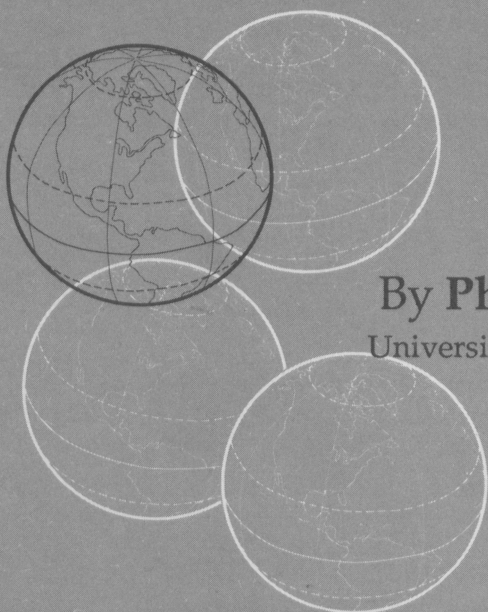


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Special Report

Agricultural Policies of

Guatemala



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Implications for Women in Agriculture

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Preface

This report examines the effects of national economic and agricultural policies on women in Guatemalan agriculture. The topic is significant. Agriculture is the most important sector of Guatemala's economy, and women comprise nearly half of the rural population and account for a substantial portion of the agricultural labor force. Both the policy makers of bilateral and multilateral assistance groups and those of national entities want agricultural development programs to yield maximum positive results. Advocates of women's rights are concerned that development policies do not economically or socially disadvantage rural women. Consequently, both the policy makers and the women's rights advocates thus have common concerns; by definition, economic development cannot proceed without increased equity among all groups within a society.

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The opinions, findings and conclusions expressed in this report are the author's and do not necessarily reflect those of the Agency for International Development, Robert R. Nathan Associates, Inc. or the University of Missouri.

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Executive Summary

This study assesses the impacts of national economic and agricultural policies on women in Guatemala's agricultural sector. The analysis focuses on the effects of macro-economic and sectoral policies on women's agricultural production, income and employment, trade and consumption — within the context of women's roles in traditional export crop production, small-farm food crop production and nontraditional horticultural production and processing.

Guatemala's agriculture is dualistic. The vast majority of farms are subsistence or near subsistence family operations. They coexist with a small minority of large commercial farms that produce primarily for the export market. Most of the small farms are located in the highlands. They produce basic foodgrains—corn, beans and wheat—under generally low levels of technology. Large commercial farms on the Pacific coastal plain use modern technology to produce cotton, sugarcane and foodgrains. Large units also produce most of the bananas and beef that is exported, while both large and small farmers are involved in coffee and cardamon (a spice) production. During the last decade or so, the small-farm production of non-traditional horticultural crops has grown rapidly. Much of this production is exported fresh or processed.

Since a high proportion of Guatemalan farms are small, family operated units, most rural women are involved in unremunerated domestic production and marketing activities. Women's direct production roles on small farms vary with ethnic tradition and other factors, but typically involve care of the household's livestock, foodgrains preservation and processing and limited field work. Women market most of the livestock, livestock products, vegetables and surplus foodgrains production.

On a seasonal basis, many women migrate with their families from the highlands to work as wage laborers in export crop production. Women work in the cultivation, weeding and picking of cotton, in the transplanting of coffee trees and picking of coffee beans and in the harvesting of cardamon.

Guatemala's agriculture has shifted away from foodgrain production to nontraditional, agro-industrial crops, and with the shift, women have become increasingly involved in producing and processing these crops. Women contribute over a third of the total field labor required to produce these crops and virtually all labor used in the processing of these crops for export.

The Guatemalan economy and agricultural sector are not beset with government interventions to the extent of many developing nations. The government plays a minor direct role in the agricultural economy, and the sector

operates relatively free of and is reasonably unencumbered by public policies, structures and market interventions. Many of the policies that affect agriculture are relatively benign. Due to lack of implementation or insufficient resources, many potentially positive or negative policies have little or no effect.

Macro-economic policies, especially monetary and international trade policies, have the greatest negative impact on agriculture. These policies have had an anti-export bias which has reduced employment in export-oriented agriculture and shifted the competitive advantage of domestic foodgrain production from small farms to commercial farms. However, most of the macro-economic policies that distorted Guatemala's agricultural resources and output markets are history. Furthermore, recent changes have reduced or eliminated most of their negative effects.

As a whole, sector policies have had quite limited effects on agriculture and on rural women. The level of public resources directed to sector development programs is minuscule—less than 3 percent of total government expenditures. Given the meager resources allocated to agriculture, the primary instrument used by the government to influence agricultural development is the control and guidance of international assistance. This has been a powerful tool. In this decade, the level of foreign assistance has exceeded all government support to all national agricultural development programs.

The government's general agricultural development strategy has emphasized the creation of rural employment by encouraging the production and processing of nontraditional horticultural products. Implemented via international assistance programs, this strategy has had a highly positive effect on rural employment, especially women's employment. Women employed in the production and processing of nontraditional crops have significantly contributed to increases in household income. With greater household income, expenditure patterns have changed positively, and caloric consumption and nutritional levels, especially for women and children, have improved.

Guatemala's economic and agricultural policies do not have effects uniquely specific to women. Clearly, some policies affect women more than other policies, but this is because proportionally more women are involved in some activities than in others. In Guatemala, women are disadvantaged or benefitted when policies affect any given subsector in which they are involved; they are proportionally more disadvantaged or benefitted if they make up a proportionally large share of that subsector.

Introduction

This study examines the impact of Guatemalan economic and agricultural policies upon the agricultural sector — with special attention to the effects of these policies on Guatemala's rural women. Of central concern are the effects of macro-economic, agricultural sector and subsector policies on rural women's agricultural production, income and employment, trade and consumption and, in turn, the significance of these effects on the agricultural and the general economies.

This is the first known inquiry into the impact of a nation's government policies on rural women. (Three other studies for Thailand, Malawi, and Yemen were conducted.) The topic has been partially and indirectly addressed by other authors, but never in a national context. Copies of the Thailand and Malawi studies are available from the Agency for International Development, Office for Women in Development, Washington, D.C.)

The selection of Guatemala as the first case study has no particular regional significance or *a priori* implications for anticipated findings. As a case study, the findings apply only to Guatemala. Guatemala cannot be considered representative as a nation or representative in terms of the array of policies or the effects of the policies on rural women.

The study is organized into three main sections. The first section briefly reviews Guatemala's agricultural setting, the second examines the role of women in the agricultural sector, and the third — the principal analysis section — describes and assesses policy impacts. The last section is a summary of key findings and conclusions.

The Agricultural Sector

Sector Overview

The agricultural sector in Guatemala plays a fundamental and critical role in the economic development of the country. Although it is declining in relative terms, it still contributes about 25 percent of the Gross Domestic Product (GDP) and provides employment for almost 60 percent of the economically active population. In addition, this sector generates two thirds of total foreign exchange earnings, most of which derives from coffee (Tables 1,4, and 7).

One of the most notable aspects of the agricultural sector is its dualistic nature: the vast majority of farms are semi- subsistence family operations. They coexist with a small minority of large commercial farms that produce primarily for the export market (Table 2). Subsistence farmers are land poor in the first place. In the face of rapid population growth, they are being confined to smaller and smaller parcels with each passing generation. Access to capital and agricultural inputs is readily available to the commercial sector. But small farmers must rely primarily on informal sources of credit and farm-produced inputs. The modern technology employed in the commercial sector contrasts sharply with the low capital techniques employed in the subsistence sector.

The sector is composed of three subsectors: basic food crops (11 percent of the agricultural GDP); traditional and nontraditional export crops (54 percent of agricultural GDP); and livestock (35 percent of GDP). The major traditional exports include coffee, cotton, bananas, sugar and beef. *Cardamom*, a spice, is a fairly recent addition to traditional exports. During the last decade or so, the government has encouraged agricultural diversification; consequently, the export of fresh and processed fruits, vegetables and flowers have grown considerably. These nontraditional exports now account for about 12 percent of the total agricultural export earnings.

Recent Performance of the Agricultural Sector

In the 1960s and 1970s the agricultural sector experienced rapid growth, primarily in export production, stimulated by strong world market prices and facilitated by low domestic inflation and real wage rates. The performance of the sector in the 1980s has been less satisfactory. Because the fall in world commodity

prices was not offset by exchange rate adjustments, production of export crops in 1985 had declined to the level of a decade earlier.

The fall in world coffee prices led to profit reductions for both the large plantations and the 40,000 or so small farmer producers. Already-low coffee yields fell because farmers postponed the replacement of existing trees with higher yielding and more disease resistant varieties.

Cotton production has been drastically cut back, with reductions in yields and area planted. This has had a negative effect on employment since cotton plantations have been a major employer of seasonal agricultural labor. Some of the land formerly planted to cotton is now used for mechanized production of maize, soybeans and grain sorghum.

Sugar production has also faced serious problems due to low prices and continual reductions in the quota access to the U.S. market. Since sugar plantations are also a major employer of seasonal labor, the decline in this industry further exacerbates unemployment caused by contraction in the cotton industry. Observers estimate that reduction in these two sectors has affected the incomes of up to 600,000 rural households.

The situation for other major export crops is mixed. Although Guatemala has been one of the world's major exporters of cardamom, an abundant supply on the world market has led to depressed prices and reduced income for producers. That includes some 40,000 small farmers. The banana market has expanded during the past 5 years; Guatemalan yields are relatively high and market prospects appear favorable. Production of nontraditional exports has also been expanding and this subsector now accounts for approximately 20 percent of the agricultural GDP and over 12 percent of all exports. Market prospects appear good and further growth is anticipated. The beef export sector has been generally stagnant, although exports increased significantly in 1985-86.

Production of staple food crops (maize [corn], beans, wheat, rice and grain sorghum), which had grown relatively slowly from 1975 to 1980, expanded more rapidly in the 1980s. Much of this growth is due to the development of mechanized production by large farms that previously produced cotton. Guatemala's agriculture, especially highland agriculture, has substantially shifted away from food production to agro-industrial crops. In 1950, food crops occupied nearly 60 percent of the cultivated land area. By 1979, this had declined to just over 37 percent (Table 3). Although current data are unavailable, observers now estimate that less than one third of the nation's cultivated area is devoted to basic food production.

The Role of Women in Agriculture

The role of women in Guatemala's agricultural sector is not apparent from national statistics. In 1986-87, women made up 24 percent of the economically active population, accounting for 41 percent of the nonagricultural labor force and only 7 percent of the rural labor force (Tables 4 and 5). The marked difference in labor force shares in agriculture is explained principally by the conceptual difficulties in defining women's labor on farms headed by men (the so called "invisible" labor force). In Guatemala, the difficulty is compounded because of the high proportion of subsistence or near subsistence farms; women in agriculture are predominantly involved in unremunerated domestic production and marketing activities.

According to the 1981 population census, women account for slightly over half of the rural population and, as reported by the 1979 agricultural census, head some 7 percent of the rural households. The total and the rural female populations are heavily skewed toward the young with 55 percent under age 20 in 1986-87.

Few studies specifically examine women's roles in Guatemalan agriculture. However, as noted by Ferguson, "many ethnographies [studies of socioeconomic systems and cultural heritage in technologically primitive societies] describe the activities and characteristics of the rural family and some include information on women's roles in food production and in the labor force (Ferguson, p. 7). This report draws heavily on these studies, focusing on women's roles and activities by the predominant types of Guatemalan agriculture, i.e., traditional export crops, nontraditional commercial horticultural crops, subsistence-based food production and employment in rural-based agro-industry.

Export Crop Agriculture

Hundreds of thousands of laborers migrate each year from the highlands to the Pacific coast and Piedmont regions to work on commercial plantations. These workers include men, women and children. Female workers usually migrate with their husbands and older children, leaving other members of their family to care for their homes, younger children and farms.

Plantation recruitment policies and tradition determine the range of agricultural activities involving female laborers. Women work in the cultivation, weeding and picking of cotton, in the transplanting of coffee trees and picking of coffee beans, in the harvesting of cardamom and in the weeding of soybeans.

Cutting sugar cane appears to be a “man’s activity” — as is the year-round harvesting of bananas. Female migrant workers are also employed as *mantenedoras* or *molenderas* (camp housekeepers and cooks).

Evidence exists that women are paid at rates equal to men — for equivalent work. Pay for harvesting operations is usually based on piece work — i.e., weights or volumes of product harvested. Common field work may be reimbursed on the basis of piece work, e.g., rows of crop weeded, but more typically is paid as a daily wage established by local labor market conditions. Daily salary rates for both men and women laborers vary with the season and bear little relationship to the agricultural minimum wage. During peak labor demand periods, daily rates easily exceed the minimum while in slack periods they fall below the official minimum wage level.

While peak labor requirements are primarily filled by migrant labor, an estimated 20 percent of the total labor force in the large scale export agricultural sector is permanent. Women residing in area households do field work in peak labor demand seasons, but they do not make up a notable part of the permanent year-round agricultural work force. In slack periods, women tend to domestic activities, household plots and small animals or work part time within the informal economy.

Subsistence Food Production Agriculture

The economic role of women in Guatemala’s subsistence agricultural sector is transparent. In subsistence agriculture total production of the household, be it for self-consumption or for the market, constitutes the economic output — and the “income” — of the family. Women, men, children, all able family members, contribute to that output. As noted by Brooks:

In Guatemala, the peasant family typically has a very small pool of capital and a very large pool of unskilled labor which can be converted to capital. The decision of the household, or any household member, to participate in any economic activity is usually a function of the internal relationship between capital and available labor...what every rural Guatemalan family is attempting to do is enrich the household resource base (capital and noncapital) in order to enhance the scale of family output. And, in reality, this is the role/work of the woman in rural Guatemala. It occupies all her waking time; it is a full-time job: to arrange capital and labor within the family in order to achieve the most favorable entry point onto the economic output curve. In short: to move the family as far as possible in the opposite direction from starvation” (p. 23).

Brooks continues, noting that “rural women” — who are “absurdly classified” as “economically inactive” by the census — “actually contribute to raising family output by four principal means”:

1) **Income conservation.** Much of a rural woman's daily effort is involved in conservation of household resources. Whereas a rural woman has almost no opportunities to earn cash, she devises numerous ways to avoid leakage of scarce household resources. These include home weaving, eating less, raising small animals, home gardening, and all domestic maintenance tasks. As a general rule, as the resource base of the family improves, a woman is likely to move out of the strict "income, conservation mode" to some means of direct, more productive income generation.

2) **Agricultural field work, paid and unpaid.** Most rural women do not particularly like agricultural field work, and given a choice, most find some other occupation. Nevertheless, women continue to work in the fields. This is especially true in highly labor-intensive vegetable growing areas, where a shortage of cheap labor is a major constraint to production.

3) **Artisan production, especially backstrap weaving.** Of the many women's artistic activities found in Guatemala, backstrap weaving is the most commonly practiced and most widely commercialized today. More than 100 Guatemalan *municipios* contain some women who weave. Based on estimated textile expenditures by tourists for 1976 and the shadow wage rate...backstrap weaving accounted for the equivalent of about 18,500 full-time jobs — or more realistically, supplemental income to about 45,000 women. The actual rate of return from this activity, however, is remarkably low...about 4.5 cents per hour. It is reasonable to assume that this rate approximately reflects the opportunity cost of labor for a skilled Indian woman artisan who is otherwise unequipped with marketable skills in the modern sector economy.

4) **Petty commerce, especially vegetable marketing.** When peasant families are unable to produce enough food to support themselves, women often turn to market trading...throughout the highlands of Guatemala a large share of poor rural women contribute small but important quantities of cash to family income by low volume sale and resale of agricultural commodities (p. 24, 25).

To summarize these four contributions, women may be fully employed with domestic responsibilities (such as child care, food preparation, weaving and laundering) and a range of agricultural activities (such as seed selection and preservation, post harvest processing, supplemental vegetable gardening and, especially, small livestock care). When opportunities are available, women in smaller households may work away from the farm for part of the year.

Women and children usually are responsible for the husbandry of the household's livestock. Livestock and livestock products produced by the household are typically marketed by women and generally not used for home consumption. Money from the sale of animals and their products is used to cover household subsistence expenses. The importance and relative contribution of these sales to household income in subsistence Guatemalan agriculture is not

known. Though not widely common, some women manage limited-scale commercial poultry or swine operations. Commercial family large- animal operations are the responsibility of men.

Variations in the roles of women within the subsistence economy are largely a function of ethnic tradition (which prescribes the division of labor along gender lines), family size (extended versus nuclear), wealth and type of crops grown. For example, among the Mams in the northwest highlands of Guatemala, women plant potatoes (a supplementary crop destined for sale in the local market). But they do not take part in the planting and cultivation of maize (the key food crop). In extended families, older women may relinquish all field work to the younger women.

Women's marketing activities raise small amounts of subsidiary income to cover household subsistence expenses. Household subsistence expenses include day-to-day food purchases such as salt, sugar and spices, as well as manufactured goods such as thread and candles. To the extent that the items sold on these trips are made or raised by women, the income from such activities is usually controlled by women and may remain separate from other monies, including those contributed by men toward household expenses. Men are generally responsible for providing money for clothes, education and major capital investments in the home. In some communities, women may also undertake longer marketing trips to sell the family's main cash crop at a terminal market. (Men usually control the purchase of farm inputs and will undertake the trip themselves should such purchases be required.)

Commercial Nontraditional Agriculture

Guatemala's agriculture has shifted away from foodgrain production to agro-industrial crops, and with the shift, women have become increasingly involved in providing the labor required to produce these crops. Virtually all production of commercial vegetable production for export and domestic markets is concentrated on small farms. Small farms appear to have a comparative advantage in commercial vegetable production. Not only do these farms have experience in vegetable cultivation, but above all they have labor available at relatively low opportunity cost. In fact, the availability of a household labor force and its composition appears to be a factor determining whether small farmers shift to vegetable production. As von Braun notes:

A more sizeable household labor force may enhance adoption of the labor-intensive crop...[but]...A higher share of women's labor may induce a different balance of preferences and bargaining positions in the household" (p 50).

Nontraditional crop production requires much more labor per land unit than foodgrains require — and even more than required by traditional vegetable production. As noted by von Braun:

Most labor in all crops is provided by men, but this varies by crop type and farm size class. Women are responsible for 9 percent of family labor in maize, 25 percent in traditional vegetables and 31 percent in snowpeas. Division of family labor between men, women, and children in the production of new export crops is not uniform across farm size. Men's share of total labor remains quite stable across farm size classes while women's share declines and children's share increases. With increasing farm size women's labor is relatively replaced by hired labor and child labor. [This is]...probably related to the increasing opportunity cost of women's labor in the field when the household and farm enterprise expands. Returns to female household labor including activities such as meal preparation for hired labor, etc., increase and lead to higher degrees of specialization within the farm-household. This still means that absolute levels of family labor input by both men and women may increase with increasing farm size (p. 76).

The study concludes that as a result of shifting to nontraditional crops, labor input in agriculture increases in the export crop producing farms by 45 percent (81 days per crop season). In the smallest farm size class virtually all the net increase in labor input comes from family labor (total labor input in these farms below 0.25 hectare more than doubles); and a substantial share of the increased family labor is from women. It is 44 percent of the increase in the two smallest farm size classes and 32 percent in the biggest farm size class (von Braun, p. 82- 84).

Clearly, this analysis confirms that the role of women in nontraditional crop production is very significantly different from their role in traditional agriculture. The extent to which work in nontraditional crop production substitutes for traditional household and production activities was not examined by the study and is unknown.

Rural-Based Agro-Industry

The growth of the rural-based agricultural processing industry parallels nontraditional crop production. The development of agro-industry is an extension of the structural change that has occurred in Guatemalan agriculture. As at the production level, this change has created significant net new employment in rural areas. However, in contrast to the impact at the production level, virtually all of the employment impacts of agro-industrialization have been on female employment.

Women unquestionably dominate the labor force of the agricultural processing industry. Men may be employed in initial stages of industrial food processing — hauling, washing, cleaning — but women make up almost 100 percent of the labor involved in line work and final packing. Research conducted on the effects of this employment indicate salary levels for women in processing and packing plant work equal those of urban male blue collar workers (Kusterer 1981). Given that few, if any other employment opportunities in highland Guatemala, pay wages, let alone even remotely equivalent salaries, the economic effect of these jobs has been extraordinary. (A number of other important impacts are discussed the text.) No phenomenon in rural Guatemala over the past several centuries has had a greater impact in influencing change in the role of agricultural women.

Agricultural Policies: Setting, Description and Assessment

The Policy Setting

Compared to most developing and developed industrial nations, the intervention of the central governmental in the Guatemalan economy is relatively limited. Guatemala's tax revenue/GDP ratio, for example, is one of the world's lowest. At 9 percent in 1988, it has ranged from 7.4 percent to 10.6 percent during this decade. Fewer than 10 nations in the world have lower tax ratios. While such ratios are usually characteristic of deeply impoverished nations or a manifestation of abysmally deficient tax administration, Guatemala's low ratio may more accurately reflect a national propensity for restricted public intervention in the private sector.

Certainly, the private sector is relatively free and reasonably unencumbered by the host of the government policies, structures and market interventions common to many developing nations. And, with the notable exceptions of macro-economic policies, especially (past) monetary and foreign exchange controls and (current) interest rate controls, the few direct or indirect government interventions in the market economy tend to be either intermittent or economically benign.

Except for the publicly owned utilities, Guatemala has no all-powerful government monopolies, trading companies or parastatals that directly compete with and notably restrict private sector enterprises. (*Parastatals* are near public entities similar to the Tennessee Valley Authority in the United States.) The only nonutility public entities with some degree of monopoly authority are AVIATECA, the national aviation company, FLOAMERICA, the national merchant marine, and INDECA, the national agricultural marketing institute. AVIATECA reserves certain entitlements in transportation of people and goods not permitted foreign carriers. FLOAMERICA, which has one ship, has government-granted monopoly rights in transportation of sea freight on some routes to and from national ports. INDECA has authority to set minimum producer prices for basic food grains and a few other agricultural commodities, but in practice its role in the market is greatly constrained by a lack of financial resources.

Taxes on international trade — an important revenue source to many developing nations — make up only 20 to 25 percent of the government's total revenues (Table 6 and 7). Export taxes contribute substantially less to revenues

than import taxes. Many goods are exempt from import taxes. For taxed imports, nominal tariff levels tend to be high, but net effective rates tend to be low due to exemptions. Effective rates average perhaps 3-5 percent for intermediate and capital goods and 10-15 percent for goods that compete directly with domestically produced substitutes (Table 8).

High export taxes have not been a constant in the Guatemalan economy. After several years of low, essentially token tax rates (except for coffee), export taxes were temporarily imposed on traditional agricultural exports in 1986. The government's goal was to capture revenues from high world coffee prices and to avert a government fiscal crisis. These taxes will be phased out by 1992.

Although some relatively brief periods of heavy public intervention occurred, Guatemala's international trade does not presently operate under extensive quantitative restrictions. The few import prohibitions in effect apply largely to agricultural commodities and are justified primarily on the basis of sanitary or legal considerations (Appendix 2). Two exceptions are wheat and wheat flour. Wheat imports come in under a one percent nominal tariff, but only when deemed necessary to cover a domestic production deficit. Flour is seldom imported. Export prohibitions include a limited number of economically unimportant items, i.e., green turtles, dead or alive quetzales (the national bird), etc.

A long and frequently changing list of commodities requires import or export licenses (Appendix 2). The license requirements can be burdensome, but apparently do not markedly restrict commerce. In practice, both import and export licenses appear to be granted for most products except for commodities deemed critical to national food security.

The government periodically imposes retail price ceilings. Milk, beans, beef, eggs, flour, sugar and other basic commodities common to the average urban consumer market basket are most often subject to control. The array of products controlled and the degree of enforcement vary. Under the pressure of rapid inflation and the volatile exchange rates of late 1985 and early 1986, over 400 different goods were subject to retail price controls, compared to only 17 in 1984. The list was reduced to eight goods in 1987 and later increased to 17 in 1988. While the actual effect of ceiling prices is debated, the 1985-86 action resulted in some observed shortages, which in turn led to reported widespread disregard of the controls.

Although the economic effect of many government policies tends to be relatively benign, general monetary policy and two specific policy measures — foreign exchange and interest rate controls — have had highly perverse impacts on the economy. Given Guatemala's position as a small export-based economy, the dominance and power of monetary policy and exchange controls coupled with inflexible interest rates have eclipsed and virtually obscured the effects of other policies.

Government and Agriculture

The government plays a minor direct role in the agricultural economy. Government actions unquestionably affect the sector in very significant ways, but almost exclusively through macro-economic impacts. The dearth of policies and resources directed specifically to agriculture is curious given the sector's vital role in the economy. Perhaps this is yet another manifestation of the (hypothesized) national propensity for restricted public intervention in the private sector. Or perhaps public resources are so inadequate that most direct policy interventions are simply precluded.

Since 1980, public outlays directed to the agricultural sector have averaged 16 percent of total government expenditures. Of the total amount, over 45 percent were central government transfers to cover BANDESA operating costs and loan losses (loan losses alone accounted for more than 80 percent of BANDESA transfers). INDECA price support operations absorbed another 24 percent of expenditures (Table 9). This left less than a third of the budget available for Ministry of Agriculture operational expenses and investments. In 1987, a third of this amount was earmarked for investments, two thirds for operations. Eighty percent of the investment budget and 10 percent of the operational budget were not spent. To conclude, other than credit and price support programs, all agricultural public sector programs combined absorbed less than 3 percent of the central government's total expenditures and accounted for a fraction of one percent of the national GDP.

This low level of public resources — regardless of how it is allocated — simply cannot notably influence the agricultural economy. At best, the ministry's budget is sufficient to maintain low level bureaucratic presence, staff rudimentary extension and applied investigation programs, but little else. Essential public regulatory activities such as the policing and enforcement of market rules, sanitary standards, timber compliances and the like are not and cannot be effectively carried out. Domestically financed Ministry of Agriculture development programs are all but precluded.

Sector Goals and Strategies

Given the meager resources allocated to agriculture, the primary instrument (other than macro-economic policy) used by the government to influence agricultural development is the control and guidance of international assistance. This is by no means a weak or impotent instrument. The annualized level of bilateral and multilateral assistance to Guatemalan agriculture easily exceeds the Ministry of Agriculture's total annual operating budget.

One broad means by which the government manipulates this instrument is through the articulation of sector goals, strategies and “actions.” For example, the government’s recent white paper on agriculture reviewed the sector’s condition, examined the future outlook and identified specific development goals. Measures (“acciones”) to achieve the specified goals were noted, but expressed in highly general terms. While the statement calls for no specific policy interventions, it establishes the framework for externally financed sector development programs. This framework thus guides sector development strategy and influences the choice and content of policy measures required to implement strategies to achieve sector goals. Current government goals are to:

- Assure food security via increased agricultural production and productivity via diversification and technology.
- Create new rural employment and redistribute incomes to the poorest (small farmer) rural sectors.
- Stimulate development of small and medium scale agro-industry production for the domestic and international markets.
- Enhance the rational utilization of natural resources through increased irrigation, improved soil conservation, reforestation and watershed and forest management.

The government and international donors collaborate in achieving these generic sector objectives by targeting resources to priority programs. These development strategies and the government policies used to achieve these goals is assessed in the following section.

Scope and Limitations of Analysis

The following section describes and assesses recent and current macro-economic, sector and, when relevant, subsectoral government policies. The theoretical basis for the analysis is neoclassical economics. The analysis concentrates on effects of policies on women’s agricultural production, farm and off-farm income and employment, trade and consumption within the context of sectoral or, when relevant, subsectoral impacts.

Time and resource constraints precluded original data collection and rigorous research. The descriptions and analyses are thus brief and draw heavily from secondary sources. Primary and major secondary impacts of policy interventions are the focus. Available information and data do not permit assessment of tertiary impacts even though these may be as important — perhaps in some cases more important — than the more evident primary and secondary effects. Specifically in this regard, the analysis does not examine the nature, magnitude

and distribution of policy impacts within the family or household. Although a valid and useful area of inquiry, available data do not support the testing of hypotheses which might be advanced on this subject.

Macro-Economic Policies

The Junta Monetaria (Monetary Council) is the highest decision-making body for macro-economic policies implemented by the Central Bank (Bank of Guatemala). This includes all matters relating to monetary, exchange and credit policies. Fiscal policy also falls within the authority of the Junta with policy administration the responsibility of the Ministry of Finance.

Monetary Policy

The Junta used these direct monetary policy instruments — reserve requirements regulations, open market operations and rediscount operations with both internal and external funds. Reserve requirements on current and time bank deposits are seldom changed, while open market and rediscount operations are used with considerable frequency and vigor.

The government used open market operations to manage short-term liquidity in the banking system through the Central Bank's purchase/sale of monetary stabilization bonds and to finance public debt through treasury bonds sales. The latter objective predominates. Since 1979 Central Bank credit has rapidly expanded to finance fiscal deficits. Given that the deficits derive from the government's current expenditures with no compensatory shift in aggregate supply, increased public debt has fueled inflation.

Rediscount operations with internal funds are used for both monetary control and Bank of Guatemala credit policy, the latter with an unconventional twist — the Bank has applied varying rediscount rates to loans for different economic activities. In 1983-84, for example, basic grains and soybean production loans were rediscounted at a minimum of 4 percent, housing construction loans at 7 percent and all other loans at 9 percent. The rates were unified at 9 percent in 1985.

Rediscount operations with external funds are a powerful policy instrument. Sales of foreign currency through "trust funds" are used to reduce the money supply and thus inflationary pressures, to capture resources for domestic development programs and to finance imports. The external funds used in rediscount operations derive from concessionary loans by bilateral and multilateral donors. Lines of credit for specific imports are established by mutual agreement between the government and lender.

Monetary policy appears to be directed predominantly to the control of the money supply. As an almost unrelated policy, commercial bank interest rates are controlled via ceilings. From the standpoint of the private sector, monetary policy influences access to commercial bank credit rather than the price of credit. Interest rates are fixed and to the extent they are pegged below market conditions, credit must be and is rationed. (See credit policy discussion below.)

Apart from the effect of ceilings on interest rates (see credit policy discussion), monetary policy affects the agricultural sector in four significant ways.

First, inflation, stemming largely from deficit financing, has caused agricultural input costs to increase faster than output prices. This has cut profitability of crops such as cotton and coffee, which rely heavily on purchased inputs. During this decade, cotton area and yield fell sharply, while coffee, a perennial, suffered yield losses. Much of the land formerly devoted to cotton is now planted to basic grain crops or soybeans, which require lower input levels. As a result, the nation's basic grain output has not changed appreciably with inflation, but has tended to shift from highland small farms to commercial operations on the Pacific coast.

Second, nearly half of all internal fund rediscount operations involve loans to agriculture. A small number of influential cotton producers have long had access to these credits. Alone, cotton production credit has traditionally accounted for some 80 percent of all rediscounted agricultural loans. With declining cotton plantings, many former cotton producers now use the credit for basic grain production. Since small farm producers rarely meet conditions for these loans (see credit discussion below) traditional grain producing areas have not benefitted from internal fund rediscount operations. Access to this credit by commercial operations has further contributed to the shift of basic grain production to different locations.

Third, virtually all external ("trust fund") rediscount operations are used to finance imports. The bulk of the financed imports are industrial inputs and machinery, including inputs and capital goods for agro-industry. Data are unavailable to determine the extent to which agro-industry and agricultural production inputs benefit from these operations. Although Jiron, et.al., contend that "agriculture has not benefitted directly from these operations," it is unclear whether the statement refers to primary production or to the entire agriculture economy. Certainly, available data clearly show that imports financed through at least two of the seven "trust funds" include considerable imports of intermediate and capital goods for agricultural product processing. Thus producers of nontraditional export crops, primarily small farmers, very directly benefit from these targeted external rediscount operations.

Fourth, all monetary policy instruments employed by the government directly or indirectly influence both bank and informal credit cost, terms and

availability. Agriculture requires both production and investment credit. The direction and magnitude of monetary policy dictates not only immediate effects but also long term sector and subsector impacts. At the beginning of this decade the government pursued sharply expansionary policies. From 1982 through late 1984 monetary measures severely suppressed the growth in the money supply. In late 1984 money supply again exploded and was not contained until 1986. Aside from the obvious short-term effects of credit expansion or restriction, this uncertainty of policy discriminated heavily against agriculture through the virtual elimination of long-term investment credit.

Impact on Women in Agriculture: The impact of monetary policies on women in agriculture is mixed. On a net basis there may be a somewhat positive tilt, but data are not readily available to support or to refute this contention. The primary negative effect derives from loss of employment in traditional export crops. The major positive effect comes from enhanced employment in nontraditional agricultural export production and processing.

The reduction in production of traditional export crops, especially cotton — in part a result of perverse monetary policy — has had a very significant income and employment impact on women. This has affected migrant and farm-resident women laborers who are employed directly in production activities and women who derive their income indirectly from activities associated with producing export crops.

Cotton, in the late 1970s and early 1980s, occupied an average of 110,000 hectares of Pacific coast land. By mid-decade the baverage harvested area dropped to 60,000 hectares and in 1986-87 reached a low of 31,000 hectares (Table 10). Cotton production requires large labor inputs even when produced under relatively modern technology. While Guatemalan production systems vary somewhat from farm to farm, a conservative estimate puts average labor requirements at 100 person days per hectare. Women comprise an estimated two fifths of the labor force directly employed in cotton production. Estimated from the average 1979-81 peak period to the low year 1986/87, the total number of days of the women employed in cotton production fell from about 4.4 million to 1.2 million days, a 70 percent drop. This represents over 10,500 person years of labor or over 4 percent of the total estimated employed female active labor force in 1979. Although much of the land formerly devoted to cotton now produces maize, grain sorghum, edible beans and soybeans, these crops are highly mechanized and require relatively little labor.

The readily discernible income and employment impact of other traditional export crops is not as pronounced as in the case of cotton. Coffee requires an average of about 50 percent more labor per hectare than cotton. Over the past decade, coffee production fluctuated around a relatively constant mean output level. The extent to which monetary policy discouraged additional coffee

plantings is a matter of speculation. A reasonable hypothesis is that substantial additional employment opportunities were not realized due to investment disincentives. Direct female employment in sugarcane and banana production is limited, and, while cardamom production utilizes high levels of female labor, output levels have changed little over the past decade.

The government's emphasis on agro-industrialization has been highly conducive to increased employment in the production and processing of nontraditional crops. The emphasis had been reflected in part by the government's rediscounting of external funds to import agro-industry intermediate and capital goods. While the magnitude of increased women labor demand cannot be quantified, observers know that women constitute a relatively high proportion of net new labor employed in nontraditional, export-oriented agricultural production and virtually all additional labor employed in the processing of these commodities. Moreover, observers know that both production and processing have sharply expanded during the past decade. The involvement of women in the production and processing of the crops has resulted in their making very notable contributions to household income. Clearly, the income and employment impacts for women have been very significant.

An additional impact of monetary policy merits brief discussion. The substitution of basic grain production for cotton in the Pacific lowlands has affected the structure and to some extent the income distribution of Guatemalan agriculture and, most likely has had some considerable influence on the national diet.

Small highlands producers reduce area and perhaps production of basic grains when they shift into nontraditional horticultural enterprises (see discussion of food production impacts under labor creation policies below). These crops are immensely more profitable than maize, beans or wheat (Table 12). Income levels of small farms soar when they shift from basic grain production to horticultural crops. With cash available to purchase grains in the market, subsistence production is no longer a critical life and death matter; a family production deficit in basic food grains is no tragedy. The expansion of commercial production of basic grains in the Pacific lowlands has permitted small farmers in the highlands to shift to more profitable horticultural crops in part because foodgrains are available in the marketplace at reasonable cost. The increased horticultural production has been both exported and sold in domestic markets. While no data are available to indicate national dietary trends, long-term observers of the country note a pronounced increase in fruit and vegetable consumption in urban and rural areas.

Credit Policy

In the general macro-economic policy setting, Guatemalan credit policy must be considered a subset of monetary policy. For this analysis, however, the discussion is separate because a key policy element — the control of interest rates — is virtually independent of monetary policy. While this element is not entirely unique to Guatemala, the policy element and its impacts are sufficiently distinctive to merit a separate discussion.

As a subset of monetary policy, credit policy mirrors monetary policy objectives. However, in contrast to conventional monetary policy, interest rates in the short run are not permitted to fluctuate. As noted previously, credit is expanded or contracted via the opening or closing of access to credit rather than via the price of credit. Monetary policy is thus largely the rationing and targeting of credit.

Maximum interest rates charged and paid by the banking system are established by the Junta Monetaria and are infrequently changed. Between 1979 and 1988, for example, rates were changed only four or five times. The Junta does not formally control interest rate ceilings for institutional or informal lenders outside of the commercial banking system if the loaned funds are “internal resources.” These interest rates reflect market conditions.

From 1979 until late 1986 controlled real interest rates were negative — at times well below the rate of inflation. Without exception, all the distortions and problems cited in the rich literature regarding the financial markets of developing nations transpired: savings collapsed, capital took flight, international reserves dropped, GDP fell, banking institutions decapitalized, the most credit-worthy and wealthy were paid (subsidized) to accept credit and the most credit-needy and poor were excluded from consideration. The scenario was classic Adams textbook — and totally predictable.

For agriculture, controlled interest rates resulted in subsidies channeled almost exclusively to producers of coffee, cotton and sugarcane. Producers of basic grains and nontraditional diversified crops reaped little benefit. The distribution of credit rather closely paralleled that of land. That the distribution of agricultural credit has been highly unequal and concentrated is shown by data from a 1984 agricultural credit analysis:

In 1983, 2.4% of borrowers had loans in excess of Q50,000, which corresponded to 75.7% of the amount lent in that year. In contrast, some 55.5% of the borrowers received loans up to Q1,000 in size, which corresponded to 3.3% of the year's credit (Ladman, p. 17).

Impact on Women in Agriculture: The direct impacts of credit policies on women in agriculture parallel the impacts on the overall sector. None of the activities engaging women yield specific gender effects of credit policy. Women are engaged in small farm agriculture proportionally more than in commercial

export-oriented agriculture. But small farm agriculture has had far less access to credit than commercial agriculture and thus women are among the most disadvantaged in terms of access to credit. Too, women are among the poorest of the small farm agricultural economy, and, for all practical purposes, the poor obtain no institutionalized credit. Thus most women do not obtain credit — not because they are women, but because they are poor. However, if women, like men, are highly credit-worthy, institutional credit appears to be available — subject to general policy objectives — without discrimination.

The indirect impacts of credit policy on women are quite favorable. Through Central Bank rediscounting of external funds that are established in collaboration with international donors, credit has been specifically targeted to export-oriented agro-industry — primarily to the industries processing nontraditional crops. (See monetary policy discussion.) As noted elsewhere, women play an important role in the production and processing of these crops; therefore, they have benefited notably from this policy.

Fiscal Policy

In contrast to many small export-oriented nations, the direct impact of fiscal policy measures on Guatemalan agriculture is very limited. At the peak taxation levels of international trade in the mid 1970s, export and import taxes combined made up less than 24 percent of government revenues. Moreover, export taxes have been less important than import taxes in government revenue. With about 90 percent of all export taxes deriving from coffee — a commodity exported under international quota agreements — Guatemala does not suffer from the strong economic disincentives typical of the export tax regimes of many developing nations.

Nontraditional exports are taxed at a flat 4 percent rate on FOB value. Under current legislation, export taxes are levied on the traditional export crops — coffee, sugar, cotton, beef, bananas and cardamom — only if the FOB price exceeds a given quetzal (Q2.70 to \$1.00.) level. At a designated threshold price the tax is assessed at a given percentage rate and (with some exceptions) increases on a percentage basis (Table 11). The tax operates very much like the pre-1987 U.S. federal income tax rate system: no tax is paid below a given threshold; above that level, the tax is progressive. This system was imposed as a temporary revenue-raising measure in 1986. The original legislation included a phase-out schedule of 3 percent per month. By 1992, the rate will reach zero.

Import taxes are nominally quite high, but net effective rates are low. According to Bank of Guatemala and World Bank estimates, for all imports in the early 1980s, the weighted average total ad valorem rate was 14.7 percent; the net effective tariff rate was 6.8 percent (Table 8). Over 54 percent of imports were exempt from tariffs. Complete current nominal and net tariff data are not

available, but from available information, it appears both rates may now be even lower than at the beginning of the decade.

Indirect taxes such as value added taxes (VAT) and stamp taxes are the single largest source of government revenues. No direct taxes are levied on basic foodstuffs. Direct taxes account for less than 15 percent of total government revenues, and, income and property taxes are virtually insignificant (Table 7).

Guatemalan fiscal policy cannot be faulted for highly negative impacts on agricultural production incentives. At prevailing rates, taxes on agricultural output, resources and wealth — fiscal policy measures have minor — essentially negligible — effects on production and marketing incentives. If fiscal policies were to be faulted, it would be because aggregate taxation levels are too low to sustain even minimal necessary public services. In this regard, agriculture suffers seriously. It would perhaps be easy to claim women in agriculture bear the brunt of poor and inadequate public services; in fact the level and the quality of services are so deficient that even the effect of a deliberate policy of gender discrimination would be of little or no consequence.

International Trade Policy

In small trade-oriented nations like Guatemala, the control and influence of trade, foreign exchange, monetary and fiscal policies are inseparably interlinked. Any notable policy-induced distortion in one element inevitably seems to bring about even greater distortions in another; policy “quick fixes” often re-emerge as massive breaks, if not at the repair point, then somewhere else.

Such is the case with Guatemalan international trade policy. Price inflation in the Guatemalan economy in this decade has been largely a function of government deficit financing fueled by highly expansionary monetary policy. Rather than attacking the root cause of inflation, the symptoms were treated through trade policy measures. Trade policy — with the objective of rationing foreign exchange — was used in an attempt to compensate for the errors and failures of monetary and fiscal policies. The effect of the treatment appears to have been worse than the ailment.

Import quotas and exchange rate controls were the two predominate policy measures used to ration foreign exchange. Both measures were subject to varying degrees and types of control depending on the economic circumstances. Little direct government intervention had occurred in international commerce until mounting deficits accompanied by rising inflation rates in the mid to late 1970s and early 1980s began to put pressure on the quetzal. In 1982, quotas were imposed on a large number of commonly imported goods in an attempt to maintain the quetzal at parity with the dollar and to ration the diminishing quantity of foreign exchange. Based on the import history of the previous three years, the quotas effectively reduced the supply elasticity of these goods to zero.

With restricted import supplies and domestic industry unable to produce substitutes, speculation set in and prices soared.

Pressure on the quetzal continued to build. By late 1984, with the parallel exchange rate moving toward 4:1, import quotas were abolished and replaced with a complex multiple exchange rate system. This new foreign exchange rationing scheme was frequently modified over the following months. In brief, it incorporated a legal parallel rate, auction markets for certain priority imports and an official exchange rate at parity with the dollar. In June 1986, the regime was simplified by the adoption of a single regulated official rate of Q2.50 per dollar while allowing the parallel rate to float. Over the past two years the gap between the official and floating rate closed to less than 5 percent, and in late June 1988 the government established a single unified rate of Q2.70:\$1.00. This rate was pegged slightly above the parallel rate and consequently, as of this writing, exchange rate distortions appear to be eliminated.

The economic effects of import quotas and exchange rate controls were pervasively perverse. Direct or indirect impacts of the policy reverberated through every sector of the economy. The principal effect was a strong anti-export bias.

Agriculture, with its extensive export orientation, was profoundly affected. Though most agricultural inputs were imported at the favorable official 1:1 rate, import quotas and long delays in obtaining access to foreign exchange restricted supplies. Black markets and contraband trade quickly emerged and prices soared for fertilizers, plant protectants, farm chemicals, animal vaccines and other imported inputs. The immediate effects were sharp declines in the use of these inputs, a drop in crop yields and livestock productivity and increases in output prices. Less obvious were impacts of factor price distortions. Because of the implicit capital import subsidies via currency overvaluation, the relative price relationships of capital and labor shifted. Labor became relatively more expensive and capital relative less expensive. Artificially cheap machinery imports thus favored producer adoption of capital intensive production processes at the expense of labor.

The extent to which subsectors of agriculture were affected by these policies depended on the degree of market orientation. Due to limited input/output market orientation, highland subsistence producers were far less affected than small scale nontraditional export crop or Pacific coast cotton producers. The latter two producer groups saw their export market prices collapse while input prices skyrocketed.

Impact on Women in Agriculture: The anti-export effects of trade policies on women during the 1980-88 period appear to parallel those of agriculture in general. As laborers in traditional export crop production, employment opportunities for women and men dwindled as profitability and production of these crops fell and producers shifted to more capital intensive systems. Women

laborers apparently did not bear a greater job loss than men. Available literature cites no evidence that women are necessarily the last hired and the first fired in export crop field work. For some work, women are preferred over men. In other types of work, women may receive less income for a day of agricultural field work, but this is a function of the “piecework” nature of the work rather than wage discrimination.

As producers of nontraditional export crops, women — like all producers — experienced rapidly rising input costs and lower profitability and output prices. However, given that the labor involvement of women is relatively greater in these enterprises than in traditional agricultural crops, women were comparatively more affected. The same goes for women employed in the processing of these crops. Women were particularly affected because food processing laborers are predominately female. While no indications exist of women producers or processing workers being laid off because of the policies, employment opportunities simply expanded at a rate far slower than would have been the case under a less perverse policy. Thus, the greatest effect on women both as producers and as processing laborers is the impact of lost opportunities. This effect is not easily estimated; the impact of the employment that was not created is difficult to quantify.

With one exception, women engaged in traditional subsistence agriculture were relatively unaffected by trade policies. By definition, subsistence agriculture has limited links to the market economy, and price movements in the market economy should not notably impact welfare. In Guatemala, however, rural women’s artisan work — primarily textile weaving — is an important source of cash income. Most of the raw materials such as cotton thread are imported. Not all of these materials were granted the favorable import quota or exchange rates provided many raw material imports. Hence, artisan output was economically disadvantaged relative to competing industrial goods.

The aggregate effects of the severely perverse trade policies on the economy, on agriculture and on women cannot be easily quantified. Certainly the aggregate impact was enormously negative. Agriculture suffered to a greater degree than other sectors, and within the sector, export agriculture was affected more than subsistence agriculture. More women are employed in agriculture than any other sector, and within agriculture, women working in export-oriented enterprises comprise a comparatively large proportion of the wage-labor force. Therefore, women have borne a comparatively large share of the onus of these policies.

Commercial Regulation Policies

Direct government interventions in national commerce are limited. Two exceptions that impact agricultural trade concern the small publicly owned national airline (AVIATECA) and the merchant marine (FLOMERICA).

AVIATECA has preferential treatment in certain airport charges and landing privileges. As a result, AVIATECA has the equivalent of a government granted monopoly in the air transport of nontraditional agricultural exports to the U.S. market. FLORAMERICA has a similar government-granted monopoly position in sea shipments of agricultural products to the U.S. These restrictions do not apply to other international markets.

The extent to which exports are restricted by these preferences is not known. That the pricing of these transportation services may be affecting exports is suggested by the fact that this year, for the first time, fresh vegetable exports were transported overland by refrigerated trucks to the U.S. through Mexico. The impacts of commercial regulation policies on agriculture and on rural women is an issue that merits additional research.

Sector Policies

This section describes recent and current agricultural sector policies and assesses their impacts on women with special attention to women's agricultural production, farm and off-farm income and employment, trade activities and consumption.

A number of policy elements often encountered in developing nations are absent in Guatemala. The nation either does not have some common explicit (or even implicit) policies or the implementation of existing policy legislation is absent or highly deficient. Many of the government's sector "policies" more resemble articulations of sector goals than implemented policy measures. While the government has clearly identified sector goals, development strategies, and policy "actions," the latter are specified not as policy measures to be carried out via policy instruments but as general paths and directions for policy.

The impacts of many policies are neutral, and certainly gender neutral, because there is no content. In other cases policies may have some content, but the impacts are highly limited. To examine the inconsequential and trivial effects on women — or any other group — would be pointless. For this reason, this section passes quickly over many policy areas and focuses discussion on a fairly limited set of the most relevant and important policies that appear to have the greatest impacts — real or potential — on agriculture and women in agriculture.

Taxation Policies

Implemented sector fiscal policies are of three different types: export taxes, import taxes and fiscal incentives for investment. The current export taxes were temporarily imposed in May 1986. The legislation invoking the taxes included a 3 percent per month phase out provision with expiration by 1992.

Given the basis on which taxes are levied, the onus of export taxes under current legislation is not great. The magnitude of tax levied depends on FOB price. With the exception of coffee, this has resulted in minimal levels of export taxation.

Taxes on coffee exports have accounted for an average of over 90 percent of all export taxes (Table 7). Coffee is exported under quotas through international agreement, and with the few exceptions of exceptionally poor crop years, the national quota has been readily filled.

Coffee export taxes have clearly confiscated wealth, but because coffee profits appear to have remained positive, the effects of wealth confiscation are likely not perverse. To suggest that a part of the government-taken coffee wealth is confiscated from laborers is incorrect; conditions of the agricultural labor market rather than the coffee market govern wages. The taxed wealth is essentially Ricardian rent, and thus the tax itself approximates the theoretically ideal tax. It is unfortunate that the nation has abandoned this tax.

Taxes collected on other traditional exports are quite insignificant in terms of both the revenue raised and their production impacts. All noncoffee export taxes account for less than 10 percent of export tax revenues and a small fraction of production value. Any production disincentive impact is inconsequential.

Producers or processors do not regard the tax on nontraditional exports as a production disincentive because it makes up such a small fraction of total costs. Typically, international transportation and marketing costs far exceed all domestic production and marketing costs. The 4 percent tax on FOB value of these products is therefore not indicative of the much lower percentage levy based on total value of the product when placed in international market ports.

Fiscal incentives have been provided to rubber, banana, poultry, swine and milk production, but were repealed in 1987. These incentives were granted under "*leyes de fomento*" (development stimulation laws) rather than as a part of a sector fiscal policy package. The incentives were numerous and varied. Included were import tax exemptions for intermediate and capital inputs, tax holidays or exemptions on property, income and miscellaneous taxes, etc.

In principle, these incentives stimulated investment in the production of goods in subsectors deemed to be of high priority by the government. Yet little evidence supports the economic need for such incentives. The extent to which investment has been stimulated is unknown. Given the very ambiguous relationship of the targeted industries to the government's sector priorities, these incentives appear to be little more than special interest legislation provided for a few commercial production operations.

It seems highly unlikely that small farm agriculture and women in agriculture have benefitted directly or indirectly from these incentives. To the extent that the incentives have subsidized investment in commercial agricultural

output of pigs, chickens and eggs — products that large numbers of women in subsistence agriculture produce and market — women may have been disadvantaged by the incentives.

Foreign Trade Policies

In Guatemala the foreign trade policies that affect the agricultural sector are driven by a singular underlying objective: national food security. The national food security goals are characterized by the ubiquitous willingness of the nation to isolate itself from international competition in the production of food. Food as tacitly defined for national food security purposes is maize, beans, wheat and rice. Historically, national food security goals have resulted in a transfer of resources from consumers to producers. Consumers have borne the burden of a technically inefficient agriculture. This has been and will likely continue to be an acceptable social cost.

The following assessment of Guatemala's foreign trade policies in agricultural does not explicitly consider the political economy of national food security. These concerns are easily disregarded because the current social costs of maintaining the policy are the lowest in recent history. Under different international or domestic conditions, the analysis might be quite different.

Describing and assessing the wide array of sector policies, regulations and controls that relate to the foreign trade of agricultural products, production and capital inputs is beyond the scope of this report. Virtually every agricultural commodity and agricultural input has — at least on paper — highly specific restrictions of one sort or another in addition to restrictions of a generic nature (Appendix 2). Various ministries or ministerial entities are involved in these restrictions. Besides, some products require the equivalent of duplicate licenses, permits or related documentation from multiple governmental entities. A product-by-product review and impact assessment would be a major research task.

To summarize briefly, sector trade policies are implemented primarily via import and export authority and/or licenses. In general, licenses are obtained through the Ministry of Economy and authorities through the Ministry of Agriculture, one of its entities such as INDECA and/or an officially recognized private producer association. No product is typical, and the bureaucratic labyrinth to obtain official import or export permissions is not standardized.

For this analysis, the essential question is to what extent these various policies and regulations actually affect the sector, subsectors and women in agriculture. This is best answered by determining where these policies appear to create the greatest economic distortions. The distortion magnitude is measured by the net differences in domestic and international prices weighted by the commodity's importance in the agricultural economy.

The Jiron study meets the analysis criterion and is an appropriate and useful guide in responding to the central question. The study examined domestic versus international price differences for five key commodities — maize, beans, rice, wheat and grain sorghum during a period from 1970 to 1985. The study concluded that maize, wheat and grain sorghum generally had a positive and relatively high level of protection until about 1984-85, while rice and beans were generally negatively protected throughout the study period. Protection levels for all five commodities shifted after 1984-85 as the government began to devalue the quetzal. With the devaluation of the quetzal, maize, wheat and grain sorghum protection levels became negative, and the already negative protection of rice and beans further widened.

Since the Jiron study, the devaluation of the quetzal has continued, and the currency is now at market equilibrium with the dollar. Since 1986, internal prices for these five commodities have been at or very close to international levels.

Foodgrains are far more than just representative proxies in this analysis, and no evidence exists of significant distortions in current Guatemalan foodgrain prices due to trade policy. No analogous proxy exists for imported agricultural inputs, but, as shown previously, imports — including agricultural production and capital goods — generally face very low effective tariff rates. Perhaps some conceivable distortions could, in principal, arise from export prohibitions on foodgrains. However, given that the bulk of all foodgrains is produced for subsistence consumption, this possibility appears quite remote.

In sum, in spite of very extensive (paper) regulation of agricultural foreign trade, the current impact of these restrictions and controls appears to be quite neutral. While the neutrality of sector trade policy impacts is due in part to random conditions in international markets, Guatemala's recent modification in exchange rate policy is the predominant explanatory variable in bringing about economic equilibrium.

Domestic Marketing Policies

Policy measures oriented to internal markets are directed to the control of prices rather than to quantitative restrictions or controls. Price regulation measures are directed to retail food sales in the form of ceiling prices and to the wholesale commodity level through minimum producer prices.

Retail Ceiling Price Controls

Retail price ceilings on food and other basic goods date back to 1974 when the Ministry of Economy fixed maximum prices on sugar, milk, eggs and a few other products. During the past fourteen years retail price controls have frequently been invoked in response to a rapid run-up in the general consumer price

level or to price rises of specific products deemed to be economically and socially “basic” by the Ministry of Economy.

The establishment of retail ceiling prices has had the objective of protecting the purchasing power of *urban* consumers. Original legislation confined price controls to the Guatemala City metropolitan area. While this limitation is (in principal) no longer in effect, the composition of products involved in price controls clearly reflects urban consumption patterns.

The administration and implementation of retail price ceilings in Guatemala are complex and difficult and — pragmatically speaking — probably rather futile and pointless endeavors. Price level determination, for example, is on a full cost recovery approach. The government obviously has insufficient resources to collect original cost data and therefore must rely on industry-provided figures for the analysis. Aside from the difficulty of obtaining unbiased data, this approach is inherently defective; for it permits the most inefficient firms to recuperate their total production costs.

Selecting the product to be controlled is based on inconstant and at times internally contradictory criteria. In principal, product selection is premised on the average urban consumer retail market basket plus other social and economic considerations. In practice, in 1985 this resulted in over 400 different goods falling under price control, including 25 brands of whole powered milk, 17 brands of vinegar, 33 brands of detergents, etc. Since 1985 the number of goods under price control has been sharply reduced and in mid-1988 stood at seventeen.

The enforcement of price ceilings in the thousands of retail establishments has been, at best, sporadic and inconsistent. As a result, retailers widely ignore the controls or temporarily suspend price-controlled product sales until price levels are adjusted upward or price controls are abandoned. Manufacturers ignore or avoid controls on specific products by changing package size and brand names or by making minor adjustments in product composition. Even price controls for unprocessed products such as meat are ignored. Jiron found little apparent relationship between the announced ceiling prices and actual retail prices for different meat cuts in his 1986 survey (Jiron p.77).

Government retail price control policy is a policy with very limited content. As such, the impacts at any economic level or in any sector of the economy are virtually indiscernible. Certainly, the agricultural sector appears to be quite unaffected by the policy.

Producer Support Prices

INDECA, a semi-autonomous entity of the Ministry of Agriculture, is responsible for administration and implementation of producer support prices. This responsibility involves many and multi-objective activities. The INDECA product mandate includes the key foodgrains — maize, beans, wheat, rice and grain sorghum.

The magnitude of INDECA intervention in the foodgrains markets depends on funds available. It seldom has funds to purchase, store and market more than a maximum of five percent of annual production of any of the five foodgrains. INDECA authorizes but has no direct involvement in the import or export of foodgrains.

INDECA financing derives directly from the Junta Monetaria, and, as such, funding levels are determined more by monetary policy objectives than by the entity's needs in fulfilling agricultural marketing policy mandates. Severely constrained by funding and market action limitations, INDECA's task as the government's only agricultural marketing institution is indeed formidable.

INDECA's central objective is to support and to maintain the income levels of the nation's small farm producers. An underlying operational assumption of this objective is that small farmers have a net marketed surplus which can be sold to the state at a minimum price rather than to the (presumed) monopsonistic (e.g. one buyer for several sellers) and exploitative market intermediaries. The assumption is flawed: a high proportion of Guatemala's small farmers produce no net marketable surplus; they are net purchasers of foodgrains (because of lack of transportation, many small farmers with market surplus have no ready access to the state market in any case). Jiron's analysis shows that in only 5 of the nation's 23 departments is average production per farm sufficient for subsistence. The case of beans is similar. Most small farmers never produce a net market surplus of either of the two key crops.

This presents INDECA with an impossible dilemma. The purpose of the foodgrains support price is to help small farmers maintain income levels, but most of the small farmers are net foodgrain purchasers. Thus, if the policy maintains high foodgrain prices, most of the intended clientele suffer. The more successful the policy, the more it fails!

Jiron's analysis examines in depth the impacts of INDECA operations. Among the key findings:

- Seasonal foodgrain price variability declined at the producer level and increased at the consumer level during the 1970-85 period. It is hypothesized that INDECA price signal interventions contributed to the greater seasonal consumer price variability.
- INDECA price support operations appear to have had little if any effect on long-term foodgrain production incentives.
- Contrary to intent, strong evidence supports the conclusion that changes in market prices of foodgrains drive changes in INDECA support price levels.
- No evidence exists that differences in the relative support price levels established by INDECA for maize and beans in any way influence production levels.

The Jiron study of the effects of INDECA operations on foodgrain price levels, price variabilities, production and production incentives, while not exhaustive, is analytically rigorous. The study's overall conclusions are transparent: INDECA operations have no discernible impact on the agricultural economy but perhaps contribute negatively to price variability at the consumer level. Although no evidence shows that INDECA operations provide a floor support level for foodgrain prices, if prices were to be supported, the intended clientele of the policy would be disadvantaged.

Agricultural Input Policies

Agricultural production inputs are subject to a considerably greater variety of policies than are outputs. This section examines policies for the three major types of inputs: labor, fertilizers and farm chemicals, and seed.

Labor Policies: Two distinct types of policy measures are directed to agricultural labor. One measure is the direct intervention by the government in the regulation of salary levels, i.e., minimum wage laws. The other is a set of either direct or indirect policies — predominantly the latter — oriented to creating rural employment. The nature and the impact of the two policy categories are distinctly different and merit separate discussions.

Salary Policies. The Ministry of Labor and Social Welfare, with the advice and counsel of the National Salary Commission, is responsible for the administration, implementation and enforcement of national minimum wage laws. This authority includes the setting of agricultural minimum wages. The National Salary Commission revises wage levels when it is deemed appropriate and convenient or when pressures for revision come from workers. In the case of agricultural wages, the minimum salary levels remained unchanged between 1980 and early 1988.

From 1980 until January 1988 the level of agricultural minimum wages varied with the agricultural enterprise. Minimum daily wages for workers in cotton, coffee, sugar cane and livestock were set at Q3.20. For laborers in foodgrains, cardamom, horticultural and miscellaneous crops, the wage rate was Q1.12 per day and for poultry, bananas and tobacco Q1.25 per day. The rationale provided for the varying rates "was to maintain a high salary level for traditional export products, and favor the production of foodgrains and nontraditional crops with low salaries" (Jiron, p. 120). No explanation is provided for the maintenance of a low salary level for cardamom, a crop (at least now) generally considered a traditional export.

The January 1988 revision of minimum wage levels established a single uniform rate for all agricultural activities. The rates are now Q.5625 per hour, Q4.50 per day and Q135.00 per month. Compared to the maximum Q3.20 daily

salary in 1980, the 1988 hourly salary represents a 40 percent increase over the highest 1980 rate, an increase well under half the rise in consumer prices during the period.

Agricultural minimum wage policy is a policy only on paper. The effectiveness and impact of the policy on labor and on agriculture are totally neutral as summarized by Jiron:

The institution with responsibility for enforcing the [agricultural] minimum salary is the Inspector General of Labor. However, due to the lack of inspectors and physical resources, there is no effective implementation of the law. As a result, the minimum salary has no real application except to serve as an indicator in the labor market. During peak labor demand periods the salaries will rise 30 to 50 percent above the minimum level and in slack seasons will fall by the same proportions (p. 120 [(translation by author)]).

Employment Creation Policies: An exhaustive review of Guatemalan public policies would likely not reveal any measures explicitly identified as policies for creating rural employment. However, virtually every official statement, national or sector development plan, or other government articulation relating to agriculture refers to enhancement of rural employment. Statements about creating employment conspicuously pervade all government utterings on agriculture even though specific policy measures aimed at creating employment are not to be found.

As noted previously, the most discernible and powerful tool used by the government to influence the direction of agricultural development and more specifically to direct resources to rural employment is the control and guidance of foreign agricultural assistance. In this decade, the annual level of foreign assistance has unquestionably exceeded all government support to all national agricultural development programs. Although precise data are not available, the magnitude of current annual foreign assistance to agriculture is estimated at well over \$100 million. Alone, this is a significant level of resources; but because the government also concentrates its counterpart resources in foreign assisted development programs, the impact of these resources is considerably multiplied. Through these efforts, rural employment creation has been stimulated by four principal means:

1. Emphasis on projects involving labor-intensive construction activities such as the building of mini-irrigation systems, rural farm to market roads and soil conservation terraces. Typical of such programs is the AID funded Farm to Market Roads Project and the Highlands Agricultural Development Project, the PL 480-funded irrigation works programs and rural roads programs, the Japanese irrigation assistance programs, the ROCAP and AID soil conservation projects and the CABELI-funded rural access roads programs.

2. Emphasis on labor-intensive nontraditional export crop production. Representative projects include the AID-funded Small Farmer Diversification Project, Small Farmer Marketing System Project and Agribusiness Development Project, the Highlands Agricultural Development Project, the ROCAP Non-Traditional Export Project and the IDB financed Agricultural Wholesale Market program.
3. Emphasis on the development of a labor intensive agro-industry oriented to the production of value-added nontraditional exports. Some important programs in support of this thrust are the AID Rural Enterprise Development Project, Cooperative Strengthening Project, Private Enterprise Development, the ROCAP Nontraditional Agricultural Export Support Project, the three Bank of Guatemala-AID financed rediscounted credit lines for rural business development, fruit and vegetable marketing and agro-industrial development.
4. Emphasis on the maintenance of the competitive capability of labor intensive traditional export crop production. In addition to foreign assistance such as the programmed AID Technification (sic) of Traditional Export Crops and the current ROCAP Regional Coffee Pest Control Project, the government subsidizes production credit, gives preferential treatment to imports of production and capital inputs, etc. (see discussions in monetary, fiscal, trade, input and marketing policies).

Impacts on Women: Of these four employment creating emphases, the latter three especially affect employment opportunities for women. In addition, the emphases on nontraditional crop production and agro-industrial processing have also had positive effects on subsistence food production, farm income, expenditure patterns, caloric consumption and nutrition.

Employment Impacts: The important role of women laborers in traditional export crops has been previously discussed. While only the employment-creating effects are noted above, clearly government policy has also hurt traditional export crop production. As a result, the export area has declined and employment opportunities have, in the aggregate, fallen. However, in the absence of the above noted measures, the drop in employment would likely have been somewhat greater.

Government emphases on nontraditional crop agriculture have had very significant impacts on employment opportunities for women. Virtually all of the new jobs in agro-industrial processing of nontraditional crops are filled by women. Evaluations of nontraditional export projects and programs indicate that women account not only for almost all the new labor employed in processing but also for a substantial proportion of all additional labor employed in the production of these crops. As the Cuatro Pinos Cooperative study concludes:

Nontraditional export crops created local employment directly on farms and indirectly through forward and backward linkages and multiplier effects resulting from increased income spent locally. Labor input in agriculture increased in the export vegetable producing farms by 45 percent. About half of this increase is covered by family labor and half by hired labor (von Braun, pp. xiii and xiv).

A substantial share of the increased family labor is from women. It is 44 percent of the increase in the farms below 0.5 hectares and 32 percent in the farms above one hectare. Women's labor input into the subsistence crop (maize) is low (9 percent) as compared to traditional vegetables (25 percent) and the new export vegetables (31 percent) — (von Braun, p.xiv).

Food Production Impacts: It has long been known that highland farmers who shift to intensive nontraditional crop production reduce the land area of the farm devoted to basic foodgrains. The untested postulate is that the reduced foodgrain area results in production declines and in families who become more dependent on the market as a source of foodgrains. An associated postulate is that nutrition, especially of women and children, suffers as a result of reduced foodgrain production (see nutrition discussion below). As the findings of von Braun show, both postulates are unfounded in the Guatemalan case:

Despite smaller areas allocated to traditional subsistence crops by export crop producers, the great majority tend to have higher amounts of maize available (per capita) for consumption from own produce than other farmers of the same farm size because coop member's maize and beans yields are 30 percent higher on average than nonmembers' yields. A combination of factors is responsible for the increase in yields. Fertilizer inputs are increased and cropping practices are more labor-intensive (more weeding labor). This is not an effect of a possible self-selection bias of more efficient farmers who became export crop producers. One reason is the positive effect of snow peas on soil fertility [nitrogen fixation]. A second more hypothetical reason is that export crop producers improved their crop management of subsistence crops once new export crops were introduced (p. xvi).

Income and Expenditure Pattern Impacts: Higher income levels and shifts in expenditure patterns are two key indicators of economic development. As family incomes increase, Engel's law comes into play and families spend a lower percentage of income for food. Also with income increases, proportionally less income is spent on starchy foods and proportionally more goes to animal proteins. The Cuatro Pinos study found this to be the case for Guatemalan small farm families moving to nontraditional crops.

The export promotion scheme led to increased income in the participants' households. Expenditures — used as an income proxy — increased by 38 percent above the average nominal increase in the total survey population. The income gains were highest among the adopters in the smallest farms. The new export crops had a favorable effect of moving the poorest upward on the income scale.

Export producers spend on average 64 percent of their total expenditures on food compared to 66.8 percent among the other households. The relative lower budget share to food among export crop producers is due to relatively lower expenditures on almost all foods but meat, fish, and eggs. Nevertheless the absolute per capita budget spent on food is on average 18 percent higher in export crop producing households (p. xviii).

Caloric Consumption and Nutrition Impacts: Nutrition and development literature widely reports that when family caloric intake and nutritional levels are at the margin, women and children are typically the most nutritionally deprived, since the adult male household member(s) eat first. This is a totally rational family survival technique if the adult male household member is the principal income earner. Thus, if family caloric and nutritional levels improve, the primary beneficiaries are women and children.

In this regard, the findings of the Cuatro Pinos evaluation are highly relevant. The study clearly shows that Guatemalan highland farmers in the surveyed region are at caloric and nutritional margins. Caloric acquisition increased with greater income levels; each 10 percent increase in income resulted in a 3.1 percent average increase in calories. As income levels increased, the growth in caloric intake declined. An additional finding pertaining to relationships between gender income and nutrition is of special interest for this analysis.

It is found that increased income leads to significant nutritional improvement, but decreasing so at the margin. The hypothesis that an increased share of male-controlled income — be it off-farm income or income from the export crops — would lead to adverse nutritional effects does not find support by this analysis. A higher share of especially women-controlled nonagricultural income, however, tends to add more to nutritional improvement than does men's nonagricultural income (p.xx).

In sum, the gender and aggregate impacts of the government's emphases on nontraditional crop production and processing are highly positive with regard to income and employment, subsistence food production and caloric and nutritional intake. Although not examined, other likely important impacts include greater equality in agricultural sector (and gender) income distribution, improved national diets and increased foreign exchange earnings.

Fertilizers and Chemicals: The general policy of the government has been to stimulate the use of fertilizers and agricultural chemicals (herbicides, pesticides, fungicides, etc.). In addition to preferential treatment through favorable exchange rates during the early and mid-1980s, all imported fertilizer and agricultural chemicals were exempted from import duties as of 1981.

During the 1970s, BANDESA was a major actor in the importation and marketing of these inputs. Private sector establishments were involved only in

market distribution under prior authorization of DIGESA. With the growth in the number of commercial agricultural input firms through the 1970s, the government withdrew from the market, then resumed direct importation and distribution in 1984.

Clearly the government has less than complete confidence that market forces in the domestic industry of fertilizer supply will bring about price competition. However, this position may or may not be justified. Certainly, the nature of the industry would appear less than competitive. Fewer than 30 firms are involved in the market, and a handful of these apparently dominate it. Prices appear to be set by agreement through GREPAGRO, the industry trade association. The three cooperative federations, while not members of GREPAGRO, appear to follow the association's price policies.

The principal reason given for government re-entry into the market is the rapid jump in prices. Indeed, prices soared with devaluation of the quetzal and exchange market uncertainties of the mid-1980s. BANDESA directly imported an estimated 10 percent of all fertilizer used in 1986 and distributed it at a price one-third less than the prevailing prices of private distributors. Jiron reports that fertilizer prices of private commercial distributors dropped by 30 percent as a result of BANDESA distributions. This seems to be an exceptionally large price drop given that official imports were doubly subsidized first through the exchange rate and again via uncharged transport and handling costs.

The fertilizer was distributed by DIGESA to small farmers who were limited to 600 pounds, the "proper amount" for exactly one manzana (1.7 acres) of maize. The program continued with few modifications during 1987 and 1988 with assistance from the Italian government. Apparently the program has not been formally evaluated. But most agree that a high proportion of the fertilizer distributed to small farmers has been re-sold to commercial farmers for profit. This implies that the 30 percent price drop reported by Jiron may be overstated.

Since data is limited, the various impacts of the government's fertilizer policies are not clear. Because price levels may have been influenced (lowered), the policies have likely encouraged somewhat greater amounts of fertilizer use by Guatemalan agriculture than would have been the case without the policies. Therefore, aggregate agricultural production is somewhat greater. Which crops, regions, groups or types of agriculture are benefitting from the policies is pure conjecture since reliable data on the distribution of use by crop, region or type of agriculture are unavailable. The likelihood of any notable gender impact of the policies would seem quite small.

Other agricultural chemicals also have had favorable exchange rate and tariff treatment. However, unlike the case of fertilizers, the government has not been involved in direct importation of these inputs. Two types of chemical-intensive enterprises — cotton and nontraditional crops — have especially

benefitted from these policies. Cotton is produced as a plantation crop, and non-traditional crops are grown by small farmers. Because women are heavily involved in both cotton production and nontraditional crop production and processing, they are beneficiaries of these policies.

Seeds: Two distinctly different seed production systems exist in Guatemala. Little information is available on the private system that produces horticultural plant seeds for the U.S. and international markets. Apparently it operates under contract to international horticultural firms. So it is essentially a subsector of the nontraditional crop production system.

The other seed production system is operated by ICTA, the Ministry of Agriculture entity responsible for agricultural research, with the participation of DIGESA. ICTA produces a small amount of foundation seed primarily for maize and beans plus very limited amounts for rice, wheat and grain sorghum and a few other crops such as soybeans, melons, potatoes and okra. DIGESA, and, to a highly limited extent, DIGESEPE are involved in limited multiplication work and seed distribution to farmers.

Guatemala has no identifiable national seed policy. Seed importation is free of duty and has no notable quantitative restrictions. The limited quantity of ICTA foundation seed production is sold to commercial seed multiplication firms at less than production cost as is DIGESA seed distributed to farmers. The total public subsidy for the entire seed program is inconsequential. Given the minor cost, but the critical importance of high quality seed, the program likely yields very high social returns.

Livestock Policies

Three distinctly different production systems produce Guatemala's livestock and livestock products. Most of the beef cattle are produced by low management, land-extensive commercial ranches. Virtually all of the export beef is produced by these commercial operations. A few vertically-integrated, high-technology "factory" systems, directly transferred from the United States, produce a high proportion of the milk, poultry and eggs and a growing, but still small part of the pork consumed in urban areas. Small and medium sized farmers produce all of these livestock and livestock products plus others — rabbits, sheep and goats. Most of the small and medium farm production, except for hogs, is sold in local markets.

Guatemala has no policies oriented specifically to livestock production with the exception of past fiscal incentives for poultry, swine and milk production (see taxation policies above). The Poultry Development Law of 1962 exempted imported poultry- production inputs and provided for 10-year income tax holidays on profits. This law was repealed in 1987. There appear to be no special import or export restrictions (other than sanitary regulations) relating to breeding

stock or genetic material. Import and export licenses are required for live animal imports or exports, but contraband border trade with neighboring countries is common. Import tariffs are 5 percent for breeding stock and 30 to 40 percent for processed meats. Animal slaughter and meat marketing (sanitary) regulations are on the books, but apparently are not enforced.

Land and Natural Resource Policies

The distribution of land in Guatemala is the most highly skewed of any Central American country. In 1979, 80 percent of the farms averaging 1.1 hectares occupied 10 percent of the farmland, while large farms averaged 230 hectares and covered almost 70 percent of the land area (Table 2).

Two laws essentially define Guatemalan land policy: the "idle lands" law and the "basic grains" law. Both are designed to affect land use.

Guatemalan legislation relating to idle lands dates to 1962. The objective of the law is to regulate the under-utilization of land on farms of 100 hectares or more. The highly complex system designed for use by INTA, the implementing entity, to determine the degree of land under-utilization includes five land classes involving numerous soil characteristics — texture, pH level, drainage, erosion, color — plus other criteria such as land topography, location relative to water, roads, etc. Based on this system, high taxes (Q2.50 per hectare) are to be imposed on the best lands and low taxes (Q0.75) on the poorest lands. Since promulgation of the law in 1962, total tax collections have amounted to less than Q200,000 (U.S. \$70,000). The law is not enforced, is disregarded by landowners and thus has no impact on land use.

The other land legislation is directed to the cultivation of basic (food) grains on farms of 100 hectares or more. The 1984 law requires these units to devote a minimum of 10 percent of land area to basic grain production and imposes fines if landowners do not comply. DIGESA is charged with responsibility to enforce the law. To date, not one farm has been brought to court for failure to comply with the law.

The official government position regarding land is "to propitiate the transfer of under-utilized and abandoned farms to landless campesinos to be developed and organized as cooperative businesses." To further this goal, the government has declared that no lands will be expropriated and has advocated an expansion of the land market to allow campesinos to purchase land.

In 1984, AID began a pilot land market program with the Penny Foundation. The Foundation "purchases large farms on the market, surveys and divides the farm into family-size plots (an average of 2.8 has.) that are resold to landless

or land-poor households as individual owners with 10-year mortgages. Between 1985 and 1987, as an AID funded pilot project, 20 farms were purchased and 1,223 family-sized plots were created for resale to landless families" (Wing, p. 41). This program was expanded in the 1987-92 period.

This program differs from the government program, which also purchases land but which by law requires that it be turned over to campesino collective organizations (*empresas asociativas*) under the management of INTA. In 1987, the government purchased 9 farms and established 11 projects benefitting 8,350 people.

To the extent that women are among the poorest of the rural poor, the government (and AID funded) land-sale program is beneficial. The program is minuscule relative to the nation's land access problem, however. Lack of greater government attention to this critically difficult problem is short-sighted and foreboding.

Agricultural Research and Extension Policies

Research: Guatemala has no national agricultural research policy or program. But by no means does this imply that no research institutions exist or that no research is being conducted. The opposite is true. For a nation of Guatemala's size and wealth, a surprisingly large and active set of agricultural research entities are involved in a rich variety of research endeavors. The large number of institutions and the range of research activities precludes all but a highly cursory overview for this study.

The public and private sectors divide — in no formal manner — the nation's agricultural research. The only public entity devoted exclusively to agricultural research is ICTA. It concentrates efforts in the basic grains, notably maize, beans, wheat, rice and grain sorghum, and gives limited attention to horticultural crops. Other public sector entities involved in agricultural research are the National Forestry Institute (INAFOR), the Institute for Agronomic Research (IIA) and the Institute for Livestock Research (IIP) at the University of San Carlos, and the Research Institute and Veterinary Faculty of the Universidad del Valle. DIGESA and DIGESEPE conduct very limited and highly applied work in carrying out agricultural extension mandates.

Private sector entities involved in research-oriented activities are all commodity specific organizations. Each of the important — and some not so important — crops is represented by a producer association or similar organization that is involved to a greater or lesser extent in conducting research for that crop. For example, coffee research is done by the National Coffee Association (ANACAFE), banana research by the Banana Growers Association (BANDEGUA), essential oils research by the Essential Oil Producer's Association (APAESA), etc.

An assessment of the effectiveness of public and private research is beyond the scope and objectives of this study. Certainly ICTA's research work in basic grains enjoys an excellent international reputation (perhaps due more to the dedication of its scientists than to the size of its budget). ICTA's orientation to foodgrains implies a public research policy orientation toward the poor, but the primary users and beneficiaries of ICTA research output have been the large commercial farming operations of the Pacific coast. The gender impact of ICTA's work is therefore rather obscure.

Extension: Two official entities DIGESA and DIGESEPE, have responsibilities for the nation's crop and livestock extension activities. Extension work oriented to specific crops is also carried out by private producer associations such as ANACAFE, BANDEGUA and others. The private organizations involved in extension activities are generally the same as those conducting research, although several entities do extension work with no research backstopping. Private resources applied to extension activities likely exceed government resources.

As in the case of agricultural research, an assessment of the effectiveness of extension programs is beyond the scope and objectives of this report. Neither of the two public entities has sufficient resources to conduct any effort remotely resembling an effective extension program. For example, some 70 extension workers serve the entire Western Highland region. That is one worker per 3,000 farms, or roughly one per 20,000 people! At best, this ratio is ten times greater than is minimally acceptable by international standards. The level and content of services are simply so deficient that even if extension efforts had blatant and deliberate gender biases — and this does not appear to be the case — the negative aggregate effects on women and on agriculture would be inconsequential.

Findings and Conclusions

This study assessed the effects of national economic and agricultural policies on women in Guatemala's agricultural sector. The analysis focused on the effects of macro-economic and sectoral policies on women's agricultural production, income and employment, trade and consumption within the context of women's roles in the predominant types of Guatemalan agriculture, i.e., traditional export crop production, nontraditional commercial horticultural crop production and associated agro-industrial processing and small-farm, subsistence food production.

The Guatemalan economy and agricultural sector are not beset with government interventions to the extent of many developing nations. Many of the policies that affect agriculture are relatively benign. Moreover, due to lack of implementation or insufficient implementation resources, many potentially positive or perverse policies have little or no impact. Policies having the greatest impact on agriculture are general macro-economic policies — those policies not specifically directed to the agricultural sector such as monetary and fiscal policy. Most of Guatemala's policy-induced agricultural resource and output market distortions are history; for recent changes have reduced or eliminated the negative effects of previous policy measures. Thus, in general, the current set of economic policies only nominally affects agricultural resource and output markets. On balance, it appears that the net effects of current policies are generally positive for agriculture and for women in the agricultural sector.

No policy or group of policies has discernibly marked gender effects. Clearly, some policies affect women more than other policies, but this is primarily because proportionally more women are involved in some activities than others. In Guatemala, women are disadvantaged or benefitted when policies affect any given sub-sector in which they are involved. So they are proportionally more disadvantaged or benefitted if they make up a proportionally large share of that subsector. Women have clearly identified and important economic roles in agriculture. But it does not appear that these roles are sufficiently unique that economic or sector policies — short of blatant legalized discrimination — could be deliberately tailored specifically to benefit or to disadvantage women.

The effects on women in agriculture of the key Guatemalan macro-economic and sector policies are summarized in Appendix 3. Note that virtually all the negative effects flow from expressly deliberate macro-economic policies measures. The positive effects derive from private sector and foreign assistance initiatives supported by the government's general articulation of sector development strategy, i.e., the production, processing and export of nontraditional crops.

**Table 1. Guatemala: Gross National Product by Sector,
1987, Constant 1958 Prices**
(Millions of dollars)

	Value ^a	Percent
Agriculture ^b	765.9	25.4
Mining	8.7	0.3
Manufacture	475.1	15.8
Construction	55.1	1.8
Utilities	72.0	2.4
Transport, warehouses, and communication	214.4	7.1
Commerce	745.0	24.8
Finance	115.3	3.8
Housing	161.2	5.4
Public administration and defense	207.9	6.9
Services	189.3	6.3
Total	3,009.9	100.0

a. Preliminary.

b. Includes forestry, hunting, and fishing.

Source: Central Bank of Guatemala.

Table 2. Number of Farms and Area by Farm Size, 1964-79

Farm size (hectares)	Number of farms			Percent change 79/64	Total area (hectares)				Percent change 79/64	Average farm size (hectares)		Percent change	
	1964	Percent	1977		Percent	1964	Percent	1979		Percent	1964		1979
Up to 1.4	183,741	44	361,489	60	97	133,991	3	173,113	4	29	0.7	0.5	-28.6
1.4 to 3.5	129,116	31	128,587	21	-	274,243	7	287,268	6	5	2.1	2.2	4.8
3.5 to 44.5	95,679	23	101,307	17	6	906,700	23	1,085,235	23	20	9.5	10.7	12.6
Above 44.5	8,808	2	13,654	2	55	2,620,277	67	3,146,794	67	20	297.5	230.5	-22.5
Total country	417,344	100	605,037	100	45	3,935,211	100	4,692,410	100	19	9.4	7.8	-17.0

Source: International Fund for Agricultural Development, "Estrategia para el Desarrollo de la Produccion Campesina en el Altiplano Occidental," 1985, p. 68; and World Bank estimates.

Table 3. Specialization in Crop Production, by Farm Size, 1950, 1964, 1979

Farm size (hectares)	Type of crops ^a	Land use in percent of farm-size class		
		1950	1964	1979
Below 1.4	Basic food	96.7	91.1	87.4
	Agro-industrial crops	3.3	8.5	12.2
	Pasture	--	0.4	0.4
1.4 - 3.5	Basic food	93.5	90.1	84.6
	Agro-industrial crops	6.2	8.4	14.0
	Pasture	0.3	1.5	1.4
3.5 - 44.5	Basic food	84.8	68.0	64.4
	Agro-industrial crops	10.8	12.6	19.1
	Pasture	4.4	19.4	16.5
Above 44.5	Basic food	18.8	14.4	13.7
	Agro-industrial crops	35.1	32.1	38.4
	Pasture	46.1	53.5	47.9
Total	Basic food	58.0	41.3	37.4
	Agro-industrial crops	20.0	23.1	29.8
	Pasture	22.0	35.6	32.8

a. Basic food includes maize, beans, rice wheat, potatoes, and vegetables. Agro-industrial crops include sorghum, cotton, coffee, sugarcane, cardamom, sesame, groundnut, tobacco, rubber, and fruits. Pasture includes permanent pasture and land for fodder crops.

Source: SEGEPLAN, *Agricultura, Poblacion, y Empleo en Guatemala* (Guatemala: SEGEPLAN, 1984).

Table 4. Population More Than 10 Years Old, by Condition of Employment, According to Gender and Age Group

Gender and age group	Economically active						
	Total	Employed			Unemployed		
		Total	Employed	Total	Unemployed	Looking for work for the first time	Inactive
Men and women	5,472,104	2,740,061	2,644,288	95,773	65,758	30,015	2,732,043
10 - 14	1,064,147	194,758	189,397	5,361	1,620	3,741	869,389
15 - 19	829,922	416,823	390,182	26,641	14,068	12,573	413,099
20 - 24	679,635	398,539	373,070	25,469	18,039	7,430	281,096
25 - 29	546,752	340,352	327,316	13,036	8,774	4,262	206,400
30 - 34	488,317	324,941	315,863	9,078	7,613	1,465	163,376
35 - 39	413,480	257,203	249,876	7,327	6,869	458	156,277
40 - 44	318,561	197,695	193,782	3,913	3,856	57	120,866
45 - 49	264,566	164,509	162,894	1,615	1,615	-	100,057
50 - 54	222,353	134,770	133,626	1,144	1,144	-	87,583
55 - 59	207,244	122,660	121,697	963	963	-	84,584
60 - 64	142,959	76,448	75,913	535	506	29	66,511
65 and over	294,168	111,363	110,672	691	691	-	182,805
Men	2,670,774	2,069,076	2,011,397	57,679	42,797	14,882	601,698
10 - 14	548,143	152,339	148,374	3,965	1,061	2,904	395,804
15 - 19	406,356	309,282	292,207	17,075	9,927	7,148	97,074
20 - 24	319,437	298,593	283,545	15,048	11,555	3,493	20,844
25 - 29	255,980	250,476	244,135	6,341	5,670	671	5,504
30 - 34	244,466	242,351	237,531	4,820	4,473	347	2,115
35 - 39	194,298	190,867	187,219	3,648	3,415	233	3,431
40 - 44	153,867	150,380	147,120	3,260	3,203	57	3,487
45 - 49	122,486	119,992	119,099	893	893	-	2,494
50 - 54	110,300	104,958	104,191	767	767	-	5,342
55 - 59	103,081	97,933	96,970	963	963	-	5,148
60 - 64	69,165	61,232	60,917	315	286	29	7,933
65 and over	143,195	90,673	90,089	584	584	-	52,522

(continued)

Table 4. (continued)

Gender and age group	Economically active						
	Total	Unemployed					
		Total	Employed	Total	Unemployed	Looking for work for the first time	Inactive
Women	2,801,330	670,985	632,891	38,094	22,961	15,133	2,130,345
10 - 14	516,004	42,419	41,023	1,396	559	837	473,585
15 - 19	423,566	107,541	97,975	9,566	4,141	5,425	316,025
20 - 24	360,198	99,946	89,525	10,421	6,484	3,937	260,252
25 - 29	290,772	89,876	83,181	6,695	3,104	3,591	200,896
30 - 34	243,851	82,590	78,332	4,258	3,140	1,118	161,261
35 - 39	219,182	66,336	62,657	3,679	3,454	225	152,846
40 - 44	164,694	47,315	46,662	653	653	-	117,379
45 - 49	142,080	44,517	43,795	722	722	-	97,563
50 - 54	112,053	29,812	29,435	377	377	-	82,241
55 - 59	104,163	24,727	24,727	-	-	-	79,436
60 - 64	73,794	15,216	14,996	220	220	-	58,578
65 and over	150,973	20,690	20,583	107	107	-	130,283

Source: I.N.E. Encuesta Nacional, 1986/87.

Table 5. Economically Active Population^a and Available Inactive Population with Experience, by Gender and Sector

Gender and sector	Total	Employed				Unemployed and laid off	Inactive population, available and experienced
		Total	Full employment	Visible under-employment	Invisible under-employment		
Men and women	2,816,377	2,644,288	1,041,019	296,870	1,306,399	65,758	106,331
Agriculture	1,415,433	1,372,612	373,863	138,603	860,146	14,880	27,941
Mining	2,951	2,761	1,355	62	1,344	—	190
Manufacturing industry	362,438	334,721	152,319	47,390	135,012	13,036	14,681
Utilities	10,584	10,476	8,441	1,068	967	80	28
Construction	101,034	93,926	53,822	2,325	37,779	5,557	1,551
Commerce	393,991	362,910	166,446	45,051	151,413	9,492	21,589
Transport & communication	56,017	53,604	36,623	4,808	12,173	1,744	669
Financial services	34,752	31,329	24,173	1,658	5,498	1,702	1,721
Social services	438,080	380,902	223,133	55,905	101,864	19,267	37,911
Miscellaneous activities	1,097	1,047	844	—	203	—	50
Men	2,073,614	2,011,397	818,072	180,089	1,013,236	42,797	19,420
Agriculture	1,298,335	1,276,888	362,616	119,928	794,344	13,759	7,688
Mining	2,899	2,735	1,355	62	1,318	—	164
Manufacturing industry	224,155	213,290	125,520	13,643	74,127	7,912	2,953
Utilities	10,107	9,999	8,158	1,068	773	80	28
Construction	100,402	93,400	53,296	2,325	37,779	5,557	1,445
Commerce	162,937	156,332	90,567	14,931	50,834	3,521	3,084
Transport & communication	53,413	51,132	34,489	4,808	11,835	1,612	669
Financial services	26,620	24,864	19,449	1,273	4,142	1,230	526
Social services	193,649	181,710	121,778	22,051	37,881	9,126	2,813
Miscellaneous activities	1,097	1,047	844	—	203	—	50

(continued)

Table 5. (continued)

Gender and sector	Total	Employed				Unemployed and laid off	Inactive population, available and experienced
		Total	Full employment	Visible under-employment	Invisible under-employment		
Women	742,763	632,891	222,947	116,781	293,163	22,961	86,911
Agriculture	117,098	95,724	11,247	18,675	65,802	1,121	20,253
Mining	52	26	-	-	26	-	26
Manufacturing industry	138,283	121,431	26,799	33,747	60,885	5,124	11,728
Utilities	477	477	283	-	194	-	-
Construction	632	526	526	-	-	-	106
Commerce	231,054	206,578	75,879	30,120	100,579	5,971	18,505
Transport & communication	2,604	2,472	2,134	-	338	132	-
Financial services	8,132	6,465	4,724	385	1,356	472	1,195
Social services	244,431	199,192	101,355	33,854	63,983	10,141	35,098
Miscellaneous activities	-	-	-	-	-	-	-

a. Not including those looking for work for the first time.
Source: INE, Encuesta Nacional 1986/87.

Table 6. Tax Revenues, 1970-1985

	1970	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Millions of quetzales												
Total central government taxes	148.7	300.7	370.3	556.9	626.6	629.4	686.1	658.6	632.7	551.5	536.1	689.0
Corporate income tax	14.4	42.1	45.5	56.7	74.4	72.3	70.6	84.9	83.5	82.4	81.6	74.3
Personal income and property tax	10.3	20.6	22.0	23.1	30.7	28.8	33.7	30.1	26.2	36.6	38.6	57.1
Indirect taxes on domestic transactions	77.6	146.5	183.7	227.8	251.9	280.4	316.3	366.1	389.8	331.3	301.7	408.6
Import taxes	37.7	60.2	69.9	97.1	108.4	117.9	111.9	105.2	80.5	67.4	80.7	80.5
Export taxes	8.7	31.3	49.2	152.2	158.3	125.8	149.7	68.2	48.7	39.8	28.4	9.9
Other taxes on international transactions	0.0	0.0	0.0	0.0	2.9	4.2	3.9	4.1	4.0	4.0	5.1	58.5
Taxes not levied by the central government	28.7	47.4	56.3	92.5	82.9	134.5	147.1	158.0	159.5	163.4	167.2	169.1
Total taxes	177.4	348.1	426.6	649.4	709.5	763.9	833.2	816.6	792.2	714.9	703.3	858.1
Percent of GDP												
Total central government taxes	7.8	8.2	8.5	10.2	10.3	9.1	8.7	7.7	7.3	6.1	5.7	6.3
Corporate income tax	0.8	1.2	1.0	1.0	1.2	1.0	0.9	1.0	1.0	0.9	0.9	0.7
Personal income and property tax	0.5	0.6	0.5	0.4	0.5	0.4	0.4	0.3	0.3	0.4	0.4	0.5
Indirect taxes on domestic transactions	4.1	4.0	4.2	4.2	4.1	4.1	4.0	4.3	4.5	3.7	3.2	3.7
Import taxes	2.0	1.7	1.6	1.8	1.8	1.7	1.4	1.2	0.9	0.7	0.9	0.7
Export taxes	0.5	0.9	1.1	2.8	2.6	1.8	1.9	0.8	0.6	0.4	0.3	0.1
Other taxes on international transactions	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.5
Taxes not levied by the central government	1.5	1.3	1.3	1.7	1.4	1.9	1.9	1.8	1.8	1.8	1.8	1.5
Total taxes	9.3	9.5	9.8	11.8	11.7	11.1	10.6	9.5	9.1	7.9	7.4	7.8

Source: Ministry of Finance; General Planning Office and IMF.

Table 7. Guatemala: Central Government Current Income

(Millions of quetzales)

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Total current income	165.2	173.4	185.1	213.1	279.6	329.7	406.8	591.2	660.7	668.8	747.3	740.6	720.7	741.1	666.3	864.8
Total taxes	147.2	154.0	163.6	191.8	254.8	300.7	370.3	556.9	626.6	629.4	686.1	658.6	632.7	305.5	264.1	315.3
Direct taxes	23.9	25.3	28.9	32.1	39.4	62.7	67.5	79.8	105.1	101.1	104.3	115.0	109.7	134.3	85.4	126.2
Income tax	18.4	20.2	22.4	25.3	32.0	54.8	59.2	70.8	94.7	92.9	96.7	107.0	102.2	128.2	78.5	108.0
Personal	4.3	5.0	5.5	6.1	7.3	12.7	13.7	14.1	20.3	20.6	26.1	22.1	18.7	18.1	29.1	35.8
Companies	14.1	15.2	16.9	19.2	24.7	42.1	45.5	56.7	74.4	72.3	70.6	84.9	83.5	110.1	49.4	72.2
Property tax	5.5	5.1	6.5	6.8	7.4	7.9	8.3	9.0	10.4	8.2	7.6	8.0	7.5	6.1	6.9	18.2
Terrestrial	5.1	4.8	6.2	6.5	6.9	7.6	8.1	8.6	9.7	7.9	7.2	7.5	7.0	5.4	5.9	17.6
Inheritances and donations	0.4	0.3	0.3	0.3	0.5	0.3	0.2	0.4	0.7	0.3	0.4	0.5	0.5	0.7	1.0	0.6
Indirect taxes	123.3	128.7	134.7	159.7	215.4	238.0	302.8	477.1	521.5	528.8	581.8	543.6	523.0	171.2	178.7	189.1
Business taxes	45.8	47.5	47.1	57.2	80.0	91.5	119.1	249.3	269.6	247.9	265.5	177.5	133.2	60.6	50.1	30.1
Import tariffs	36.2	38.5	37.4	41.6	58.8	60.2	69.9	97.1	108.4	117.9	111.9	105.2	80.5	15.4	18.6	19.4
Protocol (from San Jose)	7.6	9.4	9.0	9.2	13.8	14.2	16.0	21.3	23.2	26.0	24.8	23.3	18.3	15.3	18.6	19.0
(Others)	28.6	29.1	28.4	32.4	45.0	46.0	53.9	75.8	85.2	91.9	97.1	81.9	62.2	0.1	0.0	0.4
Export tariffs	9.6	9.0	9.7	15.6	21.2	31.3	49.2	152.2	158.3	125.8	149.7	68.2	48.7	45.2	31.5	10.7
Coffee	8.4	7.5	7.9	13.7	20.1	7.8	38.7	140.8	147.2	115.1	133.1	43.1	35.9	27.5	22.0	7.5
Banana	0.2	0.2	0.3	0.2	0.3	0.4	6.2	6.7	7.6	6.5	9.7	10.3	10.0	6.1	2.9	1.3
Cotton	0.2	0.2	0.4	0.4	0.5	1.6	1.6	0.3	3.2	0.7	4.6	7.8	2.2	0.6	0.4	0.2
Sugar	0.0	0.0	0.0	0.0	0.0	19.3	2.5	0.3	0.0	0.2	1.7	6.6	0.0	5.4	3.1	0.8
Others	0.8	1.1	1.1	1.3	0.3	2.2	0.2	4.1	0.3	0.3	0.6	0.4	0.6	5.6	3.1	0.9
Other business taxes	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.9	4.2	3.9	4.1	4.0	0.0	0.0	0.0
Taxes on domestic transfers	77.5	81.2	87.6	102.5	135.4	146.5	183.7	227.8	261.9	280.4	316.3	366.1	389.8	110.6	128.6	159.0
Tax stamp	35.6	36.9	40.6	49.6	74.1	78.5	104.7	140.2	151.6	171.3	200.3	261.0	284.8	23.7	19.3	38.5
Petroleum	11.5	12.0	13.2	14.5	16.5	18.1	19.3	17.6	24.2	28.8	24.3	20.7	19.5	24.5	43.9	42.6
Tobacco	6.7	7.1	7.0	7.2	8.5	10.2	12.4	13.1	13.9	16.9	20.7	20.6	22.8	24.5	23.0	32.5
Alcohol	15.9	17.4	17.9	19.9	23.8	25.6	31.1	36.8	40.4	42.7	46.6	43.0	41.3	33.6	40.8	43.6
Carbonated drinks	0.0	0.0	2.2	2.5	2.7	3.2	3.8	5.4	5.5	5.2	5.4	5.6	5.5	3.4	0.7	0.8
Others	7.8	7.8	6.7	8.8	9.8	10.9	12.4	14.7	16.4	16.0	19.0	15.2	15.9	0.9	0.9	1.0

Source: Public Financial Statistics, Economic Studies Department, Bank of Guatemala.

Table 8. Total Ad Valorem Rates, Tariff Paid
and Import Exemptions, 1981
(percent)

Type of good	Total ad valorem	Tariff paid	Exempted imports
Agriculture	25.3	7.7	69.8
Mining and energy	2.6	0.9	65.8
Nondurable consumer goods	23.7	11.4	52.0
Consumer durables	24.1	15.1	37.5
Petroleum and coal products	15.3	3.0	80.3
Intermediate products	14.5	5.5	62.0
Construction materials	16.0	4.9	69.2
Machinery and transport equipment	13.7	10.5	23.3
Weighted average ^a	14.7	6.8	54.2

a. Weighted by share of production.

Source: Bank of Guatemala and World Bank estimates.

Table 9. Public Sector Agriculture Budget, 1977-85
(Thousands of quetzales)

	1977	Per- cent	1978	1979	1980	Per- cent	1981	Per- cent	1982	1983	1984	1985	Per- cent
MINISTRY OF AGRICULTURE													
Operating costs	2,903		1,211	1,544	2,102		2,825		1,949	5,837	3,070	3,070	
Fixed investment	-		-	-	-		865		2,910	-	-	-	
Other	459		463	4,291	5,210		6,189		5,889	3,613	6,204	6,540	
Subtotal	3,362	4	1,674	5,835	7,313	4	9,879	5	10,748	9,450	9,274	9,611	6
DIGESA													
Operating costs	11,424		10,807	11,101	13,352		13,097		12,243	9,915	9,238	10,726	
Investment costs	2,789		1,524	1,790	941		1,114		1,010	3,383	2,275	2,240	
Other	-		-	-	-		-		-	-	-	-	
Subtotal	14,212	15	12,331	12,891	14,293	8	14,211	7	14,253	13,298	11,513	12,966	8
DIGESEPE													
Operating costs	a		a	a	3,092		2,884		3,247	2,877	2,679	2,877	
Investment costs	-		-	-	-		-		203	7,157	4,548	2,851	
Other	-		-	-	-		-		-	-	-	-	
Subtotal	-		-	-	3,092	2	2,884	1	3,450	10,034	7,227	5,728	4
INTA													
Operating costs	1,256		3,708	2,733	4,756		3,852		5,754	4,650	5,151	4,588	
Investment costs	3,670		2,347	7,817	11,788		8,000		6,400	3,696	2,952	2,825	
Other	1,164		5,904	7,908	8,048		7,904		-	-	-	-	
Subtotal	6,090	6	11,959	18,458	24,591	13	19,756	9	12,154	8,346	8,103	7,414	5
ICTA													
Operating costs	3,134		3,638	3,622	4,334		4,980		4,968	4,644	4,606	3,950	
Investment costs	185		68	60	195		93		84	159	-	174	
Other	-		124	158	170		-		168	170	173	108	
Subtotal	3,320	4	3,831	3,840	4,699	3	5,073	2	5,220	4,974	4,778	4,232	3
INAFOR													
Operating costs	2,465		3,477	3,486	5,100		5,075		4,440	3,933	3,546	3,387	
Investment costs	452		1,116	3,000	2,215		3,750		4,278	1,930	1,598	1,332	
Other	93		-	194	-		-		207	47	61	136	
Subtotal	3,011	3	4,593	6,680	7,316	4	8,825	4	8,925	5,910	5,205	4,854	3

(continued)

Table 9 continued.

	1977	Per- cent	1978	1979	1980	Per- cent	1981	Per- cent	1982	1983	1984	1985	Per- cent
INDECA													
Operating costs	1,992		1,612	1,808	4,658		5,336		5,030	4,462	1,783	1,755	
Investment costs	878		333	493	1,616		2,034		1,611	-	-	-	
Other	41,967		30,462	46,206	32,123		42,654		40,991	38,939	33,431	37,061	
Subtotal	44,837	48	32,408	48,507	38,397	2	50,024	24	47,633	43,401	35,214	38,816	24
PROLAC													
Operating costs	242		302	211	510		417		245	198	175	209	
Investment costs	612		917	-	-		-		-	-	-	-	
Other	4,820		4,182	4,519	3,539		3,570		3,413	3,670	2,978	2,943	
Subtotal	5,674	6	5,402	4,730	4,049	2	3,987	2	3,658	3,868	3,153	3,152	2
BANDESA													
Operating costs	6,188		7,441	9,249	10,228		14,308		11,687	12,067	15,863	15,394	
Investment costs	590		250	271	-		190		240	90	120	-	
Other	6,908		1,908	68,605	68,838		80,130		75,526	58,747	56,474	59,469	
Subtotal	13,686	15	9,599	78,125	79,066	43	94,618	45	87,452	70,904	72,457	74,864	46
Total operating costs	29,604	35	32,197	33,755	48,132	26	52,774	25	51,563	48,584	46,111	45,946	28
Total investment costs b	9,177	10	5,555	13,432	16,755	9	16,036	8	16,737	16,415	11,493	9,422	6
Total other c	55,410	59	43,044	131,881	117,920	65	140,447	67	125,193	105,186	99,320	106,258	66
GRAND TOTAL	94,191	100	81,796	179,067	182,816	100	209,258	100	193,492	170,184	156,924	161,636	100

a. DIGESEPE was part of DIGESA.

b. Physical or financial investment through specific projects.

c. Includes transfers, indirect investment, commercial or industrial operations, financial assistance, public debt, and reconstruction.

Source: USPA

Table 10. Average Annual Area Under Cultivation for Principal Products

	Thousands of hectares			Increase in thousands of hectares		Percent change	
	1972/73- 1976/77	1976/77- 1981/82	1982/83- 1985/86	1976/77- 1981/82	1982/83- 1985/86	1976/77- 1981/82	1982/83- 1985/86
<u>Traditional Exports</u>							
Coffee	253.1	256.9	257.3	3.8	0.4	1.5	0
Cotton	97.4	109.9	61.2	12.5	-48.7	13.1	-44.0
Bananas	5.0	8.9	10.8	3.9	1.9	98.0	22.0
Sugercane	57.4	67.0	69.9	9.6	2.9	16.7	4.0
Cardamom	9.9	21.5	31.0	11.6	9.5	117.0	45.0
<u>Products for Domestic Consumption</u>							
Maize	530.2	607.6	648.5	77.4	41.5	14.5	7.0
Beans	107.5	92.7	138.3	-14.8	45.6	-13.8	49.0
Rice	13.1	13.7	15.0	0.6	1.3	5.2	10.0
Wheat	37.8	31.4	31.5	-6.4	0.1	-16.8	0
Sorghum	52.8	41.9	52.5	-10.9	10.6	-20.6	25.3

Source: INE and Bank of Guatemala.

**TABLE 11. TAXABLE BASE RATES AND DETERMINATION
OF SPECIAL EXPORT TAX**

Coffee (grain or its equivalent)

FOB price for each 46 kilograms	Tax
Up to Q .2375	0%
Q .23751 to Q .3000	40% in excess of Q .2375
Q .30001 to Q .3500	50% in excess of Q .3000
Q .35001 to Q .5000	60% in excess of Q .3500
Q .50001 to Q .5500	75% in excess of Q .5000
Q .55001 or more	40% in excess of Q .5500

Sugar

FOB price for each 46 kilograms	Tax
Up to Q .250	0%
Q .2501 to Q .300	40% in excess of Q .250
Q .3001 to Q .350	60% in excess of Q .300
Q .3501 to Q .450	80% in excess of Q .450
Q .4501 or more	40% in excess of Q .450

Cotton

FOB price for each 46 kilograms	Tax
Up to Q .1250	0%
Q .1250 to Q .1375	2% in excess of Q .1250
Q .13751 to Q .1500	5% in excess of Q .1375
Q .15001 to Q .1625	10% in excess of Q .1500
Q .16251 to Q .1750	15% in excess of Q .1625
Q .17501 to Q .1875	20% in excess of Q .1750
Q .18751 to Q .2000	25% in excess of Q .1875
Q .20001 to Q .2125	30% in excess of Q .2000
Q .21251 to Q .2250	35% in excess of Q .2125
Q .22501 to Q .2375	40% in excess of Q .2250
Q .23751 to Q .2500	45% in excess of Q .2375
Q .25001 or more	40% in excess of Q .2500

Cow Meat (refrigerated or frozen, cut or uncut, and packaged in any form, except carcasses)

FOB price for each pound exported	Tax
Up to Q .25	0%
Q .251 to Q .27	15% in excess of Q .25
Q .271 to Q .29	25% in excess of Q .27
Q .291 or more	33% in excess of Q .29

Cow carcasses

FOB price for each pound exported	Tax
Up to Q .07	0%
Q .071 to Q .30	Q .160.0 per head
Q .301 to Q .35	Q .180.0 per head
Q .351 or more	Q .215.0 per head

Cattle -- live weight

FOB price for each pound (live weight)	Tax
Up to Q .07	0%
Q .071 to Q .150	Q .160.0 per head
Q .151 to Q .175	Q .180.0 per head
Q .176 or more	Q .215.0 per head

Registered cattle, live weight: Q .450.00 per head
The registration of cattle for export must be in document form.

Bananas

Specific tax of Q .165 per box of 19 kilograms gross, plus 33% in excess of Q .1350 in the price per box or its equivalent.

Cardomom

FOB price for each 46 kilograms	Tax
Up to Q .550.0	0%
Q .550.01 to Q .600.0	15% in excess of Q .550.0
Q .600.01 to Q .650.0	20% in excess of Q .600.0
Q .650.01 to Q .700.0	25% in excess of Q .650.0
Q .700.01 to Q .750.0	30% in excess of Q .700.0
Q .750.01 to Q .800.0	40% in excess of Q .750.0
Q .800.01 to Q .850.0	50% in excess of Q .800.0
Q .850.01 to Q .900.0	60% in excess of Q .850.0
Q .950.01 to Q .1050.0	80% in excess of Q .950.0
Q .1050.01 or more	40% in excess of Q .1050.0

Other products exported to markets out of the area of Central America, except petroleum. 4 percent above the FOB value

Other products exported to Central America (excluding Panama), except petroleum. 4 percent above the FOB value

Table 12. Cost of Production and Gross Margins of Export
Vegetables and Subsistence Crops, 1984/85

(Quetzales per hectare, mean values of sample)

Items, costs	Traditional crops			New export crops	
	Maize	Beans	Traditional vegetables	Broccoli/ cauliflower	Snowpeas
Seeds, plants	0.21	26.55	106.30	85.76	54.87
Fertilizer	105.60	85.28	158.61	243.82	216.16
Other inputs	14.85	55.10	167.95	103.88	1,296.13
Total inputs	120.66	166.98	432.86	433.46	1,567.16
Wages paid	167.71	133.69	306.06	283.58	552.71
Value of output	457.80	681.00	1,804.53	1,339.17	4,416.20
Gross margin/hectare	143.87	362.79	1,065.61	593.37	2,204.15

Source: INCAP/IFPRI survey (1985). Originally published as Table 13, p. 58, Von Braun, et. al.

APPENDIX 2. GUATEMALAN RESTRICTIONS ON THE EXPORTATION AND IMPORTATION OF AGRICULTURAL COMMODITIES

I. Products Prohibited for Exportation:

1. Coffee, unprocessed, cherry, and/or parchment
2. Cyclamates, products containing
3. Citronella - plants, seeds, or roots
4. Tree ferns - except when processed or ornamentals
5. Cattle, not registered (unless specially licensed)
6. Orchids - Monja Blanca (Lycaste Skinery-Alba)
7. Alligator skins - less than 1.5 meters
8. Quetzales - dead or alive
9. Amarillydacea and Dioscoracea plant roots
10. Lemon tea - plants, seeds, or roots
11. Turtles, green - (Chelonia Mydas)

II. Products Requiring Export Licenses:

1. Edible vegetable oils
2. Sesame seed
3. Cotton
4. Food products
5. Animal feed
6. Wild animals and/or animal products
7. Sugar
8. Cocoa
9. Coffee, green and/or processed
10. Shrimp and crustaceans
11. Cardamom
12. Beets
13. Poultry
14. Hides, cured and uncured
15. Endangered wild plants and animal species
16. Cattle, registered
17. Horses
18. Basic grains (corn, sorghum, rice, beans, sesame seed, peanuts, and sunflower seed)
19. Cottonseed meal or flour
20. Eggs
21. Lumber
22. Margarine and butter
23. Molasses
24. Rattan
25. Pigeons
26. Panela
27. Cottonseed
28. Forest, fruit, ornamental, or commercial seeds
29. Tobacco

III. Products Prohibited for Importation:

1. Bees
2. Wild and domestic animals from countries with exotic diseases
3. Animal products from countries with exotic diseases
4. Live trees for Christmas decoration
5. Flower bulbs from countries afflicted with Golden Nematodes
6. Cocoa seed
7. Coffee seeds and plants from countries with Coffee Bean Borer and Coffee Rust
8. Cyclamate, products containing
9. Fruits and flower from Mexico
10. Flour from soft wheat, except special types not manufactured in Guatemala
11. Kenaf (Hibiscus Cannabinus) seeds, except for research by GOG agency
12. Marijuana (Cannabis Indica)
13. Opium for smoking
14. Potatoes (all species) from countries with diseases or plagues
15. Piranha fish
16. Fir trees for Christmas decoration
17. Plants or their parts recognized as potential bearers of Coffee Bean Borer or Coffee Rust from infested countries
18. Rosella seeds, except for research by GOG agency
19. All tallow - except for soap or feed manufacturing
20. Seeds for following species: Cynodon Cactylon L., Sergham Halepense, Cyperus Rotundatus, Iponmea Sps, Sonchus Arvenses, Euphorbi Esula, Apocynum Cannbinum
21. Soil from countries afflicted with Coffee Bean Borer or Coffee Rust
22. Soft wheat

IV. Products Subject to Import Licenses:

1. Any foodstuffs
2. Animal and products
3. Birds of "Columbia Plumbus" and "Columbia Livia" species
4. Purebred poultry
5. Coffee seeds, clones, and plants
6. Rubber, natural or synthetic
7. Fertilizer
8. Purebred livestock
9. Herbicides
10. Insecticides
11. Special soft wheat flour, not manufactured in country, for pastry
12. Rubber seeds
13. Dry milk only through quota
14. Fresh apples
15. Fresh pears

16. Raw fruit pulp for industrial use
17. Rosella (*Hibiscus Sabdabariffa*)
18. Industrial tallow
19. All seeds intended for crops
20. Cottonseed
21. Fresh grapes

V. Regulated Products:

Exports

1. Alcoholic beverages (spirits)
2. Coffee
3. Dolphins
4. Wheat
5. Grains (including corn, sorghum, beans, rice)

Imports

1. Fertilizer
2. Tobacco
3. Wheat
4. Grains (including corn, sorghum, beans, rice)

VI. Central American Trade:

Requires import and/or export licenses:

1. Sugarcane rums
2. Foodstuff
3. Cotton from El Salvador
4. Raw or refined sugar
5. Cigarettes to and from Costa Rica
6. Wild species to and from Costa Rica
7. Fermented fruit juices to and from Costa Rica
8. Tobaccos from Costa Rica

APPENDIX 3

Guatemala: Inventory of Policies Affecting Women in Agriculture

Policy intervention	Purpose of policy	Institutions	Impacts on women in agriculture	Explanation
<u>Macroeconomic Policies</u>				
Monetary policies	Regulate supply of money and access to financial resources	Bank of Guatemala (Central Bank) under direction of the <u>Junta Monetaria</u>	Mixed impacts 1) Reduced employment in traditional export crop production, especially cotton 2) Increased employment in non-traditional crop production and agro-industrial processing 3) Possible reduced household production of basic foodgrains in small farm sector	Impact depends on policy instrument utilized 1) Deficit financing has caused high rates of inflation, resulting in increased input costs and reduced profitability of traditional export crops 2) Rediscouinting of some lines of external funds are targeted to imports of intermediate and capital goods for agro-industry 3) Rediscouinting of internal funds directed to large commercial farms to produce foodgrains (formerly cotton)
Credit policies	Control access to credit	Bank of Guatemala under direction of the <u>Junta Monetaria</u>	Mixed impacts 1) Possible reduced production of basic foodgrains in small farm sector 2) Increased employment in non-traditional crop production and agro-industrial processing	Depends on policy instrument 1) Small farms lack access to credit; with subsidized credit, competitive advantage tends to shift to commercial large farm sector 2) See (3) above.

(continued)

APPENDIX 3 (Continued)

Policy intervention	Purpose of policy	Institutions	Impacts on women in agriculture	Explanation
International trade policies	Ration foreign exchange	Ministry of Finance	Negative impact 1) Reduced employment in traditional export crop production 2) Reduced employment growth in nontraditional crop production and processing 3) Reduced income from artisan work	Anti-export bias affecting all agricultural exports 1) Profitability of export crop production reduced 2) Costs of intermediate and capital good for agro-industry reduced investment 3) Costs of imported raw materials increased due to unfavorable exchange rate and import quota treatment
Fiscal policies	Revenue generation	Ministry of Finance	Generally neutral effect	Revenue from all agricultural taxes including export and import taxes totals less than 25 percent of government tax revenue; coffee export taxes comprise high proportion of total; coffee exported under international quota and normally filled
Commercial regulation policies	Maintain publicly owned air and sea transport companies	AVIATECA, FLOAMERICA	Effects unknown	Government-granted monopoly to transport agricultural products on certain sea and air routes
<u>Sector policies</u>				
Taxation policies	Revenue generation	Ministry of Finance	Possible negative effect of reduced income derived from sales of animal production, especially poultry and swine in small farm sector	Fiscal incentives shift competitive advantage of poultry and swine production to commercial sector (now repealed)
Foreign trade policies	National food security	Ministries of Economy and Agriculture plus other public and private entities	Neutral effects	Complex set of regulations and controls on international agricultural trade, but no evidence of significant economic distortions

(continued)

APPENDIX 3 (Continued)

Policy intervention	Purpose of policy	Institutions	Impacts on women in agriculture	Explanation
Domestic marketing policies	Control retail price levels, support small producer incomes	Ministry of Economy and Ministry of Agriculture through INDECA	Neutral effects	Retail price ceilings are not effective; INDECA is under-financed; producer foodgrains support prices appear to follow, not lead market prices
Agricultural input policies			No effect	Minimum wage law not enforced and disregarded by employers
Labor policies			Positive effects	General agricultural sector development strategy implemented primarily via guidance of foreign assistance to agricultural sector
Minimum wages	Maintain agricultural labor income levels	Ministry of Labor and Social Welfare	1) Increased employment and contribution to household income	
Employment creation	Expand rural employment	Government agricultural development strategy	2) Increased production of basic foodgrains 3) Enhanced consumer expenditure patterns 4) Improved caloric consumption and nutritional levels in household including women and children	Emphasis on employment creating production and rural-based agro-industrial processing of non-traditional horticultural crops Women comprise large proportion of additional labor employed in production and nearly all labor involved in processing
Fertilizer and agricultural chemicals policies	Stimulate domestic agricultural production	Ministries of Economy and Agriculture via BANDESA, DIGESA	Positive effects 1) Increased employment in cotton production 2) Increased employment in non-traditional crop production and processing	Favorable exchange rate and import quota treatment of imported inputs of agricultural chemicals; some government subsidized fertilizer distributions Cotton and nontraditional crop production especially benefit from favorable treatment of agricultural chemical imports
Seed policy	Increase agricultural production	ICTA	Limited effect	ICTA operates limited scale foundation seed program in foodgrains and some other crops

(continued)

APPENDIX 3 (Continued)

Policy intervention	Purpose of policy	Institutions	Impacts on women in agriculture	Explanation
Livestock policies	See fiscal policies	See fiscal policies	See fiscal policies	See fiscal policies
Land and natural resource policies				
Idle lands law	Regulate land use	Congress; to be implemented by INTA	No effect	Unenforced law requires idle lands to be cultivated
Basic grains law	Regulate land use	Congress; to be implemented by DIGESA	No effect	Unenforced law requires 10 percent of land in farms over 100 hectares be used for foodgrains production
Land distribution	Redistribute land resources	Congress; implemented by INTA	Very limited effect	Government purchase land for resale to cooperative farmer groups
Agricultural research and extension policies	Increase agricultural sector productivity	ICTA, DIGESA, DIGESEPE	Limited or neutral effects	Research, but particularly extension entities seriously underfunded

APPENDIX 4

List of Abbreviations

ANACAFE	National Coffee Association
AVIATECA	Guatemalan Aviation Company
APAESA	Essential Oil Producers Association
BANDEGUA	Guatemalan Banana Growers Association
BANDESA	National Bank for Agricultural Development
CABEI	Central American Bank for Economicomic Integration
DGE	General Statistics Directorate
DIGESA	General Directorate for Agricultural Services
DIGESEPE	General Directorate for Livestock Services
FLOAMERICA	Guatemalan Merchant Marine
GREPAGRO	National Association of Fertilizer Distributors
IDB	Inter-American Development Bank
ICTA	Institute for Agricultural Science and Technology
INTA	National Institute for Agricultural Transformation
INAFOR	National Forestry Institute
INDECA	National Agricultural Marketing Institute
SEGEPLAN	General Planning Office
USPA	Agricultural Sector Planning Office

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