

Similarly, all eleven provided contract farmers with production technology, selection of crops and planting times. Most also provided training, assistance in quality control, and assistance in use of inputs. In all cases, the inputs were provided on credit, with the value of the inputs deducted from the value of the product delivered at harvest. There was some variation in the willingness of farmers to pay off such loans. The team did not investigate the terms of these contracts, and the balance of benefits would not be easy to determine in any event. The great majority of farmers interviewed saw both farmers and processors benefitting, though there have been some complaints of higher quality standards (and increased rejections of product) by processors when there is abundant supply. A number of firms, on the other hand, were vocal on the difficulties of enforcing the contract. The usual complaint was that some farmers would break their contract if spot prices at harvest exceeded the contracted price. One firm claimed that 40% of farmers were in arrears, several mentioned arrears in the 2-4% range, and others in interviews treated such cases as isolated problems.

To gauge farmer sentiment on the distribution of benefits, the 42 farmers interviewed were each asked who benefitted most from the increase in NTAEs. Of these farmers, 55% responded that "everyone equally" benefits, 17% each said that small farmers and processors benefit most, 5% each said large farmers and co-op members, and 2% said marketing intermediaries known locally as "coyotes." One farmer said that he had ceased growing NTAEs because he refused to deal with monopolists.

The enforcement of contracts between processors and growers appears to be an unsettled area, and no firm interviewed mentioned use of legal proceedings to enforce them. Nevertheless, two firms said they had taken their own direct action to enforce a contract. Both resulted from use of improper pesticides. In both instances, the processors said that they had destroyed the crop of a half-dozen farmers in enforcement of the contract. The Cuatro Pinos cooperative reported that it had expelled about 50 members for improper pesticide use.

A. Employment Effects of Agribusiness Projects

The team's estimate of the employment generation from the NTAE sectors considered in this study is shown in Table III.3. The estimate is obtained by estimating total output, yields and labor requirements per unit of output. These estimates are drawn from a variety of sources, including Bank of Guatemala (1991) and Coopers, Lybrand (1993), as well as the team's survey. They should be considered to be fairly crude estimates. Thus, the team estimates total employment of 14,000 jobs in agribusiness firms, and 21,000 full-time job equivalents in agricultural production. Estimating the number of jobs in forward-linked sectors in input supply firms is more problematic, but 5,000 jobs would seem a reasonable estimate in view of the value added involved. This would bring the total employment in the sector to the equivalent of 40,000 full-time workers. At the onset of the projects in 1978, an estimated 4,000 workers were employed in the sector. Thus, the USAID projects were associated with a ten-fold increase in employment in the sector during the last fifteen years.

Table III.3

Estimated Employment in NTAE Agribusiness

Crop	Production Metric Tons	Yield Metric Tons /Hectare	Area Hectares	Avg. Area Per Farm	Number of Farmers	Labor Use/ Hectare (Days)	Production Employment Person-Years	Processing Tons/ Person-Year	Processing Employment Person-Years	Total Employment Person-Years
Snowpeas	15,000	8	1,875	0.2	9,375	680	4,250	4	3,750	8,000
Sweetpeas	6,000	8	750	0.2	3,750	680	1,700	4	1,500	3,200
Broccoli	28,000	9	3,111	0.1	31,111	272	2,821	15	1,867	4,687
Cauliflower	6,000	9	667	0.1	6,667	340	756	15	400	1,156
Melons	80,000	13	6,154	40.0	154	213	4,359	70	1,143	5,502
Berries	3,000	9	333	1.0	333	680	756	10	300	1,056
Miscellaneous	35,000	6	5,833	0.5	11,667	340	6,611	10	3,500	10,111
Flowers, Plants	na		100	2.5	40				2,000	2,000
Total	173,000		18,823		63,097	*	21,252		14,460	35,711

*Includes duplication, as many farmers grow several NTAE crops.

Source: Team Estimates, drawn from survey and various other sources.

To properly gauge the impact of the agribusiness projects, however, one must judge how much of this increased activity would have taken place without the USAID projects. This is inherently difficult. Besides the direct impact of assistance to individual agribusinesses, the USAID projects also improved the conditions in the farm sector that provides raw materials for agribusiness. These include the 300 mini-irrigation projects, improvements in rural roads, agricultural credit, agricultural research, and technical assistance to farmers and cooperatives. These appear to have had substantial indirect effects on the supply of products to the processors and exporters. In addition, USAID policy conditionality for its macroeconomic support for Guatemala during this period probably improved conditions for economic growth generally.

There is unfortunately no easy way to isolate the USAID influence. USAID was intimately involved throughout the sector, and its involvement, both directly and indirectly through the Guild and PROEXAG as well as government agencies, was pervasive . The study has taken two tacks. First, the agribusiness firms were questioned on the importance of the USAID projects. Second, the pre-USAID trends in NTAE were examined for signs of developing comparative advantage.

The Survey. Nineteen of the 21 agribusiness firms interviewed considered at least one USAID-funded activity to have had a significant positive impact on their success, and most reported several. The two firms not reporting assistance from USAID were a multinational (Del Monte) and a flower seed exporter. Since Del Monte entered an export sector (melons) that has developed over the years with significant USAID involvement in technology and market development, the latter firm was the only true exception. It obtains technology and sells its entire output to a single U.S. firm, and the initial contact with the U.S. firm was the serendipitous result of an automobile accident.

Trends in NTAE. Exporting of flower seeds and ornamental plants appears to have sprung up during the 1970s without USAID involvement, so some continued growth of that sub-sector would have been likely without USAID support. For fruits and vegetables, however, USAID was directly involved in the establishment of the industry. In 1975, Guatemalan exports of fruits and vegetables to the United States were valued at $400,000. USAID assistance had been responsible for much, if not most, of even this minuscule level (see Austin (1974) and Goldberg (1974) for case studies of USAID export promotion activities in the early 1970s). Between 1975 and 1978, most of the growth in fruit and vegetable exports appears to have come from ALCOSA which began operations with a loan from a USAID project, albeit one that preceded those reviewed here.

These considerations suggest that USAID was probably crucial to the development of the horticulture export sector, though initially through projects outside the scope of this study. The team's view is that the projects almost surely accelerated the growth of the sector, but by an indeterminant amount. Such an acceleration could have had large consequences because of compounding. For example, one might assume that employment in NTAE would have grown by 6% annually without the projects and by the observed 18%

with it. At a 6% growth rate, employment would have risen to 9,000 by 1992, so that the consequence of these assumptions would be to attribute 31,000 new jobs to the projects. (The impact of alternative assumptions about the share of export growth that is attributable to USAID is discussed in Section VI.)

B. Project Impact on Use of Services and Inputs

The project undoubtedly contributed to a substantial increase in use of inputs in agriculture and the development of markets for a wide variety of services. About 30% of the farmgate price of NTAE products on average reflects purchased inputs. The net addition that this amount of inputs represents depends upon the prior use of the land, for which data is not available. Nevertheless, much of the land was probably used to grow corn and beans, for which purchased input requirements are far lower. Thus, the impact of NTAE on use of inputs and other services is likely to have been significant, though unquantifiable.

C. Contribution to the Growth of New Agribusinesses

During the period under study, the number of agribusiness firms expanded dramatically. According to data from the Nontraditional Exporters' Guild, the number of exporters of NTAE increased from 28 in 1980 (mostly small exporters of ornamental plants and seeds), to 98 in 1990 and to 161 in 1992. This blossoming of the number of firms also was an enormous diversification of types and sizes. Foreign-owned firms had a dominant position in only one sub-sector (melons), and play an important role in only a limited number of other products, most notably frozen products (broccoli, cauliflower and okra). For the rest, most firms were Guatemalan. The diversity of Guatemalan firms was very large, ranging from vertically-integrated producers and processors to cooperatives to exporters who depended mainly on intermediaries or processors for export material. Some firms have established U.S. offices to market product there; a few have foreign associates without an equity connection, while most operate through brokers for the foreign sale of their product. From the point of view of efficiency, the most efficient firm structure is yet to be determined, and the extensive experimentation with diverse forms of enterprise is providing an interesting test of alternative forms.

The diversity of exporting firms has also spawned a diversity of other types of intermediaries. A large number of specialized firms, from freight forwarders and packaging specialists to testing laboratories for pesticide residuals, have grown up. The development of this support industry has allowed some very small firms to become exporters. One firm interviewed, for example, exported several hundred thousand pounds of vegetables per year with only six employees. Such a possibility indicates a well-developed market for specialized services for exporters. It also provides producers with some protection against monopsonistic practices by processors.

The characteristic of the entire process of developing a vibrant horticultural NTAE sector in Guatemala is interdependence. Independent action by none of the actors could have

succeeded in creating the sector as it exists now. ALCOSA was the pioneer, that showed the possibilities, but numerous other positive outcomes simply would not have happened without the actions by others pursuing their own ends.

The characteristic of the two central actors in the success of Guatemalan NTAEs -- the Guild and PROEXAG -- is not that they undertook specific actions foreseen in a project design that contributed to success, but that they undertook actions that contributed to success because they were able to continually experiment and adapt to the requirements of the situation. It was the fact that they chose particular actions that were strategically important at a particular time, rather than the actions themselves in an intrinsic sense, that was the critical ingredient.

To illustrate, consider the value of a marketing expert who spends two weeks in each of 10 countries giving advice to prospective exporters on means of connecting to U.S. buyers. The advice may be identical in each case, but its value may vary enormously. In some countries, the prospective exporters may have other problems that render the advice useless. Thus, the primary determinant of the value of external technical assistance is the capacity to judge the point at which particular types of assistance are likely to be of greatest value. This seems precisely the role that the Guild and PROEXAG were able to fill.

In sum, the basic conclusion -- though not supportable by any unambiguous or clear data -- is that the USAID projects were instrumental in the establishment of a NTAE **industry**. Without the projects, there would have been some successful exporters of specific products. Exports of perhaps $20 million of such products would be a reasonable guess as to the magnitude. The creation of the industry, with numerous linkages among firms, with numerous sources of information on external markets and technologies, and numerous contacts in foreign markets. Altogether, the uncertainties and complexities -- the "software," of exporting perishable products -- exists in Guatemala today that makes continued discovery of new products, the development of new markets for existing products, and the steady quality improvement of both, a matter that is within the grasp of firms in the industry.

D. Project Benefits to Existing Agribusinesses

Both existing agribusinesses and new firms benefitted from the USAID projects. Given the explosion in the number of firms, the data available suggest that new firms were helped more. Direct USAID funding mainly went to existing entities, especially cooperatives, but indirect assistance was provided through PROEXAG, the Nontraditional Exporters' Guild and through improvement in the policy and institutional regime. This indirect assistance tends to be far more valuable to new firms, as existing firms have already developed marketing channels, contacts with buyers, and mechanisms for coping with shortcomings in the local policy environment.

Of the private firms interviewed, 27% had been established in the last five years. These firms were more intensive users of services provided by USAID projects than older

firms. In the case of cooperatives, the existing cooperatives appear to have been the primary beneficiaries. None of the cooperatives interviewed had been established in the last five years, and nearly half had been in existence for more than fifteen years.

The firms and cooperatives interviewed were asked where they obtained services (marketing information, technical assistance and training), and how important these services had been to their success. Table III.4A shows the share of the firms considering each type of assistance to be critical or very important. As the table indicates, 93% of all private firms saw market information as their most critical need, while 73% considered technical assistance very important, and about half valued training highly. Fewer cooperatives saw market information and technical assistance as critical, but more of them considered training important.

Table III.4B identifies the sources of these highly-valued services. Donor supported programs were the major source for both private firms and cooperatives, though private firms also received important services from buyers or foreign partners. The Non-traditional Exporters' Guild was clearly the most important source of expert assistance, valuable to both private firms and cooperatives. PROEXAG was also important to firms, while cooperatives found CLUSA valuable.

The firms interviewed were asked to provide sales data for 1990 and 1993, and a projection of sales in 1996. Fourteen of the 22 firms provided such data, though some of the largest firms did not. The NTAE enterprises for which data was available had sales in 1993 of $25 million, as shown in Table III-5. As shown by the table, sales of private firms had grown 138% between 1990 and 1993. Cooperatives lagged behind, with sales growth of 37%. Both types of firms expected rapid growth over the next three years. Table III-6 shows the average sales per firm. On average, firms had sales twice as large as cooperatives in 1990, and the gap widened by 1993.

Over half of the firms had increased sales by more than 400% over the past three years. Some cooperatives had also shown rapid growth, but the trend for cooperatives was much more mixed. Table III.7 shows the number of firms and cooperatives by sales classes for 1990 and 1993[14]. Only one cooperative (Cuatro Pinos) had sales exceeding $1 million, which it had reached before 1990. Five private firms had 1990 sales of $1 million, but 14 had exceeded this figure by 1993. As shown by the table, a significant cause of the larger size of the private firms in 1993 was the fact that they had grown rapidly during the preceding three years, while the cooperatives had not.

[14]Table III-7 contains data on several more firms than the previous tables, as they could be placed into size classes without specific data on sales.

Table III.4 A

Activities Leading to Firm Success
Share of Firms Valuing Highly

Type of Activity	Firms	Coops	Both
Training	55%	64%	58%
Technical Assistance	73%	36%	61%
Marketing Information	91%	55%	79%

Note: These are shares of firms considering each type of activity as "very important" or "critical" to the firm's success. Thus, 91% of the private firms considered marketing information to be in one of these categories.

Table III.4 B

Sources of Highly Valued Assistance

Source	Firms	Coops	Both
Exporters' Guild	46%	24%	40%
Proexag	19%	0%	14%
Clusa	0%	24%	6%
Other AID-Supported Source	6%	18%	9%
Other Donor	0%	29%	8%
Buyer, Partner or Internal	25%	6%	20%
Other Private Sector	4%	0%	3%
TOTAL	100%	100%	100%

Table III-5

Total Sales, by Type of Firm

	Actual		Projected	Annual Growth Rate	
	1990	1993	1996	Actual 1990-93	Projected 1993-96
	($ Million)				
Cooperatives	3	5	7	37%	53%
Private Firms	8	20	33	138%	65%
Both	12	25	40	109%	63%

Table III-6

Sales Per Firm, by Type

	Actual		Projected	Annual Growth Rate	
	1990	1993	1996	Actual 1990-93	Projected 1993-96
	($ Thousand)				
Cooperatives	283	389	595	37%	53%
Private Firms	600	1,333	2,200	122%	65%
Both	454	949	1,544	109%	63%

Source: Survey Data

Table III-7

Number of Firms by Size, Guatemala

	Private Firms		Cooperatives	
Firm Sales	1990	1993	1990	1993
Under $200,000	7	1	6	4
$200,000 - $ 1 million	7	6	5	7
$1 million - $5 million	2	10	1	1
Over $5 million	3	4	0	0
Total*	19	21	12	12

*Two of the private firms began operations after 1990.

Source: Survey Data

E. Impacts on Public Policies and Regulations

The project had only a limited effect on public investment policies in Guatemala. Its positive effect appears to have been primarily in demonstrating the economic value of mini-irrigation projects in the highlands, an activity which is being continued by the Guatemalan government. Overall, however, the public sector may well be smaller and less effective in the agricultural sector than it was a decade ago. (This point is further discussed in Section VII.A.)

The projects, and particularly the Nontraditional Exporters' Guild portion, did have a positive effect on the regulatory environment. As a result of efforts of the Guild working with the government, procedural requirements for exports, as well as for foreign investment, were substantially simplified by the creation of "one-stop" windows. Partly due to pressure from the Guild, as well as from USAID, the government eliminated a government-owned shipping company, which owned no ships but imposed a tax on other shippers. It also sold the national airline and established an "open skies" regime for air transport, which substantially increased the availability of cargo space for perishable products. Also as a result of complaints by shippers of perishable products, export cargo handling in the Guatemala City airport was privatized. The import regime has also been liberalized in recent years. This is likely to have been the result of the demonstration, by both NTAEs and manufactured exports, that Guatemala's future growth lay in increased exports rather than the maintenance of highly-protected import-substitution industries.

The largest and most positive impact on government policy, however, may have come through the establishment of a vision of Guatemalan development that hinged on nontraditional exports. The USAID agribusiness promotion activity was justified in terms of its direct impact on incomes of small farmers. While Mission strategy made only a very general link between increased exports, income and productivity by small farmers and strengthening of support for democratic institutions in Guatemala. Nevertheless, events in 1993 suggest that the dynamic growth of agribusiness exports may have played a direct and significant role in this area. In May, Guatemalan President Serrano dissolved Congress and assumed unconstitutional powers. The United States responded by suspending aid and threatening to end GSP and CBI duty-free trade preferences for Guatemala. Public pressures, notably including many in the business community who saw Guatemala's recent export dynamism threatened by the loss of U.S. trade preferences, led to Serrano's removal from office, replaced by a new government led by the country's most respected champion of human rights.[15]

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[15]A causal linkage between the pressure from businessmen in the new export sectors and Serrano's removal is made in a number of press reports from the period. See, for example, the **New York Times**, June 3, 1993, Peter Hakim's op-ed article in the **Christian Science Monitor**, June 23, 1993, and **The Economist**, June 25, 1993.

The events following the 1993 coup were dramatically different from those following the previous U.S. effort to pressure a Guatemalan regime during the late 1970s. In response to human-rights violations by the military government, the U.S. cut off military aid in 1977; and economic aid was limited to poverty-related activities in the highlands. In the 1970s, successive Guatemalan military governments responded to the U.S. pressure with indifference or hostility. Particularly after 1979, the Guatemalan government unleashed a reign of terror in the highlands in its efforts to eliminate the guerrilla threat. Only in 1986 was democratic rule re-established.

The more general principle here was the linking of the interests of small farmers with those of elites (Tendler 1993). The agribusiness export and processing activities of the elites depended upon production by small farmers. The elites acted in their own interests in opposing the dictatorship. In the process, they also benefitted small farmers because of their common interests. A similar shared interest meant that small farmers benefitted from the pressures of the elites for the whole range of institutional changes that made exporting easier: open skies, simplified export documentation, better airport storage, and a market-based exchange rate.

Further, the perspective of this team is that economic policy changes like the sharp reduction in Guatemalan import duties at the end of the 1980s are not simply the result of new theories about economic growth. Politicians generally have only limited tolerance for theory, and more often base decisions on concrete facts. The growth during the early years of USAID involvement created some facts of the appropriate sort -- demonstrating that Guatemala indeed could enter new markets with new products -- so politicians were more likely to support the types of policies that seemed to be associated with that success. In this respect, the division between the effects of policy and the effects of projects cannot be sharp. Each influences the other.

IV. Social Impacts and Issues

A. Impact on Disparities in Access to Resources

1. Income Distribution

The agribusiness projects clearly increased rural incomes of small farmers and other rural poor. At the same time, some high-income Guatemalans also obtained substantial incomes. A major source of skepticism about the distributional consequences of agribusiness has been the perception that the balance of increased incomes between the two groups has favored the wealthy.

Calculation of the distributional consequences of any activity is extremely complex. An economy-wide model is required so that the impacts of any income changes can be traced through from income to expenditure to incomes of producers of the items for which the initial income earners spent their money, and continue to follow the impact through

successive stages of income and expenditure. This is simply unfeasible. A first approximation, however, can be made by simply examining the location in the income distribution of the initial recipients, and comparing that to the existing national distribution. Estimates of the national distribution of income differ, though all sources agree that extreme disparities exist. The World Bank (1993) gives representative figures, reporting that the bottom 20% of the income distribution received 2.1% of total income, while the top 20% received 63%. This distribution translates into less than 3% for the bottom quarter, and about 70% for the top quarter.

Poor Guatemalans have long participated in export agriculture, but their participation varies by crop, as discussed earlier. Table IV.1 is adapted from Bank of Guatemala estimates on the distribution of costs for major crops. The data are presented on the assumptions that all labor costs accrue as income to low-income families. Land rent costs and profits accrue to low-income or high-income households depending on the usual characteristics of that crop in Guatemala. As indicated by the table, the new NTAE crops are dramatically different from traditional agriculture in their distributional consequences. For the traditional export crops, the share of the farmgate price accruing to low-income workers was below 25%, while it is above 60% for many of the NTAE crops.

Table IV.2 carries the distribution of income flows from the farmgate to the export value, drawing upon a recent study of value added for Guatemalan exports (Coopers, Lybrand, 1993) and on other data collected by the team. For the four crops for which detailed data is available, the Table shows how much income accrues to each income quartile. (For the purposes of the calculation, entrepreneurial income is assumed to flow to the bottom quartile or the top quartile in proportion to the shares of production taking place on small and large farms. Income from processors is assumed to flow to the top quartile except for co-ops, where it is assumed to go to the bottom quartile. Income generation in other sectors is assumed to conform to the existing income distribution.) The distributional consequences of different crops is marked, with over half of Guatemalan value added accruing to the bottom quartile for snowpeas. Melons are at the other extreme, with only 12% of Guatemalan value added accruing to the bottom quarter, all of this as wage income. Clearly, vegetables have a much more favorable impact on lower-income Guatemalans. Even the large-farm crops of melons and carnations, however, provide substantially more income to the bottom quartile than the 3% of GDP that the existing Guatemalan economy yields for this quartile. In this sense, all of the NTAE crops lead to improvements in the share of income flowing to the bottom quartile. Table VI.1 provides an estimate of the total income to the bottom quartile from NTAEs, totalling $116 million by 1993, and projected to reach $235 million by the year 2000.

The agribusiness survey queried processors on wage rates paid to employees. Table IV.3 summarizes the results. Considerable variation existed in the responses, which did not probe for differences due to skill levels of workers, fringe benefits or variations in hours worked per day. Generally, full-time workers earned more than part-time, private firms paid

Chart IV-1

Guatemala
Small Farmer Share of Income Generated From Selected Crops

Crop	Region	Technology	Farm Type	Small Farmer Share of	
				Farmgate Value	On-farm Value Added
Rice	III	Technified	large	6%	10%
Bananas	III	Technified	large	12%	21%
Cotton	V	Technified	large	14%	25%
Melons	III	Semi-Technified	large	18%	28%
Sugar Cane	VI	Semi-Technified	large	23%	48%
Carnations	I	Semi-Technified	large	26%	66%
Coffee	VI	Semi-Technified	large	27%	40%
Okra	VI	Semi-Technified	large	34%	47%
Beans	V	Semi-Technified	small	43%	100%
Coffee	III	Traditional	small	50%	100%
Brocoli	I	Semi-Technified	small	59%	100%
Snowpeas	V	Technified	small	64%	100%
Cauliflower	V	Semi-Technified	small	68%	100%
Corn	VII	Manual	small	74%	100%

Note: For crops identified as large-farm, the income accruing to small farmers is assumed to include only labor costs; for small-farm crops, their income also includes profit and land rent.

Source: Banco de Guatemala, "Costos Estimados de Produccion de los Principales Productos Agricolas, Temporada 1990-91," Aguust 1991

Table IV.2

Distribution of Income Generated by NTAE

Value per Hectare in 1992 Dollars

	Carnations	Broccoli	Melons	Snowpeas
Imported Imputs	24,257	2,119	825	857
Income to:				
Bottom 25%	9,523	1,295	597	6,031
Middle 50%	5,611	888	634	938
Top 25%	39,209	4,083	3,663	4,764
Total Sales	78,600	8,385	5,720	12,590

Bottom 25%

Wage Income	9,523	812	597	3,563
Entrepreneural Income	0	483	0	2,468

Bottom 25% Share

Export Value	12%	15%	10%	48%
Guatemalan Value Added	18%	21%	12%	51%

Source: Team estimates, based on Table IV.1

Table IV.3

Wages Paid by Surveyed Firms By Region and Type of Firm

Type of Firm	Department	wage full time	number Full-time	wage Part time	number Part time
Central Highlands					
Cooperative	Chimaltenango	27	8	15	60
Firm	Chimaltenango	25	260	20	
Cooperative	Chimaltenango	12	11	12	70
Firm	Guatemala	30	35		
Firm	Guatemala	50	500		250
Firm	Guatemala	37	6		
Firm	Guatemala	15	10	15	50
Firm	Guatemala	40	100	20	200
Firm	Guatemala		23	20	
Firm	Guatemala	30	90	22	
Firm	Guatemala		370	30	430
Firm	Guatemala	30	14	30	45
Firm	Guatemala	17	40		
Firm	Sacatepequez	17	150	14	180
Firm	Sacatepequez	15	180	15	250
Firm	Sacatepequez	20	20	15	125
Firm	Sacatepequez	18	48	18	300
Cooperative	Sacatepequez	20	36	15	250
Cooperative	Sacatepequez	20	150	20	300
Western Highlands					
Cooperative	Huehuetenang	10	7	10	1500
Cooperative	Huehuetenang	17	15	10	125
Cooperative	Quetzaltenang	17	28		
Cooperative	Quetzaltenang	17	10		
Cooperative	Quetzaltenang	17	25	13	
Eastern Lowlands					
Cooperative	Zacapa	13	5		
Firm	Zacapa	22	100		
Cooperative	Zacapa	17	16		
Cooperative	Zacapa	13	3		
Firm	Zacapa	20	100	16	800
Firm	Zacapa	20	75	18	250
Firm	Zacapa	25	130	20	1200
Cooperative	Jalapa			8	
Cooperative	Jutiapa	17	5	15	30

more than cooperatives, and firms in areas where the NTAE horticulture was concentrated paid more than in more remote areas. No data was available on trends over time in wages.

2. Land Access and Small-Farmer Differentiation

A major source of opposition to NTAE has been the perception that its expansion would have negative consequences for small farmers. There are two basic concerns. First, one fear is that such production may be subject to significant scale economies. Larger farmers adopt faster than smaller farmers and, because of scale economies, are able to produce more cheaply. They subsequently bid up the price of land, inducing smaller farmers to sell out and become landless laborers. This process is argued to have been characteristic of previous agro-export booms in Guatemala, as elsewhere in Central America. Barham et al (1991) summarize this view, but Rosset (1991), and Carter and Mesbah (1993) provide support for it. As indicated above, the tendency toward land concentration appears to depend upon the specific crops that are grown.

A second area of concern regarding distribution relates to early adopters vs. later adopters. Even if a crop is grown most efficiently by small farmers so that economies of scale do not enter, most small farmers may benefit little. This might happen if the early adopters of the new crop, though initially poor, use their technological edge to accumulate wealth quickly. They could then buy out neighboring farmers who were slower to react to the new opportunity. The other farmers could then become landless farm laborers, cultivating the land of the early adopters.

The central issue is whether or not land is passing from smallholdings to large ones. Consequently, the statistic to examine is the amount of land area by size of farm. Fewer hectares are in the small farm-sector would indicate accumulation into larger farms, while more area in small farms would suggest the opposite. The team examined farm size data for the last three agricultural censuses (1950, 1964 and 1979) to see what evidence existed regarding land concentration during the previous agro-export booms in the country. National statistics showed no tendency for land to pass from small to larger holdings, but the substantial increase in the total amount of land in farms over this period might obscure concentration patterns. For example, small farmers might be evicted from land in more valuable and settled areas, but adapt by colonizing new land in remote areas.

Confining the analysis to the highlands and central regions of the country, however, gives a clearer picture. This densely populated region has long been settled, and the total amount of land in farms increased only slightly between 1950 and 1979. This is also the region where most NTAEs are produced. The results are shown in Table IV.4.

The table shows no evidence of land passing from smallholders to larger farms. In the highlands, there was a steady movement of land from larger to smaller holdings. In 1950, 17.5% of the land was in holdings under 5 manzanas [3.3 hectares]; by 1979, this share had grown to 24.3%, mainly at the expense of farms over 64 manzanas. Finally, the Panajachel

Table IV.4
Land Distribution by Census

Altiplano	Size Class (Mz)				
1950	under 2	2 to 5	5 to 64	over 64	total
Number	63,095	32,738	29,093	1,339	126,265
Avg.Size	1	3.1	11.9	313.8	7.4
Area	63,095	101,488	346,207	420,178	930,968
1964					
Number	76,051	47,119	39,695	1,291	164,156
Avg.Size	1	3.1	12.1	309.4	6.7
Area	76,051	146,069	480,310	399,435	1,101,865
1979					
Number	144,338	47,400	32,850	851	225,439
Avg.Size	0.8	3.3	14.6	429.9	4.9
Area	115,470	156,420	479,610	365,845	1,117,345

Area Distribution, Altiplano

	under 2	2 to 5	5 to 64	over 64	total
1950	6.8%	10.9%	37.2%	45.1%	100.0%
1964	6.9%	13.3%	43.6%	36.3%	100.0%
1979	10.3%	14.0%	42.9%	32.7%	100.0%

Central	Size Class (Mz)				
1950	under 2	2 to 5	5 to 64	over 64	total
Number	28,019	16,439	10,260	1,397	56,115
Avg.Size	1	3	13.1	642.8	19.8
Area	28,019	49,317	134,406	897,992	1,109,734
1964					
Number	28,817	20,205	12,890	1,634	63,546
Avg.Size	1.1	2.9	15	510.1	17.6
Area	31,699	58,595	193,350	833,503	1,117,147
1979					
Number	65,990	15,556	10,265	1,783	93,594
Avg.Size	0.6	3.6	18.8	469.7	12
Area	39,594	56,002	192,982	837,475	1,126,053

Area Distribution, Central

	under 2	2 to 5	5 to 64	over 64	total
1950	2.5%	4.4%	12.1%	80.9%	100.0%
1964	2.8%	5.2%	17.3%	74.6%	100.0%
1979	3.5%	5.0%	17.1%	74.4%	100.0%

case where longitudinal data is available indicates that the number of acres of land farmed by Indians did not change between 1936 and 1964. Some land was lost to Ladinos, but other land was acquired from a flood control project and through purchases in other municipalities.

The average size farm declined significantly -- from 7.4 manzanas to 4.9 -- presumably as farms were divided among children. But this "minifundization" was partially offset by accumulation of land by small farmers from larger farms.

More direct, and more recent, evidence regarding farm size in relation to NTAEs comes from IFPRI (1989 and 1992) and Barham, Carter, and Sigelko (1992). These studies used longitudinal data for highlands areas where NTAEs were being adopted. Barham et al suggest that "a process of land transfer from larger toward smaller holders may be underway." IFPRI, with more complete data in the area where the Cuatro Pinos cooperative operates, found that smaller farmers accumulated land, while larger ones sold land. The central tendency was toward plots of about 0.6 hectares, which appear to reflect the size which can be managed effectively for snowpeas largely with family labor.

The IFPRI studies compared behavior of both members of the Cuatro Pinos cooperative and non-members. Less than one-third of the latter group raised NTAE crops in 1985, compared with 90% of the co-op members. Nevertheless, both members and non-members showed the same tendency for small farms (under 0.5 hectares) to increase land holdings, and for farms over 1 hectare to decrease them. In both cases the members did better (i.e., smallholders bought more land and larger farms sold less) than non-members, so there was an advantage to farmers producing NTAEs. The evidence shows no tendency for significant dispossession of non-adopters of new technology. Non-members of the co-op did increase the area planted to horticulture, albeit more slowly than members.

A notable feature of IFPRI (1992) is the substantial evidence that expansion of snowpea production is occurring in a very "horizontal" manner. Between 1985 and 1992, the quadrupling of snowpea production by Cuatro Pinos members occurred almost entirely through an increase in the number of farmers growing the product. The amount grown per farmer remained stable. Again, this suggests both that there are diseconomies of large scale, and that later adopters of the new technology have benefitted as well as the early adopters.

3. The Treadmill

A further concern about small farmers linking with processors for NTAE might be termed the treadmill. In the treadmill, small farmers are lured by high prices to begin producing NTAE. With initial success, they incur debt to make specific investments (e.g., irrigation) to produce the NTAE crop on a larger scale. After they make the investment, however, they find the processor reducing prices for their product. Because of his new debt service burden, the farmer is caught on a treadmill; he cannot return to corn and beans because of his obligations to repay his debt, and he cannot earn enough from NTAE to repay the debt.

This is not an idle concern. In their study of contract farming, Glover and Kusterer (1990) identify lower prices to producers after a processor becomes established as a common phenomenon, which they call "normalization." The processor initially pays high prices because his major concern is to utilize his new processing capacity. Operating losses can be tolerated as an expected start-up cost. Moreover, the processor has probably begun exporting at a favorable moment for external markets. As more farmers see the success of their neighbors, more production is induced from others, and the processor sees the opportunity to cut costs by lowering prices. Indeed, he may need to do so to achieve profitability. The less efficient of the farmers producing for the processor will gradually be squeezed out.

To some extent, this is what happened with ALCOSA in 1980 (Kusterer, 1981), when it stopped purchasing from some producers while maintaining them with the less problematic Cuatro Pinos cooperative. As a general problem in Guatemala, however, the team found no evidence of this problem. The evaluation of the mini-irrigation portion of the HAD project indicated that the great majority of farmers who incurred debt to grow vegetables were both paying off their debt on time and enjoying higher incomes. The lack of monopsonistic price-cutting by producers is probably due to the relatively developed state of the NTAE sector. With numerous firms in the business, there is too much competition for product for individual processing firms to control prices below market levels.

B. Effects on Women

1. Employment

Women benefitted substantially from the increased wages paid for NTAE processing. For the firms surveyed, women workers constituted 49% of employment in processing plants. There was little gender difference in the amount of either full-time or part-time employment; women were 51% of the full-time workers and 45% of the part-time. Table IV.5 summarizes the employment data gathered in the interviews. The share of women in the agribusiness labor force appears to have increased over time. For the 1984 agribusiness development project paper, USAID/Guatemala surveyed employment in 61 agribusiness firms. That survey found that women were 46% of full-time workers and 36% of part-time workers[16]. Some differences in gender employment by crop did appear, most notably in the fact that melon workers were mostly male. This may reflect the heavier nature of melon fieldwork.

The agribusiness firms did not appear to pay different wages by gender, although there may have been occupational differences between male and female workers that had this effect. The survey of farmers, however, did indicate significant gender-based differences in wage rates. Of the farmers who responded, 29% reported paying equal wages to men and

[16]USAID/Guatemala, Agribusiness Development Project Paper (1984), Annex 7, p. 12.

Table IV.2

Employment in Agribusiness
NTAE Firms Surveyed

	Number of Employees			Share by	Share of Employment	
	Firms	Coops	Total	Gender	Firms	Coops
Full Time	2,338	253	2,591		90%	10%
Men	1,072	189	1,261	49%		
Women	1,266	64	1,330	51%		
Part Time	3,800	830	4,630		82%	18%
Men	2,551	154	2,705	58%		
Women	1,249	676	1,925	42%		
Total	6,138	1,083	7,221		85%	15%
Men	3,623	343	3,966	55%		
Women	2,515	740	3,255	45%		
Full Time Equiv	5,006	839	5,845		86%	14%
Men	2,711	287	2,998	51%		
Women	2,295	552	2,847	49%		

Source: Survey Data

women, while 71% paid higher wages to men. The lower womens' pay varied from 50% to 80% of the male wage, with an average of 73%. To learn how much of this is due to productivity differences, farmers were queried separately on women's relative productivity and relative wages. On this point, 56% of the farmers viewed women's wages and relative productivity as equal, 11% considered their wages higher than relative productivity, and 33% thought them lower. These estimates are subjective, rather than based on actual productivity differences. Nevertheless, the size of the latter figure suggests that wage discrimination against women does occur. There were major regional differences in the male/female wage differential. In the melon/okra lowlands of Zacapa, wages tended to be equal, while a discriminatory wage gap was evident in the highlands. The lower women's wage appears to be conventional in this area. The fact that women are available to work at such wages, and not be bid away by other farms, suggests unemployment in this region is higher for women than for men.

Two of the new NTAE processing firms are owned by women, but all of the others were male-owned, as was the top management of both the firms and the cooperatives. There is no indication that USAID activities provided any special assistance to the formation of women-owned enterprises, nor were any aspects of the activities that limited access by women identified by the interviews.

2. Other Effects on Women

The fieldwork provided only limited evidence on other effects on women from agribusiness activity, and the farmer interviews conducted for the study were entirely with men. Nevertheless, other studies of the impact of NTAEs on women in Guatemala were analyzed.

As discussed above, there was a substantial increase in off-farm female employment due to NTAE activity. This has many ramifications, some of which are likely to be positive and some adverse. Most are generic concerns. However, the literature has identified two major issues with regard to women that are NTAE-specific. First, did NTAE production reduce womens' independent access to money income by diverting their time from tasks where they received income directly to other tasks where the income was paid to their spouses? Second, has NTAE activity increased the workload borne by women?

a. Diversion from income-earning tasks. The survey indicates that a substantial number of new income-earning opportunities were established for women as a result of increased NTAE production. In processing plants of surveyed firms, more than 4,000 women have paid employment, nearly all of these jobs created since 1980. Paid labor by women on farms has also increased substantially as a result of NTAE activity, though at wages significantly lower than those for men. In both cases, the income would be expected to be paid directly to the woman. On the other hand, some decline may have occurred the substitution of womens' work on NTAE crops (where the income was paid to the husband) for work on locally-sold vegetables where the woman received the income.

Farmers were queried on this point. Twenty-nine farmers had discontinued production of some crop since they began production of NTAE, for which six said that the crop had been marketed by women. Potatoes and traditional vegetables were the usual crops affected. Three of the six farmers each said that income and spending decisions were made jointly between man and wife, and by the man. In the overall sample, 23 men said that they made such decisions, while 13 said they were joint. Thus, most women still live in a patriarchal society. Nevertheless, the impact of NTAE on independent womens' income was may have been negative in only a few cases, and was likely to have been positive in many.

In a multi-country study, Glover and Kusterer (1990) have studied gender issues in a number of cases of agroprocessing in developing countries, including ALCOSA in Guatemala. They conclude that employment in production of NTAE crops has some benefits, but those from working in processing plants are far larger. They attribute this to the empowerment that income away from the farm provided. They write:

> The most positive transformational effect of agribusiness on women's lives came not from contract farming but from processing-plant employment. Small-town and rural women who worked in the packing sheds, canning plants or freezing factories were nearly unanimous in reporting that employment increased their self-esteem, self-confidence, and household influence. Paying legal minimum wages, not often available to women in informal employment, these jobs dramatically increased women's incomes. Female employees became major, if not the major, earners of outside income in their households, and this empowered them in their relations with husbands and fathers.[17]

A related benefit identified by Glover and Kusterer is escape from patriarchical social systems. They conclude that most women favor "the bureaucratic, impersonal management style, the well-defined division of labor, the time clocks, and the chance to work with large numbers of other women." because they are improvements over women's subordination in the rural social systems. They add that "general satisfaction in these large plants does not translate into docility. The women in Guatemala had gone on strike in the plant's early days of operation and in Peru they held a sit-down strike that lasted for weeks. Ironically, it is a testament to the self-confidence and personal empowerment brought about by these jobs that women were able to act so strongly when they felt that specific grievances warranted action."

b. Increased workloads for women. The team collected limited direct evidence on this point, querying farmers on changes in the use of family and hired labor by gender. No significant patterns emerged.

IFPRI has done much more careful and extensive work in its two studies of the Cuatro Pinos cooperative. These shed some light on it. IFPRI 1992 used separate focus-

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[17]Glover and Kusterer (1991), p. 137.

group meetings with women to identify problem areas. The interviews included 156 women in 5 focus groups in three villages. Six women (and no men) agreed with the statement that women work more hours as a result of NTAE. In the context of the number of responses to other questions, this suggests a significant, though moderate, level of concern. The IFPRI survey also probed a number of other women's concerns.

The quantitative evidence from the study on this point is inconsistent. Female labor is generally a larger share of total family labor in NTAE production than in corn or traditional vegetables. IFPRI found that adult women provided 9% of family labor for corn production, 17% for snowpeas and 16% for traditional vegetables. Nevertheless, there was a significant decline between 1985 and 1991 in the share of family labor provided by women for snowpeas and traditional vegetables, with adult males increasing their share. Thus, a shift to the new crops does increase female on-farm labor, but the share of women in total labor for these crops also appears to decline over time, while that of men increases.

C. Environmental Issues

The assessment did not examine environmental issues in detail, as this would have required substantially more time and expertise. Two environmental issues were raised by a number of persons interviewed for the study: pesticides and land degradation.

1. Pesticides. The movement to NTAEs has increased agrochemical use by small farmers. Some have argued that this is likely to lead to misuse of pesticides to the detriment of both the quality of the products grown and -- because of inadequate care in their application -- to the health of small farmers.

Pesticide residuals was a very immediate issue at the time of the team visit, as Guatemala was in the midst of a four-month export prohibition on snowpeas. This "voluntary" ban on snowpea exports came as a result of discussions between U.S. health officials and Guatemalan exporters. Detentions and rejections because of pesticide residuals have been common for Guatemalan products at U.S. ports of entry. The export ban eliminated the growing season for which pests are most problematic, and provided a window for Guatemalan producers to establish procedures for controlling residuals acceptable to the U.S. Government. The undesirable alternative would have been shipment-by-shipment testing of Guatemalan products.

While the team could not analyze these concerns in detail, it did obtain perspectives, particularly on quality, from numerous observers. It should be recognized that the pesticide residual issue is one that cuts both ways. While the desire for high-quality products encourages greater use, the presence of pesticide inspections -- with the substantial costs associated with rejections by U.S. government officials -- also encourages greater awareness of appropriate use and concern about pesticide residuals. Processors and exporters have become directly involved with producers in assuring proper pesticide use. In some cases, the processors supply the pesticides to the farmers, and contractually prohibit use of any other

products. In one case, the processor prohibited farmers from applying any chemicals, and had its own staff of 25 do the on-farm applications. Cuatro Pinos tests individual lots for pesticide residuals, and said that it had expelled about 50 members from the cooperative for improper use.

The concern with pesticide residuals does not extend to horticultural products for local and regional markets. Some have conjectured that pesticide use in some areas producing only for the local market (e.g., the Almolonga valley) is a more serious problem than that for NTAE. If so, the pesticide awareness coming from NTAE (as well as the capacity to test of residuals) may lead to elimination of some dangers to Guatemalan consumers.

Little information was available on the health issues for farmers using pesticides and their families. It seems clear, however, that many farmers take inadequate care in applying or storing pesticides. It seems likely that the number of cases of pesticide poisoning in the highlands has increased with their increased use. Both USAID and agroprocessors have carried out pesticide education campaigns, but it seems evident that the problem continues to be serious.

2. Land degradation. Some have charged that NTAEs lead to degradation of the land base. Two lines of reasoning are used. First, because the flatter land is being used by small farmers for NTAE crops, the farmer will use steep slopes, previously unused, for maintaining production of corn and beans. Second, the increased use of chemicals will tend to degrade the quality of the soil.

Without some empirical verification, the first line of argument is unconvincing. Certainly, Guatemalan farmers have long cultivated traditional crops on very steep slopes, and there is no a priori reason to expect higher incomes to make farmers less conscious of proper environmental practices. Indeed, one might expect the cushion of increased income to have a beneficial effect.

The land degradation issue also needs to be considered from a broader perspective. What alternative would have been pursued in the absence of NTAEs, and with what environmental consequences? No definitive answer is possible to this question, but it is clear that pressure on land would have become more intense without adoption of more productive techniques. Since one major effect of NTAEs is to raise sharply the amount of labor applied per hectare of land, it is likely to reduce the tendency of small farmers to migrate to new areas in search of land.

Mann (1992) has made the case, using rough estimates of magnitudes, that NTAE is having a significant effect on reducing deforestation by reducing migration to the uncleared areas in Northern Guatemala. He estimates that agricultural diversification in the highlands in creating employment for on the order of 8,300 families per year. He then argues that, absent this new source of employment, that number of families would migrate out of the western highlands. Based on historic trends, about 20% of the migrants would move to

urban areas, 20% would migrate to the South Coast, typically to work as wage laborers on large farms, and 60%, or 4,900 families, migrate to the sparsely-settled Northern region of the country, where they clear new land to farm. Mann calculates that each migrant to the North would clear, by slash and burn, two hectares of the forest cover each year for a decade. Over a decade, this level of migration would clear 750,000 hectares of forest.

The team did not examine Mann's assumptions, nor did it find alterative estimates of the impact of agricultural colonization. This issue clearly merits greater attention, however, as it addresses a major source of pressure on the environment. Deforestation has become a major issue in Guatemala as in other Central American countries, and activities that limit the incentive to migrate to forested areas are valuable in slowing this process.

V. Links to U.S. Agribusiness

A. Linkages with U.S. Firms

The majority of agribusiness firms in Guatemala are locally-owned, and most of the USAID interventions did not emphasize links to U.S. business. Nevertheless, firms with such linkages valued them highly. It appears that **Agritrade**, an annual convention of the NTAE sector held in Guatemala City, has been an extremely valuable mechanism for linking U.S. agribusiness firms with Guatemalan production. USAID, through PROEXAG and its support for the Nontraditional Exporters' Guild, was responsible for the inception of Agritrade. Numerous firms identified Agritrade as an important means for learning about new markets, and several firms established permanent relationships with U.S. firms after making initial connections at Agritrade.

The development of Guatemalan NTAE has necessarily created strong linkages between Guatemalan and U.S. firms, for few Guatemalan firms market their products inside the United States. Most NTAE firms rely on U.S. firms to bring the product from the port to the final consumer. For many of the products exported, value added in the U.S. distributional chain is larger than Guatemalan value added. Indeed, an economic case could be made for U.S. promotion of Guatemalan agribusiness solely on the basis of benefits to U.S. consumers in lower prices and greater availability of perishable products during the U.S. winter.

B. Problems Encountered by U.S. Agribusiness Firms

Several firms interviewed were subsidiaries of U.S. firms, or owned by U.S. nationals. No particular problems relating to USAID activities in relation to U.S. firms were identified. The USAID projects appear to have been of substantial benefit to U.S. firms in the same ways that they benefitted Guatemalan firms -- by improving the environment for profitable exports of NTAE. Two U.S. firms were vocal, however, in complaining about negative effects on their operations by other parts of the U.S. Government. In both cases,

this flows from U.S. pesticide regulations that were perceived as irrational (i.e., unrelated to real threats to U.S. consumers) or bureaucratic.

VI. Cost Effectiveness of the Projects

A. Per Unit Cost of Employment Generated by Agribusiness Projects

This section concentrates on longer-term employment effects of the USAID agribusiness activities in creating permanent new jobs. Temporary employment was created by the projects, both for those employed in its execution and, particularly, in those project activities that built rural infrastructure such as rural roads and irrigation systems. Such employment is permanently valuable only insofar as it creates the conditions under which permanently-sustainable jobs are created.

As discussed in Section III, the estimated increase in permanent employment in the NTAE agribusiness sector as a result of the USAID support is 31,000 full-time workers[18]. Of the $70 million in USAID assistance under the projects considered, about $54 million went to activities that were directly or indirectly related to agribusiness. (The remaining $16 million was used to strengthen the credit union movement, which has little relation to agribusiness.) These numbers produce a cost per direct job of $1,740. It is typical for economists to assume that direct jobs in any industry -- because the earnings of workers spawn demand for goods that create jobs in other sectors -- that two indirect jobs are created for each direct one. Using this figure, the cost per total job would fall to $580. The analysis ignores the temporary employment created by project activities, such as that used in the rural infrastructure activities to build rural roads and irrigation systems.

While the average cost per job created is lower than for most industrial sector activities, it may be noted that there was very wide variation in the impact of different project activities. The support for mini-irrigation, rural roads, and the Nontraditional Exporters' Guild had much higher payoffs than average. Others, such as the funding for Patzicia regional marketing center, had none. The payoff to the support for the cooperative sector was on average far below average. Nevertheless, the Mission's effectiveness did improve over time, and the job-creating impact of the activities during the last half of the 1980s was far higher than that from the first seven years of project activity. Even in the cooperative sector, the focus tended to move from visions of the movement to more practical

[18]As noted earlier, the job creation estimates in this study are limited to the NTAE sector which was the primary focus of USAID assistance. Nevertheless, the USAID projects did assist small producers in coffee, as well as for increased production of crops such as tobacco and sesame that were not included. The presence of so many other factors in the growth of these sectors in addition to USAID activities makes estimates of employment effects conjectural.

efforts to strengthen individual base cooperatives that had potential for increased production.

B. Cost and Impact of Direct and Indirect Technical Assistance

No effort has been made to quantify technical assistance costs. Project and evaluation documents, however, make clear that technical assistance is a difficult instrument to use effectively. The unexpected is simply to be expected in the use of expatriate experts. One chief of party left after only three months, substantially delaying implementation of one project. Personality conflicts among expatriate members of the same team were a factor in another. Sometimes USAID procurement procedures created serious problems. A project management contract was delayed for two years by a protest by an unsuccessful bidder for the contract. At the same time, expatriates have played key roles in promoting Guatemalan agribusiness. The relatively flexible mechanism established under the PROEXAG project appears to be a model for assuring timely and quality expertise. Under the project, the PROEXAG staff was able to contract short-term visits in a wide range of specialties quickly and with little paperwork. Its success, however, depended upon the very high quality of the PROEXAG team's wide-ranging contacts in the U.S. agribusiness sector.

C. Cost Benefit Analysis of the Projects

A variety of approaches to compare the costs and benefits of the USAID assistance are available. In principle, one should consider what actually happened with the project, and compare it to what would have happened without the project. The latter is counterfactual, so it cannot be observed directly. The simplest formulation is to assume that no change would have taken place without the project. In a world where change is commonplace, however, this is questionable. Nor is the "with the project" outcome unambiguously an effect of the project. Numerous other events will have occurred during the period which contributed to or impeded the actual historical result.

Even where an outcome is crucially dependent upon an intervention, attribution may be "overdetermined," meaning that full credit for the outcome can be attributed to more than one source. In the case, for example, of two donors contributing different inputs, each critical to achieving the outcome. Without both, no result would have been achieved. In this case, one could attribute 100% of the credit for the outcome to each donor. One could look further to judge whether the second donor's input were "endogenous" (caused in some sense by the first donor's input) or exogenous. In the first case, the first donor is more justified in claiming full attribution, since its action "caused" the other donor to act. The second donor still may claim full credit, however, by asserting that, while the first donor's action could have been expected to lead it to act as it did, it still exercised independent decisionmaking. It could have refused to act. Given the complexities and ambiguities about attribution, this paper takes two approaches to provide only a "ballpark" judgement about the value of the projects: foreign exchange earnings; and incomes of low-income Guatemalans.

1. Foreign Exchange Earnings

A simplified approach to the costs and benefits to Guatemala could look only at the foreign exchange aspect. Did the project lead to a steady stream of foreign exchange earnings for Guatemala that gives a permanent benefit to the country? After all, foreign exchange in a poor country like Guatemala is scarce, and an alternative use of the $70 million in USAID funds ($87 million in 1989 dollars) would have been to invest those funds in the world capital market; and Guatemala would have a steady stream of income.

For the most simplistic formulation, the dollar costs of the USAID assistance were compared to the increase in NTAE exports from Guatemala, with 1978 as a base. In this formulation, all of the increased exports of NTAE are attributed to the USAID assistance. Both exports and USAID flows were converted to constant dollar terms, and the 1992 level of exports was assumed to continue indefinitely. For this case, the Economic Rate of Return (ERR) was 105% -- a very impressive figure. Since a portion of the value of the additional exports represents additional imports needed to produce them, however, this procedure overstates **net** export earnings. Correcting for this by reducing export earnings to eliminate imported inputs in NTAE lowers the ERR to 95%. Table VI.1 shows the data used in the computation, and the net present value of the project for the case where a discount rate of 30% is used.

The procedure above assumes that all of the increase in exports is due to the impact of the USAID project. This might be justified by the pervasive USAID's involvement, touching the entire range of policy and institutional arrangements relating to exports. Moreover, the great majority of exporters had received direct assistance from a USAID-financed intermediary. Nevertheless, some export growth would probably have taken place without the projects, and the ERR is dependent on the assumption regarding attribution. Chart VI.1 shows the sensitivity of the ERR to alternative assumptions about the share of export growth that is due to the USAID projects. As shown by the chart, the ERR falls below 20% only if the share of export growth that can be attributed to USAID involvement falls to about 21%. Given USAID's participation in the sector, it is relatively easy to justify an attribution share higher than this. Consequently, it is reasonable to conclude that the ERR on the USAID assistance -- from a foreign exchange perspective -- is quite high, and surely above 20%.

2. Income to Poor People

The primary purpose of USAID assistance is to reduce world poverty. Direct payments to poor people -- or dropping dollars out of airplanes flying over high-poverty areas -- obviously achieve this purpose. Nevertheless, such direct payments may (or may not) be less effective than indirect means. The implicit justification for care in donor programming of development projects is that such projects create conditions where the benefit to poor people is far larger than what would come from direct donation.

Table VI.1

Cost Benefit Calculation for Foreign Exchange

Discount Rate = 30%

Year	Project Costs	Project Benefits	Discounted Net Benefits	Discount Factor	AID Funding	Income Bottom 25%	NTAE Exports
	(Million 1989 Dollars)				(Million Current $)		
1978	0.5	-0.0	-0.5	1	0.3	1.6	8.0
1979	0.5	-0.2	-0.5	0.77	0.3	1.7	8.6
1980	0.7	0.9	0.1	0.59	0.5	1.6	10.2
1981	0.7	2.1	0.7	0.46	0.5	2.2	12.3
1982	0.9	5.3	1.5	0.35	0.7	3.0	16.0
1983	1.5	3.4	0.5	0.27	1.2	3.0	14.8
1984	4.1	8.8	1.0	0.21	3.5	4.2	20.8
1985	4.9	8.0	0.5	0.16	4.3	4.1	20.7
1986	6.8	14.4	0.9	0.12	6.2	5.4	28.1
1987	7.5	22.1	1.4	0.09	7.0	7.5	37.2
1988	9.4	22.1	0.9	0.07	9.0	7.8	38.4
1989	8.0	31.9	1.3	0.06	8.0	10.9	51.5
1990	7.7	38.0	1.3	0.04	8.0	13.4	61.2
1991	7.4	44.4	1.2	0.03	8.0	15.2	71.5
1992	6.0	58.1	1.3	0.03	6.7	17.2	91.6
1993	3.5	58.1	1.1	0.02	4.0	17.2	91.6
1994	1.7	58.1	0.8	0.02	2.0	17.2	91.6
1995		58.1	0.7	0.01		17.2	91.6
1996		58.1	0.5	0.01		17.2	91.6
1997		58.1	0.4	0.01		17.2	91.6
1998		58.1	0.3	0.01		17.2	91.6
1999		58.1	0.2	0.00		17.2	91.6
2000		58.1	0.2	0.00		17.2	91.6
2001		58.1	0.1	0.00		17.2	91.6
2002		58.1	0.1	0.00		17.2	91.6
2003		58.1	0.1	0.00		17.2	91.6
2004		58.1	0.1	0.00		17.2	91.6
2005		58.1	0.0	0.00		17.2	91.6
2006		58.1	0.0	0.00		17.2	91.6
2007		58.1	0.0	0.00		17.2	91.6
2008		58.1	0.0	0.00		17.2	91.6
2009		58.1	0.0	0.00		17.2	91.6
2010		58.1	0.0	0.00		17.2	91.6
2011		58.1	0.0	0.00		17.2	91.6
2012		58.1	0.0	0.00		17.2	91.6
2013		58.1	0.0	0.00		17.2	91.6
2014		58.1	0.0	0.00		17.2	91.6
2015		58.1	0.0	0.00		17.2	91.6
2016		58.1	0.0	0.00		17.2	91.6
2017		58.1	0.0	0.00		17.2	91.6
2018		58.1	0.0	0.00		17.2	91.6
2019		58.1	0.0	0.00		17.2	91.6
2020		58.1	0.0	0.00		17.2	91.6
Total	71.8	1887.3	16.5		70.2	580.4	3055.7

Chart VI.1

Economic Rate of Return to AID Assistance

As Function of Attribution for Export Growth

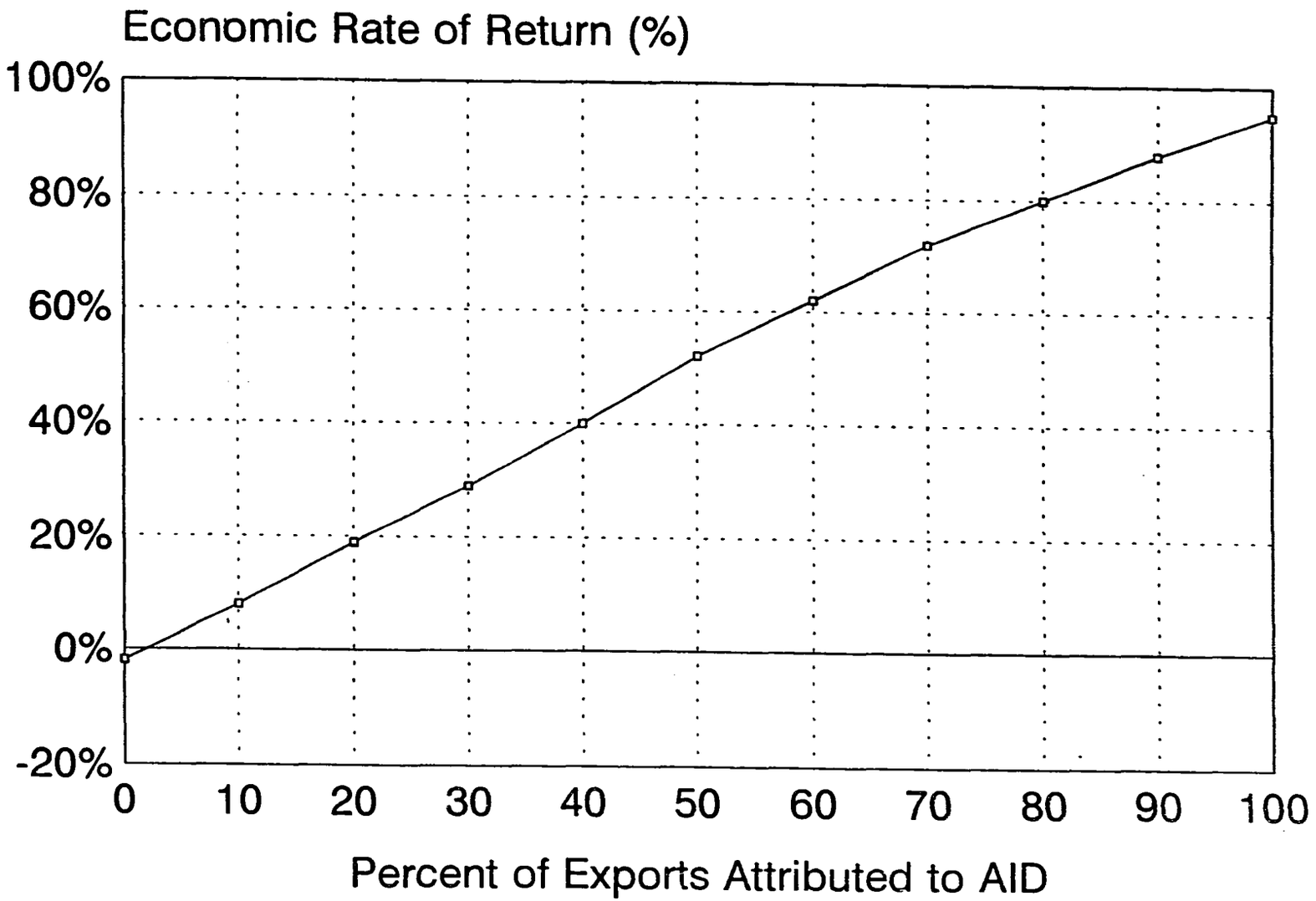

Table IV.2 provided a breakdown of the earnings from four leading NTAE crops by income levels of the recipients. While the share of the poorest quartile varied with the crop, the weighted average was on the order of 20% of the value added. Using this data, assuming full attribution of the increase in NTAE exports to the USAID projects, yields an ERR of 19.5%. Thus, the project can be justified economically even if no weight is given to the increased income to non-poor people in Guatemala. Reducing the attribution rate, of course, would lower this number. Nevertheless, the case for attribution to USAID of a large share of the credit for the increase in incomes of poor people is even stronger than that for exports in general. USAID's projects attempted particularly to focus resources on the rural poor. To the extent that NTAE growth would have taken place without the project, its benefits would not have been tilted as much toward the rural poor as with the project.

The direct income flows to the bottom 25% only give a partial picture of the impact on them of the projects. Any economic activity has broader effects on the economy, and the total impact can only be traced through with careful analysis. One potential effect of the project on poor people not considered in the analysis worthy of mention is effect on wage incomes for those outside the NTAE sector. Because of the large demand for workers resulting from NTAE, wage rates in the primary NTAE areas have risen above those elsewhere in the country. There is anecdotal evidence that wage rates in costal areas that have depended on temporary migration from the highlands have also risen. This will impact on all workers, whether involved in NTAE or in other sectors. Consequently, any rise in wages resulting from NTAE would bring this additional benefit.

3. Possible Refinements to the Analysis

The above approaches to costs and benefits are relatively crude. They suggest that the USAID assistance has been well-spent because it has been associated with major increases in the sectors where the projects were targeted. This section identifies further refinements to the cost-benefit analysis that would increase its precision. Neither was carried out because of lack of resources. The impact of the refinements discussed below is indeterminant. The first would raise the ERR even higher, while the second and third would lower it.

a. NTAE Exports as the Only Benefit. The first simplifying assumption used in the foreign exchange model is to assume that NTAE exports are the only benefit of the projects. In fact, the projects provided support for a number of other activities that did generate benefits for Guatemala. These are of several sorts. First, the projects assisted production of some other export crops, notably cooperatives producing coffee, and other farmers producing tobacco, sesame and other crops not included in the analysis. Second, some increased production for the domestic market surely resulted from these activities. This includes both increased consumption of vegetables such as broccoli as well as increased productivity in traditional

foodcrops that result from the experience of growing NTAE[19]. Third, the establishment of an efficient credit union system in Guatemala that mobilizes substantial amounts of savings by lower and middle-income people -- the most important achievement of the cooperative strengthening project -- was not included. In addition to the direct project benefits for other activities, the projects may have had other influences, particularly in the policy and institutional areas, that affected other aspects of Guatemalan development. The most interesting of these -- which must remain speculative because of the difficulty of establishing causality -- was the possible impact on re-establishment of democratic institutions in 1993. As discussed earlier, some have attributed this to the community of interests between Guatemalan elites and the rural indigenous population created by the new export boom.

b. Opportunity Cost as Zero. The implicit assumption behind the treatment of all foreign exchange earnings from NTAE as a benefit of the project is that the resources used by Guatemalans as a result of the project would not have earned foreign exchange without it. There may not have been a NTAE sector without the USAID involvement, but the most of the land, labor, and capital that went into NTAE would have been applied to some other purpose without it. These alternative uses would have been less productive, but they would have produced some output and some foreign exchange earnings. Additional analysis to establish opportunity costs would be required to pursue this refinement.

c. The Effects of Policy. Several policy factors could have contributed to the success of Guatemalan NTAEs, irrespective of activities by USAID. Three such factors should be mentioned: the overall economic policy climate in Guatemala; the Caribbean Basin Initiative (CBI); and direct export subsidies by the Government of Guatemala. Each is considered in turn.

Macroeconomic Policy. The Guatemalan economic policy environment has historically been among the most stable in the world. Its exchange rate was maintained at a 1:1 parity with the U.S. dollar for more than 60 years until the early 1980s, throughout most of the period without exchange controls or other rationing devices. Between 1960 and 1980, Guatemalan inflation was lower than that in the United States. The government sector in Guatemala has also been one of the smallest in Latin America, with government spending usually less than 10% of GDP. Government controls over the economy and the importance of parastatal enterprises has similarly been small. Consequently, it is difficult to lay great stress on the macroeconomic policy environment as the determinant of NTAE success during the 1980s, and not during the half-century that preceded this success.

The Caribbean Basin Initiative (CBI). Since 1984, Guatmalan products have had

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[19] IFPRI (1989) found that producers of NTAE were consuming significant amounts of broccoli and cauliflower, in contrast to non-producers. They also concluded that yields on traditional crops were significantly higher for NTAE producers. Both corn and bean yields were 30% higher among co-op members than among non-members, presumably because of more effective use o fertilizer.

duty-free access to the U.S. market under the CBI. However, Fox (1989) has shown that the CBI -- despite the considerable publicity that has surrounded it -- did not offer Guatemala any appreciable access to the U.S. market beyond what already was available under the Generalized System of Preferences (GSP) which was available to all developing countries. At the time the CBI became law in 1983, it may have had some encouraging effect because the U.S. GSP legislation was to lapse in 1984, and there were some uncertainties about prospects for its renewal. In the event, however, GSP was renewed in a timely manner. Consequently, any incentive effects of CBI were in the hearts and minds of people, and not in the legal advantages it gave to Guatemalan exports.

Export Subsidies. Guatemala did introduce export subsidies in 1983 in the form of tax credit certificates for nontraditional exports, that could be used, after a lapse of time to pay tax liabilities. These never seem to have attained quantitative significance and were later abolished. In 1986, an export tax of 4% for nontraditional exports as a means of capturing part of the gains to exporters from a devaluation of the currency. This was phased out two years later. Overall, then, direct subsidies to exports have not played a significant role in developing or sustaining Guatemalan NTAEs.

VII. Sustainability

A. Sustainability of Public Sector Capabilities/Institutions Supported by the Projects

The common view of most interviewees is that the capabilities of public sector institutions related to agribusiness, never very strong, have deteriorated significantly in recent years. The ministry of agriculture, the government marketing agency, the government agricultural bank, and the agricultural research entity are all held in extremely low esteem. Most interlocutors agreed that numerous competent professionals work for these institutions (and many more have left for positions with private agribusiness firms), but believed that institutional weaknesses from poor political leadership have prevented effectiveness. Some of this deterioration has been unrelated to project activities, as part of serious government-wide management problems. The long period of military rule, with periodic irregular changes in government, no doubt is partly responsible. The budgetary "starvation" of the public sector is an additional factor. Guatemala has traditionally had the lowest tax collection-to-GNP ratio in Latin America, leading to the smallest public sector in the region. While USAID made serious efforts during the 1980s to promote increased taxation and to condition its assistance to greater government spending on priority development needs, these efforts yielded only limited results, which were subsequently reversed. Government investment spending consistently fell significantly below levels agreed with USAID, both because of revenue shortfalls and because of lack of management capabilities.

USAID responded to the shortfall in public institutions in large part by channeling support away from public institutions, but also through some innovative programs. The most notable of these was the FEAT program, which sought to generate revenues from the

services provided by the agricultural extension service. Recipients of technical assistance were required to pay a gradually increasing share of the costs of Ministry extensionists over time, but given a role in choosing their extensionists. This seems to have yielded positive reactions from farmers, and the mechanism certainly has the potential for creating more responsive government and empowering recipients of government programs. Nevertheless, many things can go wrong in such an approach. For example, it could produce a steady exit of extensionists to the private sector once they have been trained partly at government expense and developed a clientele as government officials. Consequently, the success of such experiments can only be judged over time.

Overall, our judgment is that USAID has not improved the capabilities of the public sector with its agribusiness projects. The public sector is, and will continue to be, a weak point in the prospects for continued agricultural growth. We cannot judge whether increased USAID attention would have made the situation appreciably better.

B. Sustainability of Intermediary Organizations

There are several types of intermediary organization that have played a critical role in the success of NTAE agribusiness in Guatemala. The sustainability of each merits separate consideration.

1. The Nontraditional Exporters' Guild. This is a highly-competent and valuable enterprise that has played a critical part in the growth of NTAEs, as well as other forms of nontraditional export expansion. It has developed a very broad membership base (more than 500 companies) that provides a revenue base. The institution has also worked to establish other sources of funding. Its annual Agritrade convention is a significant source of revenues to the institution, in addition to its key role of providing contacts between foreign buyers and suppliers and Guatemalan agribusiness firms. The Guild's solid technical capabilities make it competitive in bidding to implement donor projects, as it is currently doing for both USAID and the Inter-American Development Bank. The Guild's strategy for continuing its operations after USAID funding ceases seems realistic and consistent with continued effectiveness by the organization.

2. PROEXAG. This "institution" was created as a Central American regional promotion entity and was not within the scope of the Guatemala study. Nevertheless, its shadow falls over much of what has been accomplished in Guatemala. With no source of significant revenue except the USAID project, PROEXAG has no prospect for survival without USAID funding. Nevertheless, it was designed to be an effective mechanism for transferring technology and marketing expertise, and not to be a financially sustainable institution. It has surely paid its cost several times over in benefits to Guatemala, and would likely continue to do so for a few more years as the pace of change continues to be rapid. Nevertheless, its importance can be expected to decline year by year as a greater diversity of connections, sources of expertise and institutional arrangements is developed by the private sector.

3. FENACOAC. The national credit union cooperative federation has emerged as a financially strong, committed, and sustainable institution, bringing together similarly efficient credit unions. This development owes much to USAID support, both financial and through long-term technical assistance. This is of considerable value to Guatemala as part of the financial system that is particularly effective in generating savings in rural areas, but it is only tangential to the agribusiness sector.

4. The Agricultural Cooperative Movement. USAID efforts have been largely unsuccessful in establishing a sustainable set of agricultural cooperative federations. In addition, there are a number of individual cooperatives that have received significant amounts of USAID funding with little to show for it except debt.

C. Financial Viability of the Agribusiness Firms Supported by Projects

Any projection of the viability of the agribusiness sector must be predicated on maintenance of a stable economic and political climate in the country. Should serious insurgency return to the highlands, or should the macroeconomic climate (most notably, the real exchange rate) seriously deteriorate, the agribusiness sector would face severe strains. Small countries cannot afford such turmoil if they are to grow, and Guatemala is no exception. The remainder of this section assumes that this stability can be maintained.

Overall, the private agribusiness firms that have been established or expanded as a result of the agribusiness projects are viable, rapidly expanding enterprises. As discussed in Section III, agribusiness firms have been growing rapidly, and they expect this growth to continue. NTAE has become a growth pole for the economy, and has been providing growing benefits to both the agribusiness firms and to the farmers who provide raw materials.

The cooperatives, which received far more direct support from USAID, are more problematic. Some cooperatives, notably Cuatro Pinos and Cooperative Magdalena, have been highly successful to the present. We view their continued success as less certain than that of the private firms. In part, this is due to the legacy of Guatemalan history that has left a large fraction of the rural Guatemalan population uneducated, and justifiably suspicious of being cheated or deceived by sophisticated businessmen. Export of perishable products is a demanding business, requiring considerable flexibility, risk-taking, quick judgment and close communication with foreign markets.

In sum, it requires highly-sophisticated management. Cooperative members in such a situation may find it difficult to effectively oversee managers to prevent self-dealing or fraud. The character of management of the cooperatives is thus critical, but human frailties make such judgments difficult even where cultural gaps are narrow and information more readily available.

For the numerous cooperatives that have done poorly, the prospects are far more

problematic. USAID has not developed a mechanism for bringing these institutions to solvency, nor for establishing longer-term sustainability. The "bottom line" for cooperatives in this field may well be that USAID has promoted the establishment of cooperatives in areas where the tasks are simply too difficult to expect success. The much more manageable task of establishment of co-ops as interfaces with privately-owned exporters would simplify the management and oversight task enormously, and reduce, but not eliminate, the moral risks from co-op management.

Annex 1

Cooperative Case Histories

Cuatro Pinos. This is the most successful of the Guatemalan agricultural cooperatives. Its members are indigenous farmers cultivating small plots (average 0.6 hectares) in an area 25 kilometers west of Guatemala City. Its membership has grown from about 150 families in one town to close to 2,000 in eight towns. Established after the 1976 earthquake, its initial effort, with substantial Swiss government aid, involved reconstruction of members' houses destroyed by the earthquake. When reconstruction was complete, the Swiss (the "Swiss Group") provided technical assistance on a series of agricultural and social projects. The area was one that traditionally had produced vegetables for the urban market. In 1978, first the Swiss group, and later the cooperative began acting as an intermediary for production of cauliflower under contract to ALCOSA, a vegetable freezing plant exporting to the U.S. market. This seems to have been the first case where ALCOSA used an intermediary to obtain product. From early on, the cooperative warehouse was the buying station for ALCOSA, and the cooperative kept records of deliveries by individual members. It would receive one check from ALCOSA for each delivery and disburse it to the individual members.

By 1981, the cooperative was also producing snowpeas for another exporter and experimenting with other crops. Snowpeas became the major crop during the 1980s, accounting for over 75% of the value of product handled by the coop, and it began to export directly. During the 1980s, Cuatro Pinos continued to receive assistance from the Swiss Group, but also received some limited assistance from AID. Apart from a small amount of technical assistance, AID support seems to have consisted mainly of salary supplements for the coop manager. The cooperative had a highly competent manager that provided continuity over the coop's export expansion until he left in 1992 to form his own snowpea exporting firm.

Rincon Grande. This strawberry cooperative, located about 50 kilometers west of Guatemala City, received the most intensive assistance from AID. It was established in 1985 with about 50 members, who farmed about 9 acres, of which 2 acres was devoted to strawberries. Through CLUSA, AID provided early support to the cooperative, financing training for members, and paying the full salaries of the manager and accountant. Coop members had produced strawberries for the local market prior to its formation, but CLUSA assisted them in starting to export. This required rehabilitation of the strawberry beds, fertilization and better pest control. The first trial export was in late 1986, yielding a price twice that for local sales.

With CLUSA's assistance, the cooperative obtained a BANDESA loan in late 1987 of Q900,000 (about $325,000) to dramatically increase production, and to install drip irrigation and processing facilities. Because the loan exceeded the $100,000 limit for individual cooperatives established by AID for the Agribusiness Development Project (the limit was later raised), IDB funds were used. The IDB funds also had less demanding requirements on guarantees for the loan. With the BANDESA loan, the coop members pooled their land, and began farming 20 hectares in three fields as a single unit.

At the end of 1989, the final evaluation of the cooperative component of the Agribusiness Development Project concluded that Rincon Grande was the most successful result of that part of the project. The coop exported 300 tons of strawberries that year, and had total sales of $275,000 and profits of 495,000, and provided close to 300 person years of employment per year. Sales were projected to climb to 1,100 tons in 1990, yielding more than $1 million.

Nevertheless, management had been a continuing problem. The first manager had

problems with alcohol; his replacement embezzled funds; and a third manager had serious conflicts with the board of directors.[1] The cooperative then dispensed entirely with a manger, and the CLUSA technical advisor assumed that role for all practical purposes about the end of 1989. This advisor came to be seen by some members as dictatorial, controlling decisionmaking and imposing demands on the members. When he left in 1992, the members of the cooperative began to disband the joint production.

When interviewed for the evaluation team, the cooperative had virtually ceased to function. The value of product marketed through the cooperative in 1993 was only about $25,000, mostly consisting of snowpeas. The coop marketed only 2 tons of strawberries. Individual members were continuing to grow strawberries successfully, though some had shifted to snowpeas, but they marketed their product themselves.

Los Manzaneros. This apple cooperative in Chichicastenango was established in 1982 to market apples for 39 members. It received Q400,000 in loans (about 40% from AID funds from the Small Farmer Marketing Project. The credit financed two cold storage rooms and other equipment, and AID later donated a juice press. The Cooperative Development project financed salary supplements equal to about 60% of the salaries of the four permanent employees of the cooperative, and the CLUSA team also provided substantial technical assistance. The cooperative was never able to generate sufficient revenues to service its debt. It also had serious problems in managing product, losing 22% of its apples in storage in 1985 due to poor inventory control and problems with refrigeration. CLUSA aid helped reduce losses to around 1%. The 1988 evaluation concluded that the cooperative was technically bankrupt; even operating at full capacity (which it was not), it could not generate enough surplus to service its debt.

CLUSA assistance ended in 1988, when it concluded that the low quality of the product gave little prospect for successful exporting. When visited in late 1993, the cooperative was in a financially precarious position. It had obtained financing from a private financiera to stave off foreclosure by BANDESA on its overdue loans. Management appeared to be effective, but the cooperative seemed to have little future. The apples produced are of low grade, and the liberalization of Guatemala's import regime had opened the market to high-quality Chilean apples. The cooperative's limited niche was seasonal sales to low-income consumers.

Magdalena. This cooperative, located in Milpas Altas, Sacapaquez, about 25 kilometers west of Guatemala city, was established in 1981 to market snowpeas for an initial membership of 25. It built its own cooling plant in 1986, with a BANDESA loan of Q425,000 using AID funds from the Small Farmer Marketing Project. Subsequently, the Agribusiness Development Project subsidized about 80% of the salaries of coop management, financed visits to the U.S. by coop leaders, and provided other marketing assistance. The cooperative rejected further CLUSA assistance in 1988, complaining of interference in its operations. Membership grew steadily to about 100 families in 1986 to over 200 in 1989. The cooperative has also packed for another cooperative, Kato Ki. Kato Ki discontinued sales after the first season because Magdalena was not paying promptly. Kato Ki later resumed some sales through Magdalena, but exported also through a private processor.

In 1992-93, the cooperative processed 1.3 million pounds of vegetables, mainly snowpeas and sweetpeas, worth about $750,000. Production was affected by drought, and was expected to be 2 million pounds in 1993-94.

La Fragua. This cooperative is located in the Eastern lowlands of Zacapa, where farms are

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[1]DAI (1989), p. 10.

considerably larger than in the highlands. The cooperative's 150 members each farm at least several hectares, and most are larger. Established in 1970, the cooperative has undertaken a series of projects which have each ended in failure. The first effort was exporting cucumbers, which lost money. It then combined with six other cooperatives in Zacapa to finance a tomato processing plant to break the monopoly of the existing tomato paste producer. After operating with at least marginal success for several years of operation, the factory's losses and operating difficulties led to bankruptcy.

These early operations left the cooperative with considerable debt, and without an economic role that could generate income to service it. The cooperative has a small retail store, and has been involved in subsequent promotions of melons, first to United Fruit and then to a supermarket chain. Currently, okra is being produced for a freezing plant. In these crops, the members appear to deal directly with the buyer, with the cooperative playing only a limited facilitation role.

CARSVO. This is another Zacapa cooperative, with 52 members, with an average farm size of 6 hectares. The farmers grow tomatoes and cucumbers. The cooperative was established in 1960, and first exported in 1978. The cooperative was also a participant in the ill-fated tomato paste factory. It fared somewhat better in achieving modest levels of exports. The cooperative established a pickling works for cucumbers, and has been exporting pickles to the U.S. It values its assets (a packing shed, offices, and the pickling works) at about $1 million. The cooperative exported 20 containers of pickles in 1990, worth about $200,000, but exports fell to 5 containers in 1993.

According to the current cooperative leadership, the previous manager of the cooperative had controlled the export business, and had treated the cooperative as his personal enterprise. The manager had lived at one time in the United States, and was a large cucumber producer. He was ousted from the cooperative, which now has difficulty finding buyers and export channels. The previous manager has apparently offered to purchase the cooperative's product (it has numerous vats filled with pickles) at prices considered unfavorable by the present management, and they have refused to do business with him.

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